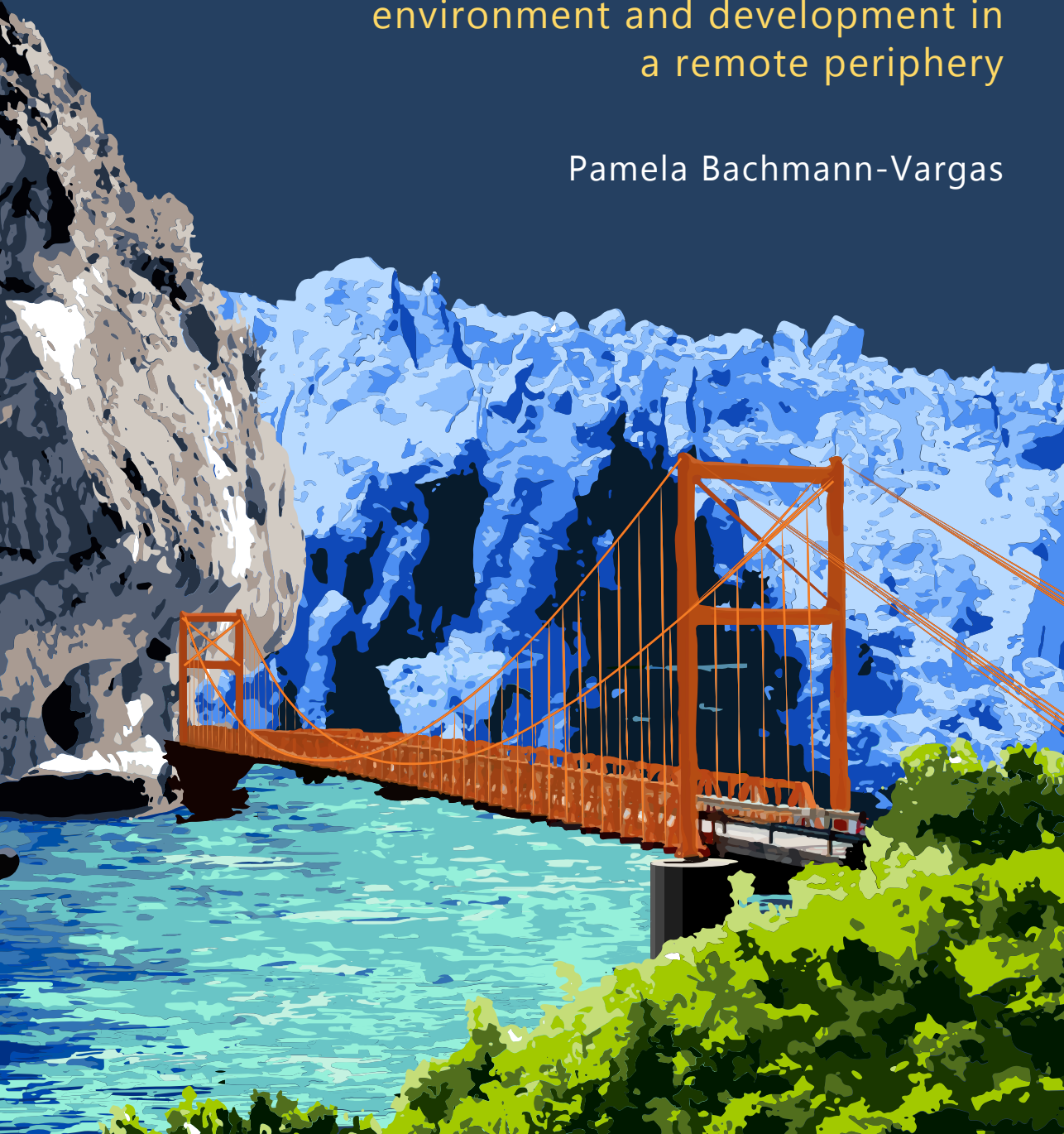


MEANWHILE, IN AYSÉN-PATAGONIA

Exploring discursive transformations on
environment and development in
a remote periphery

Pamela Bachmann-Vargas



Propositions

1. Discourses on environment and development have the potential to re-define the peripheral condition of a certain geographic area. (this thesis).
2. The integration of the cultural heritage discourse into nature conservation initiatives, provides opportunities for bringing together nature conservation, local empowerment and social inclusiveness. (this thesis).
3. 'Science for Impact' has a limited impact on non-English speaking readers.
4. The absence of a *p-value* in qualitative research hinders the collaboration between social and environmental scientists.
5. While *blue growth* feeds the 'rich', *blue waste* affects the 'poor'.
6. Doing a PhD requires a dose of stubbornness, ambition, and most importantly, resilience.

Propositions belonging to the PhD thesis, entitled:

Meanwhile, in Aysén-Patagonia: exploring discursive transformations on environment and development in a remote periphery

Pamela Bachmann-Vargas
Wageningen, 5 November 2021

MEANWHILE, IN AYSÉN-PATAGONIA

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and development in a remote periphery

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This research was conducted under the auspices of the Wageningen School of Social Sciences (WASS).

MEANWHILE, IN AYSÉN-PATAGONIA

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and development in a remote periphery

Pamela Bachmann-Vargas

Thesis

Submitted in fulfilment of the requirements for the degree of doctor
at Wageningen University
by the authority of the Rector Magnificus,
Prof. Dr A.P.J. Mol,
in the presence of the
Thesis Committee appointed by the Academic Board
to be defended in public
on Friday 5 November 2021
at 1.30 pm in the Aula.

Pamela Bachmann-Vargas

Meanwhile, in Aysén-Patagonia: exploring discursive transformations on environment and development in a remote periphery

170 pages

PhD thesis, Wageningen University, Wageningen, the Netherlands (2021)

With references, with summaries in English and Spanish

ISBN: 978-94-6395-964-3

DOI: <https://doi.org/10.18174/553259>

The title of this thesis is inspired by two sources.

The first one refers to the combination of *Aysén-Patagonia*, as a widely used tourism marketing concept of the Aysén region (Chile), and the second one makes allusion to the awarded travel book *In Patagonia* (Chatwin 1977).

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Contents

SUMMARY	I
RESUMEN	IV
INTRODUCTION	1
1.1. THE IDEALIZATION AND THE (RE)INVENTION OF AYSÉN-PATAGONIA, CHILE	2
1.2 RESEARCH PROBLEM	6
1.3 RESEARCH OBJECTIVE AND RESEARCH QUESTIONS	6
1.4 CONCEPTUAL FRAMEWORK	7
1.4.1 <i>Defining discourses and practices</i>	7
1.4.2 <i>Defining the remote periphery</i>	8
1.4.2.1 <i>Nature-based tourism at the 'pleasure periphery'</i>	9
1.4.2.2 <i>Salmon aquaculture at the 'resource periphery'</i>	10
1.4.2.3 <i>Nature conservation and the idealization of the 'wild periphery'</i>	12
1.5 RESEARCH METHODOLOGY	13
1.5.1 <i>Personal and scientific stance</i>	13
1.5.2 <i>Research design</i>	13
1.5.3 <i>Data collection</i>	15
1.5.4 <i>Data analysis</i>	15
1.5.5 <i>Data storage and data sharing</i>	16
1.5.6 <i>Validity and reliability</i>	16
1.6 OUTLINE OF THE THESIS	18
DISENTANGLING ENVIRONMENTAL AND DEVELOPMENT DISCOURSES IN A PERIPHERAL SPATIAL CONTEXT: THE CASE OF THE AYSÉN REGION, PATAGONIA, CHILE	19
ABSTRACT	20
2.1 INTRODUCTION	21
2.2 THE AYSÉN REGION, A REMOTE PERIPHERAL AREA	22
2.3 CONCEPTUALIZING DISCOURSES	24
2.4 METHODS	26
2.5 DISCURSIVE THEMES FROM THE CORE	28
2.6 DISCOURSES FROM THE PERIPHERY	29
2.6.1 <i>Environmental discourses</i>	29
2.6.2 <i>Development discourses</i>	30
2.7 ANALYSIS	33
2.7.1 <i>Synergies and tensions</i>	33
2.8 DISCUSSION: IMPLICATIONS FOR (DE)PERIPHERALIZATION	37
2.8.1 <i>Strengthening periphery-periphery relationships</i>	37
2.8.2 <i>Taking tensions seriously</i>	37
2.8.3 <i>Shifting discursive relationships with the core</i>	38
2.8.4 <i>Theory implications</i>	38
2.9 CONCLUSION	39

**A SOCIAL PRACTICE APPROACH TO NATURE-BASED TOURS: THE CASE OF THE MARBLE CAVES
IN NORTHERN PATAGONIA, CHILE..... 41**

ABSTRACT 42

3.1 INTRODUCTION 43

3.2 PRACTICE-BASED APPROACH IN TOURISM STUDIES 44

3.3 THE CASE OF THE MARBLE CAVES 46

3.4 RESEARCH METHODS 47

3.5 RESULTS 50

3.5.1 Understanding the tour's routine 50

3.5.2 The tour as a social practice 52

3.5.2.1 Material components 53

3.5.2.2 Required competences 53

3.5.2.3 Symbolic meanings..... 54

3.5.2.4 The reproduction of the practice 55

3.6 DISCUSSION 55

3.6.1 Nature-based tours as social practice 56

3.6.2 Competences as key practice element 56

3.6.3 Touring practices and policy 57

3.7 CONCLUSION..... 59

RE-FRAMING SALMON AQUACULTURE IN THE AFTERMATH OF THE ISAV CRISIS IN CHILE 61

ABSTRACT 62

4.1. INTRODUCTION 63

4.1.1 Making sense of the ISAV crisis 64

4.1.2 Renovated meanings..... 65

4.2 SALMON AQUACULTURE IN THE AYSÉN REGION 66

4.3 RESEARCH METHODS 68

4.4 RESULTS 70

4.4.1 The biosecurity discourse 70

4.4.2 The sustainable protein discourse 71

4.4.3 "The Promise of Patagonia" discourse 72

4.4.4 The local (un)willing acceptance..... 73

4.5 DISCUSSION 73

4.5.1 Re-framing and coexisting..... 74

4.5.2 Legitimizing expansion 76

4.5.3 The absence of integrated ecosystem-related elements 77

4.5.4 Times of crises and uncertainties..... 77

4.6 CONCLUSION..... 78

**PROTECTING WILDERNESS OR CULTURAL AND NATURAL HERITAGE? AN ANALYSIS OF
ENVIRONMENTAL DISCOURSES IN NORTHERN PATAGONIA, CHILE 81**

ABSTRACT 82

5.1 INTRODUCTION 83

5.1.1 Environmental discourses in Northern Patagonia	84
5.2 STUDY AREA AND METHODS	86
5.2.1 Protected areas in Northern Patagonia	86
5.2.2 Research methods.....	87
5.3 RESULTS	89
5.3.1 National Park Cerro Castillo.....	89
5.3.2 National Park Patagonia.....	90
5.3.3 National Park Laguna San Rafael.....	92
5.3.4 AMCP-MU Pitipalena-Añihué (Multiple-Use Marine Protected Area)	93
5.3.5 Nature Sanctuary Capilla de Mármol.....	94
5.4 COMPARATIVE ANALYSIS	95
5.5 DISCUSSION	97
5.5.1 The rewilding and the rebranding of Patagonia	97
5.5.2 Too much optimism in tourism	98
5.5.3 Global conservation goals within the national context.....	99
5.6 CONCLUSION	100
GENERAL DISCUSSION AND CONCLUSIONS	101
6.1 INTRODUCTION	102
6.2 GENERAL DISCUSSION AND CONCLUSIONS OF THE MAIN FINDINGS	103
6.2.1 Aysén's predominant environmental and development discourses	103
6.2.2 Discourses and environment-related practices.....	104
6.2.2.1 Nature-based tourism	104
6.2.2.2 Salmon aquaculture.....	106
6.2.2.3 Nature conservation.....	106
6.2.3 Implications of environmental and development discourses and practices, and the (de)peripheralization of Aysén-Patagonia	108
6.3 THEORETICAL REFLECTIONS ON (DE)PERIPHERALIZATION	110
6.4 METHODOLOGICAL REFLECTIONS	112
6.5 FUTURE RESEARCH AGENDA FOR AYSÉN-PATAGONIA	114
6.6 IN SUM – KEY CONCLUSIONS	115
REFERENCES	117
APPENDICES	137
APPENDIX 1: INTERVIEW OUTLINE, CHAPTER 2	138
APPENDIX 2: INTERVIEW OUTLINE, CHAPTER 3	138
APPENDIX 3: SEMI-CLOSED QUESTIONNAIRE, CHAPTER 3	139
APPENDIX 4: INTERVIEW OUTLINE, CHAPTER 4	142
APPENDIX 5: SUPPLEMENTARY MATERIAL, CHAPTER 5	143
APPENDIX 6: INTERVIEW OUTLINE, CHAPTER 5	143
LIST OF PUBLICATIONS	145
WASS EDUCATION CERTIFICATE	146
ACKNOWLEDGEMENTS	148

List of figures

Figure 1: Digital elevation model of the Aysén region, Northern Patagonia..... 3
Figure 2: Research design. 14
Figure 3: Geographic location of the Aysén Region, Northern Patagonia. 24
Figure 4: Geographic location of the Marble Caves, Northern Patagonia. 47
Figure 5: The Marble Caves. 52
Figure 6: Geographic location of the administrative regions where salmon farming takes place..... 67
Figure 7: Protected areas in the Aysén region, Northern Patagonia. 87

List of tables

Table 1: Interviewed organizations..... 27
Table 2: Analysis of environmental and development discourses, based on Dryzek (2013). 36
Table 3: Interviewees' profile. 48
Table 4: Discourses, practices, environmental elements and the discursive relation in the re-framing of the salmon farming in Chile 70
Table 5: Primary and secondary information sources. 88

Summary

Patagonia, is an imaginary territory that comprises the south of Chile and Argentina. Historically, Patagonia has captivated an image of far-off lands and wilderness, embedded in a remote and peripheral context, which in turn has often been idealized as 'pristine'. In the literature, the reader will find different terminologies referring to Patagonia, in both Chile and Argentina and diverse ideas of where the imaginary boundaries of Patagonia reside. In this dissertation I focus on the Chilean territory, specifically the territory that comprises the administrative region of Aysén, also known as Northern Patagonia. Hereafter, Aysén-Patagonia.

The current social-ecological state of Aysén-Patagonia, cannot be fully understood without looking into historical processes of idealization, territorial (re)invention and discursive transformations, which have molded the common perception towards the Aysén region, and at the same time have influenced how the region (self)transforms.

Over the years, Aysén-Patagonia has faced a series of socio-spatial transformations driven by development and environmental ideas. From a development point of view, Chilean Patagonia, and specifically Northern Patagonia transitioned from extensive livestock ranching in the early twentieth century, to small-scale agriculture, nature-based tourism and industrial salmon aquaculture. From an environmental perspective, cultural and natural heritage associated to the rugged terrains and the livestock farming traditions are being replaced with renovated meanings of pristine and wild nature, situated within national and global targets of nature conservation.

Despite the particular socio-spatial transformations that have taken place in Aysén-Patagonia, no studies have explored the entanglement of environmental and development ideas alike, nor their effects on the Aysén's peripheral condition. This research contributes to fill this gap, by delving into three current prominent aspects for the environment and development of Aysén-Patagonia, namely: nature-based tourism, salmon aquaculture and nature conservation.

Three research questions guide this dissertation, namely:

- a) What are the predominant environmental and development discourses that are currently being (re)produced in Aysén-Patagonia?
- b) How are these discourses playing out in environment-related practices, specifically in relation to nature-based tourism, salmon aquaculture and nature conservation?

- c) What are the implications of environmental and development discourses and practices, for the (de)peripheralization of Aysén-Patagonia?

This dissertation is composed of six chapters, four of them empirical. Chapter 1 begins with the general introduction. In this chapter, I present a brief description of the historical context, which has shaped the socio-spatial transformations that have taken place in Aysén-Patagonia. Next, I introduce the conceptual framework. The conceptual framework is based on the definitions of discourses and practices, (de)peripheralization and the remote periphery, along with its connotations of ‘pleasure periphery’, ‘resource periphery’ and ‘wild periphery’. Subsequently, I describe the research design and the methodology carried out throughout the thesis.

In Chapter 2, I identify and analyze the most prominent environmental and development discourses reproduced in the Aysén region. Based on semi-structured interviews with key informants, six discourses were identified, namely: *Patagonian wilderness*, *cultural and natural heritage*, *regional demands*, *sustainable energy mix*, *nature-based tourism*, and *salmon aquaculture*. Based on the analysis of synergies and tensions among discourses, the chapter concludes that environmental and development discourses play a key role in the transformation of remote peripheral areas. Discursive synergies may counteract or exacerbate peripheralizing processes.

Chapter 3 follows up on the nature-based tourism discourse, and its translation into practices. This chapter analyzes small-scale tourism from a practice based approach. This chapter focuses on the case study of the Marble Caves boat tours, an iconic tourist attraction in Aysén-Patagonia. Through semi-structured interviews, questionnaires and participant and non-participant observations, the analysis shows how the reproduction of the boat tour, defined as a social practice, is particularly reliant on the tour operators’ competences, as well as on the abiotic nature of the tourist attraction. The chapter suggests that future tourism policy interventions that aim to harmonize local development and environmental protection need to carefully analyze and take into account existing social practices.

Chapter 4 delves into the discursive reproductions that are currently re-framing the salmon aquaculture industry. This chapter identifies the main discourses in the aftermath of the ISAV crisis (Infectious Salmon Anemia virus), which caused staggering effects more than a decade ago. Based on semi-structured interviews and non-participant observation, the analysis shows how the salmon industry repositions by means of the reproduction of three main discourses, namely: *biosecurity*, *sustainable protein*, and *The Promise of Patagonia*. The chapter concludes, that despite the severe effects of the ISAV crisis on the salmon industry, as well as on coastal communities, new discourses are focused on the legitimization to growth, in the absence of integrated marine ecosystem-

related elements, indicating a crucial gap toward environmental sustainability in the Chilean salmon aquaculture.

Chapter 5 explores the interplay between the environmental discourses identified in Aysén-Patagonia: *Patagonian wilderness*, and *cultural and natural heritage*, and nature conservation practices. Based on secondary sources supplemented with (online) semi-structured interviews, the chapter inquires into the narratives that guided the creation of five protected areas, the management approaches and the livelihood practices associated to those areas. The analysis draws upon the following protected areas: National Park Cerro Castillo, National Park Patagonia, National Park Laguna San Rafael, Marine Protected Area Pitipalena-Añihué, and Nature Sanctuary Capilla de Mármol. The chapter contends that the future of protected area management in Aysén-Patagonia will depend on how community-based management initiatives are fostered, by bringing to the fore the sense of attachment and the cultural heritage that has historically transformed the Patagonian landscapes.

Finally, I discuss and synthesize the answers to the research questions aforementioned. I reflect on three aspects of the concept of (de)peripheralization, followed by methodological reflections. Next, I propose key themes for the future research agenda of Aysén-Patagonia. The chapter finalizes with a summary of the conclusions of this dissertation. Lastly, I argue that it is time to acknowledge the local agency and the effect of meanings of discursive reproductions in the development of socio-spatial processes, which not only take place on a local level. After all, this thesis - *Meanwhile, in Aysén-Patagonia* - shows how remote peripheral areas keep on changing in a globalized world.

Resumen

El título de esta tesis se traduce como: “Mientras tanto, en Aysén-Patagonia: explorando transformaciones discursivas sobre medio ambiente y desarrollo en una periferia remota”.

Patagonia, es un territorio imaginario que comprende el sur de Chile y Argentina. Históricamente, la palabra Patagonia ha cautivado una imagen de desolación y naturaleza salvaje, enmarcadas dentro de un territorio remoto y periférico, idealizado como ‘prístino’, el cual a su vez ha adquirido diferentes significados a lo largo de la historia. En la literatura tanto de habla hispana como inglesa, se pueden encontrar diferentes terminologías respecto de la definición geográfica de Patagonia y de su límite norte. Esta tesis doctoral tiene como foco de estudio la Patagonia chilena, específicamente el territorio que comprende la región administrativa de Aysén, conocida también como Patagonia Norte. En esta tesis me refiero al territorio de Aysén, como Aysén-Patagonia.

Hasta el día de hoy, la construcción de Aysén-Patagonia ha conllevado procesos históricos de idealización, (re)invención territorial y transformaciones discursivas, los cuales han moldeado la percepción común de la región de Aysén, y al mismo tiempo han influenciado cómo la región se (auto)transforma. Históricamente, Aysén-Patagonia ha experimentado diversas transformaciones socio-espaciales impulsadas por ideas de desarrollo y medio ambiente. Desde el punto de vista del desarrollo, la región de Aysén ha transitado desde la explotación ganadera desarrollada a principios del siglo XX, hacia la agricultura de pequeña escala, el turismo basado en la naturaleza y la acuicultura industrial. Desde una perspectiva ambiental, el patrimonio cultural y natural asociado a las tradiciones agro-campesinas, y a la escarpada topografía y atractivos escénicos de Aysén, ha sido reemplazado con renovados significados de naturaleza prístina y salvaje, los cuales se sitúan dentro de objetivos nacionales y globales de conservación de la naturaleza.

A pesar de las particulares transformaciones socio-espaciales que han ocurrido en Aysén-Patagonia, se advierte un vacío de conocimiento, en tratar de entender cómo se entrelazan las ideas actuales de medio ambiente y desarrollo en dicha región, y cuáles son los efectos de dichas ideas. Esta tesis contribuye a llenar dicho vacío por medio del análisis de discursos de medio ambiente y desarrollo que emergen en el contexto remoto periférico de Aysén. En esta tesis, analizo las sinergias y tensiones entre dichos discursos y sus prácticas asociadas, enfocándome en tres aspectos principales: el turismo de naturaleza, la acuicultura del salmón y la conservación de la naturaleza.

Las siguientes preguntas de investigación guían esta tesis:

- a) ¿Cuáles son los discursos de medio ambiente y desarrollo, que predominan y que están siendo (re)producidos actualmente en Aysén-Patagonia?
- b) ¿Cuál es el rol de dichos discursos en prácticas relacionadas con el medio ambiente, específicamente en relación al turismo de naturaleza, la acuicultura del salmón y la conservación de la naturaleza?
- c) ¿Cuáles son las implicancias de los discursos de medio ambiente y desarrollo, junto con sus prácticas, para la (des)periferalización de Aysén-Patagonia?

Esta tesis se compone de seis capítulos, cuatro de ellos empíricos. El Capítulo 1, inicia con la introducción general de la tesis. En este capítulo, presento una breve descripción del contexto histórico que ha moldeado las transformaciones socio-espaciales en Aysén-Patagonia. A continuación, introduzco el marco conceptual, compuesto por las definiciones de discursos y prácticas, y por la definición de los conceptos de '(des)periferalización', y periferia remota, junto con sus connotaciones de 'periferia del placer', 'periferia de los recursos' y 'periferia salvaje', las cuales a su vez se corresponden con el turismo de naturaleza, la acuicultura del salmón y la conservación de la naturaleza, respectivamente. Posteriormente, describo el diseño de la investigación y la metodología llevada a cabo durante esta tesis.

En el Capítulo 2, se identifican y analizan los principales discursos de medio ambiente y desarrollo que se (re)producen actualmente en Aysén. En base a entrevistas semiestructuradas con actores claves de la región, se identificaron seis discursos, los cuales fueron denominados como: *Patagonia salvaje*, *patrimonio cultural y natural*, *demandas regionales*, *matriz energética sustentable*, *turismo de naturaleza*, y *acuicultura del salmón*. Posteriormente, a través del análisis de las sinergias y tensiones entre los discursos, el capítulo concluye que los discursos ambientales y de desarrollo juegan un rol clave en la transformación de áreas remotas periféricas. Las sinergias discursivas pueden, ya sea, reforzar o contrarrestar procesos de periferalización.

El Capítulo 3 se basa en el discurso del turismo de naturaleza, a través del cual se analiza el turismo de pequeña escala desde la perspectiva de las prácticas sociales. Este capítulo se enfoca en el análisis del tour a las Cavernas de Mármol, una atracción turística icónica de la región de Aysén. A través de entrevistas semiestructuradas, cuestionarios y métodos de observación participante y no participante, el análisis muestra cómo la reproducción del tour, conceptualizado como una práctica social, está particularmente sujeto a las competencias de los operadores turísticos, así como también a la naturaleza abiótica de la atracción turística. El capítulo sostiene que futuras políticas de turismo

que apunten a compatibilizar el desarrollo local y la protección ambiental debieran tomar en consideración prácticas sociales existentes, contribuyendo así a un mejor entendimiento del turismo de pequeña escala, y al desarrollo sustentable de la actividad turística.

El Capítulo 4 se enfoca en la acuicultura del salmón, una de las principales actividades económicas en el sur de Chile. En este capítulo, se analizan las reproducciones discursivas que renuevan a la industria del salmón, luego de la crisis del virus ISA (Infectious Salmon Anemia), ocurrida hace más de una década. En base a la aplicación de entrevistas semiestructuradas, y métodos de observación no participante, el análisis muestra cómo la industria del salmón se reposiciona a través de la reproducción de tres discursos claves, identificados como: *bioseguridad*, *proteína sustentable* y *La Promesa de la Patagonia*. El capítulo concluye que a pesar de los efectos devastadores que causó la crisis del ISA tanto en la industria del salmón, como en las comunidades costeras, los nuevos discursos se enfocan en la legitimización del crecimiento de la actividad industrial, en ausencia de elementos ecosistémicos integrados, indicando así un vacío hacia la sustentabilidad ambiental de la acuicultura del salmón en Chile.

El Capítulo 5 analiza la interrelación entre los discursos de medio ambiente, identificados en Aysén-Patagonia: *Patagonia salvaje*, y *patrimonio cultural y natural*, y la conservación de la naturaleza. Por medio de fuentes bibliográficas, complementadas con entrevistas semiestructuradas realizadas en formato virtual, el capítulo indaga en las narrativas que guiaron la creación de cinco áreas protegidas de Aysén, en las estrategias de manejo y en las prácticas de subsistencia asociadas a dichas áreas. El análisis se basa las siguientes áreas protegidas: Parque Nacional Cerro Castillo, Parque Nacional Patagonia, Parque Nacional Laguna San Rafael, Area Marina Costera Protegida de Múltiples Usos (AMCP-MU) Pitipalena-Añihué, y Santuario de la Naturaleza Capilla de Mármol. El capítulo sugiere que el futuro manejo de las áreas protegidas de Aysén, dependerá de cómo iniciativas de manejo comunitario son impulsadas, de modo de enfatizar la importancia del sentido de apego, y del patrimonio cultural, el cual históricamente ha transformando los paisajes de la Patagonia.

En el capítulo final, discuto de manera general y sintetizo las respuestas a las preguntas de investigación señaladas anteriormente. Reflexiono acerca del concepto de (des)periferalización, y sobre aspectos metodológicos. A continuación, propongo temas de investigación claves para el medio ambiente y desarrollo de Aysén-Patagonia. El capítulo finaliza con un resumen de las conclusiones de esta tesis. Finalmente, sostengo que ya es hora de reconocer el agenciamiento local y el efecto de los significados, inmersos en las reproducciones discursivas asociadas a procesos socio-espaciales, los cuales no sólo ocurren a escala local. En definitiva, esta tesis - *Mientras tanto, en Aysén-*

Patagonia - muestra cómo áreas remotas periféricas continúan transformándose en un mundo globalizado.

Chapter 1

Introduction

“Patagonia is the farthest place to which man walked from his place of origins... From its discovery it had the effect on the imagination something like the Moon, but in my opinion more powerful” (Chatwin 1977: p. xiv).

1.1. The idealization and the (re)invention of Aysén-Patagonia, Chile

Patagonia is an “evocative idea of place” (Moss 2008, book front flap); it is a territory and an identity, and it is even a clothing company. Patagonia covers the southern tip of South America and thus consists of Chilean and Argentinian Patagonia. In the literature, the reader will find different terminologies referring to Patagonia, in both Chile and Argentina (e.g. Western, Northern, Central), and diverse ideas of where the imaginary boundaries of Patagonia reside (e.g. Pardiñas et al. 2012, León-Munõz et al. 2018). In this dissertation I focus on the Chilean territory, hence I make use of the Northern and Southern denominations of Patagonia commonly used in Chile, whereby the northern part refers to the administrative region of Aysén (hereafter Aysén-Patagonia), and the southern part to the administrative region of Magallanes (Figure 1). This thesis is based on the discursive and territorial dynamics of Aysén-Patagonia only.

The current social-ecological state of Aysén-Patagonia, cannot be fully understood without looking into historical processes of idealization, territorial (re)invention and discursive transformations. In the following paragraphs, I briefly introduce some key developments that have influenced the construction of the Aysén region and Patagonia until these days.

The discovery of the Magellan Strait in 1520, and a century later of Cape Horn represented historical milestones, that paved the way for maritime exploration into the New World, and spurred the exploration of Patagonia (Moss 2008).

Countless missions followed such discoveries. Since the arrival of European explorers and missionaries, tall stories fed the yearnings for gold, fame and faith; rewards that were supposedly to be found in the remote corners of the world recently discovered. The Giants of Patagonia and the City of the Caesars, an enchanted city abundant in gold (Memoria Chilena 2018), were among the first stories that invented Aysén and Patagonia in the eyes of the foreigners (Martinić 2005: p. 53, Moss 2008: p. 74).

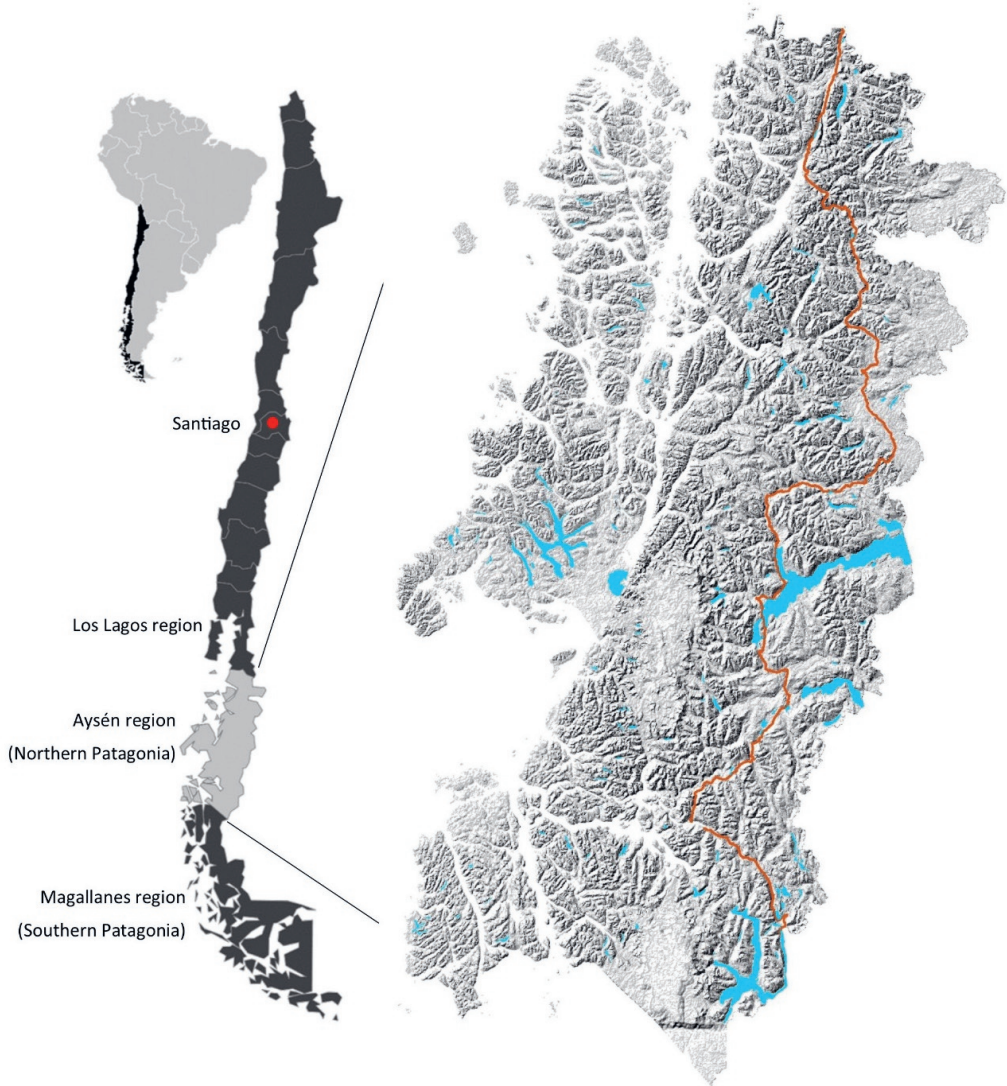


Figure 1: Digital elevation model of the Aysén region, Northern Patagonia.

The Aysén region located in southern Chile covers a surface of 108,494 km² of uneven topography, reaching a population density of 0.9 inhabitants per km². To the west, the region is characterized by fjords, temperate rain forests and mountain peaks, while toward the east grasslands and the Patagonian steppe become the predominant landscape components. The main lakes are shown in light blue. In orange, the Southern Highway route. (Map own elaboration based on publicly available data at the National Catalogue of Geospatial Information-IDE Chile, WGS 84/UTM zone 18S, CIREN 2016. DEM Alos Palsar).

Later on, the *Beagle*'s voyages (between 1826-1836), gave the name to a newly discovered passage connecting the Atlantic and the Pacific oceans: the Beagle Channel (Southern Patagonia). On board, captain surveyor Robert FitzRoy together with Charles Darwin also played a role in the (re)invention of Patagonia. FitzRoy's expeditions enriched the nautical and geographical knowledge of Patagonia, which had been initiated by the Spanish Navy decades ago (Martinić 2005: p. 70), whereas their encounters with indigenous people depicted the differences between the 'savage' and the 'civilized' man (Moss 2008: p. 110). Some of the natives were even taken to England, to be 'educated' and 'civilized' (Moss 2008: p. 103). In his journey, Darwin portrayed Patagonia as "the most godforsaken landscape he had ever seen" (Moss 2008: p. 118). Adjectives that later on, were going to be remembered by the politicians of that time (Araya 2017).

Meanwhile, maritime expeditions were also approaching Northern Patagonia from the north. From 1818 onwards, and following the independence from Spain (Martinić 2005: p. 69), maritime inspections to the unknown southern territories were encouraged by ideals of sovereignty, development and hydrographic knowledge. Based on FitzRoy's charts, recognized national sailors such as Francisco Hudson and Enrique Simpson embarked on a number of journeys to document what was lying 'at the edge of *Christianity*', as the peripheral condition of Patagonia in relation to the rest of the country was referred to in that time (Araya 2017). In the meantime, on the mainland, the geographer Hans Steffen was defining the territorial features of Aysén, based on scientific foundations (Osorio et al. 2007: p. 16). Throughout this process, nomadic indigenous people who inhabited the coastal areas of what it is currently the Aysén region, were ignored by the official reconnaissance; their mobile character did not match the territorial paradigm from that time (Núñez et al. 2016). At the same time, those who sparsely populated the mainland had been decimated (Martinić 2005: p. 30). Thus, by the end of the nineteenth century Aysén-Patagonia was deemed uninhabited (Martinić 2005: p. 30).

The beginning of the twentieth century was marked by the modern colonization of the Aysén region, a process that was boosted by two drivers of migration: spontaneous and forced colonization (Osorio et al. 2007: p. 9). The spontaneous colonization was composed of Chileans coming from areas such as Chiloe and Palena (north of Aysén), and Argentineans coming from the *Pampa*. In parallel, the forced colonization was driven by the creation of the *Sociedades Ganaderas* (i.e. livestock companies). Large land concessions were granted by the government, to private companies to develop the ranching business, and to attract workers and new residents to Aysén-Patagonia. A method that was used to secure the national sovereignty (Yarrow and Torres 2009). As a consequence, the 'livestock' period gave birth to an intense landscape transformation. By means of fire, native forests were burnt down to habilitate the terrains for ranching.

To date, the effects of the colonization fires are still visible in the eroded hills of the Aysén region (Yarrow and Torres 2009). Meanwhile, small coastal communities were settling down attracted by the forestry business, which at that time was in full swing shipping railway sleepers to the north of Chile and Peru (Osorio et al. 2007: p. 36). During this period, the Aysén-Patagonian culture was being brewed of a mix of Chilean, Argentinian and other foreign migrants who ventured to colonize, and to make a livelihood in this still far-off land.

From a national sovereignty stance, the present Aysén region was historically considered as an internal frontier, a periphery within the national territory (Núñez et al. 2017a, Rodríguez et al. 2019). The Aysén region was one of the last mainland territories to be officialized, formerly designated as ‘Aysén’s territory’ (Martinić 2005: p. 258), and still holds one of the lowest population densities in the country (INE 2017). The internal frontier idea was surmounted to some extent with the construction of the Southern Highway (Carretera Austral), the only road that connects the Aysén region with the north. To the south, the rugged terrains dominated by the presence of the Southern Icefields impeded terrestrial access. Only recently, a ferry service was established connecting the Aysén and the Magallanes regions (AQUA 2017).

With the aim to integrate the remote southern territories into the nation, amid the military dictatorship (1973-1990), the road construction began in 1976 (Urrutia et al. 2019). Steeped in symbols of patriotism and propaganda from that time “to make Chile a great nation” (Urrutia 2020: p. 37), the Southern Highway implied geopolitical and modernization effects that transformed the austral territories, and replaced the east-west conceptualization of the space based on the closer geographic distance and access to Argentina, with the north-south national construct (Urrutia 2020). The opening of the Southern Highway brought the long awaited ‘development’ through the terrestrial access, and reinforced the sentiments over the handling of an untamed nature (Urrutia et al. 2019). The road which is still partially paved, connects the Los Lagos and the Aysén regions over 1,000 km of intricate topography.

The opening of the Southern Highway, also opened up the access to remarkable landscapes, which gradually stimulated the arrival of tourists (Muñoz and Torres 2010). The Southern Highway is nowadays considered as a scenic route for tourism development (PER Turismo Aysén 2015).

Along with the increasing demand for nature-based tourism experiences, the idealization of the wild and pristine nature at (literally) the end of the world has transformed the conceptualization of the Patagonian landscapes, and ‘green’ ideas have taken over the traditional way the local nature used to be perceived (Núñez et al. 2020).

Meanwhile along the fjords and channels of Aysén-Patagonia, an intense socio-spatial transformation has been taking place. The meandering coastlines and the natural conditions of the inner sea have become the main assets for industrial salmon farming. By 2006, salmon aquaculture in the Aysén region was flourishing and the salmon industry was being depicted as the “regional driving force” (Vial 2006), whereas Chile was positioning as a second global producer of farmed salmon (Barton and Fløysand 2010).

At present, the Regional Development Strategy (2010-2030) aims to position Aysén-Patagonia as an international sustainable tourism destination, to consolidate aquaculture development and align it with other coastal usage, and also to position the Aysén region as scientific research platform, focusing on the region’s natural capital (ILPES-CEPAL/DIPLADE Aysén 2009). All seems to indicate that the idealization and (re)invention of Aysén-Patagonia will continue.

1.2 Research problem

Peripheral areas, and more specifically remote peripheral areas have traditionally faced the ascriptive power of ideas, for better or worse. On one side, negative connotations are usually ascribed by *others*, to the alleged adverse, peripheral, condition. On the other side, remote peripheral areas are also evocative places, wherein imaginaries of far-off lands and wilderness have been central elements for their idealization and (re)invention.

Despite the named attributes and the particular socio-spatial transformations that have taken place in Aysén-Patagonia, no studies have explored the entanglement of environmental and development ideas alike, nor their effects on the Aysén’s peripheral condition. This research contributes to fill this gap, by delving into three current prominent aspects for the environment and development of Aysén-Patagonia, namely: nature-based tourism, salmon aquaculture and nature conservation. In these domains, discourses on environment and development interact with practices. Together, discourses and practices shape processes of local development, and in doing so reinforce or counteract different forms of peripheralization. Therefore, a better understanding of these interactions can help explaining past developments and guiding future developments towards greater socio-economic and environmental sustainability.

1.3 Research objective and research questions

The objective of this thesis is to analyze the interplay between environmental and development discourses and practices that are taking place in the remote peripheral

context of Aysén-Patagonia, Chile, with a focus on discourses and practices of nature-based tourism, salmon aquaculture and nature conservation.

Three research questions guide this dissertation, namely:

- a) What are the predominant environmental and development discourses that are currently being (re)produced in Aysén-Patagonia?
- b) How are these discourses playing out in environment-related practices, specifically in relation to nature-based tourism, salmon aquaculture and nature conservation?
- c) What are the implications of environmental and development discourses and practices, for the (de)peripheralization of Aysén-Patagonia?

1.4 Conceptual framework

1.4.1 Defining discourses and practices

This research follows an interpretive discourse approach (Leipold and Winkel 2017), rather than a traditional critical discourse analysis (e.g. Fairclough 2013). While critical discourse analysis focuses on power dynamics as their main analytical device, the interpretive approach used in this research draws upon the description and interpretation of the social context wherein discourses are realized, in which knowledgeable actors provide their accounts (Phillips and Hardy 2002), and give different meanings to real-world phenomena, thus constructing multiple realities (Hajer and Versteeg 2005).

Throughout this thesis, I build upon Maarten Hajer's definition of discourse, as: "an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices" (Hajer and Versteeg 2005: p. 175). By following Hajer's approach, it is highlighted that "discourses need to be done" (Leipold and Winkel 2017: p. 514) through practices, in which meanings are created by actors in social interaction.

To analyze practices, this thesis draws upon Spaargaren et al. (2016) and Shove et al. (2012). Spaargaren et al. (2016: p. 8) define social practices as: "shared, routinized, ordinary ways of doings and sayings, enacted by knowledgeable and capable human agents who - while interacting with the material elements that co-constitute the practice - know what to do next in a non-discursive, practical manner". In this regard, a practice-based approach focuses on social practices as basic unit of analysis. Shove et al. (2012) propose that social practices are made up of three interconnected elements: materials

(e.g. tangible objects), competences (e.g. know-how, skills) and meanings (e.g. symbolic representations). Hence, practices emerge and exist when those elements are articulated in a dynamic cycle in which they co-evolve and shape each other. Chapter 3 illustrates small-scale nature-based tours as a social practice, using practice theory as the main theoretical lens.

1.4.2 Defining the remote periphery

In this thesis, I use the term *remote peripheral area*, as a relational concept to refer to the physical geographic characteristics of a particular area, that denote a certain degree of isolation, along with the imaginary construct of the periphery, which usually refers to socio-economic disadvantages. The periphery then entails unequal and subordinated, tangible and intangible relations with a counterpart called the *core* or the *center*. However, the notions of remoteness and the peripheral character of a certain area are contested concepts, subject to “where you stand” (Hall et al. 2013: p. 72, Pezzi and Urso 2016). In Chapter 2, I explicitly refer to the idea of core-periphery between Santiago, where the central government is located, and the Aysén region; while in Chapters 3, 4 and 5, I mostly focus on the remote periphery of Aysén.

In the Latin American context, the idea of core-periphery can be traced back to the seminal work of Raul Prebisch (Connell 2007: p. 143), on the analysis of the economic development and its problems back in 1950. In the opening paragraphs, he asserts that “the specific task that fell to Latin America, as part of the periphery of the world economic system, was that of producing food and raw materials for the great industrial centers” (Prebisch 1950: p. 1). Thus, the world was defined by advanced industrialized countries, while the periphery referred to poor agricultural countries, arguing that “the resulting lack of capital accumulation is connected to the relations of the periphery with the center” (Namkoong 1999: p. 130).

Though fully exploring the Chilean pathways toward the uneven development between the core and the periphery is beyond the scope of this dissertation, I make use of the core-periphery idea to better understand the discursive constructions from a certain area called the *periphery*, therein discursive reproductions are embedded in broader social and geographical arrangements. The particular geographic configuration of the Chilean territory, added to the centralized policy making system creates a core-periphery scenario that whether we like it or not, affects how remote peripheral areas are being acted upon.

The peripheral character, or the internal frontier as Aysén-Patagonia has been defined, denotes a marginal integration within the national territory and refers mostly to political

and economic territorial patterns that have shaped the geographic imaginary on a national scale (Núñez et al. 2017b: p. 39). Araya (2017) indicates that the Aysén region has historically undergone discursive transformations ascribed by the Chilean state, wherein mostly negative connotations have been reproduced, which at the same time have influenced the actions of the state over the region. The differences with the *other*, have thus created a discursive frontier that still persist (Núñez et al. 2020).

Traditionally, peripheral areas have been defined in structural and static terms, in relation to their geographic distance to urban centers, remoteness, sparse population, elevated travel and service costs, and lack of infrastructure and innovation (Copus 2001). In addition, peripheries have been characterized in rather negative terms, as being backward in terms of development, and powerless (Kühn and Bernt 2013, Kühn et al. 2017). More recent spatial research, however, has thematized the so-called peripheralization process as a way to understand social dynamics with spatial implications, specifically related to mechanisms of out-migration, dependence, disconnection, and stigmatization (Kühn 2015). Thus, peripheralization can be understood as a multidimensional and dynamic process whereby peripheral areas emerge and change while reinforcing and reproducing the spatial disparities in relation to the core (Naumann and Reichert-Schick 2013, Harders 2015).

As it is shown in Chapter 2, this thesis moves beyond the traditional fixed understanding of peripheral areas, by bringing to the fore the meanings ascribed through discursive (re)productions that are pertinent to the social construction of socio-spatial relationships.

In constructing socio-spatial relationships, ideas around nature-based tourism, salmon aquaculture and nature conservation have attributed renovated meanings to the remote character of Aysén-Patagonia, counteracting but at the same time strengthening its peripheral condition (Chapter 2). The next sections outline key contemporary elements in the construction of the remote periphery of Aysén, which are the focus of the following chapters of this thesis.

1.4.2.1 Nature-based tourism at the 'pleasure periphery'

In the last ten years, nature-based tourism has become one of the main economic activities in Aysén-Patagonia, representing a prominent development discourse. Nature-based tourism has mostly developed as an economic activity involving small-scale family business throughout the region. Nature-based tourism offer is mainly composed of outdoor activities such as: camping, long distance trekking, ice-hiking, fly-fishing, kayaking, hitch-hiking along the Southern Highway, hot-springs, and boat trips. During

the summer season outdoor activities are combined with folk festivals and horse taming shows, among other local events.

With the opening of the Southern Highway, the rugged terrains became more accessible for those who wanted to experience outdoor adventures. Thus by the late 1980s, those who used to offer accommodation for the workers of the Southern Highway turned to offering accommodation for the few tourists who began to arrive at the Aysén region (Muñoz and Torres 2010). Accordingly, what used to be seen as a hostile environment by the ‘colonists’, became a ‘pleasure periphery’ for those attracted to nature-based experiences away from the urban centers, embedded in sparsely populated landscapes with low-tech facilities. As an example, the ecotourism offer invites tourists to enjoy the pleasures of the isolated nature, disconnected from the city (e.g. Añihué Reserve).

The definition of Aysén-Patagonia as a ‘pleasure periphery’, has entailed the positioning of the region as an outdoor destination both nationally and internationally, through which the regional and national administrations have sought to overcome its peripheral condition (cf. Hall et al. 2013: p. 77). Despite the contested character of tourism development in remote areas (Hall et al. 2013), Chapter 2 shows how nature-based tourism discourse finds synergies with other regional discourses, such as the *cultural and natural heritage* discourse, creating the opportunities for local innovations within the Aysén region.

In Chapter 3, I turn the attention toward an iconic tourist destination, the so-called Marble Caves. The Marble Caves are a rocky formation embedded in the General Carrera lake (also known as Chelénko lake), hence the caves can only be visited by boat or kayak. The Marble Caves were designated as Nature Sanctuary in 1994, based on their special landscape features for tourism development. Both boat and kayak tours are offered on a daily basis by local tour operators based at the closest village to the caves. This chapter examines the Marble Caves boat tours from a social practice perspective, whereby the boat tours are analyzed based on their materials, competences and meanings. This case portrays the wilderness as a key element in the boat tour practice, and therefore an integral component of the local livelihood (cf. Saarinen 2016). Through the reproduction of the boat tour, the local tour operators have made the nature sanctuary ‘theirs’, in their efforts toward local development based on nature-based tourism.

1.4.2.2 Salmon aquaculture at the ‘resource periphery’

With the development of salmon aquaculture, Aysén-Patagonia became the land of pristine and cold waters to produce high quality salmon. Consequently, the reinvention

of Patagonia took place once again, this time through industrial salmon production at the ‘resource periphery’. The rapid expansion of the industrial activity transformed remote and sparsely populated fjords and channels into global production sites, and Chile became the second largest producer of Atlantic salmon, after Norway. Moreover, salmon production from Chile aims to fulfill the increasing global demand for food and protein (Chapter 4).

With a long history of primary product exports, along with one of the most open economies in the global context and high degree of social inequality, Chile is deemed a dynamic resource periphery (Barton et al. 2008). Resource peripheries are “those spaces integrated into the globalizing economy largely on the basis of an overwhelming dependence on primary products and low value-added-exports” (Barton et al. 2008: p. 24). The ‘resource periphery’ entails contested spaces wherein global and local dynamics are embedded (Hayter et al. 2003), which at the same time creates intra-national socio-spatial inequalities (Barton et al. 2008).

Chilean national production of Atlantic salmon in 2015 accounted for 25.4% of the global supply (Iversen et al. 2020), while Atlantic salmon harvests in the Aysén region in that year accounted for around 54% of the national production (Sernapesca 2015). Nevertheless, Aysén’s salmon production is characterized by a weak value chain, meaning that most of the harvests are shipped north, to the Los Lagos region, where processing plants are located. Hence, resulting in territorial disparities among areas where salmon farming takes place. Chapter 2 shows that discursive reproductions ensuing from such disparities are consequently reinforcing the peripheral condition of the Aysén region.

Though Chilean production of primary products has increased its added-value (Barton et al. 2008), for example based on farmed fish, and the technological developments are closing the gap between geographic distances and core-periphery economic relationships, Chilean economy remains as a resource periphery based on its production base, which has been built on a political and economic legacy of high volumes, low costs and short-term planning (Barton 2006).

In Chapter 4, I address one of the most significant events that have restructured the Chilean salmon industry until now: the Infectious Salmon Anemia Virus crisis (ISAV crisis). In this chapter, I argue that the ISAV crisis served as a tipping point in the discursive construction of the salmon industry, reframing the industry towards optimistic and future-oriented goals, while at the same time missing out integrated marine ecosystem-related elements, which are crucial dimensions for the future development of the salmon aquaculture.

1.4.2.3 Nature conservation and the idealization of the 'wild periphery'

When referring to peripheral areas, one of the notions that can be found in the literature is the reference to the “wilderness as periphery” (Hall et al. 2013: p. 72). In this section, I refer to Aysén-Patagonia and its idealization as ‘wild periphery’, through which environmental discourses such as the *Patagonian wilderness* (Chapter 2 and 5), are currently prompting Aysén’s nature conservation, in synergy with the nature-based tourism discourse.

The Aysén region, with a vast territorial extension, astounding wilderness areas and a very low population density, continues until these days evoking the imaginaries of wild and pristine nature that needs to be protected from human influence (cf. Saarinen 2016). The geographic location of Patagonia has historically elicited the ideas of seemingly empty remote places at the end of the world, and more recently ideas about ‘the last of the wild’ are giving new meanings to the local nature, which nowadays it is required to protect within a global context. In terms of nature protection, the Aysén region holds almost half of its surface under some sort of protection category, ranging from national parks to marine protected areas, and nature sanctuaries.

Although most of the protected areas in the Aysén region were designated between 1925 and 1999 based on geopolitical, tourism development and conservation interests (García and Mulrennan 2020), the last 20 years have seen a rise in private as well as public initiatives of nature conservation. On the private side, the Aysén region has witnessed what some have called the shift from ‘colonists’ to ‘eco-colonists’, a new form of colonization, through which changes in land ownership are increasing (Núñez et al. 2020). With regard to public initiatives, nature conservation has been bolstered by the collaboration between local communities, public agencies, universities and NGOs, supporting for example the creation of multiple-use protected areas.

Within this rise of nature conservation in Patagonia, non-state actors have played a key role in the designation and management of new protected areas. For instance, Tompkins Conservation has been one of the most influential environmental organizations, on public as well as private conservation, and on a national and local level. Nevertheless, its neoliberal character has encountered agreement and disagreement on both sides of the Andes (Holmes 2015, Busscher et al. 2018, Borrie et al. 2020).

In Chapter 5, I delve into Aysén’s environmental discourses, namely: *Patagonian wilderness* and *cultural and natural heritage*, and their interplay with nature conservation. By positioning Aysén’s case within the contemporary conservation debate, wherein global goals are aiming to protect 30% of the planet by 2030, this case illustrates how the

different understandings of the ‘wild periphery’ (cf. Saarinen 2016), are being reproduced in practices.

1.5 Research methodology

1.5.1 Personal and scientific stance

From a personal stance, this thesis draws upon my previous experience traveling and doing research across the Aysén region. As many other explorers, researchers, tourists and conservationists, I was also drawn to the idea of idealized remote places filled with outdoor adventures and wilderness. Since my first visit to the Aysén region in 2005, I have very much enjoyed camping and hiking across the region; along with attending several traditional celebrations. From a scientific stance, I build upon my background in ecological sciences and ecosystem analysis, which I have aimed to combine to some extent with the social sciences knowledge acquired during the PhD research, thus aiming for an interdisciplinary scientific development. It is worth mentioning that I conducted my bachelor thesis and my two master theses in the Aysén region.

In developing my research, I follow a ‘moderate’ constructivist approach, which has allowed me to interpret the different ideas that have shaped the discursive transformations in the Aysén region, but at the same time has allowed me to understand how discursive constructions articulate and are articulated by policy making.

1.5.2 Research design

This thesis is based on a qualitative case study approach (Crowe et al. 2011, Tight 2017). A case study design is deemed appropriate for this thesis since it allows an in-depth understanding of real-life and complex social phenomena that hinge on their context. The case study approach addresses explanatory questions triggered by the characteristics of particular study units such as a community, event or territory. The case study approach follows a ‘naturalistic’ way, rather than an ‘experimental’ one (Crowe et al. 2011).

Each empirical chapter of this thesis builds on one specific dimension wherein discursive transformations can be distilled from. Figure 2 summarizes the research design.

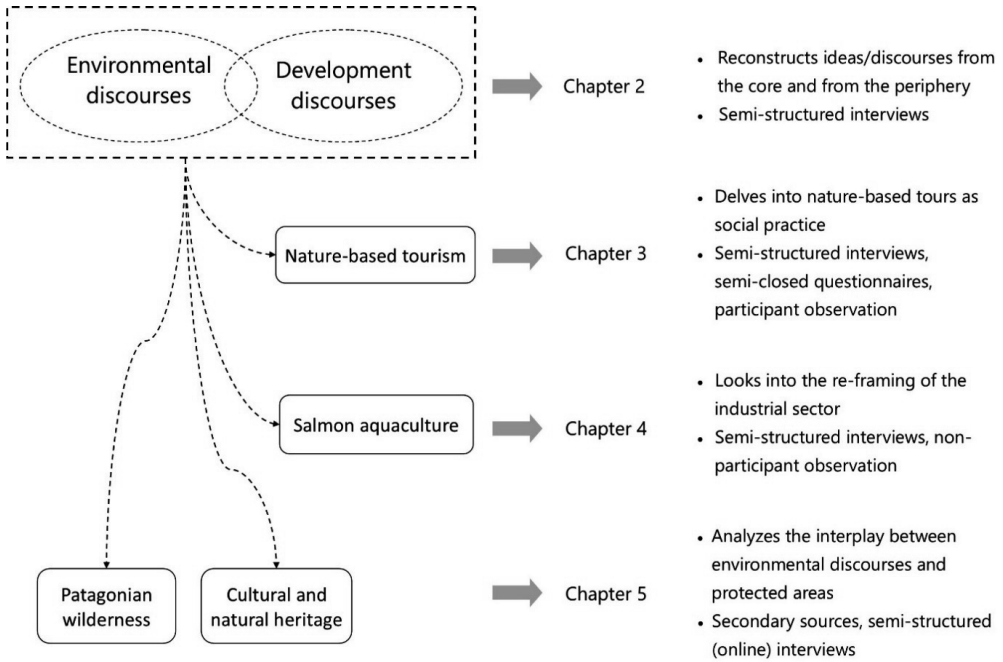


Figure 2: Research design.

Chapter 2 identifies the key discourses on environment and development that are playing out in the Aysén region. Its conceptual framework builds upon core-periphery discursive constructions, and wherein the Aysén region is the case study. Chapter 3 zooms in on nature-based tours as a social practice, underpinned by the reproduction of the nature-based tourism discourse. In this chapter, the case study is demarcated by the particular social-ecological characteristics of the tourist activity under scrutiny. Chapter 4 builds on the notion of discursive renewal induced by a crisis of a particular industrial sector: the salmon aquaculture industry. This case study is defined by the geographical extent of the salmon farming in southern Chile, and at the same time is grounded in the local discourse reconstructed through the narratives emerging from the Aysén region. Chapter 5 analyzes the interplay between environmental discourses, namely: *Patagonian wilderness* and *cultural and natural heritage*, and various protected areas of the Aysén region. In this chapter, the Aysén region, and more specifically the set of protected areas investigated, are considered as a case in point within the contemporary global debate on nature conservation.

1.5.3 Data collection

In line with a case study design, I rely on qualitative research methods that provide the necessary flexibility and openness for an in-depth data collection, and simultaneously offer a certain adaptability to unforeseen logistical challenges. Semi-structured interviews with key informants were the primary research method (Marshall 1996, Kallio et al. 2016), supplemented by textual data collected from scientific publications both in English and Spanish, technical reports (mostly in Spanish), online sources and press releases. Two fieldwork campaigns over a total period of nine months and more recently, online meetings created the opportunities for data collection. Key practical decisions during fieldwork such as traveling by public transport, getting on board ferries instead of airplanes, and finding accommodation with local residents instead of at hotels (when it was possible), enriched the research experience and the data interpretation.

In addition, participant and non-participant observation complemented the data collection (Kumar 2014: p. 173). Chapter 3 portrays participant observation as a method to gain first-hand knowledge when analyzing social practices, while in Chapter 4, non-participant observation allowed a deeper understanding on current narratives and dialogues around the salmon farming industry on a national and global scale. In Chapter 3, a logistical challenge encountered doing fieldwork was solved by means of creating a short semi-closed questionnaire, as a way to get the attention of local boat tour operators, who were often busy during the tourist season and did not have time for in-depth conversations.

In Chapter 5, I draw upon secondary sources complemented with online semi-structured interviews. Though online communication allowed an efficient way to reach informants located within a range of 1,000 kilometers, it did exclude those who were too busy with many other online meetings amid the COVID-19 pandemic and those who did not have access to internet connection.

1.5.4 Data analysis

The data analysis carried out in this thesis followed an inductive approach (Thomas 2006). Since I have aimed to answer research questions that fall in the domain of interpretative and shared construction of discourses and practices, an inductive approach was considered pertinent. The observation of phenomena and the inference of patterns thereafter, led to interpreting findings and drawing conclusions (Woo et al. 2017).

A total of 64 face-to-face semi-structured interviews were conducted (Chapters 2, 3 and 4), along with 16 semi-closed questionnaires (Chapter 3), and five online semi-structured

interviews (Chapter 5). Semi-structured interviews were conducted in Spanish, and were mostly audio recorded and transcribed verbatim when possible; otherwise, the transcription followed a bullet point structure. Interview transcripts were indexed anonymously by adding an identification code (e.g. Int_1). For the consistency of data referencing in this thesis, interviews have been cited by a standardized numbering, indicating the number of the chapter and the interview number respectively (i.e. Int_2.1). Some interviews informed more than one chapter.

Overall, primary and secondary data were compiled and analyzed following an open coding strategy, with the aid of the Atlas.ti software. Through an iterative reading-interpretation process, the open coding strategy allowed to identify and condense the key themes that emerged from the raw data (Kumar 2014: p. 318), and therefore allowing the identification and reconstruction of discourses and practices.

In Chapter 2, once environmental and development discourses were reconstructed, they were subsequently analyzed following Dryzek's (2013) analytical elements of discourses analysis. In Chapter 3, the elements of the social practice (i.e. the boat tour) were characterized based on the primary data analysis, supplemented by secondary information. In Chapter 4, based on the raw data analysis, discourses were selected among the most recurrent and conspicuous topics that interviewees referred to. In Chapter 5, the key links between environmental discourses and protected areas were identified through inductive analysis.

1.5.5 Data storage and data sharing

The data collected during this research, such as interview transcripts, field notes and questionnaire transcripts will remain anonymized and archived for the purposes of potential audits only, at the Environmental Policy Group of Wageningen University.

Due to the sensitive matter of some issues discussed, and the trust placed by the interviewees, the scientific articles that have already been published as part of this dissertation, have kept the data collected as confidential.

1.5.6 Validity and reliability

Qualitative research, which is based on intangible accounts as a way to 'measure' and make sense of certain phenomenon and its context, posits a number of challenges in terms of validity and reliability of the research process. Whether these key elements, frequently used in quantitative research, are equally applicable in qualitative inquiries remains debatable and controversial (Kumar 2014: p. 220, Leung 2015). Nevertheless,

they should not be overlooked when analyzing the integrity and the quality of qualitative research. Instead, alternative terminologies such as truth value, consistency and applicability may provide a more suitable framework for qualitative research assessment (Noble and Smith 2015).

Following the comparison presented by Noble and Smith (2015), I have assessed the credibility and quality of the qualitative research carried out in this thesis, based on the following aspects:

Truth value, as an alternative of validity, is based on the assumption that multiple realities exist, and different personal viewpoints may result in diverging interpretations. When collecting primary data, the first tenet was the acknowledgment of multiple accounts that refer to the same issues, wherein knowledgeable actors build upon their personal and professional lived experiences to tell their stories. In analyzing data, those accounts are not questioned *per se*, what is questioned is the collective construction of the phenomenon under inquiry, and whether it makes sense or not to answer the research questions. The methodological biases that may have emerged from personal viewpoints have been addressed through triangulation in the form of different data sources (Long and Johnson 2000), thus cross-checking the primary data with secondary sources, supervisors' advise and scientific peer-review process.

Consistency, as an alternative of reliability, refers to the trustworthiness and the transparency of the data collection, allowing independent further comparisons. The data collected in this thesis has been gathered following a specific line of inquiring in order to answer the research questions of each empirical chapter. Each chapter builds upon a thorough understanding of the phenomenon under scrutiny, followed by a detailed and transparent description of the data collection methods and data sources. Similarly, the scientific peer-review process has also ensured the consistency of the collected data and the findings.

Applicability, as an alternative of generalizability or external validity, refers to whether findings can be applied to a different context or setting. According to Onwuegbuzie and Leech (2007), qualitative researchers tend to make generalizations based on analytic generalizations and case-to-case transfer, whereby analytic generalizations are the most common. Each empirical chapter of this thesis provides insights about the applicability of the specific findings. The concluding chapter offers some analytic generalizations that may serve the analysis of core-periphery discursive constructions, based on environmental and development dimensions that take place in remote peripheral places.

1.6 Outline of the thesis

The remainder of this thesis is composed of five chapters. Chapter 2 reconstructs environmental and development discourses, and general ideas from the local level (periphery), as well as from the national level (core). In this chapter, discursive processes are considered key components in the formation of socio-spatial patterns. Chapter 3 delves into nature-based tourism, focusing on one iconic tourist destination in the Aysén region. By using a practice-based approach, this chapter conceptualizes small-scale nature-based tours as a social practice. Chapter 4 explores the discursive mechanisms through which the Chilean salmon aquaculture sector is currently being re-framed, searching for the emergence of ecosystem-related elements post Infectious Salmon Anemia virus (ISAV) crisis. Chapter 5 analyzes the interplay between the environmental discourses and protected areas in the Aysén region. The chapter shows how different constructs of nature and livelihood are stimulating the designation and management of protected areas and nature conservation, and the importance of foregrounding cultural components within nature conservation. Finally, Chapter 6 discusses the key findings, and lays out the conclusions of this thesis.

Chapter 2

Disentangling environmental and development discourses in a peripheral spatial context: the case of the Aysén region, Patagonia, Chile

This chapter has been published as:

Bachmann-Vargas, P., van Koppen C.S.A. (Kris) 2020. Disentangling environmental and development discourses in a peripheral spatial context: the case of the Aysén region, Patagonia, Chile. *Journal of Environment & Development* 29(3), 366-390. <https://doi.org/10.1177/1070496520937041>



Panoramic view of the city of Coyhaique

Abstract

In places with a predominantly natural heritage, environmental and development discourses are intertwined and often competing. A key dimension is the social construction of socio-spatial relationships, and particularly, the attribution of core and periphery features. In this article, we investigate environmental and development discourses in the peripheral spatial context of the Aysén region of Chile. Three research questions guide the investigation: a) what are the dominant environmental and development discourses?, b) what are the main synergies and tensions among discourses? and c) what are the (discursive) implications for (de)peripheralization? Based on semi-structured interviews and secondary sources, we identify six regional discourses on environment and development. Imaginaries of nature, regional development, and economic growth are the common denominators that create synergies and tensions. We conclude that environmental and development discourses play a key role in the transformation of geographic peripheral areas. Discursive synergies can not only reinforce but also counteract tendencies of peripheralization.

Keywords: discourses, core-periphery pattern, (de)peripheralization, socio-spatial patterns, Northern Patagonia.

2.1 Introduction

Remote peripheral regions are often associated with high levels of naturalness, conservation values, high distance costs, and territorial inequalities (Copus 2001, Hall and Boyd 2005). In such areas, discourses on environmental protection enmesh and often compete with discourses on socioeconomic development. In this article, we investigate these discourses and their interplay in the peripheral spatial context of the Aysén region, a remote region in southern Chile.

In scientific literature, peripheral areas have traditionally been defined in structural and static terms, in relation to their geographic distance to urban centers, remoteness, sparse population, elevated travel and service costs, and lack of infrastructure and innovation (Copus 2001). In addition, peripheries have been characterized in rather negative terms, as being backward in terms of development, and powerless (Kühn and Bernt 2013, Kühn et al. 2017).

More recent spatial research, however, has thematized the so-called peripheralization process as a way to understand social dynamics with spatial implications, specifically related to mechanisms of out-migration, dependence, disconnection, and stigmatization (Kühn 2015). Thus, peripheralization can be understood as a multidimensional and dynamic process whereby peripheral areas emerge and change while reinforcing and reproducing the spatial disparities in relation to the core (Naumann and Reichert-Schick 2013, Harders 2015). Peripheralization may occur in urban as well as in rural areas and is not fixed to a specific geographic location (Beetz et al. 2008). By overcoming certain peripheral conditions, geographic areas may engage in deperipheralization processes (Köhler 2012). The conceptualization of when and how an area is being peripheralized or deperipheralized remains an open debate (Fischer-Tahir and Naumann 2013). Meyer and Miggelbrink (2013: p. 208) emphasize that if research on peripheralization aims “to go beyond a taken-for-granted structuration of the social world, (it) has to conceptualize the production and effects of meaning”. They consider discursive processes as a key component in the formation of socio-spatial patterns. By consequence, meanings ascribed through discursive (re)productions are pertinent to the social construction of socio-spatial relationships and therefore influencing (de)peripheralization processes (cf. Plüschke-Altolf 2016).

In the case of Chile, there are noticeable territorial inequalities between the northern most regions, including the Atacama desert, the southern region of Patagonia, and the central area where the capital (Santiago) is located (Atienza and Aroca 2012, Aroca 2013).

According to Aroca (2013) territorial inequalities in Chile have increased in the last two decades due to state policies and market mechanisms, leading to an uneven distribution of economic opportunities (Amorós et al. 2013). The allocation of the National Fund for Regional Development, the centralization of public investment, the geographic distribution of advanced human capital, and the Central Bank's monetary policy are examples of state actions that had direct and indirect impacts on the distribution of economic growth and development. In addition, market mechanisms such as labor mobility, interregional and international commerce, and concentration of private sector decision-making have contributed to the concentration of goods and wealth around Santiago, Metropolitan region (Aroca 2013). Moreover, interregional disparities are aggravated by large differences in infrastructure and access to telecommunications. Along with the particular geographical configuration of the Chilean territory, these factors pose challenges for the local and regional administrations, which at the same time have limited opportunities for locally differentiated, place-based policies due to the highly centralized administrative system (OECD 2009).

Despite these influential processes, research on core-periphery spatial relationships in Chile has developed only modestly, and most of it has focused on two main aspects: transformations around metropolitan areas and their consequences for urban segregation (Rodríguez and Winchester 2001, Jirón and Mansilla 2013, Inzulza and Galleguillos 2014) and the conceptualization of Chile as a resource periphery in the global context (Barton 2006, Barton et al. 2007). In further expanding this range, this article focuses on core-periphery discursive relations in the region of Aysén.

This research aims to contribute to the discursive conceptualization of peripheralization in a remote spatial context by bringing together environmental and development meanings from the core as well as from the periphery. In doing so, environmental and development discourses are reconstructed. Three research questions guide the investigation: a) what are the dominant environmental and development discourses?, b) what are the main synergies and tensions among discourses? and c) what are the (discursive) implications for (de)peripheralization?. The remainder of this article introduces the study area, the conceptualization of discourses, the methodological approach, and the results. Subsequently, by looking at the synergies and tensions among discourses, we analyze the effects of meanings in the socio-spatial transformation of the Aysén region. Finally, we draw the conclusions of this article.

2.2 The Aysén region, a remote peripheral area

The Aysén region, also known as Northern Patagonia, is the third largest and the least populated of Chile's 16 administrative regions (Figure 3). Over the eighteenth and nineteenth centuries, the indigenous population declined, and it is believed that by the

end of the nineteenth century, the regional territory was practically unpopulated (Martinić 2005: p. 45). Since then, mainly because of Chilean settlers, its population has slowly increased from 197 inhabitants in 1907 to 103,158 residents in 2017, reaching a density of 0.9 inhabitants per km² (Ortega and Brüning 2004, INE 2017). Currently, domestic migration data indicate that the Aysén region presents a slightly negative trend (INE 2020).

Historically, the region of Aysén has been conceptualized as a frontier territory, a remote peripheral area within the national territory (Núñez et al. 2017a). Explorer chronicles, colonization, and development policies, and, lately, green development ideas have imposed different sociogeographic frontiers, idealizing the spatial imaginary of the Aysén region and Patagonia (Mendoza et al. 2016, Núñez et al. 2017a).

Based upon the logic of spatial integration of the national territory, development policies have defined the Aysén region as an Extreme and Special Territory (GORE Aysén 2014). This classification allows to prioritize public and private resources that may contribute to overcome the disadvantages and inequalities, in relation to the rest of the country (Núñez et al. 2010, GORE Aysén 2014). Nevertheless, the Aysén region still faces a lack of economic opportunities, infrastructure, and connectivity (i.e. terrestrial, maritime, and digital).

Two main cities, Puerto Aysén and Coyhaique concentrate around 80% of the regional population. The regional economy and rural livelihood are primarily based on natural resources (Delgado et al. 2013). Salmon aquaculture and nature-based tourism are the main economic activities (Blanco et al. 2015, Gale et al. 2019). From a socioeconomic stance, the regional government is trying to address the challenge of improving the quality of life through economic growth and creation of jobs while trying to maintain the region's cultural and ecological heritage. By 2030, the regional goal is to become an international sustainable tourism destination, to consolidate aquaculture development and align it with other coastal usage, and to become a scientific research platform with a focus on the region's natural capital (ILPES-CEPAL/DIPLADE Aysén 2009).

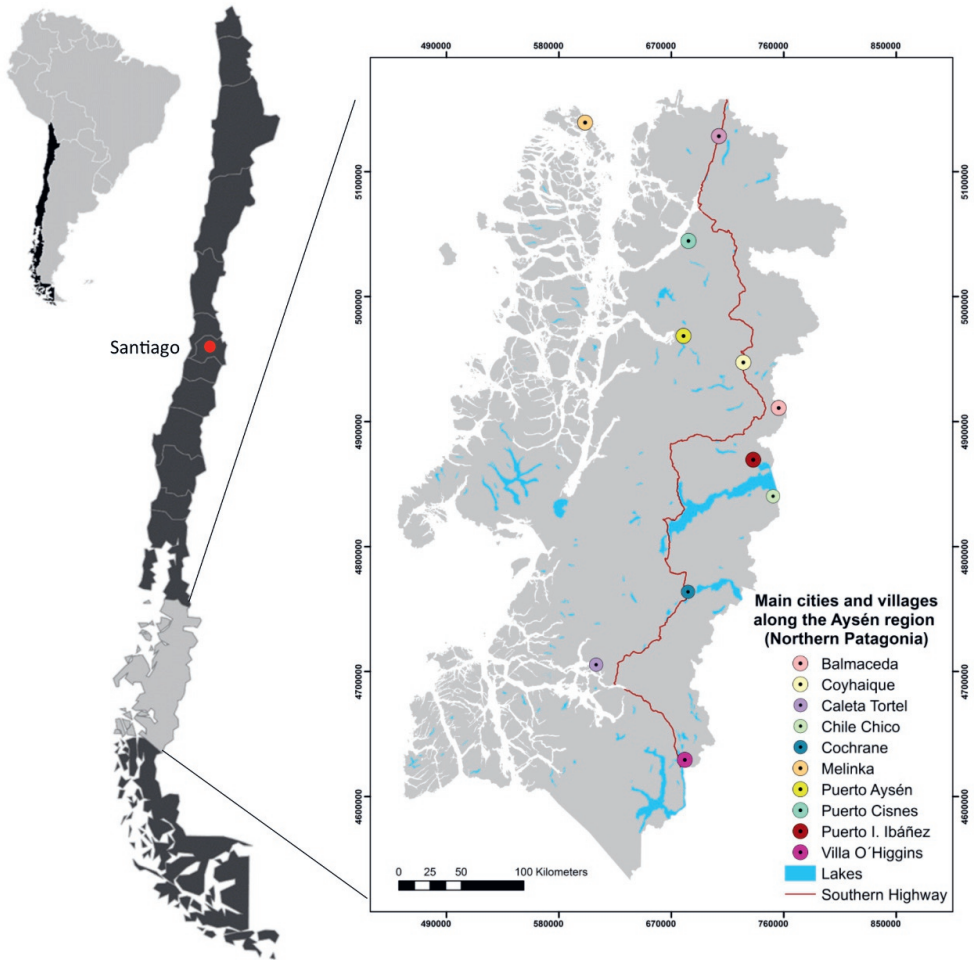


Figure 3: Geographic location of the Aysén Region, Northern Patagonia.

The Southern Highway is the only longitudinal and partially paved road that connects the region for over 800 km of intricate geography. The capital city, Santiago (Metropolitan region), is located 1,600 km north from the Aysén region. The Aysén region is part of one of the largest fjord regions in the world. Its terrestrial ecosystems are characterized by a large cover of native forest with a high degree of disturbance due to forest fires during the colonization period. (Map own elaboration based on data set publicly available at National Catalogue of Geospatial Information-IDE Chile, WGS 84/UTM zone 18S).

2.3 Conceptualizing discourses

Discourses may be interpreted from several perspectives. In simple terms, discourses can be understood as a particular set of ideas. Those who subscribe to these ideas may have

a shared vision of the same phenomena, constructing common meanings and legitimating their knowledge, agreements, and disagreements (Dryzek 2013). Hajer and Versteeg (2005: p. 175) define discourse as “an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices”. Furthermore, discourses are connected with different levels of power in shaping the social and physical world (Sharp and Richardson 2001). In the political domain, discourses represent an input for policy making and policy change. In this regard, discourse analysis reveals how policy processes and practices are being influenced (Sharp and Richardson 2001). Discourses reveal how different actors construct their own reality, defining problems and solutions in a specific way (Hajer and Versteeg 2005).

Mühlhäusler and Peace (2006: p. 458) define environmental discourses as “the linguistic devices articulating arguments about the relationship between humans and their environment”. In their approach, which we follow in this research, the environment is understood as the intersection between the sociocultural construction of nature and the natural components and ecological processes that characterize the study area. In line with this understanding, environmental discourses can take many forms and may comprise many interwoven narratives. A key component of environmental discourses is their interpretation of nature. Traditionally, nature protectionists have given a central position to cultural, aesthetic, and ethical aspects in their interpretation of nature (van Koppen 2000, Gustafsson 2013). However, the interpretation of nature as a resource has been important as well. In the last few decades, the resource approach has gained more prominence due in the ecosystem services approach; in this approach, nature is valued as a means for the sustainable provision of goods and services (van Koppen 2000). In this regard, the definition of nature as a resource may be considered as a developmental idea rather an environmental one.

Views of development are related to different conceptualizations of wellbeing and often associated with economic growth (Fischer-Tahir and Naumann 2013). According to Cornwall (2007), development ideas are constructed around buzzwords that gain power due to their vague definitions and normative character. Poverty, the poor and marginalized, globalization, and sustainability are among the buzzwords that have globally framed the development discourses. Such framing is also apparent in the adjectives attached to development, such as local development, which often serve to justify certain economic and social interventions (Rist 2007). In remote peripheral areas, development is usually characterized as lagging behind because of its geographical location, low levels of innovation, and lack of infrastructure (Amorós et al. 2013). Anderson (2000), however, argues that the social construction of peripheries can change by virtue of a renovated entrepreneurial culture, whereby the creation of value based on existing natural and cultural components is revitalizing the area. Abandoning the

traditional donor-recipient model, recent views on peripheral area development stress the challenge of endogenous growth in developing new capacities and new business to create new economic values, specific to the region. What used to be dismissed has to become an asset (Mayer and Baumgartner 2014). In this research, development discourses are defined based on narratives that refer to improving living conditions as well as economic activities based on natural resources.

2.4 Methods

Discourses were reconstructed based on semi-structured interviews with key informants and secondary sources review. Scientific publications, official documents, online sources, and technical reports enriched the analysis. National themes about environment and development were described based on secondary information.

Interviewees were considered as key informants (Marshall 1996) due to their role or position within selected regional organizations related to development and environmental issues. However, the ideas expressed during the interviews do not necessarily represent the organization's stance. Twenty-eight interviews were conducted between October 2016 and January 2017. This sample represents four out of ten municipalities that constitute the Aysén region, and 11 of 18 regional secretaries located in the region (Table 1). Depending on the respondent's role, interviews were conducted in several localities. Interviews aimed to gather a variety of ideas around development and environmental issues in the Aysén region (see interview outline in Appendix 1). Interviews were in most cases individual, face-to-face, audio recorded, and subsequently transcribed. Semi-structured interviews seemed to be the most appropriate method to get an in-depth understanding of different dimensions related to development and environment and to gather a broad range of perceptions in a guided conversation, within a limited amount of time.

Table 1: Interviewed organizations.

Category	Organization	Interviewees' role
Research	Patagonia Ecosystem Research Centre (CIEP) and Sustainability Educational Board, Aysén region	Scientific outreach, Board President
	Universidad de Magallanes	Researcher
	Patagonia Ecosystem Research Centre (CIEP)	Researcher
NGOs	Aumen	Director
	Meri Foundation	Scientific Director, Educational and Ecotourism Coordinator
	Poverty Foundation (Servicio País Program)	Territorial coordinator
	Society of History and Geography, Aisén	Society member
Public sector	National Forest Corporation (CONAF)	Regional Director
	General Directorate of Water (DGA)	Regional Director
	Regional Museum, Coyhaique	Director
	Regional Secretary of Agriculture	Regional Director
	Regional Secretary of Energy	Regional Director
	Undersecretariat for Fisheries and Aquaculture	Regional Director
	National Tourism Service	Studies Department
	Regional Secretary of Economy, Development and Tourism	Regional Director
	Regional Secretary of Environment	Regional Director
	Agricultural Development Institute	Regional Director
	Regional Secretary of Mining	Regional Director
	Regional Secretary of Social Development	Regional Director
	Regional Government - Regional Board	Board Member
	National Service for Fisheries and Aquaculture	Regional Director
	Tourism and Culture Program, Puerto Ibáñez Municipality	Coordinator
Tourist Department, Coyhaique Municipality	Director	
Aysén Municipality	Mayor (S)	
Coyhaique Municipality	Mayor	
Río Ibáñez Municipality	Mayor	
Puerto Cisnes Municipality	Mayor	
Public-Private partnership	Regional Tourism Strategic Program (PER)	Director/Manager

Interview transcripts were indexed anonymously, by adding an identification code and a consecutive number (i.e. Int_1). Primary information was analyzed following an inductive approach (Thomas 2006), whereby the main themes and narratives emerging from the raw data were identified, with the aid of Atlas.ti software (Kumar 2014: p. 318). Thus, discourses were selected among the most recurrent topics that interviewees

referred to, resonating with a set of ideas and practices applicable throughout the Aysén region. Subsequently, secondary information was used to complement the argumentation of each discourse.

In analyzing discourses, we draw upon Dryzek's (2013) seminal work on environmental discourses, along with the search for synergies and tensions. Dryzek (2013) proposes four key analytical elements, namely, a) basic entities whose existence is recognized or constructed, b) assumptions about natural relationships, c) agents and their motives, and d) key metaphors and other rhetorical devices.

2.5 Discursive themes from the core

National discourses about environment and development are certainly intertwined, encompassing the main public guidelines that shape the national and regional performances. Natural resources extraction and export-led development have molded the destiny of Chile's administrative regions. From the mining regions in the north, to the salmon production in the south, the neoliberal nature of environmental policies has fostered market-enabling conditions instead of a stronger market regulation (Tecklin et al. 2011). As a result, Chilean macroeconomic indicators have shown promising trends in economic growth and social development. Despite this, income inequality in Chile is still one of the highest among OECD countries accompanied by the appearance of substantial environmental conflicts (OECD 2011, Latta and Aguayo 2012).

In this scenario, a full account of the environmental and development discourses at the national level is beyond the scope of this article. We concisely characterize the key current themes in types of national discourses, based on national documents containing guidelines for environmental protection and development.

In the last presidential period (2014-2018), the public administration oriented its efforts toward a more integrated view when addressing environmental problems and their interaction with climate change, national development, and poverty (Pizarro and Serrano 2017). Climate change, plastic pollution in the oceans, and protected areas have been some of the main topics that have characterized the national environmental discourse in the recent years. Regarding climate change and plastic pollution, Chile has taken a frontrunner position in Latin America, in developing a Climate Change Bill, presiding the United Nations Climate Change (2019) Conference, COP25, and being the first country in banning plastic bags (Ministerio del Medio Ambiente 2018a). In addition, the execution of the National Biodiversity Strategy through regional policies has prioritized local actions concerning biodiversity conservation. In this regard, the creation of the Route of Parks of Chilean Patagonia (Tompkins Conservation 2017) has become part of the national environmental discourse. While increasing the areas of sensitive

ecosystems under protection, this development also imposes a rather conservationist vocation on Patagonia as a peripheral area.

Meanwhile, national development themes are mainly oriented toward the enhancement of economic competitiveness and productive diversification of the country. Fostering investment, innovation, and entrepreneurship, as well as strengthening human capital and technological capacities, are considered the main mechanisms to achieve an equitable territorial and sustainable development (CORFO n.d.). Nevertheless, national economic growth is still highly dependent on natural resource extraction. Lately, the national plan called *Plan Región, Chile lo hacemos Todos* (Plan Región, we all make Chile), was launched by the government aiming to target some specific regional needs such as infrastructure and economic growth in peripheral regions, in order to advance towards an integral development (Gobierno de Chile 2018). Yet, social inequality is still one of the main stumbling blocks of Chilean development, as it was manifested by the recent social uprising occurred in October 2019.

2.6 Discourses from the periphery

Based on an inductive analysis of interviews and documents, we identified six regional discourses pertinent to the scope of our research. All these discourses have implications for environmental protection and socioeconomic development but based on their relative priorities and the values of nature that are highlighted, we can classify two as environmental discourses and four as development discourses.

2.6.1 Environmental discourses

Over the past 30 years, Patagonia and the Aysén region have been framed and reframed as life reserve, as a pristine and untouched place and as one of the last wild places in the world. The rewilding of the Aysén region owes its conceptualization to a series of consecutive events, highly influenced by the American environmental philanthropist Douglas Tompkins (1943-2015). Tompkins promoted a strict ecological approach to preserve Patagonian landscapes, setting a precedent for public and private biodiversity conservation, on a national and on a local scale (Holmes 2014, Bourlon 2017). However, Tompkins's efforts encountered a great opposition, sparking the debate about private conservation versus traditional farming, as well as rising all kind of suspicions about the real aim of acquiring large extensions of land in both sides of the Andes (Louder and Bosak 2019). In addition, by the end of the 1980s, regional environmental movements emerged, mobilized against the building plans of two large projects in Patagonia: a nuclear dump site and later on against an aluminum refinery (Segura 2008). As a consequence, the regional green sector coined the motto *Aysén life reserve* which aimed to represent the ideals toward an inclusive sustainable development, with and for the people

of the region (Hartmann 2014). Later on, *Aysén life reserve* was adopted by regional authorities and the private sector, transforming the regional ideology into a sort of green regional brand. To date, *Aysén life reserve* and Tompkins's legacy are still influencing the regional and the national environmental policy making. The latest and greatest development has been the creation of the Route of Parks of Chilean Patagonia. This route covers 2,800 km and 17 national parks located in southern Chile. Endorsed by the government and environmental organizations, this route symbolizes a step forward to save the wild beauty of Patagonia (Franklin 2017) and a clearly and strong reinforcement to the *Patagonian wilderness* discourse.

In a parallel and sometimes in contrasting position with the *Patagonian wilderness* discourse, ideas about *cultural and natural heritage* can also be traced as an environmental discourse that coalesces in the Aysén region. Produced and reproduced by public organizations and non-governmental organizations that aim to recover the tangible and intangible components of Patagonian culture, the *cultural and natural heritage* discourse emphasizes the role of cultural components in the regional development as well as in economic activities such as tourism (Aumen 2017). As one of the interviewees pointed out, "Patagonia is not only about natural attractions, is about people, culture and traditions" (Int_2.26). Together with the landscapes aesthetics and natural resources, cultural heritage is being portrayed as a regional asset for local and regional development. Aysén's cultural heritage, molded by Chilean and foreign migration after the decline of the sparse indigenous populations, is acknowledged for the courage and the strength that the colonists - the pioneers - had during the colonization period, surviving, and cultivating a very hostile natural environment. The pioneer's heritage is still shaping mostly the rural life, where the handling of nature reaffirms the peasant (Gaucho) and Patagonian identity. The sociopolitical revalorization of culture and nature, in parallel so to speak, has contributed to empower local communities, recognizing their traditional knowledge and enhancing their identity. The recent opening of the first regional museum in the city of Coyhaique represents a major achievement for cultural heritage conservation, strengthening the efforts for a better understanding of culture and nature in Northern Patagonia.

2.6.2 Development discourses

The development of the Aysén region has been historically constrained by its remote peripheral condition and by the highly centralized policy-making processes that have partially dictated the destiny of the region of Aysén. The perceived marginalization and asymmetric relation with the central government has led the Aysén region to a permanent discussion and dissatisfaction about decentralization efforts (Durstun et al. 2016), providing a fertile ground for the emergence of the *regional demands* discourse. As

one of the interviewees manifests, “we (the regions) want development, based upon our own interests and natural resources” (Int_2.20).

Despite the dependence on public investment, in 2012 a social uprising under the movement *Aysén, your problem, is my problem* arose as a social and political reaction against the historical state failure toward the region (Pérez 2016). High living costs spurred the discussion. The movement was initially led by artisanal fishermen followed by numerous social organizations. Regional actors demanded, among other requests, legally binding citizen participation related to hydropower projects, the creation of the regional public university, and regionalization of natural resources. As a result, in 2014, the regional public university was created, Universidad de Aysén. However, according to Pérez (2016), 76% of the demands that emerged from the movement were not considered into the government plan (2010-2014), indicating a low impact in public policies and a rigid policy-making process.

In this respect, narratives about regional development still recall the turmoil caused by the hydropower projects. In 2005, the plan to build five dams in the Aysén region triggered one of the largest environmental movements against dams in Chile: *Chilean Patagonia without Dams* (Consejo de Defensa de la Patagonia Chilena 2017). The project promised the creation of jobs, roads and port infrastructure, lower electricity costs for the region, and therefore better chances for regional and national development (Romero 2014). Aysén’s rivers were seen by the public and private sector as promising rivers, with exceptional conditions (Salazar 2009), where dams could be built in order to supply the increasing national energy demand. In 2014, and after several years of environmental reports and protests, the project was unanimously rejected by the Council of Ministers, leaving behind a general discontent, a social division, and a feeling of victory for those who supported the environmental movement (Reyes and Rodríguez 2015). At the same time, social demands activated the debate about the national energy mix and renewable energies. In addition, the Aysén region initiated its own discussion about the regional energy policy. As a result, the local anti-dam discourse shifted toward the *sustainable energy mix* discourse, although with less discursive power compared with its predecessor. Recently, the shared ideas about the regional energy mix have been expressed in the document Citizen Proposal, Energy Policy for Aysén Life Reserve (Coalición Ciudadana por Aysén Reserva de Vida 2018). The proposal emphasizes the localized character of energy production, the need for small-scale projects, and the energy transition toward cleaner production. The common vision is clear: the Aysén region needs clean, equitable and affordable energy to support regional small-scale economic activities, such as tourism and agriculture, as well as to tackle the air pollution of the regional capital, Coyhaique (Ministerio del Medio Ambiente 2016). Besides, it has been pointed out that “the Aysén region has a different destiny, it will not become the platform

for extra-regional interests”(Coalición Ciudadana por Aysén Reserva de Vida 2018: p. 52).

In recent years, *nature-based tourism* has gained prominence as a development discourse. Nature-based tourism has become one of the main economic sectors in the Aysén region, fostering a number of tourist destinations, and resulting in a rapidly growing job market of more than 7,000 related jobs (Sernatur Aysén 2017). In 2009, the Regional Development Strategy (ILPES-CEPAL/DIPLADE Aysén 2009) pointed out that regional nature and pristine landscapes should be taken as an asset into the regional economy but at the same time should be protected in order to preserve the natural and cultural heritage. In this scenario, fostering the tourist sector seemed to be the best way to achieve this balance. In 2015, the regional tourist sector was boosted by a large public investment. As a result, in the last three years, several initiatives have been implemented by the Chilean Economic Development Agency, the National Tourism Service (SERNATUR), and the Regional Government. For instance, tourism spatial planning instruments (Zones of Tourist Interest, ZOIT) have defined three geographic areas along the Aysén region to invest resources and to further develop tourism initiatives. In addition, economic instruments have been created to support local entrepreneurs. As one of the respondents mentioned, tourism development “has become an inclusive and democratic activity for the local people” (Int_2.25). Another initiative is the Regional Tourism Strategic Plan (PER Turismo). In this plan, protected areas and the Southern Highway have been taken as the main elements to be prioritized in order to advance in nature-based tourism development in the Aysén region (DNAExpertus 2015). In this context, the Tourism Strategic Plan has framed the Aysén region, as a destination of *nature and adventure*. To date, the *nature-based tourism* discourse has certainly changed the living conditions of the local communities throughout the region. Tourism and economic development plans have fostered a sort of entrepreneurship culture, encouraging small and family business to provide new facilities to cope with the inflow of tourists.

Meanwhile in the coastal areas of the Aysén region, the salmon aquaculture industry has had a sustained growth, despite the effects of economic and sanitary crises (Iizuka and Zanlungo 2016). *Salmon aquaculture*, composed of industrial salmonid production (i.e. Atlantic salmon, Pacific salmon, and trout), represents nowadays one of the main economic activities in the Aysén region, and an important development discourse, accounting for 49% of the national production (Sernapesca 2016). However, regional production is mostly shipped to the Los Lagos region, where the main processing facilities are located. A weak value chain and a lack of infrastructure have characterized the Aysén’s salmon industry.

By 2006, the industry was flourishing and salmon farming activity was being described as the regional driving force (Vial 2006). Nevertheless, after a severe sanitary crisis between 2007 and 2010 (Bustos 2015), development plans were canceled. Several processing plants and salmon farms were shut down, and the number of employees was reduced. The salmon farms' maritime concessions were relocated, and new environmental regulations have been implemented ever since. Notwithstanding the sanitary and environmental crises, the industry continues benefiting from the access to clean and cold water. Recognized as Chile's unique advantages, geomorphological and environmental characteristics provide optimal conditions for salmon farming (Niklitschek et al. 2013). Such conditions represent key elements to promote the salmon market, which is exemplified in the following quote: "Chile has unique conditions for salmon farming. The crystal clear cold waters of Chilean Patagonia, surrounded by glaciers and fjords, produce a fresh, versatile and healthy product" (Salmon Chile n.d.). In opposition to this development, indigenous communities located in the northern coast of the Aysén region, amid litigation over the maritime space and together with environmental non-governmental organizations, have manifested their discontent toward the increasing southward expansion of the salmon farming activity, accompanied by the insufficient enforcement of environmental regulations.

2.7 Analysis

Table 2 summarizes the analysis of the environmental and development discourses. When comparing the discourses, it becomes clear that elements of different discourses may fit together and thus create potential synergies where these discourses influence policies and practices, or may not fit, and thus create conflicts and contradictions. Depending on the content of the discourses, synergies between them may reinforce peripheralization or stimulate deperipheralization. In this section, we first explore the synergies and tensions between the discourses; then, we discuss their implications for (de)peripheralization.

2.7.1 Synergies and tensions

Peripheral discourses do not exist in a void; they are being constantly reframed in a dynamic and mutual relation between the core and the periphery, whereby entities are being remolded into new spatial imaginaries of the Aysén region and into new core-periphery relations. Imaginaries of nature, local development, and economic growth are the common denominators that create synergies but at the same time cause tensions among environmental and development discourses.

Strong synergies are found between the *nature-based tourism* discourse and several other discourses, such as the *regional demands*, the *cultural and natural heritage* discourse, and the

Patagonian wilderness discourse. This discourse finds support in the social legitimization as a regional economic activity compatible with the environment and employs metaphors and rhetorical devices based upon regional and sustainable development. The reproduction of the *nature-based tourism* discourse is being promoted by several actors and contributes to a shared vision on how the region should be developed. These synergic interactions reinforce the discursive power through which nature-based tourism is being validated and implemented. Arguably, this has contributed to the fact that the *nature-based tourism* discourse has become the predominant development discourse throughout the Aysén region.

Another synergic articulation can be found in the narratives of the *aquaculture* discourse and the national level development themes, whereby aquaculture development is being directly supported by national development guidelines. Assumptions of economic growth and development and the use of rhetorical devices related to employment creation, quality product from Patagonia, and being a world salmon producer have enriched the discursive reproduction. As a result, this synergy has imposed a new spatial imaginary of Northern Patagonia in which its remote coastal areas have been transformed into productive nodes within global supply chain networks.

The aquaculture development discourse, however, also causes tensions with the *regional demands* discourse. These tensions emerge, among others, from the contrasting effects of the industrial activity. Whereas the national economy benefits from the regional salmon production, the national revenues poorly reflect on the regional well-being. Although municipalities where aquaculture takes place benefit from the annual revenue from salmon activities (Orellana 2018), the weaknesses of the regional value chain have hampered the creation of economic opportunities, resulting in a general dissatisfaction about the distribution of costs and benefits of salmon aquaculture in the Aysén region. Recently, the public and private sectors signed a cooperation agreement that aims to strengthen the salmon value chain and to change the way regional development is being perceived (AQUA 2019). Yet, results remain to be seen. Remarkably, we found far less tensions between the *aquaculture* discourse, on one hand, and the *cultural and natural heritage*, and *Patagonian wilderness* discourses, on the other hand, even when salmon aquaculture clearly has negative environmental effects, which may threaten coastal nature and artisanal fishery (Quiñones et al. 2019). A plausible reason for this is that the discourse on nature and natural heritage is mostly oriented, as yet, to the inland and mountain areas.

Another tension worth mentioning stems from dissimilar ways of nature representation between the *Patagonian wilderness* discourse and the *cultural and natural heritage* discourse. While the former aims for biodiversity conservation and for saving the wild nature at the

end of the world, the latter aims for value creation based on the natural and cultural regional heritage. *Patagonian wilderness* discourse as it has been termed in this research has created a new environmental imaginary of the Aysén region, influencing land-tenure changes and contrasting with the traditional cultural landscape, in which sheep farming used to be the predominant activity.

Table 2: Analysis of environmental and development discourses, based on Dryzek (2013).

Elements for the analysis of discourses	Environmental and development discourses from the periphery					Main themes from the core	
	Patagonian wilderness	The cultural and natural heritage	Regional demands	Nature as a resource I: Aquaculture	Nature as a resource II: Nature-based tourism	Environment	Development
Basic entities recognized or construct	Nature Biodiversity	Regional cultural identity Nature Landscape aesthetics	Connectivity Infrastructure Decentralization	International market Industry Economic growth	Nature Landscape aesthetics Local development	Climate change Protected areas Plastic in the oceans Biodiversity	Innovation Entrepreneurship Economic growth
Assumptions about natural relationships	Nature has to be protected Wilderness	Co-existence of culture and nature Culture shaped by nature and vice versa	Conflict Marginalization Asymmetric relation	Economic growth Production Competition Subordination of nature	Democratic economic activity Non-consumptive use of nature	Biodiversity conservation is important for economic growth, science, society and culture	Social inequality Raw materials Regional disparities
Agents	International, national and local environmental NGOs The national government	Government agencies Local communities The regional government	Government agencies Regional social movement The regional government	Companies The national government	Government agencies Chilean Economic Development Agency (CORFO) Entrepreneurs Local communities	The national government Regional environmental agency	The national government Chilean Economic Development Agency (CORFO)
Key metaphors and other rhetorical devices	Biodiversity conservation Saving wilderness Last wild place in the world	Our regional heritage Value creation of culture and nature	Decentralization Autonomy Remoteness	Development Employment Quality product World leader producer	Regional development Sustainable development Tourism: nature and adventure	The ocean is angry Bye plastic bags National anthem verses	Employment OECD member Stable and open economy Better future

2.8 Discussion: implications for (de)peripheralization

2.8.1 Strengthening periphery-periphery relationships

In this research, we emphasized environmental and development discourses constructed by the periphery, rather than focusing on how the periphery is being framed by the core or by the media (e.g. Plüschke-Altöf 2016). In this attempt, we identified local narratives that are commonly conveyed throughout the Aysén region, thus shedding light on the local agency and on the active role of local agents in reshaping socio-spatial relations (Willett and Lang 2018).

Our findings indicate that the construction and coexistence of spatially dependent environmental and development discourses influence the way remote peripheral areas are being acted upon. The synergies observed between the *nature-based tourism* discourse and other regional discourses can be seen as drivers of innovative periphery-periphery relations with policy implications, through which regional actors strive for a better integration of environmental and development dimensions. This may help counteracting peripheralization through materialization of discursive content, that is, through regional empowerment, regional identity, and sociopolitical agreements, altering core-periphery connections and changing the way peripheral areas are being (self)perceived. In this respect, the creation of periphery-periphery relations might be considered as endogenous strategy of coping with peripheralization.

2.8.2 Taking tensions seriously

By contrast, unless the tensions between *aquaculture* and *regional demands* are being addressed, the uneven relation between the core and the periphery due to aquaculture expansion and economic growth interests will be accentuated. This implies that peripheralization is further promoted through the socio-spatial transformation of coastal areas and the declining of environmental conditions (cf. Niklitschek et al. 2013).

Another finding worth discussing is the *Patagonian wilderness* discourse. According to Aliste et al. (2018), renewed environmental-capitalist values have transformed the perception of Patagonian landscapes into representations of *purified nature*. Despite promoting nature conservation, the idealization of pristine nature has redefined the access to natural areas, generating new forms of inequalities. The *Patagonian wilderness* discourse has played a key role in the reframing of the Aysén region, but as we have argued earlier, it both shows synergies and tensions with other regional discourses. Depending on the future development of this discourse and its materialization in policies and practices, it may counteract or stimulate the peripheralization of the region. In this regard, our research foregrounds other local narratives that are equally important to

understand socio-spatial patterns in the Aysén region. As policy implication, regional policy makers need to be aware of such tensions and evaluate them within a broader view of regional development so that impacts on peripheralization can be properly assessed. Developments that taken in isolation may seem favorable to counteract peripheralization when considered in a broader regional context may have the opposite effect. This clearly applies not only to *salmon aquaculture* but, to some extent, also for the *Patagonian wilderness* imaginary.

2.8.3 Shifting discursive relationships with the core

Historical representations of the Aysén region have shaped until these days how the region is perceived by the core. In this asymmetric relationship, discursive constructions of the Aysén region have been materialized by means of regional sentiments, social mobilization, and resistance. In this process, regional narratives show a closer integration between environmental and development goals than narratives on the national level where environmental and development themes seem stand apart or even in opposition. The social movements *Patagonia without dams* and *Aysén, your problem is my problem* reconfigured the power relations with the core, but this process took years of manifestations, and violent acts were not absent. In this context, unearthing regional discourses becomes relevant for influencing and modifying discourses in the center, thus shifting the discursive relationships with the core. At the time of writing, it remains unclear what the actual effects of regional discourses on center-periphery relationships will be (cf. Kühn and Bernt 2013). But in line with Willett and Lang (2018), our study confirms that disentangling discourses from the periphery represents an opportunity for regional development, wherein spaces of possibility can be created by bringing forward the regional capacities, hence changing the way the periphery is being framed by the core.

2.8.4 Theory implications

According to Kühn and Bernt (2013), spatial factors influencing processes of peripheralization still remain underdeveloped in theory. In response to this, our research shows how environmental and development ascriptions may serve as proxies for spatial dimensions, wherein the geographic location and the natural attributes are implicitly, and explicitly, immersed in the narratives from the periphery.

Drawing upon Meyer and Miggelbrink (2013), and the need to conceptualize the production and effects of meanings within peripheralization analysis, we suggest that (de)peripheralization processes may emerge from the (self)construction of spatial imaginaries ascribed to peripheral areas and not only from social stigmas, often attributed to peripheries (Leibert and Golinski 2016). While stigmatization implies

negative representations, spatial imaginaries of places, idealized spaces, and spatial transformations are able to create identity and drive change (Watkins 2015), and ultimately may counteract peripheralization processes. Generally speaking, the challenge of analyzing spatially informed discourses is to identify and differentiate these processes of imagination and transformation.

2.9 Conclusion

This research has identified six regional discourses on environmental protection and socioeconomic development, which we labeled *Patagonian wilderness*, *cultural and natural heritage*, *regional demands*, *sustainable energy mix*, *nature-based tourism*, and *salmon aquaculture*. The first two are mainly environmental discourses, and the others put an emphasis on development aspects. On a national level, we identified key ideational components of the prevailing environmental and the development discourses.

Environmental and development discourses, from the core as well as from the periphery, intersect either by building synergies or facing tensions. Our analysis has shown that discursive synergies around the reproduction of the *nature-based tourism* discourse can potentially counteract peripheralization, through the creation of new periphery-periphery relations. On the other hand, synergies between salmon aquaculture and national development discourses may reinforce peripheralization by accentuating the uneven relation between the core and the periphery. More generally, we conclude that environmental and development discourses play a key role in the transformation and creation of new socio-spatial patterns of geographic peripheral areas, and discursive tensions shed light on how contested meanings are being articulated and materialized.

We suggest that the analysis of discursive reproductions of geographic peripheral areas should look at the potential synergies that might be stimulated in order to counteract peripheralization processes. In this particular case, potential synergies between the regional demands and sustainable energy mix discourses and national environmental and development ideas represent a crucial aspect for the environment and for the development of the Aysén region, which should be further addressed.

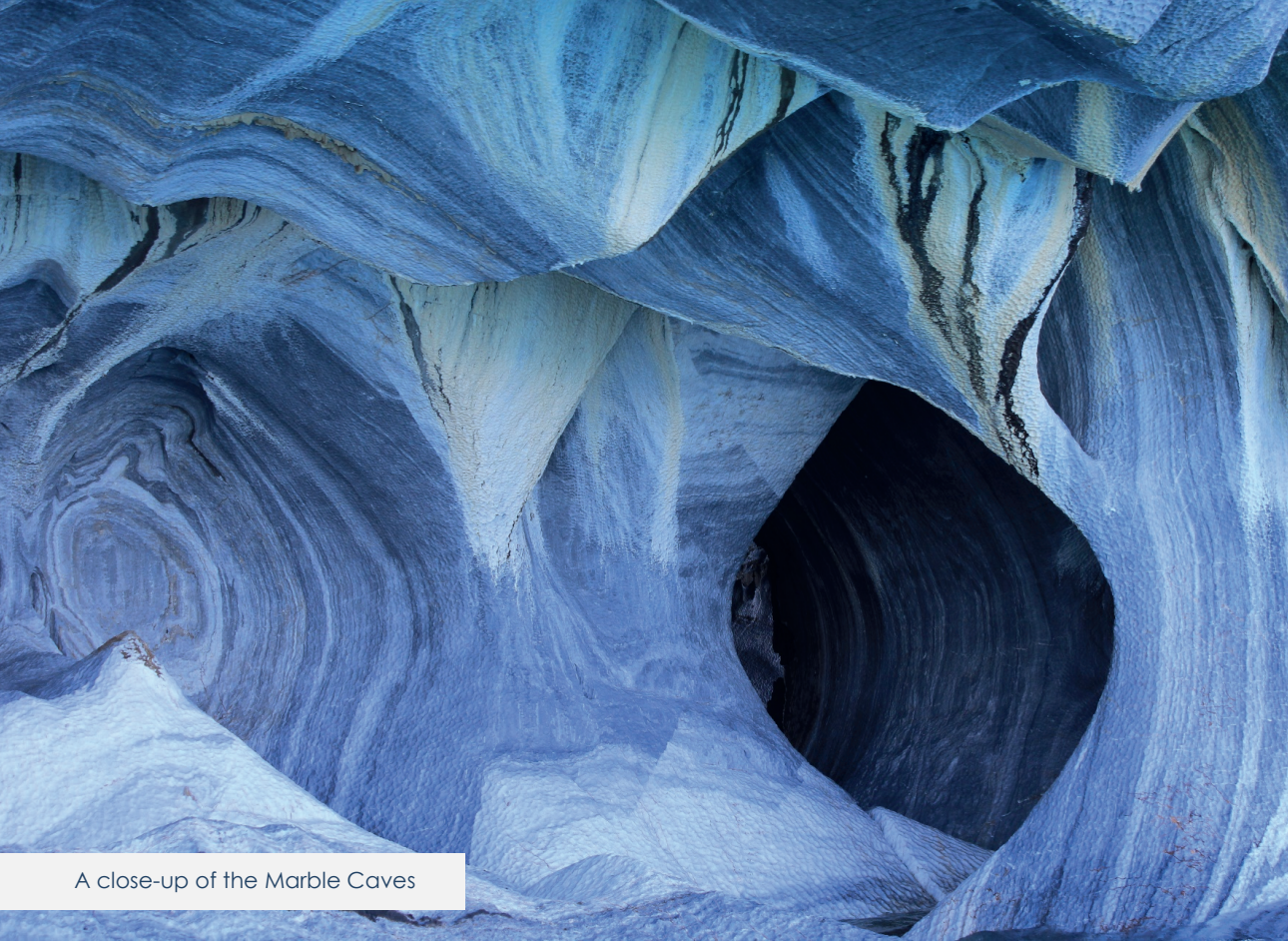
Finally, our analysis confirms that environmental and development dimensions are specially entangled in places such as the Aysén region and Patagonia, where economic and cultural activities directly depend on the provisioning of natural resources and on the landscape aesthetics. In this context, environmental and development discourses are redefining the peripheral condition, and at the same time, the alleged geographic isolation remains as a unique feature that identifies the region and its people.

Chapter 3

A social practice approach to nature-based tours: the case of the Marble Caves in Northern Patagonia, Chile

This chapter has been published as:

Bachmann-Vargas, P., van Koppen C.S.A. (Kris), Lamers, M. 2021. A social practice approach to nature-based tours: the case of the Marble Caves in Northern Patagonia, Chile, *Journal of Ecotourism*, <https://doi.org/10.1080/14724049.2021.1913176>



A close-up of the Marble Caves

Abstract

Chile's Northern Patagonia attracts thousands of tourists, who every summer venture to undertake a range of outdoor activities. In this article, we explore the local production of outdoor activities, by conceptualizing small-scale nature-based tours as a social practice. The study is based on empirical research, taking as a case study the development of the Marble Caves tour, an iconic destination in Northern Patagonia, Chile. The touring practice is analyzed based on the interplay of its material components, required competences and symbolic meanings. Our findings demonstrate that the persistence of the practice is particularly reliant on the competences of the tour operators, and on the abiotic nature of the tourist attraction. Fostering tour guide competences therefore contributes to the sustainability and performance of the practice. We contend that tourism policy interventions that aim to harmonize local development and environmental protection need to carefully analyze and take into account existing social practices.

Keywords: nature-based tourism, social practices, competences, tourist experience, remote peripheral areas.

3.1 Introduction

Global demand for nature-based tourism experiences is rapidly growing and challenges local development, tourism policy-making and biodiversity conservation (Balmford et al. 2009, Fredman and Tyrväinen 2010). South America is no exception. Every summer thousands of tourists from all over the world venture to travel to Northern Patagonia, Chile (Figure 4). Characterized by unique landscapes, rugged terrains and unpredictable weather conditions, Northern Patagonia occupies an important place within the social imaginary of pristine, unspoiled and extreme nature (Núñez et al. 2018). On a national and international scale, it has been featured as a nature-based tourism destination, providing ideal conditions for adventure sports (Chile Travel 2016), fly fishing (Recorre Aysen 2017) and long distance trails (BBC 2018). In recent years, nature-based tourism has become one of the main economic sectors in Northern Patagonia, fostering a number of tourist destinations, and resulting in a rapidly growing job market of more than 7,000 related jobs (Sernatur Aysén 2017).

Widely promoted and accepted as an economic activity compatible with the environment (Ardoin et al. 2015), nature-based tourism has frequently been portrayed as a means for local development, especially in geographic peripheral areas with high aesthetic amenity values, limited economic opportunities and a low population density (Hall and Boyd 2005, Brown and Hall 2008). At the same time, the rapid growth of nature-based tourism has been increasingly assessed with respect to the range of potentially unsustainable impacts that growing numbers of visitors generate in local areas (Butler 2018, Gale et al. 2019). There is a long and lively academic debate on effective policies and governance arrangements for sustainable nature-based tourism activities and development. A relatively recent argument in this debate is the importance of the self-organized character of nature-based tourism in peripheral areas (Haase et al. 2009, van Bets et al. 2017). These studies typically emphasize the collaborative efforts of organizers and operators of nature-based tours, including local networks, partnerships and branch organizations (Haase et al. 2009, Lamers et al. 2017), in shaping meaningful tourist experiences, as well as the dependence on such collective action to ensure safety for tourists, to minimize environmental impacts and to provide sufficient livelihood options for the local community. At the same time, it is argued that these forms of collective action are vulnerable to external actions and policies, such as operational standards, restrictions, zonation or certification, that disregard such communities of practice.

In this article, we aim to build on these insights by applying a social practice theory lens for understanding the production and regulation of small-scale nature-based tours (see also Lamers et al. 2017). The study is based on empirical research, taking as a case study

the development of the Marble Caves tour, a ‘must see’ in Northern Patagonia (Revista Enfoque 2018). Two research questions guide the investigation: a) how can nature-based tours be analyzed as social practice, and b) how can the social practice perspective contribute to local tourism policy-making for nature-based tourism.

By conceptualizing the Marble Caves tour as a social practice (Bachmann-Vargas 2019), we focus the attention on the quotidian performance of tourism activities. These tourism activities are locally grounded in environmental conditions and livelihood sources, and are embedded in larger policy decisions and traveling trends. In addition, they are influenced by existing regulations, aimed at the tourist’s safety and protection of nature. But, as we aim to demonstrate, the performance of activities is also significantly shaped by the social practice itself. We base our analysis on Shove et al.’s (2012) theoretical framework, and analyze the Marble Caves tour as an interplay between materials, competences and meanings. To contextualize the reproduction of the social practice, we use the ‘zooming-in’ and ‘zooming-out’ approach suggested by Nicolini (2012).

Looking into this particular case allows us to shed light on how small-scale nature-based tours can be understood from an everyday production perspective, wherein several tangible and intangible elements are intertwined in the local reproduction of such organized activities, and where the natural attractions influence the way tours are reproduced. In the following sections, we first introduce the social practices approach, the Marble Caves case study and the research methods. Afterwards we present the main results of this study, including a detailed description and analysis of the Marble Caves tour as a social practice, and discuss the implications of our findings for academic research and policy-making on nature-based tourism.

3.2 Practice-based approach in tourism studies

Social practices, or practice-based approaches, have recently gained attention in tourism studies as a way to understand the role of human and non-human components as part of routinized and recursive interactions, as well as to obtain a better comprehension of how certain activities, such as polar cruises and nature experiences are performed and materially and symbolically shaped (Souza Bispo 2016, Lamers et al. 2017, Lamers and Pashkevich 2018, James et al. 2019).

Spaargaren et al. (2016: p. 8) define social practices as “shared, routinized, ordinary ways of doings and sayings, enacted by knowledgeable and capable human agents who - while interacting with the material elements that co-constitute the practice - know what to do next in a non-discursive, practical manner”. In this regard, a practice-based

approach focuses on social practices as basic unit of analysis, wherein the definition of practices is an empirical question by itself (Nicolini 2012).

Shove et al. (2012) propose that social practices are made up of three interconnected elements: materials (e.g. tangible objects), competences (e.g. know-how, skills) and meanings (e.g. symbolic representations). Hence, practices emerge and exist when those elements are articulated in a dynamic cycle in which they co-evolve and shape each other. On the contrary, practices die when connections between materials, competences and meanings are broken. The interplay between materials, competences and meanings may resemble an imaginary 'gear assembly', in which the carriers of the practice - i.e. knowledgeable and capable human agents - give life to a coordinated, coherent and self-organized interaction between the elements of the practice.

According to Nicolini (2009), social practices have a history and are historically and spatially situated. Social practices have a dynamic character and both material and discursive dimensions. Nicolini (2012) proposes that in order to understand a practice, we must 'zoom-in' on a practice by exploring its discursive and material accomplishment. By 'zooming-in', doings and sayings, bodily choreography, timing and tempo, practical concerns, tools and artifacts can become the main focus of analyzing practices. Complementary, by 'zooming-out' the association and effects between practices can be recognized in a wider network (Nicolini 2012). Thus, interconnected practices can be identified and mapped as 'practice-arrangement bundles' (Schatzki 2006). According to Schatzki (2002) in a practice-arrangement bundle, doings and sayings and material arrangements are articulated through practical and general understanding, rules and acceptable ends while performing the practice.

Moreover, through a practice-based approach (un)sustainable ways of doings can be scrutinized and reconfigured, in order to achieve more environmentally desirable outcomes (Spaargaren 2011). However, the site-specific logic of practices will influence the extent to which social change is possible (Arts et al. 2014).

James et al. (2019) have recently published a compilation of different applications of practice-based approaches within tourism studies. They illustrate how practice-based approaches can shed light on a range of tourism and leisure activities, with exception of nature-based tourism practices. However, previous studies have explored practices of wilderness guiding (Rantala 2011) and polar expedition cruising (Lamers and Pashkevich 2018). Lamers et al. (2017), emphasize that the importance of practice-based approaches for tourism studies lies in its ability to generate in-depth understanding of tourism consumption and production, to analyze change in tourism, and to delineate the interconnections and embeddedness of multiple practices.

3.3 The case of the Marble Caves

This paper focuses on a single case study of the boat tours conducted at the Marble Caves in Northern Patagonia, southern Chile. Located 220 km south from the regional capital, Coyhaique (Figure 4), the Marble Caves are part of a geological formation that crosses the General Carrera lake (also known as Chelénko lake). They can only be visited by boat or kayak. Puerto Río Tranquilo is the closest village to the Caves.

The tours are characterized by a high seasonality, concentrating the tourist activity in the summer months of January and February. In January 2017, 8,145 tourists took the Marble Caves tour. The lowest activity is during the winter months, for example, in June 2016, only 80 tourists were registered as boat passengers (Capitanía de Puerto del Lago General Carrera 2018). During the high tourist season, the population of Puerto Río Tranquilo (600 inhabitants) can be tripled on a daily basis (Cerdea 2019). Due to its affordable ticket price (around 13 EUR p/p) and low fitness requirements, the Marble Caves boat tour attracts most of the tourists that pass by Puerto Río Tranquilo on the Southern Highway. Roughly 69% of the tourists that visit the village participate in the tour to the Marble Caves (Situr Aysén 2017).

In 1994, the Marble Caves, and specifically the Marble Chapel formation was declared a Nature Sanctuary based on the aesthetic value of the rock formation and the wider lacustrine landscape (Ministerio de Educación 1994). Fifty hectares were decreed as Sanctuary, while the boundaries remained unclear (Seremi del Medio Ambiente región de Aysén 2017). Since 2016, swimming or disembarking the boats at the Caves is no longer allowed (Capitanía de Puerto del Lago General Carrera 2016a). In addition, boats are obligated to navigate by one licensed skipper and one crew member (Capitanía de Puerto del Lago General Carrera 2016b). On the ground, the Navy and the Sea Bailiff keep track of the daily tours. Recently, the environmental authorities and the local community have expressed their concern about the village's coping capacity, the Nature Sanctuary's carrying capacity and the deterioration of the marble rocks. A public tender has been awarded to diagnose the tourist activity and the tourist services around the Nature Sanctuary (Ministerio del Medio Ambiente 2018b). The report, expected in June 2020, should provide baseline information to initiate the elaboration of a future sustainable tourism plan (it is likely, that due to the current COVID-19 situation, these initiatives may have been postponed). In this context, this research aims to provide policy recommendations that may shed light on nature-based tours as a multidimensional activity inspired by social practices analysis.

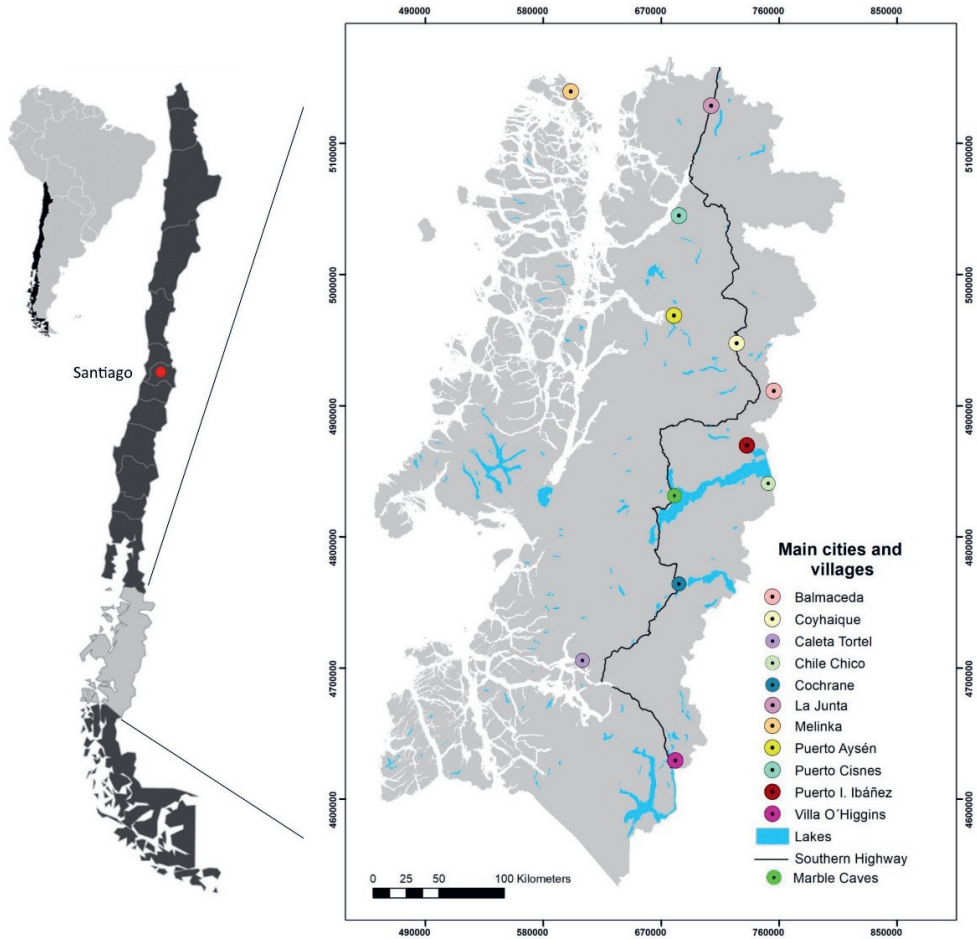


Figure 4: Geographic location of the Marble Caves, Northern Patagonia.

Northern Patagonia, under the administration of the Aysén region, corresponds to the third largest and the least populated region in Chile. Holds a population of 103,158 inhabitants, and a density of 0.9 inhabitants per km² (INE, 2017). The map shows the main cities and villages along the Aysén region and the Southern Highway. (Map own elaboration based on data set publicly available at National Catalogue of Geospatial Information-IDE Chile, WGS 84/UTM zone 18S).

3.4 Research methods

This case study is based on semi-structured interviews with key actors (Table 3), semi-closed questionnaires and observation methods were conducted between November 2016 and January 2017. Depending on the respondent's role, interviews were conducted

in several localities. Semi-closed questionnaires and observation methods only focused on Puerto Río Tranquilo village. This primary focus on qualitative methods, and participant observation particularly, has been claimed to match well with the study of social practices as it allows for an in-depth comprehension of the local context and a thorough understanding of the social and material interactions that constitute the practices (Nicolini 2012).

Twenty semi-structured interviews were conducted. The interviews aimed to gather information about the beginnings of the Marble Caves tour, the current management and the opinions about the future of the tourist activity (see interview outline in Appendix 2). Interviewees' accounts provided a complete overview on how the tour has been developed until now. Interviews were carried out at the work places or the homes of the interviewees, face-to-face and in most cases audio recorded and subsequently transcribed.

Table 3: Interviewees' profile.

Sector	Position	Gender	Locality	Profile/Activity
NGOs	Director	Male	Bahía Murta	NGO that aims to promote sustainable tourism and cultural heritage, involving youth from rural areas
	Secretary	Female	Puerto Río Tranquilo	NGO that gathers representatives from each of the small villages located around the Marble Caves, related to the tourism spatial planning unit (ZOIT)
Tour operator	Crew member	Female	Puerto Sánchez	Owner and crewwoman in a small family business that offers tours to the Marble Caves
	Manager	Female	Puerto Río Tranquilo	Owner and manager of a medium size family business, that offer tours to the San Rafael Lagoon
	Tour guide	Male	Puerto Río Tranquilo	Owner and tour guide of a small business that offers ice climbing tours
	Tour guide	Male	Puerto Río Tranquilo	Employee, skipper and tour guide in a medium size business that offers tours to the Marble Caves
	Manager	Male	Puerto Río Tranquilo	Owner, manager and tour guide in a medium size family business that offers ice climbing and kayak tours to the Marble Caves

Sector	Position	Gender	Locality	Profile/Activity
Tour operator	Secretary of the Boat Workers Association	Male	Puerto Río Tranquilo	Owners and temporary and informal workers, that offer the Marble Caves tour
	President of the Boat Owners Association	Male	Puerto Río Tranquilo	Boat owners organized in the General Carrera Lake Trade-Union Association
Public agencies	Sea Bailiff	Male	Puerto Río Tranquilo	A civilian, a trustworthy person recognized by the Navy
	Tourism and Culture program	Female	Coyhaique	Coordinator of the municipal tourism and culture program (Puerto Ibáñez)
	Mayor	Male	Coyhaique	Puerto Ibáñez Municipality
	Port Captain (S)	Male	Chile Chico	Navy Port Captaincy, General Carrera Lake. Enforcement of lacustrine and navigation rules
	Natural Heritage Commission	Male	Santiago	Belongs to the National Monuments Council, in charge of the Nature Sanctuary
	Studies department	Female	Coyhaique	Belongs to the National Tourism Service
	Regional Secretary	Female	Coyhaique	Regional Secretariat of Mining. In charge of the geological heritage
	Regional Secretary	Female	Coyhaique	Regional Secretariat of Environment, with competence in protected areas
Tourism Public-Private Partnership	Manager	Female	Coyhaique	Regional Tourism Strategic Program (PER)
	Coordinator	Female	Bahía Murta	Spatial Planning Instrument (ZOIT), Chelenko area
Labor-union associations	President	Female	Puerto Río Tranquilo	Chamber of Tourism of Puerto Río Tranquilo

In addition to the interviews a semi-closed questionnaire was carried out among the boat operators, locally called *boteros* (see questionnaire in Appendix 3). The data collection took place at the beginning of the tourist season. As a consequence, many *boteros* were often so busy dealing with the daily inflow of tourists that they did not have time for an interview, but they could briefly answer questions and fill in the questionnaire in spare moments while selling the tour tickets. The semi-closed questionnaire aimed to understand the *boteros'* perspective about the tourist activity, and collect more specific information about the duration of the tour, the number and type of vessels, the tour ticket price, and the number of daily tours, among other aspects. Sixteen *boteros* were surveyed at their tour ticket sale points, small kiosks along the lake shore. Because of the lack of official records, it is estimated that this sample represents around 40% of the *boteros*

working during the tourist season 2016-2017. However, the questionnaire does not aim to provide statistical representation.

Participant observation allowed for a detailed understanding of the tour's routine. As participant observer the first author embarked on the boat tour on several occasions, at different days and times. Moreover, observations were made at the tour tickets sale points and at the lake shore. From those observations, we learned about the logistics for the tours, the sailing practices and the way the safety measures and the tour's schedule were explained before embarking the boats.

Primary data were compiled and analyzed by using an open coding system, whereby the elements of the practice were characterized, with the aid of Atlas.ti software (Kumar 2014: p. 318). Interview transcripts and questionnaires were indexed anonymously, by adding an identification code and a consecutive number (i.e. Int_1, Q_1). Secondary sources supplemented the analysis.

3.5 Results

Analyzing social practices requires a rich comprehension of the doings, sayings and things that constitute a specific routine. In this results section, we first present the tour's routine, which was reconstructed based on our field observations. Second, we analyze the Marble Caves tour as a social practice, whereby the material components, required competences and symbolic meanings of the tour are concisely described, drawing upon the data collected through interviews and surveys. Third, insights about the reproduction of the practice are laid out.

3.5.1 Understanding the tour's routine

The participant observation and the interviews demonstrate that the Marble Cave boat tours follow a particular routine that is shared by most of the tour operators. Once the tourists have bought their tickets at the busy lake shore, the skipper asks for their names and nationalities, in order to fill in the sailing permit. The document is subsequently brought to the Sea Bailiff office (a shipping container located next to the tour ticket kiosks). When the weather conditions allow the port to be open, the Sea Bailiff immediately approves the permit (field notes). The skipper comes back to the tour ticket kiosk and, together with the crew member, walks the tourists to the boat. The tour usually runs with 8-10 passengers (field notes). At the time of data collection, we observed no piers to board the tourists. At the beach, either the skipper or the crew member hands over the life-vests, briefly describes the navigation route and indicates the Nature Sanctuary protection measures. The round trip usually takes 90 min (answer

given by 12 out of 16 surveyed *boteros*). The skipper, who is usually male, is in charge of the vessel, and either he or the crew member acts as a tour guide. At the end of the brief introduction, the tourists are ready to embark. The skipper asks them to take a seat. He starts the engine and navigates the boat towards the caves. During the first 20-30 min, the tourists are amazed by the turquoise color of the lake. The first stop along the circuit is at the beginning of the marble formation. At this point, the tour guide begins the tour narrative. Inspired by the shape of the marble rocks, the tour guide evokes the tourists' imagination, picturing nature-made figures on the marble rocks.

Typically, the tourists identify the characteristic rock that resembles a giant 'dog's head'. After this point, the navigation continues towards the main spot along the tour. Two rocky islets of 30 meters high each, the Marble Chapel and the Marble Cathedral, are a mandatory stop (Figure 5). The skipper stops the boat and either he or the crew member gives a short explanation about the age and color of the marble rocks. The provision of historical, ecological and geological information depends on the tour guide's knowledge and experience. At this stop, the skipper maneuvers the boat, allowing tourists to take photographs without the presence of other boats or kayaks. The skipper carefully approaches the islets and caves, letting the tourists observe the colors and the unique texture of the marble rocks (Figure 5). After an observation period of 30-40 min, the tour guide indicates that the tour has ended and it is time to return to Puerto Río Tranquilo. The skipper accelerates the boat and sails without stopping until arriving at the village. We observed that depending on the weather conditions the return trip can be quite rough. Once the group is back in Puerto Río Tranquilo, either the skipper or the crew member collects the life-vests and says goodbye to the passengers. They moor the boat and walk back to the tour ticket kiosk, where a new group of passengers is ready to depart on the tour.



Figure 5: The Marble Caves.

Photographs show the main spots that tourists encounter during the Marble Caves tour. The distinctive texture of the marble rocks can also be observed.

3.5.2 The tour as a social practice

Arranged tours provide access to natural or man-made areas that otherwise would not be possible to visit, either because of lack of means, time limitations or because of regulations that rule the attractions. Hence, tours take place as an organized and continuous set of activities, that while being performed integrate natural as well as artificial elements through a pertinent set of competences. The reproduction of tour narratives re-create symbolic meanings, and different connotations may be ascribed to the touring activities. Thus, tour operators and tourists engage in a concrete and meaningful experience. In our case study, the number of visitors to the Marble Caves is mediated exclusively by the local tour operators. Therefore, the tour becomes a significant unit of analysis for nature-based tourism and local policy-making that we proceed to unpack.

3.5.2.1 Material components

Materials, or material arrangements, are especially relevant in nature-based tourism and ecotourism narratives and practices (Chakraborty 2019). The biophysical environment and the built infrastructure form the space in which the tours take place. Hence, the predominantly natural assets, i.e. biotic or abiotic, co-determine the performance of the practice and thereby the tourist experience. At the same time, natural attributes may be associated with a sense of attachment and satisfaction (Stedman 2003).

As a boat trip, the vessel is the central component of the practice along with the biophysical environment in which the activities are set. Back in late 1980s, the vessels used to be wooden boats steered with two wooden oars (Int_3.6). Nowadays, boat trips are carried out in open fiberglass vessels for ten passengers, equipped with one outboard motor. During the high tourist season, an average of six trips per day are performed by each boat (Int_3.6). According to one of the boat operators, upgrading the vessels means a direct increase in the number of passengers (Q_3.1). Life-vests, flares and anchor are mandatory safety elements for each boat, among others (Capitanía de Puerto del Lago General Carrera 2016a).

The biophysical environment is dominated by geological formations that have been carved for thousands of years, by the corrosive effect of the carbonic acid on the marble rocks. The slowly dissolving rocks form unique shapes and colors, referred to by geologists as a 'karst landscape' (Seremi de Minería región de Aysén 2017). The characteristic coloring of the General Carrera lake due its glacial origin (Zambrano et al. 2009), frames the Marble Caves in an turquoise-greenish environment, creating a remarkable landscape. In this landscape, the Marble Chapel and the Marble Cathedral islets are the main attractions, visited by the boats for a certain amount of time and requiring navigation competences in order to provide a pleasant and worthwhile tourist experience. The weather conditions, particularly the wind, represents a key natural element that sets the scene and mood of each tour (field notes).

3.5.2.2 Required competences

Competences, or elements of know-how underpin the appropriate reproduction of practices (Shove et al. 2012: p. 23). In this particular case, windy days require slower and careful maneuvering through the short lake waves. A commonly heard phrase in Puerto Río Tranquilo is: "to navigate in this lake is not the same as if you were in the sea!" (field notes). Throughout the navigation skippers perfectly know what to do next and where to steer the boat to, following a memorized navigation route and allowing the passengers to take pictures without the presence of other vessels. Especially when boats are around

the marble islets, the *boteros* are performing a complex practice of maneuvering the boat in such a way that the interests of the tourists are met, while taking wind, swell, rocks and other boats into account. In addition to navigation skills, historical, geological and ecological knowledge have become an important input to quality tour guiding. *Boteros* acting as tour guides, answered in the questionnaire that most of the information shared during the tours, has been self-learnt (12 responses) or taught by another *botero* (10 responses), with few opportunities for formal training. Performances and experiences between different operators can therefore differ widely. One of the interviewees pointed out that “one of the problems with the *boteros* is when they go on a tour, there are many that do not talk, while others even tell you the history of the ‘big-bang!’” (Int_3.14). Regarding language competences, at the time of the research, boat tours were given only in Spanish. In addition, tourists that engage in the practice have the aptitude to sail in a small boat, while experiencing nature in a physical, observational and spiritual manner.

3.5.2.3 Symbolic meanings

As relative constructions, symbolic meanings emerge and evolve, making sense of old and new connotations. Meanings are reshaped by processes of association and re-classification (Shove et al. 2012: p. 55). According to the interviewees, the Marble Caves tour began in 1987 as a family boat trip that slowly became a commercial visitor experience for the few tourists occasionally passing through Puerto Río Tranquilo in the late 1980s (Int_3.6). Nowadays, boat tours are directly associated with a source of local livelihood. The Marble Caves tours mobilize almost the entire local tourism sector, by generating the demand for accommodation, transport, fuel and food (Int_3.20).

The Marble Caves have also become a key component of the local identity and natural heritage, which is exemplified in the following quote: “Puerto Tranquilo does not have an identity as a Patagonian village so to say, as a Gaucho (peasant) culture. What represents Tranquilo are the Marble Caves” (Int_3.20). In addition, associations related to environmental sustainability can be found in local narratives, referring to:

“we, the ones that make this tour, have understood that this is a natural heritage, that we must protect. We wish that our children and grandchildren can be raised in this wonderful environment that we have tried to protect as much as we could” (Consejo de Monumentos Nacionales 2017, translation by first author).

While the designation of Nature Sanctuary in 1994 has not provided any material facilities or staff on the ground, it has created a discursive meaning whereby the *boteros* and the local community have made the Sanctuary theirs, by shaping the performance,

the rules and the existence of the practice. Meanwhile, tourists often express a sense of accomplishment and adventure when visiting the Caves that they saw on TV or in the tourist travel guide. Tourists usually describe the landscape formed by the lake and the caves as ‘stunning’, ‘unique’ and as an ‘amazing scenery’.

3.5.2.4 The reproduction of the practice

In spite of high seasonal variations and lack of infrastructure, the Marble Caves boat tour has become a stable and persistent tourist activity, whose main carriers hope to continue in the future. In this respect, it is important to consider that practices do not exist in isolation. Practices emerge, mutate, re-enact and persist, by reinforcing existing links or creating new ones. They are connected to and affected by other practices and material arrangements that originate elsewhere.

From a zooming-in perspective, the reproduction of the practice is directly dependent on the stability of the relations between its dimensions (i.e. materials, competences and meanings), which provides a pleasant and safe tourist experience. By zooming-out, one recognizes that the reproduction of local tourism practices is dependent on its position within a broader network of practice-arrangement bundles (Lamers et al. 2017). For example, the persistence of the Marble Caves tour has been highly influenced by the regional tourism marketing campaigns that have aimed to position the Marble Caves tours and the Puerto Río Tranquilo village as a tourist destination in the Aysén region (Int_3.20), accompanied by the increasing flow of tourists who travel along the Southern Highway, a scenic route that connects Northern Patagonia through 800 km of intricate geography. Further, hospitality and waste management practices are challenged every summer when dealing with the increasing number of visitors (Int_3.2).

3.6 Discussion

Based on our qualitative data, this research has aimed to analyze nature-based tours from a social practice perspective, as well as to analyze their implications for local tourism policy-making. Though the data collection took place within a limited period of time, we believe that our account of the Marble Caves tour as a social practice provide valuable insights for a better understanding of small-scale nature-based tours in Patagonia, and elsewhere in similar remote peripheral areas. Data collected through semi-structured interviews, semi-closed questionnaires and participant observation allowed us to delve into a routinized and self-organized activity. Here, we would like to discuss the implications of our results for research, practice and policy.

3.6.1 Nature-based tours as social practice

Small-scale nature-based tours involve intertwined and complex economic and social-ecological relations that are situated in specific political, geographical and ecological contexts, and whereby livelihood, local identity and sustainability concerns are typically interwoven. While the definition of social practices based on the three elements of materials, competences and meanings entails a simplification of social life, it does provide a useful conceptual tool, whereby stability and change can be analyzed as part of a recursive and self-organized activity (Shove et al. 2012: p. 15). Our article demonstrates that this model also serves as a solid and practical ground for empirical research on nature-based tours, enabling researchers to analyze complex social phenomena (Lamers et al. 2017), and providing a versatile approach that integrates natural and human components in one unit of analysis (see also Rantala 2011). It enables researchers to comprehend how tourism activities are reproduced in practice, and where there might be room for change.

Our findings indicate that the *boteros* can be deemed as the main carriers of the practice. Despite their social division (i.e. boat owners and boat workers associations, Table 3), *boteros* have built a sort of community of practice (Snyder and Wenger 2010) with their own identity and a shared passion for the tours. As a community of practice, they share practical knowledge and exercise intentional and unintentional creative control throughout the performance of the practice. Hence, their ideas and behaviors are influenced by the practice and vice versa (Arts et al. 2014). This case has shown how the *boteros* have shaped the Marble Caves tour in a learning by doing strategy, into its current status as the main local economic activity and one of the iconic tourist destinations in Northern Patagonia.

3.6.2 Competences as key practice element

The practice approach foregrounds the role of competences as a crucial element of the touring practice. It is through appropriated competences that material elements and symbolic meanings are combined in the performance of tourism practices. Competences and materials are articulated through the boat maneuvering skills, thus integrating human agency, material and ecosystem components as part of the unit of analysis. As ingredient of the timing and tempo of the practice (Nicolini 2012: p. 220), executing the right boat maneuvers may increase the experiential capacity of the Marble Caves, by reducing the spatial pressure when the tour is at the main observation point. At the same time the boat maneuvering competences help to prevent biophysical impacts by not approaching too close. Boat maneuvering skills also provide a safe and pleasant visit to the Caves, therefore creating part of the tourist experience.

Moreover, the interaction between competences and meanings is exemplified by the role that the *boteros* play as tour guides. Competence enables a tour guide to create meaningful narratives with historical, social, ecological and geological knowledge. Thus, the persistence of the practice depends on the number and types of meanings that are ascribed to it, as well as on the connection with other practices (Shove et al. 2012). The creation of natural value, as well as the reproduction of the sustainability, livelihood and adventure meanings, have crafted the practice into what it is today. However, the analysis suggests that scientific knowledge plays a potentially sensitizing role, in communicating particular geological characteristics that are not immediately perceived, compared to the primarily biotic or charismatic natural attractions. Equipped with this knowledge, the tour guides would be able to enrich the tour narratives.

Since there is no one unified concept of what a tourist experience is (Uriely 2005), we propose that the nature-based tourist experience in Northern Patagonia may be defined as the enjoyment of nature's beauty, in a non-invasive, knowledgeable and safe way when undertaking outdoor activities. We suggest that the tourist experience is constructed each day as a result of the consistent and safe performance of practices. Nevertheless, in a pilot survey conducted in 2017, tourists identified four areas in which the tour could be improved, namely: payment methods, quality/price perception, tour narrative and tour guide's knowledge (Situr Aysén 2017). These results demonstrate that competences of practitioners should be prioritized in eventual tourism policy interventions. Further, enhancing local touring competences may also better prepare the *boteros* for the competition of new, larger and trained tour operators that aim to offer the Marble Caves tour in the future.

3.6.3 Touring practices and policy

According to Shove et al. (2012: p. 163), a “practice based approach offers a conceptual framework around which to build policy interventions explicitly designed to address systemic challenges”. Nature-based tourism development certainly posits a systemic challenge, whereby human and non-human, and tangible and intangible dimensions are closely entangled, and by which local livelihood and environmental concerns challenge the everyday touring practices. The Chilean state is currently attempting to gain control by devising a sustainable tourism management plan for the Marble Caves tours. Our practice-based analysis contributes several insights to tourism policy-making.

First, our discussion suggests that, next to potential future investments in the material arrangement (e.g. pier, infrastructure), fostering or enhancing competences required to perform the tour (e.g. educational programs, certification) maintains or enhances both sustainability and the tourist experience. In other words, if the current touring practice configured by the *boteros* is considered desirable or sustainable, the key elements of the

practice should be carefully fostered. This is relevant as community-based sustainable tourism practices are also vulnerable, particularly in terms of new participants or external state policies (see also Haase et al. 2009). The future implementation of a sustainable tourism management plan is no guarantee for improving touring practices or changes in environmental behavior (Baggio et al. 2016). Social practices have their own internal logic that cannot be easily steered by external rules (Arts et al. 2014). The performance, the spatial extent and the site-specific logic of the practice have been molded by the main carriers of it - the *boteros* -, whose practical knowledge and situated agency have allowed them to configure, re-adapt and sometimes improvise while carrying out the practice (cf. Valtonen 2010, cf. Arts et al. 2014).

Second, with regard to the meanings ascribed to the tour, the Nature Sanctuary, that was designated to highlight and protect the value of the marble formations, plays a key role. To date, the management attention has primarily been concentrated within the boundaries of the Nature Sanctuary, which only encompasses the area of the marble formations. However, the mobile character of the practice analyzed in this research, outlines a larger area that could be considered as a management unit. The tour, and therefore the tourist experience, begins at the tour ticket kiosks and continues with the embarkation, the sailing, the climax of reaching the Marble Cathedral and the Marble Chapel spots, and the closure with the boat trip back to the village. Incorporating the area of the whole trip as part of the Sanctuary might enrich a sense of attachment that the local tour operators already convey towards the marble formation. Matching the management unit with the scale of the practice performed would enhance the management effectiveness, contribute to a better performance of the practice and to the tourist experience (see also Boas et al. 2018).

Third, analyzing the embeddedness of small-scale touring practices in a broader traveling and policy context provides insights into how local communities are changing and how tourist destinations are being created (Saarinen 2004). The current performance of the Marble Caves tour is the result of a series of events, which include the discursive reproduction and material arrangement of the Southern Highway journey. The same goes for current policies on regional development, nature conservation and tourism promotion, which have contributed to the reproduction of local development, local identity, nature-based tourism and nature conservation meanings through policy instruments and marketing campaigns. For example, the touring practice of the *boteros* might be considered sustainable, but as the practice lens zooms out one realizes that the village of Puerto Río Tranquilo has major challenges dealing with the visitation peaks resulting from regional promotion campaigns. We suggest that future policy interventions should consider local tourism activities, as arrangements of interconnected routines wherein, by mapping the elements of the practices, specific innovations towards sustainable tourism could be determined.

3.7 Conclusion

In this paper, we have conceptualized and analyzed nature-based tours as social practice, by unpacking the Marble Caves boat tours in Northern Patagonia, Chile, and by discussing the significance of the social practices approach for local tourism policy-making. The social practices approach highlights the role of competences of local tourism operators in performing sustainable and meaningful tourism experiences. Moreover, our case illustrates how the performance of the practice is enabled by the abiotic nature of the tourist attraction.

We conclude that fostering the competences of local tour guides will certainly contribute to a better performance of the practice, and therefore to a better tourist experience. By looking at nature-based touring practices, tourism activities can be analyzed beyond institutional approaches, thus foregrounding the everyday reproduction of doings and sayings, and providing a critical account of how competences and meanings are being reproduced in practice. A practice-based approach provides a non-prescriptive framework that may be used as input for future policy interventions. We conclude that nature-based tourism policies may benefit by taking a closer look at the production of small-scale touring activities and its social and environmental dimensions. Moreover, examining the persistence of touring practices may offer some indications about the potential (un)sustainable effects of nature-based tourism and the current and future changes in the tourist activity.

Chapter 4

Re-framing salmon aquaculture in the aftermath of the ISAV crisis in Chile

This chapter has been published as:

Bachmann-Vargas, P., van Koppen C.S.A. (Kris), Lamers, M. 2021. Re-framing salmon aquaculture in the aftermath of the ISAV crisis in Chile. *Marine Policy* 24, 104358. <https://doi.org/10.1016/j.marpol.2020.104358>



Melinka bay

Abstract

Globally, aquaculture is expanding rapidly, with salmon becoming one of the most dynamic and fast-growing production systems in the world. Despite its commercial success, Chilean salmon production has navigated through severe economic and sanitary crises; followed by consecutive policy changes. Between 2007 and 2009, the rapid spread and the multiple effects of the Infectious Salmon Anemia virus (ISAV) marked a tipping point in the trajectory of the salmon aquaculture in southern Chile. This paper examines the discursive mechanisms through which the Chilean salmon aquaculture industry is currently being re-framed in the aftermath of the ISAV crisis, with a focus on searching for the emergence of ecosystem-related elements post crisis. The analysis shows that Chilean salmon aquaculture is being re-framed by the reproduction of three main discourses: *biosecurity*, *sustainable protein* and *The Promise of Patagonia*. The paper concludes that despite the staggering effects of the ISAV crisis on the national salmon production and on coastal communities more than a decade ago, new discourses are focused on the legitimization to growth, in the absence of integrated marine ecosystem-related elements, indicating a crucial gap toward environmental sustainability in salmon aquaculture.

Keywords: ISA virus, discourses, transformational processes, Aysén region, Patagonia.

4.1. Introduction

In the last two decades, the global aquaculture sector has rapidly expanded, and salmon aquaculture has become one of the most dynamic and fast-growing production systems in the world (Asche et al. 2013b). Influenced by the so-called blue discourses, aquaculture expansion is aimed to contribute to food security, coastal community livelihoods as well as to compensate for dwindling wild fisheries harvests worldwide (Nahuelhual et al. 2019). Internationally, there has been a lot of attention though with limited application, for the introduction of ecosystem-based approaches in the global aquaculture sector to make sure that production processes and impacts do not exceed ecological and social limits (Aguilar-Manjarrez et al. 2017, Brugère et al. 2019).

Global salmon production, led by Norway and Chile, has transformed remote coastal areas into industrial and productive nodes in global supply chain networks. Although this economic activity has been a successful enterprise, Chilean production has navigated through severe economic and sanitary crises; followed by consecutive policy changes. The ongoing expansion of the salmon farming activity keeps on raising concerns about the environmental and social impacts (Chávez et al. 2019, Quiñones et al. 2019), and calls for the introduction of an ecosystem-based approach to salmon aquaculture (Quiñones et al. 2019).

Currently, salmon aquaculture represents the second largest economic sector, and the most important animal production system in Chile (Mardones et al. 2014). Chilean salmon aquaculture is composed of industrial salmonid production, i.e. Atlantic salmon, Pacific salmon and Rainbow trout, with Atlantic salmon (*Salmo salar* L.) being the most profitable salmonid species (Bustos-Gallardo and Irrazaval 2016). By July 2020, domestic fish harvests reached 540.8 thousand tonnes of which 80.1% consists of Atlantic salmon. Total aquaculture exports, for the same period, reached 471.3 thousand tonnes accounting for 2,657.8 million USD, of which 62.5% corresponds to the total exported value of Atlantic salmon (Subpesca 2020a). To date, Chile remains as second larger producer of Atlantic salmon, after Norway, and followed by Scotland and Canada (British Columbia). Nevertheless, Chilean production is increasing the market share of farmed Pacific salmon, accounting for 95% of the global production (Poblete et al. 2019).

Salmon production is concentrated in southern Chile. The sea phase, based on the net-pen technology, is primarily carried out in the Los Lagos and Aysén regions, and to a lesser extent in Magallanes (Figure 6).

Between 2007 and 2009, Los Lagos region became the epicenter of an unprecedented sanitary crisis with multiple socioeconomic and environmental effects, caused by the

outbreak and the rapid spread of the Infectious Salmon Anemia virus (ISAV) (Bustos-Gallardo 2017). With previous occurrences in Norway, Canada, Scotland, Faroe Islands and United States (Godoy et al. 2008), the ISAV was already known to the salmon industry. The consequences of the ISAV outbreak propagated throughout the national value chain and global market (Asche et al. 2018). High mortality rates of salmon, revenue losses and massive layoffs marked the trajectory of the fastest-growing salmon producer in the world (Asche et al. 2009). According to Dresdner and Estay (2016), the production of Atlantic salmon decreased by 60%, accompanied by the loss of approximately 8,400 direct jobs. Thus, after 30 years of successful growth and integration with global markets (Bustos 2015), the Chilean salmon industry faced for the first time the consequences of its neoliberal production model characterized by self-regulation (Barton and Fløysand 2010, Tecklin 2016), or a sort of ‘Far West austral’, as it has been termed by environmental organizations (Radio U. de Chile 2019). Early evidence of fish health deterioration was also indicating a systemic collapse (Iizuka and Katz 2015). Unlike its competitors, Chilean production thrived at the expense of nature and labor, underpinned by the neoliberal nature of environmental policies (Phyne 2010, Tecklin et al. 2011).

In the aftermath, a series of institutional, financial and production-related measures were taken to mitigate the effects of the crisis (Bustos 2015). The creation of the group of salmonid concessions informally called *barrios* (i.e. neighborhoods) and the sanitary macro zones (Figure 6) represent the most important policy innovations that restructured production practices in relation to their geographic locations (Iizuka and Zanlungo 2016, Tecklin 2016). In addition, new sanitary and environmental regulations have been implemented ever since (Soto 2018). To date, after more than a decade of the first reported case of the ISAV in Chile, the staggering effects of the crisis continue to influence changes in the salmon aquaculture sector.

4.1.1 Making sense of the ISAV crisis

According to Roux-Dufort (2007), crises should be understood as processes of accumulation of deficiencies and weaknesses rather than as extraordinary events, which start long before the triggering event. Additionally, crises serve as transformational processes that may catalyze institutional changes, and organizational renewal (Ulmer et al. 2007, Boin et al. 2009). In this regard, Roa (2015) points out that the ISAV crisis triggered policy learning and a policy change in the aquaculture sector in Chile.

The ISAV outbreak unveiled the weaknesses of the production model and the passive role of the state, accumulated over a period of three decades of rapid expansion. More concretely, high production densities, short distances among cultivation sites, a lax

regulatory framework and a strong market demand created a highly vulnerable social-ecological system for any disruptive event to occur (Iizuka and Zanlungo 2016).

Bustos-Gallardo and Irrarrázaval (2016), conceptualize the ISAV crisis as a *capitalist crisis of realization*, that exposed the contradictions between capitalism and nature, and the conditions that challenge the salmon production at sea. From another stance, Iizuka and Katz (2015) relate the ISAV crisis to the overexploitation of the *commons*, due to a lack of knowledge of local carrying capacity and neglect of the long-term environmental sustainability that the salmon industry should be based on. However, what environmental sustainability means for the salmon farming activity, continues to be open to interpretation (Christiansen 2013).

Studies exploring what views have emerged as a consequence of the ISAV crisis are lacking. In analyzing current narratives on Chilean salmon aquaculture, this study contributes to filling this gap. Drawing upon the ideas of *discourse of renewal* induced by a crisis (Ulmer et al. 2007), this research examines the discursive mechanisms through which the Chilean salmon aquaculture sector is currently being re-framed, with a focus on searching for the emergence of ecosystem-related elements post ISAV crisis, and also by looking at the intersection with the local discourse. Two research questions guide the investigation, a) what are the main discourses that are re-framing the salmon industry? and b) how do these discourses conceptualize the environment? Conceptualizations of the environment may range from reductionist to more holistic or systemic approaches. Understanding how the environment is being conceptualized by the post ISAV crisis discourses, represents a key aspect to analyze how the environmental sustainability is being acted upon.

This study is based on empirical research, focusing on the Aysén region due its increasing importance for the southward expansion of the salmon activity into this region, especially after the ISAV crisis (Niklitschek et al. 2013). In line with Christiansen (2013), this research aims to contribute to a better understanding of how discourses on a global industry are reshaping well-established aquaculture practices and their effects on the local environment.

4.1.2 Renovated meanings

From a discursive perspective, this research argues that the ISAV crisis served as a tipping point in the discursive construction of the salmon industry. Consistent with a discourse of renewal that portrays optimistic, prospective and future-oriented goals (Xu 2018), traditional views on industrial growth are being replaced with renovated meanings of more sustainable production practices, along with technological

innovations. Meanwhile, on a local scale, what used to be seen as a booming business, nowadays is being taken with caution.

Within such renewal, this research looks at the emergence of new discourses. This work follows a constructivist approach to discourse analysis, rather than a critical discourse analysis in the tradition of Fairclough or Foucault. While critical discourse analysis focuses on power dynamics as their main analytical device, the constructivist approach used in this research draws upon the description and interpretation of the social context wherein discourses are realized, in which knowledgeable actors provide their accounts (Phillips and Hardy 2002). In line with this constructivist approach, Chong and Druckman (2007: p. 104) define framing as “the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue”. Thus, the term ‘re-framing’ is used to describe the repositioning of the salmon industry through renovated discursive reproductions, after the ISAV crisis.

Discourses respond to a specific time and space, reflecting past experiences, the present and future concerns (Hajer 1995). In this regard, a discourse can be defined as “an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, which is produced and reproduced through an identifiable set of practices” (Hajer and Versteeg 2005: p. 175). Discourses create shared meanings and delineate what is socially acceptable and what is not. According to Olsen and Osmundsen (2017), discourses can be seen as frameworks for interpretation, wherein dominant frames of reference can be traced. Discourses reveal how different actors construct their own reality, defining problems and solutions in a specific way (Hajer and Versteeg 2005). On a local scale, discourses represent an input for policy making and policy change. Discourse analysis reveals how policy processes and practices are being influenced (Sharp and Richardson 2001).

4.2 Salmon aquaculture in the Aysén region

The Aysén region is the third largest and the least populated of Chile’s 16 administrative regions (Figure 6). It holds a population of 103,158 inhabitants, with a density of 0.9 inhabitants per km² (INE 2017). With a meandering coastline and sparsely populated coastal areas, the Aysén region offers a vast maritime territory and optimal physicochemical conditions for salmon farming development. In July 2007, the first case of the ISAV was confirmed in the Los Lagos region (Gustafson et al. 2016), and six months later it was reported in the region of Aysén (Orrego 2015). The poor sanitary conditions that boosted the ISAV crisis in the Los Lagos region, and the need to relocate salmon farms rapidly increased the number of maritime concessions operating in the region of Aysén (Tecklin 2016). While a large number of maritime concessions had been

granted prior to the ISAV crisis, it is after the crisis, between 2012 and 2013, when the recovery and the expansion of the industry can be explained by the growing production of salmon in the region of Aysén, in comparison with the Los Lagos region (Dresdner et al. 2017).

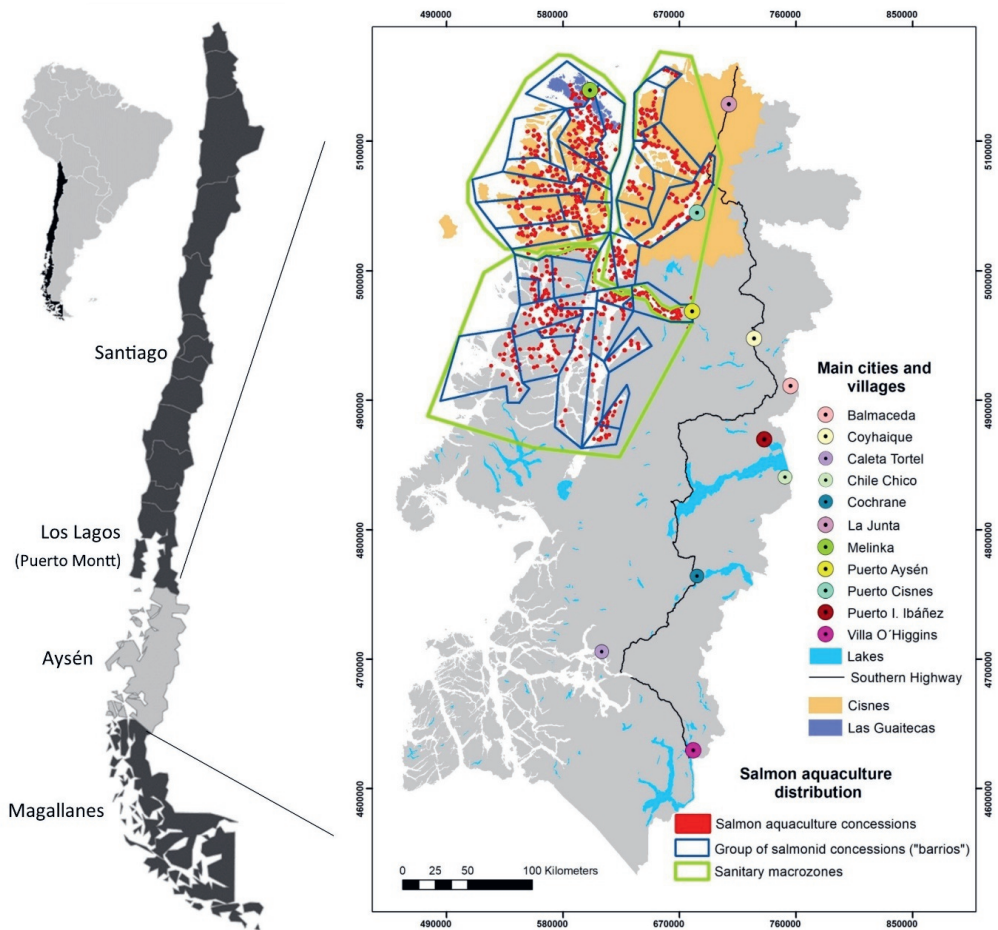


Figure 6: Geographic location of the administrative regions where salmon farming takes place.

The map of the Aysén region shows Las Guaitecas and Cisnes municipalities located in the northern part of Aysén, and the location of the main cities and villages throughout the region. The map also indicates the salmon aquaculture concessions, the groups of salmonid concessions (*barrios*) and sanitary macro zones. (Map own elaboration based on publicly available data at the National Catalogue of Geospatial Information-IDE Chile, WGS 84/UTM zone 18S).

In 2006, 543 maritime salmonid concessions had been granted within the limits of the Aysén region (Dresdner et al. 2017), while in January 2020, 724 concessions were registered (Subpesca 2020b). Policy reforms introduced in 2010 placed a moratorium on the allocation of new maritime concessions for a period of five years (Dresdner et al. 2017). In March 2020, the suspension was still in place (Patagonia Mar y Tierra 2020).

Coastal municipalities, such as Las Guaitecas and Cisnes (Figure 6), have witnessed the benefits and the consequences of the salmon industry. On one side, Las Guaitecas municipality with a permanent population of approximately 1,800 inhabitants, holds a strategic geographic location for salmon operations by providing airport facilities that serve salmon firms, industry suppliers and local residents. On the other side, Cisnes municipality, with a larger territory (17,450 km²) and a population of 6,000 residents accounts for the highest annual revenue from salmon activities (ca. 4 million EUR) among Chilean coastal municipalities where salmon farming takes place (Orellana 2018).

To date, salmon farming in the Aysén region accounts for 49% of the national production (Sernapesca 2016), and it is seen as a potential future growth region of the salmon industry (Salmonexpert 2020). North of Aysén, the Los Lagos region possesses a high production density with higher associated sanitary risks. In the Magallanes region to the south, the salmon industry has encountered strong opposition from indigenous groups and environmental NGOs against further expansion. There, salmon aquaculture is seen as a threat to the bio-cultural values of austral territories which must be protected (WWF 2019).

Up to now, regional production is mostly shipped to the Los Lagos region, where the main processing facilities are located. A weak value chain and a lack of infrastructure have characterized the Aysén's salmon industry. Recently, the public and private sector signed a cooperation agreement that aims to achieve better regional performance, to strengthen the regional value chain and to change the way regional development is being perceived (AQUA 2019). Yet, results remain to be seen.

4.3 Research methods

Discourses were re-constructed based on semi-structured interviews with key informants and complemented with secondary sources, including specialized media reports, scientific publications, technical reports, online sources, and official documents. Between December 2017 and October and November 2018, 23 semi-structured interviews were conducted in four cities/localities located in the Aysén and the Los Lagos region, namely: Melinka (Guaitecas), Puerto Cisnes, Puerto Aysén and Puerto

Montt. In investigating local communities, the main focus was on the Las Guaitecas and Cisnes municipalities (Figure 6). Puerto Montt and Puerto Aysén cities were considered due to the geographic location of the salmon producers' headquarters and the aquaculture regulatory agencies, respectively. Key informants were selected according to their role and position within a variety of organizations related to the salmon farming activity. Interviewees consisted of six public sector representatives, including municipalities and aquaculture regulatory agencies; three members of research and academic institutions; three representatives of salmon firms (including a managing director, an environmental manager and a social/community coordinator); one member of the technical branch of the salmon trade group; three representatives of consultancy companies and private veterinary laboratories; three representatives of local and international NGOs; two teachers from local schools; one local service provider; and one representative of the local Chamber of Tourism. Local NGOs represent indigenous people as well as the 'red tide' committee led by artisanal fishers. The workers' position was incorporated through secondary information.

The main objective of the interviews was to inquire how respondents interpreted salmon aquaculture before and after the ISAV crisis and to get insights into the current situation (see interview outline in Appendix 4). Most of the interviews were conducted face to face, audio recorded and subsequently transcribed. The opinions expressed by the interviewees do not necessarily represent their organization's stance.

In addition, the first author attended five stakeholder events held in southern Chile as an observer, including *Leadership for Sustainability* (Sustainable Salmon Program, CORFO - Chilean Economic Development Agency); *Challenges and Strategies in the Sanitary Sector*, Chile-Norway (Sernapesca - National Service for Fisheries and Aquaculture); *AquaSur 2018 International Fair*; *ASC in Chile* (Aquaculture Stewardship Council) and *Building The Future of Chilean Aquaculture - Our Turn to Lead* (Global Salmon Initiative - GSI). Observations made at these events enabled a better understanding of the national and regional context, as well as a deeper comprehension of actors, dialogues, and conflicts around salmon production systems.

Interview transcripts were indexed anonymously, by adding an identification code and a consecutive number (i.e. Int_1). Primary information and field notes were analyzed following an inductive approach (Thomas 2006), whereby the main themes and narratives emerging from the raw data were identified, with the aid of Atlas.ti software (Kumar 2014). Thus, discourses were selected among the most recurrent and conspicuous topics that interviewees referred to. Subsequently, secondary information was used to complement the argumentation of each discourse.

4.4 Results

There seems to be a common understanding about the causes that led to the ISAV crisis. Reflections about the errors of the past and the future challenges of the salmon industry are now publicly discussed. Salmon production is back to ‘normal’, but the risk of a new crisis still concern both public and private sector actors. Meanwhile, episodes of harmful algal blooms and salmon escapees, as well as contested management practices (e.g. use of antibiotics, misreporting mortalities, and labor conditions), continue to question the future (sustainable) development of the salmon industry in Chile. In addition, as one of the interviewees expressed: “there is still a lack of knowledge on how the industry deals with sustainability issues” (Int_4.13). Based on an inductive analysis of interviews and documents, four discourses were identified. Three discourses signal a re-framing of national policy and aquaculture practices which coexist with a local discourse of (un)willing acceptance toward salmon aquaculture and its effects, especially after the ISAV crisis. Accordingly, four key environmental elements are portrayed in these discourses. Table 4 summarizes the findings.

Table 4: Discourses, practices, environmental elements and the discursive relation in the re-framing of the salmon farming in Chile.

Discourses	Practices prompted by the ISAV crisis	Key environmental elements	Discursive relation
Biosecurity	Coordination of production cycles in the same group of salmonid concession, reporting of mortalities, disease surveillance	Oxygen concentration in the sediments	Different but compatible ways of re-framing salmon culture
Sustainable protein	ASC certification	Carbon footprint on a global scale	
The Promise of Patagonia ©	Fostering US market, reduction of antibiotics	Image of pristine landscapes	(tense) Coexistence
The local (un)willing acceptance	Small-scale nature-based tourism development	Intertwined social and ecological dimensions	

(Promise of Patagonia ©, Chilean Salmon Marketing Council 2019).

4.4.1 The biosecurity discourse

The *biosecurity* discourse combines the ideas and practices that emerged right after the ISAV outbreak, to contain the spread of the virus throughout the salmon production chain. Producers as well as suppliers had to adapt to new sanitary protocols, incurring in higher productions costs, but wagering that better sanitary control would lead to

greater productive benefits (Fundacion Terram 2009). In this respect, interviewees point out that “before (the ISAV crisis), there was no awareness of reporting, or being more careful with the sanitary heritage” (Int_4.15). Nevertheless, “regulations were created because of the crisis, but not based on a long-term vision” (Int_4.10).

The creation of the group of salmonid concessions (i.e. *barrios*) introduced significant changes in salmon farming practices. Synchronization of productive cycles and fallowing periods among firms sharing the same *barrio* reorganized the industrial production. According to one of the respondents: “the ISAV crisis forced the industry to create the *barrios* system, which were not created based on ecosystem carrying capacity, they are based on biosecurity, which is far from perfect” (Int_4.9). Biosecurity, defined as the “actions, techniques or methods that must be applied to reduce or avoid the risk of introduction or spread of the causative agent of a disease” (Subpesca 2001a), became the new norm for salmon farming. In practical terms, biosecurity measures are primarily enforced through the definition of farming densities of each salmonid species within each group of salmonid concession. The definition of fish farming densities are subject to sanitary results from the previous productive cycle, farming projection and environmental records indicating aerobic conditions in the sediments (Subpesca 2001b). To date, the *biosecurity* discourse is well established, and it also concerns surveillance practices of diseases, such as Caligidosis, in addition to a permanent monitoring of ISAV cases.

4.4.2 The sustainable protein discourse

The *sustainable protein* discourse entails the narratives that position the salmon production as an efficient source of animal protein with high nutritional value. Feed conversion ratio and carbon footprint are the main indicators whereby the salmon production is deemed more efficient, in comparison with cattle and chicken production (Global Salmon Initiative n.d.). In addition, high contents of Omega-3 enrich the narrative around nutritional value, and its benefits for human health (Salmon Chile n.d.).

Driven by the Global Salmon Initiative (GSI), a joint venture by leading CEOs of salmon production companies from around the world, launched in 2013, and with almost half of its members operating in Chile, salmon producers aim to fulfill the increasing global demand of food and protein, while at the same time contribute to maintaining both wild fish stocks and marine biodiversity (Global Salmon Initiative n.d.). For example, one of the GSI representative argue that by farming salmon “we take part of the solution and we take our rightful place in food security” (Field notes, GSI 2018).

The *sustainable protein* discourse finds support in global discourses. Food security, protein nutrition and blue discourses are conveyed as a hegemonic set of meanings, through which the growth of salmon aquaculture is being legitimized (Nahuelhual et al. 2019). On the ground, the *sustainable protein* discourse can be related to the increasing number of Aquaculture Stewardship Council's (ASC) certifications that members of the GSI are committed to achieve (Global Salmon Initiative n.d.). According to one of the interviewees, the ISAV crisis urged firms to undergo certification processes (Int_4.12). For example, ASC certifications are supported by WWF Chile (Int_4.10). Currently, there are 70 certified farms of Atlantic salmon in Chile (Aquaculture Stewardship Council 2020).

4.4.3 "The Promise of Patagonia" discourse

The economic effects of the ISAV crisis and the need for harvesting smaller sized salmon during the virus outbreak, forced the industry to seek new markets (Asche et al. 2018). Thus, Brazil became a new destination for salmon from Chile. Further, by 2013, the Chilean exports to the US market were re-established (Little et al. 2015). In 2019, the Chilean Salmon Marketing Council launched a marketing campaign called *The Promise of Patagonia*, to strengthen the reputation of Chilean salmon in the United States. By making use of metaphors referring to the landscape aesthetics, environmental quality and wilderness of Patagonia, this discourse relates the pure and pristine waters to the salmon reared in Patagonia, which is brought to the American consumers. The salmon from Patagonia promises "a conscious and sustainable collaboration between nature and nurture" (Chilean Salmon Marketing Council n.d.).

Through this discourse, salmon producers associated with SalmonChile, a trade group representing Chile's salmon industry, have committed to produce high quality and healthy salmon, to preserve pristine territory and support local communities, to ensure fish welfare, to use the highest processing standards and to assure the availability of salmon year-round (Chilean Salmon Marketing Council n.d.).

On a practical level, this discourse has been linked to the efforts of reducing the use of antibiotics in the Chilean salmon industry. In a strategic alliance, SalmonChile, the Salmon Marketing Council and the Monterey Bay Aquarium elaborated the Chilean Salmon Antibiotic Reduction Program (CSARP). By 2025, this program aims to reduce the use of antibiotics by 50% (White 2019). The ultimate goal is to become a 'good alternative' within the classification of the Monterey Bay Aquarium's Seafood Watch program. Currently, the Seafood Watch ranking recommends to 'avoid' Atlantic salmon from Chile (Seafood Watch Program n.d.).

4.4.4 The local (un)willing acceptance

On a local level, acceptance and resignation sentiments enmesh with local indigenous opposition toward the increasing use of maritime space by the salmon farming activity, along with the insufficient enforcement of environmental regulations. In the case of Las Guaitecas municipality, interviewees acknowledge the benefits they have received since the industry began. The increase of air and maritime connectivity, and the emergence of direct and indirect jobs, have boosted the local economy. One of the interviewees recalls: “at that time (prior the ISAV crisis), working in a *salmonera* meant a permanent salary. It was a booming business” (Int_4.18). In parallel, the environmental effects are acknowledged as well. Images of an unnatural fatty, pinkish and rotten salmon are depicted by the respondents when answering the questions about the ISAV crisis and its local effects. Further, indigenous communities amid litigation over the maritime space, have argued that the ‘Lafkenche law’ (i.e. Marine Coastal Spaces of the Ethnic Populations), is the only legal instrument that can limit the southward expansion of salmon aquaculture (Int_4.19). Nevertheless, the indigenous community Pu Wapi, located in Las Guaitecas municipality, has brought to court their claims over maritime space, with no success yet (Carrere 2019).

Further south, interviewees in Puerto Cisnes draw attention to the fact that after the ISAV crisis “there is no certainty that this industry is sustainable” (Int_4.21). “The ISAV crisis was a disaster, in economic terms. There were no jobs, and hostels were empty. Part of the population had a very bad time” (Int_4.23). Currently, the local community is more focused on developing tourism activities, while a few remain employed by salmon firms. Meanwhile, the local perception about the environmental impacts of salmon farming still persists, expressed in the following quote: “the environmental damage is tremendous, only when the farms are under fallowing, it seems that the *huiro* (Giant kelp) recovers a bit, that it can breathe again, but after that, everything is almost gone again” (Int_4.23).

From another stance, by 2014, labor union leaders claimed that “the industry did not learn anything about the ISAV crisis” (Areyuna 2014). Labor conditions, such as low wage, safety at work and low standard subcontracts, did not improve alongside the industry recovery. To date, the same issues remain in the industry’s agenda (Faundez 2020).

4.5 Discussion

According to Ibieta et al. (2012), the Chilean salmon industry emerged as a mature cluster, emphasizing the regional economy (primarily in the Los Lagos region) and the

integration with global markets. Later on, the industry renewal (post ISAV crisis) was built on a stronger public-private coordination, with the support of the financial sector and the creation of new laws and regulations (Alvial et al. 2012). However, the question whether the salmon aquaculture is still developing as a cluster, or as an enclave economy remains debatable (Bustos-Gallardo 2017). Either way, the salmon farming activity represents nowadays one of the main development discourses of the Aysén region and one of the most prominent drivers of socio-spatial transformations in the coastal areas of southern Chile. The discursive reproduction finds synergies in the assumptions of economic growth and development, employment creation, quality product from Patagonia and world salmon producer; which are underpinned by national development guidelines (Bachmann-Vargas and van Koppen 2020). In this context, this research has attempted to capture the main discourses through which Chilean salmon aquaculture is currently being re-framed in the aftermath of the ISAV crisis.

4.5.1 Re-framing and coexisting

While the discourses have been reconstructed with a focus on the Aysén region, general considerations may be applicable to the other Chilean administrative regions where the salmon farming activity takes place.

The ISAV crisis prompted a series of discursive and practical changes, from a phase of economic imperative preceded by a social-ecological silence (Barton and Fløysand 2010), to a new phase, where biosecurity measures are shaping the way the salmon aquaculture is being developed. The *biosecurity* discourse is the most prominent one. Driven by a series of consecutive policy changes, the *biosecurity* discourse disrupted the so-called 'Far West austral', which until the ISAV crisis dominated the industry culture. The *biosecurity* discourse, which has not been exempted from debate between salmon firms and regulatory agencies, continuous to legitimize new regulations, thus assuring the sanitary conditions required by the global market and making the salmon farming a highly competitive industrial sector, in constant adaptation. To date, the *barrios* system and the estimation of salmon farming densities remain the key innovations that reorganized production practices. Thus, biosecurity became a new bargaining chip in salmon aquaculture risk politics (cf. Oosterveer 2002). It is to be expected that further technological innovations, such as closed net-pens or off-shore aquaculture may trigger a discursive shift toward more sustainable production practices, meaning a reduction of the environmental impacts at sea. However, as Fløysand and Jakobsen (2017) indicate, the industry does not only need a technological change, a 'cognitive renewal' is also required.

From another stance, and complementary with what Fløysand and Jakobsen (2017) labeled as the global demand narrative, the *sustainable protein* discourse portrays a carbon efficient animal protein that should fulfill the global demand of food and nutritional value. The *sustainable protein* discourse positions the national salmon production as an accountable sector within global food nutrition, hence justifying the local expansion for a greater benefit, which takes place far away in the remote fjords of Patagonia. Though this discourse might not have been directly emerged as a consequence of the ISAV crisis, it is after the crisis when the reproduction of ideas of sustainable protein found fertile ground, along with the implementation of ASC certifications.

On a national level, ideas about sustainable protein from farmed salmon have gained relevance on a discursive dimension, rather than on a practical one. According to Nahuelhual et al. (2019), Chilean salmon aquaculture has neither contributed to improve the diet of national consumers, nor has it reduced the overexploitation of wild fisheries. On one side, the domestic salmon consumption is very low, 1.5 kg per person per year, and on the other side 70% of wild fisheries are overexploited (Nahuelhual et al. 2019). High retail prices of farmed salmon have hindered the access of domestic consumers. In addition, policy incentives have primarily focused on seafood exports (Nahuelhual et al. 2019).

The Promise of Patagonia discourse, brought forward as a marketing campaign that capitalizes on the image of iconic landscapes of Patagonia, applies similar rhetorical elements to those used as an argument for the green profile of New Zealand salmon production (Fløysand et al. 2016). Accordingly, *The Promise of Patagonia* discourse is rebranding the local nature, as an iconic image, and as an integral resource for the development of the salmon aquaculture. *The Promise of Patagonia* discourse attempts to convince the consumers, that salmon reared in Patagonia is synonymous with environmental quality, but it is still debatable how the industry aims to commit to “preserving the pristine territory... of our homeland, the Chilean Patagonia” (Chilean Salmon Marketing Council n.d.). In recent years, several mismanagement practices have tarnished the efforts of the salmon industry in Patagonian waters. To name a few, a sinking well-boat, an industrial painting spill, massive salmon escapes and work accidents, have questioned the Social License to Operate (cf. Voyer and van Leeuwen 2019). In this respect, one of the respondents referred to: “there is still a lot to do, and one of the main topics is the social license, the acceptance of the industry by the communities. This topic is one of the fundamental reasons why the industry has neither been able to grow, nor has it been able to be successful” (Int_4.10).

While on the ground *The Promise of Patagonia* discourse may be unknown, Patagonian residents express mixed feelings and an *(un)willing acceptance* toward the fluctuations of the industry, or as Saavedra et al. (2016: p. 90) state “an ambivalent, discursive division”.

The authors indicate, that such ‘ambivalence’ is expressed through local concerns that have to weigh their opportunities for employment vs. the environmental impacts of the salmon farming activity, while labor conditions remain a key public discussion.

The ISAV crisis left an indelible mark on coastal communities. The local development argument that underpinned the rapid expansion prior the ISAV crisis does no longer have the same impact. An increasing opposition has confronted the southward expansion of the salmon farming activities, foregrounding the discussion over marine spatial planning, and the conflicts between salmon farming areas, indigenous communities’ maritime space and nature protected areas. In addition, artisanal fishers located in Melinka for example, remain occupied with other urgent matters, such as the sea urchin extraction quota (Saavedra 2012).

Findings based on the Aysén region, indicate a (tense) coexistence between the local discourse toward the salmon farming activity and the discourses that are re-framing the salmon aquaculture. Despite the local effects of the ISAV crisis, the local discourse seems to have very little influence on how the salmon farming activity is being re-framed in the Aysén region.

4.5.2 Legitimizing expansion

Resembling the cowboy economy model (Ayres 1998), salmon farming in Chile has enjoyed until now the seemingly infinite maritime space of Patagonian fjords and channels. The southward expansion of the salmon activity, induced by the poor sanitary conditions that triggered the ISAV crisis in the Los Lagos region, affected the maritime spaces of the Aysén and the Magallanes regions (Dresdner et al. 2017). In this context, discourses described in this research mirror the legitimization of the salmon aquaculture expansion. The legitimization to growth is being materialized through the improvement of sanitary conditions, the justification of the sustainable protein production on a global scale and the promotion of the American market by compromising to reduce the use of antibiotics. Consistent with the rhetoric of blue growth, these three particular discourses may work in synergy, but in disconnection with what the local discourse conveys toward the marine ecosystems wherein the salmon farming activity is embedded (cf. Bogadóttir 2020).

In a recent turn, in March 2020, the Under-Secretariat for Fisheries and Aquaculture issued a decree indicating that the areas formerly designated as areas for aquaculture in the Aysén region, are no longer available for new maritime concessions. Only relocations will be processed (Subpesca 2020c). In this scenario, spatial restrictions may become the main limiting factor for salmon aquaculture (Asche et al. 2013a). Hence, the need for more efficient management strategies in the future.

4.5.3 The absence of integrated ecosystem-related elements

Prior the ISAV crisis, salmon farmers were looking at the main fjords in the Aysén region as sites of production for the market, rather than as complex marine ecosystems (Delgado et al. 2008). To date, despite the multiple social-ecological effects of the ISAV crisis and the fact that salmon farming depends on certain environmental conditions, the discourses that are re-framing salmon aquaculture do not incorporate integrated marine ecosystem-related elements. One reason might be that biosecurity measures and the creation of the group of salmonid concessions (*barrios*), were not created based on ecosystem criteria, and according to Iizuka and Katz (2015), *barrios* are being implemented on a trial and error basis. By contrast, the local discourse manifests an intertwined social-ecological relationship. The key environmental elements in the discourses, i.e. the oxygen concentration in the sediments, the carbon footprint of salmon production and the image of idyllic Patagonian landscapes are not part of an integrated perspective. The discourses thereby reduce the environmental condition of marine ecosystems to a few indicators, representing a part of the production function and overlooking the social-ecological complexity that challenges the salmon production at sea.

In this respect, the national aquaculture authority has recently acknowledged the relationship that ecosystem-based management and One Health principles should bring into salmon aquaculture (Gallardo 2019). In addition, the scientific community has proposed a series of ecosystem indicators for salmon production (Soto et al. 2020), yet their implementation remains a pending task.

To date, Chilean salmon farming policies are still removed from meeting the ASC environmental standards, while Norwegian regulations are the closest match to the ASC requirements in environmental sustainability (Luthman et al. 2019). This contrast indicates how differences in socioeconomic development standards shape global salmon aquaculture production, and therefore their potential to influence the emergence of environmental discourses within the salmon industry.

4.5.4 Times of crises and uncertainties

At the time of writing, the COVID-19 crisis has brought back the memories of the ISAV effects both in the aquaculture industry and in the coastal communities. As an unexpected outcome, lab capacities installed back in 2007 to deal with the ISAV outbreak, are nowadays providing PCR tests for COVID-19 (Alvial 2020). Both crises, have exposed the social inequalities and the uncertainties that shocking events cause in vulnerable socio-political systems. Even more, both crises are related to ecosystem

components, and remind us once again of the importance of science-based policy making.

In Chile, recent crises have triggered the emergence of social uprisings, as means of protest against the state's failure in handling social inequalities and the detrimental environmental effects of some industrial activities. To date, social uprisings caused by ecosystem-related phenomena, such as the ISAV crisis, and later on by the massive harmful algal bloom that affected salmon aquaculture as well as artisanal fisheries in 2016 (Armijo et al. 2020), had little impact on how the salmon aquaculture sector is conceptualizing its relation with marine social-ecological systems. Instead, biosecurity became the main discourse informing policies on animal disease risks. In light of complex and uncertain events, risk management, based on multi-level and multi-actor perspectives (McDaniels et al. 2006), should complement the biosecurity efforts that are currently shaping the way forward for salmon aquaculture in Chile. Further research on the discursive effects of consecutive crises around salmon farming production and marine social-ecological systems would certainly provide valuable insights on how the industry, the policy sector as well as local communities continue to re-frame the future of the salmon production in southern Chile.

4.6 Conclusion

This research has identified three discourses that signal a re-framing in salmon aquaculture in the aftermath of the ISAV crisis in Chile, namely: *biosecurity*, *sustainable protein*, and *The Promise of Patagonia*. These discourses, and the practices they refer to, coexist with the local *(un)willing acceptance* discourse. While the *biosecurity* discourse entails significant policy changes, the *sustainable protein* and *The Promise of Patagonia* discourses focus on changes within the business sector. The latter two are influenced by global blue discourses and the US market respectively. The local discourse has contested views toward the salmon aquaculture expansion, with little discursive power in the Aysén region.

The paper concludes that despite the staggering effects of the ISAV crisis on the national salmon production and on coastal communities more than a decade ago, new discourses are focused on the legitimization of growth, while integrated marine ecosystem-related elements remain absent. This absence denotes a crucial gap toward environmental sustainability in salmon aquaculture.

This research suggests that if the public and private sectors aim to anticipate new critical episodes and advance toward sustainable salmon aquaculture, technology development

as well as elements of common public good and ecosystem-based management should become central discourses in the discussion of the future of the salmon industry in Chile.

Chapter 5

Protecting wilderness or cultural and natural heritage? An analysis of environmental discourses in Northern Patagonia, Chile

This chapter has been submitted on 22 June 2021, as:

Bachmann-Vargas, P., van Koppen C.S.A., Lamers, M. Protecting wilderness or cultural and natural heritage? An analysis of environmental discourses in Northern Patagonia, Chile. *Conservation & Society*.



National Park Laguna San Rafael

Abstract

Protecting 30% of the planet's terrestrial and marine ecosystems by 2030 (30x30), is the most recent call for global conservation action. To do so, protected areas are a central strategy. Fifty countries in the world have committed to this global goal, including Chile. Against this backdrop, this article aims to understand current protected area developments in Northern Patagonia, Chile. Using the environmental discourses of Northern Patagonia as a conceptual framework, this research analyzes the interplay between environmental discourses and nature conservation practices, specifically by looking at the protection of the wilderness and the cultural and natural heritage. We compare the narratives guiding the creation of various protected areas, and the current management approaches and livelihoods practices associated to those areas. The discussion addresses the rewilding and the rebranding of Patagonia and reflects on the implications of our findings for further developments in Patagonia and for the global conservation debate. We contend that the future of protected area management in Northern Patagonia will depend on how community-based management initiatives are fostered, by bringing to the fore the sense of attachment and the cultural heritage that has historically transformed the Patagonian landscapes.

Keywords: nature conservation, 30x30 target, rewilding, livelihood, gateway communities, Aysén.

5.1 Introduction

Recent calls by conservationists worldwide are asking for ‘30x30’: a global conservation target protecting 30% of the planet’s terrestrial and marine ecosystems by 2030 (Campaign for Nature 2021). This global call means moving beyond the CBD Aichi biodiversity Target 11 set in 2011, which aimed at protecting “at least 17% of terrestrial and inland water, and 10% of coastal and marine areas” by 2020 (Woodley et al. 2019: p. 20), and wherein effective and equitable management should have been developed (Woodley et al. 2019).

Protected areas have been for a long time a flagship expression of the mainstream conservation discourse worldwide (West et al. 2006, Büscher and Fletcher 2019). Creating new protected areas or expanding existing ones represent a central strategy within the global conservation ambition. Recently, proponents of the 30x30 target have claimed that the financial and non-monetary benefits of increasing the coverage of protected areas toward the 30% target would outweigh the costs by a factor of at least 5:1 (Campaign for Nature 2020, Waldron et al. 2020). However, a series of concerns have emerged in relation to the effects of the expansion of protected areas on indigenous people and local communities worldwide (Agrawal et al. 2021). Moreover, critics have associated the protected areas approach with land grabbing, conservation by dispossession and ‘fortress’ conservation, claiming that it has damaged the efforts of biodiversity conservation (e.g. Holmes 2015, Louder and Bosak 2019).

According to Adams (2020), the spatial expression of conservation ambitions is still growing, and conservation ideals continue to be underpinned by imaginaries of pristine and wild nature, along with recent ideas of rewilding, private conservation and the securitization of protected areas (Adams 2020). In this regard, conservation imaginaries keep on putting pressure on cultural landscapes with multiple-use purposes, resulting in new ideas on land management and in new ways in which local nature is perceived.

For instance, the initiative called the ‘last of the wild’ is a proactive approach to protect wilderness areas that have very low human influence (Promis et al. 2019). By means of global ideas of ‘what’s left to protect’, formerly peripheral remote places have been transformed into global conservation spots (Inostroza et al. 2016); attracting increasing global demand for nature-based tourism experiences. Nature conservation developments in Patagonia, Chile, have also been subject to this criticism (Holmes 2014, Inostroza et al. 2016).

Even when it represents just a small surface within ‘what’s left to protect’ on a global scale (Watson et al. 2018), Chilean Patagonia is a case in point in this intensified

protection debate. It has historically faced a series of socio-spatial transformations driven by development and environmental ideas. From a development point of view, Chilean Patagonia, and specifically Northern Patagonia transitioned from extensive livestock ranching in the early twentieth century, to small-scale agriculture, nature-based tourism and industrial salmon aquaculture. From an environmental perspective, cultural and natural heritage associated to the rugged terrains and the livestock farming traditions are being replaced with renovated meanings of pristine and wild nature (Aliste et al. 2018), along with the creation of new protected areas.

Taking Northern Patagonia as its focal region, this article sets out to explore how the conservation and development debates are playing out at the local level. In doing so, it aims to shed more light on the global conservation debate, as well as to contribute to socially and environmentally sustainable local development. Using the environmental discourses of Northern Patagonia as a conceptual framework, this research is guided by the following question: what is the interplay between environmental discourses and nature conservation practices? We will answer this question by specifically looking at the protection of wilderness and the protection of the cultural and natural heritage. The findings compare the narratives guiding the creation of Patagonian protected areas, the current management approaches, and livelihoods practices associated to those areas. The discussion addresses the rewilding and the rebranding of Patagonia and reflects on the implications of our findings for further developments in Patagonia and for the global conservation debate aforementioned. The paper closes with conclusions.

5.1.1 Environmental discourses in Northern Patagonia

Discourses, or in more general terms shared sets of ideas that make sense of a certain phenomenon, are “produced and reproduced through an identifiable set of practices” (Hajer and Versteeg 2005: p. 175). According to this definition, ideas not only exist as desired or imagined actions; they are implemented through concrete acts or practices. Consequently, practices reinforce the reproduction of discourses (van der Hoff et al. 2015).

Along these lines, recent research has identified *Patagonian wilderness* and *cultural and natural heritage*, as the predominant environmental discourses in Northern Patagonia (Bachmann-Vargas and van Koppen 2020), and their regional characteristics may be considered a reflection of contemporary global debates on nature conservation. While the *Patagonian wilderness* discourse conceptualizes local nature as the last wild place in the world which must be protected, the *cultural and natural heritage* discourse emphasizes the co-existence of culture and nature, and the need for value creation based on the local heritage.

The *Patagonian wilderness* discourse owes its reproduction in great extent to the highly influential work of Tompkins Conservation. Tompkins Conservation is a non-profit organization, co-founded by the American environmental philanthropists Douglas Tompkins (1943-2015), and his wife Kristine Tompkins. Over the past thirty years, Tompkins Conservation has carried out extensive work on nature protection throughout southern Chile and Argentina, setting a precedent for private as well as public conservation, by creating protected areas and implementing rewilding programs (Busscher et al. 2018, Hora 2018). In 2017, as part of a broader conservation strategy, Tompkins Conservation signed a cooperation agreement with the Chilean government aiming to create new national parks in Patagonia, to enlarge the surface of three other parks, to reclassify national reserves as national parks and to create the Route of Parks of Patagonia (Ministerio del Medio Ambiente 2017a). Launched in 2018, the Route of Parks is “a vision of economic development based on conservation and ecologically-minded tourism” (Tompkins Conservation 2021). Inspired by the ‘last of the wild’ (Promis et al. 2019), the route envisions the Patagonian territory (from Puerto Montt to Cape Horn, Figure 7) as a network of 17 national parks encompassing 60 local communities, wherein tourism should be developed as a key economic sector enabling these local communities to build livelihoods in line with nature conservation objectives.

Contrastingly, the *cultural and natural heritage* discourse aims to represent the local efforts toward an integrated valuation of cultural as well as natural aspects of Northern Patagonia. This discourse emphasizes that Northern Patagonian is not only about natural attractions, it is also about people, culture and traditions (Bachmann-Vargas and van Koppen 2020). Aysén’s cultural heritage, is acknowledged for the courage and the strength that the colonists - the pioneers - had during the (modern) colonization period, surviving and cultivating a very hostile natural environment. The pioneers’ heritage is still shaping mostly the rural life, where the handling of nature reaffirms the peasant (Gaicho) and Patagonian identity (Bachmann-Vargas and van Koppen 2020). It is worth noting here that the handling of nature that took place in the past signified an intense landscape transformation, which is visible until the present day. For example, in the early twentieth century, forests were seen as an obstacle (Yarrow and Torres 2009) and large extensions of native forest were set on fire to prepare the land for ranching. To date, fire is no longer used to clear the land, and small-scale agriculture persists amid the rural transition driven by nature-based tourism (Blair et al. 2019). Hence, cultural manifestations, such as the traditional lamb barbecues and the horse taming shows, are attracting tourists nowadays. Meanwhile, folk music finds inspiration in family traditions, such as cattle branding, and also has served as an expression of resistance amidst environmental conflicts (Yañez and Valenzuela 2014).

5.2 Study area and methods

5.2.1 Protected areas in Northern Patagonia

This research is set in Northern Patagonia, Chile. Northern Patagonia, falls within the administrative region of Aysén, which is the third largest and the least populated of Chile's 16 administrative regions. With a population of 103,158 residents in 2017 and a population density of almost 0.9 inhabitants per km² (INE 2017), Aysén holds around 52 land areas under some sort of protection (see supplementary information, Appendix 5), representing more than 50% of the regional surface. Protected areas are primarily administrated by the National Forest Corporation (CONAF), under the National System of Protected Areas (SNASPE). However, other agencies, such as the Regional Secretariat of Environment, the National Monuments Council and the Ministry of National Assets also have authority over some protected areas.

Out of the total number of protected areas located in the Aysén region, five areas were selected to analyze their relationship with the environmental discourses. Selected areas are composed of three national parks (NP), one multiple-use marine protected area (Spanish acronym AMCP-MU: Area Marina Costera Protegida de Múltiples Usos) and one nature sanctuary (NS). These areas are NP Cerro Castillo, NP Patagonia, NP Laguna San Rafael, AMCP-MU Pitipalena-Añihué and NS Capilla de Mármol (Figure 7). These areas were selected based on the range of conservation objectives and the local opportunities they provide. For example, NP Cerro Castillo and NP Patagonia have important fauna components within their conservation objectives, while NP Laguna San Rafael focuses on glacier protection. Conservation objectives of the NS Capilla de Mármol are based on its aesthetic value, whereas AMCP-MU Pitipalena-Añihué focuses on aquatic ecosystems and local uses. The local influence of the selected protected areas is mostly based on nature-based tourism opportunities. In addition, access to secondary information and the possibility to contact local informants related to each protected area were taken into account for the selection. While five areas represent a small sample, we believe this selection offers a representative overview of protected areas in relation to the current environmental discourses in Northern Patagonia.

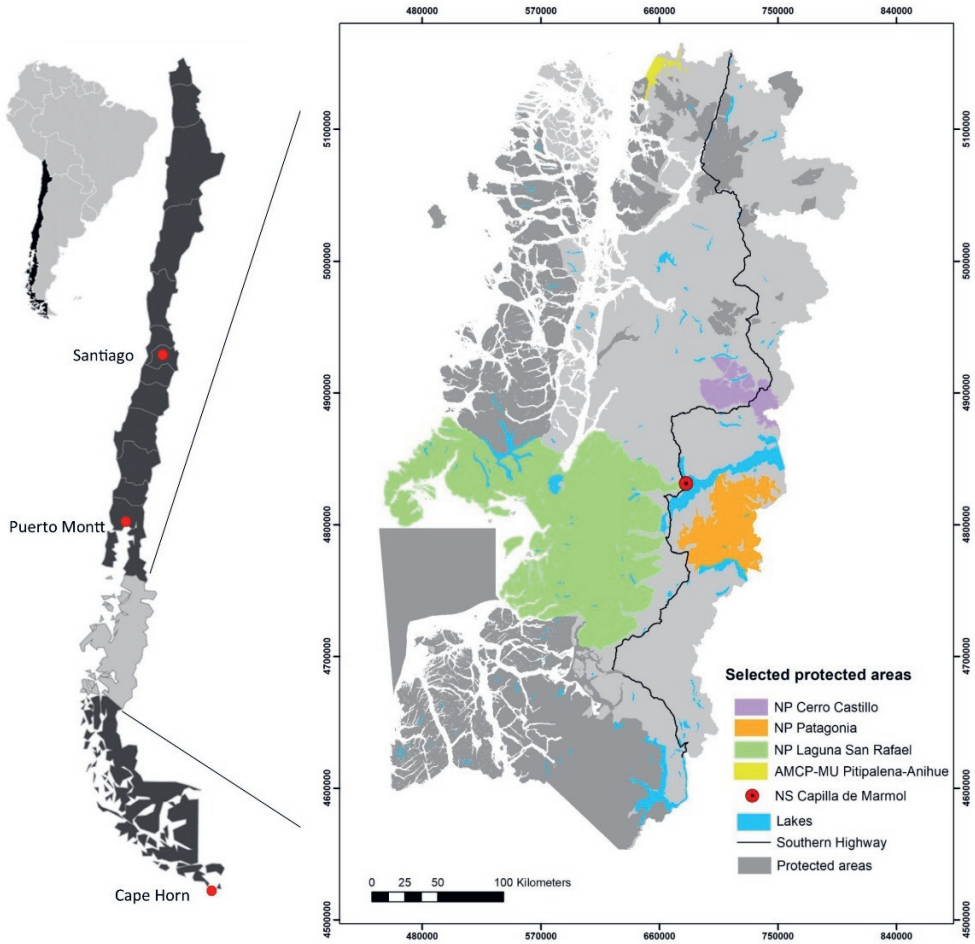


Figure 7: Protected areas in the Aysén region, Northern Patagonia.

NP: National Park; AMCP-MU: Multiple use marine protected area, NS: Nature Sanctuary. Smaller areas such as protected national assets (BNP) and priority biodiversity sites are not shown in the map. (Map own elaboration based on data set publicly available at National Catalogue of Geospatial Information-IDE Chile and at National Register of Protected Areas, Ministry of Environment, WGS 84/UTM zone 18S).

5.2.2 Research methods

This research draws upon a combination of secondary sources in the form of technical reports, scientific articles and online sources, supplemented with six semi-structured interviews related to the selected protected areas, which were mostly used to fill in

information gaps in the available secondary sources; one was conducted face-to-face, the other five online. In addition, we built on the experience of the first author in doing research in the Aysén region, including several visits to the selected protected areas. Complementary (online) interviews were conducted between July and August 2020 (Appendix 6). Respondents gave their consent to audio-record the interviews, which were subsequently transcribed. Interviewees were selected according to their role in relation to the protected area management, private conservation, local use and scientific research (Table 5). Since the interviews took place amidst the COVID-19 pandemic, we could only communicate with respondents that were available online. On the positive side, online communication allowed to conduct research within a range of 1,000 km, which otherwise would have been impossible for time and budget reasons.

Table 5: Primary and secondary information sources.

Selected protected areas/Other	Secondary sources	Primary sources: Interviewees
NP Cerro Castillo	(CONAF 2009, CONAF-CIEP 2017a, Gale et al. 2018, Blair et al. 2019)	Park administrator
NP Laguna San Rafael	(Moreira-Muñoz et al. 2014, CONAF-CIEP 2017b, CONAF-EULA 2018)	President of tour operators association
NP Patagonia	(Bantle 2010, Jones 2012, Serenari et al. 2015, Louder and Bosak 2019)	-
AMCP-MU Pitipalena-Añihué	(Araos 2018, Seremi del Medio Ambiente región de Aysén 2019)	Executive director Pitipalena-Añihué Foundation
NS Capilla de Mármol	(Ministerio de Educación 1994, Bachmann-Vargas et al. 2021)	Tour operator
Route of Parks of Patagonia (Tompkins Conservation)	(Promis et al. 2019, Zorondo-Rodríguez et al. 2019)	Program director
Austral Patagonia Program (Universidad Austral de Chile)	(Sepúlveda et al. 2019)	Executive director

A total of 17 documents were compiled and analyzed along with interview transcripts. Interview transcripts were indexed anonymously, by adding an identification code and a consecutive number (i.e. Int_1). With the aid of the Atlas.ti software and following an inductive approach, textual material was codified based on an open coding strategy, whereby three elements emerged as key links between protected areas and environmental discourses, namely: creation of protected areas, management approaches and livelihood practices. The following section presents the findings in relation to each of the selected protected areas.

5.3 Results

5.3.1 National Park Cerro Castillo

Created in 1970 as a national reserve, Cerro Castillo was reclassified in 2017 as a national park. The creation of the former National Reserve Cerro Castillo can be attributed to the two ideas that dominated the period between 1925 to 1979 in Chilean conservation policies. First, landscape aesthetics were considered a resource for tourism, hence the need to create protected areas. Second, the Chilean government saw the territorialization of protected areas as a geopolitical instrument with particular relevance in remote areas (García and Mulrennan 2020). By contrast, the upgrading to a national park was mainly due to the influential work of non-state actors, who shaped a private conservation trend with ideas of the wilderness along with initiatives to return formerly private-owned land to the state (García and Mulrennan 2020).

The ecological and landscape features of the park are dominated by the presence of *huemules* (South Andean deer) and by the castle-shaped mountain peaks, which have made the NP Cerro Castillo a mandatory destination for trekking activities. The park is projected to become one of the main protected areas in the Aysén region, based on nature-based tourism development (Blair et al. 2019). The park is surrounded by six villages, Villa Cerro Castillo being the closest one. NP Cerro Castillo is part of the Route of Parks of Patagonia (Promis et al. 2019).

Currently, the public use of the NP Cerro Castillo is mainly managed through concessions. Concessions are a tourism management instrument within state-run protected areas, that aims to “contribute to improving the quantity and quality of tourism services within the SNASPE, through promoting and attracting investment (infrastructure, equipment and services) and management capacities (knowledge, entrepreneurship and know-how) from third parties” (CONAF 2007: p. 7). In this respect, the representative of NP Cerro Castillo points out that:

“today, we are a National Park...we had to implement tourism concessions, which is a form of productive relation with the neighboring communities, because all our concessions are local. Though we have had bigger (tourism) proposals, it is not our vision to become a business center either nationally or internationally; what we want is to foster the local communities, so we are working hard on that” (Int_5.5).

According to the interviewee, there are contradictions between the aims for the protected areas at the national level, through the Undersecretariat of Tourism, and the aims at the regional level. For instance, NP Cerro Castillo has been prioritized on a national level,

based on its tourist potential, for further investment (Ministerio de Economía 2012). However, the park's representative indicates that "it was a centralized decision, no one was consulted. The (Aysén) region did not propose the protected area to be prioritized...it did not seem correct to us, that there was no consultation" (Int_5.5). To date, NP Cerro Castillo works on the basis of three concessions granted to local providers through public tender, namely: Laguna Chiguay (camping services), Las Horquetas trail (maintenance and basic infrastructure) and Mirador Laguna Castillo trail (maintenance and basic infrastructure).

Further, incipient co-management efforts are taking place around the NP Cerro Castillo. Drawing upon the public use management plan (CONAF-CIEP 2017a), the current park administration is aiming "to generate a governance mechanism with the local communities" (Int_5.5). Thus, in 2019 the local tourism council of Villa Cerro Castillo was created, congregating 14 local organizations (Villarroel 2019). With the support of the national development agency (CORFO) and the Universidad Austral, the local tourism council aims to co-administrate the public use management plan of the park (Int_5.5), seeking to generate a working relationship between the community and the park, and pursuing to foster a sense of attachment and tourism opportunities around the NP Cerro Castillo. Lately, NP Cerro Castillo has been included as one of the two national parks selected to undergo, for the first time in Chile, the IUCN Green List of protected and conserved areas standard (IUCN 2021).

Meanwhile, livelihood practices associated to NP Cerro Castillo are mainly based on providing tourism services. Other livelihood practices such as summer grazing (*veranadas*), horse riding, and logging are not allowed within national parks.

5.3.2 National Park Patagonia

Driven by the ideas of saving the wilderness at the end of the world, and supported by the collaboration between environmental philanthropy initiatives and the Chilean government, the creation of the NP Patagonia represents the culmination of a contested process, that involved the mutation of a number of symbolic meanings attached to the land. In 2004, Tompkins Conservation (formerly called Conservación Patagónica) purchased the Estancia Valle Chacabuco, a large ranch located in the surroundings of Cochrane, a small city whose main economic activity used to be sheep farming in the terrains of the Chacabuco valley (Bantle 2010). Historically, the Valle Chacabuco embodied the symbolic ascriptions that identify the Gaucho (peasant) culture, as well as the land tenure changes driven by the national agrarian reform and the subsequent counter-reforms, including its sale in public auction (Louder and Bosak 2019). With the acquisition by Tompkins Conservation, the Estancia Valle Chacabuco became the Patagonia Park. Thus, what used to be considered a productive land for cattle raising,

became a valley rich in biodiversity and landscape aesthetics that should be protected from overgrazing. This ‘rebranding’ did not gain many local adepts, but rather triggered local discontent, thus revealing the two sides of the ‘Patagonian pride’ (Bantle 2010). On one side, saving the wild at the end of the world is a source of pride for environmental organizations. On the other side, local residents expressed their concerns about how their pride in local traditions related to lamb production and consumption was being dismissed by new ideas about land management and nature conservation, imposed by the foreigners (Louder and Bosak 2019).

In April 2019, Tompkins Conservation donated the Patagonia Park to the state of Chile in order to create the National Park Patagonia (CONAF 2019), in combination with two former national reserves, Lago Jeinimeni and Lago Cochrane. The park protects ecosystems such as Patagonian steppe, deciduous forest, wetlands and high mountain peaks, with important fauna components such as *huemules*, *guanacos* and *pumas*. To date, the NP Patagonia is administrated by CONAF and is also part of the Route of Parks of Patagonia.

Prior the donation, Tompkins Conservation had implemented a rewilding strategy in the terrains of the NP Patagonia, in a way that clearly manifests how ideas about saving the wild at the end of the world are being materialized. The rewilding aims to “protect wildlife, and, where necessary, actively reintroduce missing species...”; it “seeks to reassemble beautiful, vibrant ecosystems” (Tompkins Conservation n.d.). Since 2005, efforts have been made to monitor and restore iconic Patagonian species such as *huemul*, *puma* and *Darwin’s rhea*. One of the latest achievements, by Tompkins Conservation along with CONAF, has been the release of 14 Darwin’s rhea specimen in May 2020 (National Geographic 2020), resulting in a hatching season with six new chicks in November 2020 (Vega 2020). To date, the goal is to increase the population of Darwin’s rhea in the NP Patagonia by at least 30% (UNEP 2019).

In a recent TED Conference called “Let’s make the world wild again” (Tompkins 2020), Kristine Tompkins emphasizes that: “the first step in rewilding is to be able to imagine that it’s possible in the first place”. In her talk she explains:

“for a century, this land had been overgrazed by livestock...Soil erosion was rampant, hundreds of miles of fencing kept wildlife and its flow corralled. And that was with the little wildlife that was left. The local mountain lions and foxes had been persecuted for decades, leaving their numbers very low. Today, those lands are the 763,000-acre Patagonian National Park... and Arcelio, the former gaucho, whose job was to first find and kill mountain lions in the years past, today is the head tracker for the park’s wildlife team, and his story captures the imagination of people around the world. What is possible”.

In April 2020 Tompkins Conservation signed a cooperation agreement with CONAF, with the aim to create a biological corridor for *huemules* through the NP Cerro Castillo and the adjacent lands owned by the environmental organization (Tompkins Conservation 2020). Since the acquisition by Tompkins Conservation, traditional livelihood practices such as *veranadas* (summer grazing) have been excluded from the terrains of the NP Patagonia.

5.3.3 National Park Laguna San Rafael

The NP Laguna San Rafael was created in 1959 as part of the SNASPE, and in 1979 it was designated as Biosphere Reserve (Moreira-Muñoz et al. 2014, CONAF-EULA 2018). Its creation responded to the same arguments that drove the creation of the NP Cerro Castillo: landscape aesthetics for tourism development and geopolitical interests in remote areas (García and Mulrennan 2020).

The park covers a vast extension of terrestrial and marine areas, and protects the entire extension of the Northern Icefields, one of the most important continental freshwater reservoirs in the world (Moreira-Muñoz et al. 2014). Tourist visitation is increasing, mainly attracted by glacier hiking tours and by the navigation to the San Rafael lagoon. With the recent opening of the Exploradores Valley road, Puerto Río Tranquilo village became one of the closest gateway communities. The NP Laguna San Rafael is also part of the Route of Parks of Patagonia (Promis et al. 2019).

Just like NP Cerro Castillo, the public use of NP Laguna San Rafael is being managed through tourism concessions. Tourist visits are concentrated in two sectors of the park: Exploradores glacier and San Rafael lagoon. In the case of Exploradores glacier, tour operators explain how the increasing visitation has transformed the tourist offer, emphasizing that “it was profitable, but not sustainable” (Int_5.2). In 2018, through a public tender, CONAF granted permit to access the Exploradores glacier to nine local tour operators based in Puerto Río Tranquilo village, who in total can bring 90 tourists per day into the park; while two tour operators have concessions in the lagoon sector. Nevertheless, tour operators claim that: “CONAF does not have any power to forbid the access. At the end, anyone can access the park, without paying, while we keep paying the permission. This discussion is stand-by for now” (Int_5.2). For instance, tour operators that approach the San Rafael lagoon from the sea and do not disembark at the park, do not pay entrance fee.

Livelihood practices associated to NP Laguna San Rafael are mostly around nature-based tours that depart from Puerto Río Tranquilo village. Ice-hiking and navigation to the San Rafael lagoon compose the tourist offer. Nevertheless, interviewees’ accounts revealed that local residents of Puerto Río Tranquilo village do not express a sense of attachment toward the area beyond tourism development (Int_5.2). Their lived

experiences and symbolic attachments correlate with the Exploradores Valley, an adjacent geomorphologic unit to the park; but not with the NP Laguna San Rafael as protected area.

5.3.4 AMCP-MU Pitipalena-Añihué (Multiple-Use Marine Protected Area)

Common ideas against the industrialization of the Patagonian fjords by the southward expansion of the salmon farming activity and the illegal fishing, motivated the local community of Raul Marin Balmaceda (ca. 200 inhabitants) to pursue the creation of the AMCP-MU Pitipalena-Añihué, wherein artisanal fishermen played a key role in its designation. With the support of the World Wildlife Fund (WWF Chile), Melimoyu Foundation and the Regional Secretariat of the Environment (Ministerio del Medio Ambiente 2015a), the local community engaged in a co-management strategy that saw its first results in 2014 with the designation of the area and later on, in 2019 with the approval of the management plan (Seremi del Medio Ambiente región de Aysén 2019). According to one of the interviewees, the creation of the protected area was not an easy process, having to navigate a complex bureaucracy, but at the end it paid off (Int_5.1). The AMCP-MU has been highlighted as a reference model in Chile (Ministerio del Medio Ambiente 2017b). In this context, the local leader explains: “there always has to be someone from the community to be willing to work for free, for this to happen. If there is no one from the community who is empowered, this does not work out” (Int_5.1). In addition, the interviewee adds that: “the different thing here is, that this management model of public-private partnership has not happened anywhere else in Chile. The community here is empowered; and we created the Foundation” (Int_5.1).

The Foundation that the interviewee refers to congregates the representatives of local organizations, such as the leader of the artisanal fishermen, the neighborhood council, and the representative of the tourism union. Through this non-profit organization, the community achieved the representation to co-manage the protected area. Thus, the Foundation became the core of the local governance model, and it is through the Foundation that the community dialogues with the environmental authority. The interviewee points out that: “we have an opinion, we always have had it. That is something to highlight about this model” (Int_5.1).

The management goals should be achieved within a period of five years, but in the meantime the respondent asserts that: “by creating the AMCP we kind of ‘upgraded’ the locality. People seek for biodiversity protection areas. There are fishermen that instead of fishing 30 bags of *Cholga* (Magellan mussel), they prefer to take tourists, and they earn the same” (Int_5.1). Another achievement has been the implementation of the multiple-use management which includes both industrial and artisanal usage; “the topic of

multiple-use is very relevant, because it has allowed us all who share the *maritorio* (maritime space) to sit at the table. Before, that would have not happened” (Int_5.1).

Based on a public-private partnership, between the local community and the environmental authority, and supported by WWF the co-management strategy is the essence of the AMCP-MU Pitipalena-Añihué. In this respect, WWF Chile representative indicates:

“there are many important milestones: to start managing this area a Foundation was created, which truly belongs to the community; next, the Regional Secretariat of Environment joined the initiative to protect the area, and finally our work and the work of other NGOs. There is a virtuous relationship, where each party contributes with their experience. This is what allows a real protection” (Ministerio del Medio Ambiente 2017b).

Based on the co-management approach, the management plan aims to tackle the threats to the conservation objectives, through four strategies: a) effective monitoring of illegal fishing; b) sustainable artisanal fisheries; c) responsible aquaculture and d) sustainable tourism (Seremi del Medio Ambiente región de Aysén 2019).

5.3.5 Nature Sanctuary Capilla de Mármol

Created in the 1990s, the NS Capilla de Mármol (also known as The Marble Caves) was considered as a national tourist attraction due its landscape aesthetics (Ministerio de Educación 1994). Fifty hectares were decreed as Sanctuary, while the boundaries remained unclear. The Marble Caves are featured as a ‘must see’ of the Aysén region (Revista Enfoque 2018). Its supervision resides in the competences of the National Monuments Council and the Regional Secretariat of Environment. Since its designation, the tourist demand has steadily increased. The marble formation surrounded by the turquoise waters of the General Carrera lake (also known as Chelenko lake), is visited everyday by local boat tour operators based in Puerto Rio Tranquilo village. Local boat tour operators have been the main actors defining the fate of the protected area. Though some regulations have been imposed by the Navy concerning navigation and tourist safety, the boat tour operators have developed an informal but self-organized management strategy, while reproducing the boat tour: a sort of adaptive, learning by doing approach (Bachmann-Vargas et al. 2021). The Marble Caves have become a key component of the local identity and economy. One of the interviewees emphasizes: “the Marble Caves are unique, and they are in Patagonia. On the contrary, glaciers are here and in many other parts of the worlds. In fact, many Europeans come with previous experience on ice climbing, but they do not have the Marble Caves” (Int_3.7). Despite the limitations on infrastructure and lack of formal knowledge on sustainable tourism

practices, the Marbles Caves boat tours provide an example of how local communities strive on a daily basis for local development driven by nature-based tourism.

5.4 Comparative analysis

In this section, we further explore the differences and similarities between the cases presented, and identify emerging tensions and trends. First, we analyze the meanings of the areas that guided their inception and development, and explore how these meanings were affected by prevailing discourses. Then we explore the interaction of these meanings with the management approaches and the livelihood practices associated to the protected areas.

Each of the protected areas in this study embodies different meanings. Since its inception, the NP Patagonia has portrayed the strongest ideas about nature conservation. Starting with an effort to protect a piece of ‘wilderness at the end of the world’ it became a large-scale conservation effort with the globally resonating label - and brand - of ‘Patagonia’. Currently, it is identified as ‘rewilding’, in line with this global trend in conservation. These meanings have certainly influenced the development of the protected area, which nowadays is under the national conservation regime. On the contrary, the NP Cerro Castillo has been shaped by geopolitical and conservation ideals, and more recently, ideas about the rewilding of Patagonia have complemented the efforts of nature conservation. Meanwhile, NP Laguna San Rafael remains mostly as a tourist destination, holding an incipient local attachment driven by the local tour operators. Its difficult access, added to the fitness requirement to participate in ice-hiking activities, along with relatively expensive day trips to the San Rafael lagoon (ca. 250 EUR p/p), may have hindered a broader local engagement with this area.

In contrast, the NS Marble Caves, was designated based on national tourism interests, but has been developed at the core of the local community. Small-scale tourism has become an integral component of the local livelihoods and local identity, thus shaping the touring practices around the nature sanctuary.

On the other hand, the designation of the AMCP-MU Pitipalena-Añihué is an example of local organization, underpinned by meanings of cultural heritage, ecosystem functions, and local livelihoods. This case entails a community-based management initiative with a greater sense of attachment and local agency.

In terms of discourses, the *Patagonian wilderness* discourse clearly prevails in the NP Patagonia, and *the cultural and natural heritage* discourse is dominant in the NS Capilla de

Mármol, and in the AMCP-MU Pitipalena-Añihué; we find influences of both in NP Cerro Castillo.

In the protected areas, the environmental discourses and their associated meanings are being reproduced by four management approaches, namely: rewilding, co-management, management through concessions and adaptive management. For example, implementing rewilding programs clearly materializes the ideas of the *Patagonian wilderness* discourse, while the co-management approach, the management through concessions and the adaptive management can be seen as different mechanisms whereby conservation objectives relate to the local use of the protected areas. Moreover, the rewilding and the co-management approaches, show how different conservation imaginaries are aiming on one side, for wilder landscapes; and on the other side, for more inclusive environmental management, among state and non-state actors.

Local livelihoods associated to protected areas are mostly based on the provisioning of tourism services, and to a lesser extent on artisanal fisheries (AMCP-MU Pitipalena-Añihué). Either way, environmental discourses converge on protected areas, driven by different motivations, finding different types of synergies and with diverse consequences for the local livelihoods. On one side, the *Patagonian wilderness* discourse aims to finance nature conservation through tourism development within national parks, through which local livelihoods should be developed as a consequence of the tourism activity. On the other side, the ideas of *cultural and natural heritage* are aiming to generate local revenues through multiple-use protected areas, which imply different livelihood practices, and wherein tourism development is seen as one of the potential uses.

Our findings also show how protected area developments affect and are affected by different actors. For instance, while powerful non-state actors such as Tompkins Conservation are promoting the wilderness ideas, other environmental NGOs, and also universities are providing technical and scientific support to assist the definition of multiple-use protected areas.

Recently, the relevance of the *gateway communities* has been acknowledged and that livelihood practices should be developed in line with protected areas throughout Patagonia (Sepúlveda et al. 2019). While traditional protected areas, such as national parks, have a limited range of activities than can be developed within their boundaries, more flexible protection instruments are aiming to couple the cultural and natural heritage dimensions. Thus, nature-based tourism and nature conservation along with local traditions can be combined within a locally managed protected area. The protection category called National Protected Asset (Bien Nacional Protegido, BNP) aims to provide a better integration between protected area management and livelihood practices; or, in other words, a community-based conservation model. One of the

respondents indicated: “this model is much more flexible, with a multiple-use model that allows to manage and balance the traditional usage like *veranadas*, along with the tourist operation and conservation goals” (Int_5.4). Lately, local residents of Puerto Río Ibáñez, located in the surroundings of NP Cerro Castillo, along with the municipality have requested to declare the mountain range, called El Avellano, as a National Protected Asset (BNP). Their aim is to “integrate the traditions of *arrieros* (i.e. mule drivers) and the strong local identity with responsible tourism practices and biodiversity conservation, thus strengthening the relationship between communities and their environment” (Solís 2020). By January 2021, the declaration of the BNP was still in process.

In sum, this comparative analysis shows how the environmental discourses, *Patagonian wilderness* and *cultural and natural heritage*, are interrelated with nature conservation practices. By means of designating protected areas, implementing management approaches and developing livelihood practices, discourses are being reproduced and materialized. Within this interaction between discourses and management practices, we find that multiple-use protected areas are slowly gaining ground in Northern Patagonia. The examples of the AMCP-MU Pitipalena-Añihué and El Avellano mountain range illustrate small scale periphery-periphery innovations toward local sustainable development (Bachmann-Vargas and van Koppen 2020).

5.5 Discussion

In this section, we highlight three topics emerging from our analysis that have a broader relevance for the conservation and development debate: the trend of rewilding, the promises of (eco)tourism, and the tensions between global, national and local aims.

5.5.1 The rewilding and the rebranding of Patagonia

Rewilding is a relatively new, contested and multidimensional conservation management approach, which has gained ground within the growing expansion of protected areas and environmental activism across the world (Jørgensen 2015, Prior and Ward 2016, Holmes et al. 2020). In the case of Patagonia, the land donation made by Tompkins Conservation to the Chilean state, marked a milestone in environmental philanthropy nationally and globally (Quammen 2020). The donation added more than 4,000 km² to the SNASPE (CONAF 2019), and positioned the ideals of rewilding Patagonia as a proactive ecosystem management approach, specifically in the NP Patagonia, and to a lesser extent in the NP Cerro Castillo. Thus, reinforcing the *Patagonian wilderness* discourse and its conservation imaginaries (cf. Adams 2020).

The rewilding of Patagonia is being underpinned by the wishes of *bringing back to life* wilderness areas, through the reintroduction of charismatic fauna species, the removal of fences, and the creation of biological corridors across national parks. The rhetoric of bringing back something that was apparently lost because of human action (cf. Jørgensen 2015), implicitly decouples the cultural and natural heritage associated to the Northern Patagonian landscapes, that nowadays seems to mainly serve (eco)tourism initiatives, such as the Route of Parks of Patagonia. Further research on the local impacts of rewilding Patagonia, may provide key insights on how to advance toward integrated nature conservation initiatives, that may encompass local livelihoods, fauna and flora components and ecosystem functions.

The Route of Parks of Patagonia is one of latest ideas that is rebranding Patagonia. Although its mission states: “to protect and support the natural and cultural heritage of Chilean Patagonia and its 17 national parks...” (Tompkins Conservation 2021), key concepts, such as (socio)cultural sustainability, multiple-use protected areas and community-based management, are not part of their main narrative. Smaller protected areas, such the AMCP-MU Pitipalena-Añihué and the NS Capilla de Mármol, hold a secondary position on their website. The Route of Parks Patagonia is claimed to present a territorial vision that aims to impose a new ecological imaginary (cf. Mendoza et al. 2016); yet, it is lacking local validation. Its persistence over time will depend on how local communities embrace such ideals (Borrie et al. 2020).

By looking at the example of the Protected Area Network in Europe (PAN Parks), which aimed to balance local development, nature-based tourism and nature conservation through certified parks (Puhakka et al. 2009), a number of lessons can be learned from remote peripheral areas that may provide some insights for further development of the Route of Parks of Patagonia. First, contested discourses are conveyed when analyzing the network of parks and their effects on the local sociocultural sustainability. Second, value-laden connotations underpin the ideas of wilderness, local development, nature protection and protected areas. Third, lay-person knowledge should be acknowledged within protected area management. Fourth, the creation of a network of parks enhance collaboration, but it requires the willingness of local participation and lastly, socioeconomic trade-offs are likely to emerge from such tourism-driven initiative.

5.5.2 Too much optimism in tourism

Financing wilderness protection through (eco)tourism has been strongly criticized in the scientific literature (Igoe and Brockington 2007, Ward et al. 2018, Büscher and Fletcher 2019). The commodification of nature in pursuit of the nature conservation tends to be an “elite privilege rather than a democratic possibility” (Büscher and Fletcher 2019: p. 287); thus, rendering the wild nature to the wealthy, and leaving an unequal distribution

of the local tourism benefits. In Chile, nature-based tourism associated with protected areas has extensively been endorsed on a national level as a means for local development, though leaving in a secondary place the integrated and effective management of areas under protection (Sepúlveda et al. 2019).

Conversely, this research has shown that multiple-use protected areas driven by local heritage ideas tend to have better local representation, thus assuring more equitable opportunities for nature conservation along with local revenues. Nonetheless, the win-win promises of different types of protected areas, remain to be further analyzed in Northern Patagonia (cf. Chaigneau and Brown 2016).

As Agrawal et al. (2021) have pointed out in their response letter to the Working Paper by Waldron et al. (2020) on the economic benefits of the 30x30 global target, relying too much on tourism to finance nature conservation means firstly, overlooking the fluctuations of the global tourism industry, which has clearly been evidenced after a year into the COVID-19 pandemic. Secondly, it also relies on aviation and its high consumption of fossil fuels. Lastly and more importantly, it does not necessarily foster local resilience (Agrawal et al. 2021).

5.5.3 Global conservation goals within the national context

Currently, the percentages established by the CBD Aichi Target 11 have already been reached in Chile (Petit et al. 2018). However, the effective management of terrestrial and marine protected areas, which is a requirement of Target 11, is still a pending task (Petit et al. 2018). It is worth noticing that in Chile, protected areas remain primarily managed by public agencies, in a fragmented sectoral way, underfunded, understaffed and lacking unified designation and administration criteria (Ministerio del Medio Ambiente 2015b). Moreover, the Bill on Biodiversity and Protected Areas Service, which aims to unify the administration of protected areas among other goals, has been debated in the parliament since 2011 (Ministerio del Medio Ambiente 2019).

Up to know, it remains to be seen how the national commitment toward the 30x30 global target (Piñera 2021), will be effectively achieved, especially considering the national debate on social inequality, and when the creation of protected areas is being “both celebrated and contested” (Brain et al. 2020: p. 11). For example, an ex-ante evaluation, which analyzed the acceptance or rejection of new national parks in the Magallanes region (Southern Patagonia) concluded that there are divergent opinions, especially related to indigenous communities’ rights, and in general, people seem to prefer less restrictive protected areas (Zorondo-Rodríguez et al. 2019).

5.6 Conclusion

With more than 45,000 km² under protection, equivalent to approximately 30% of the total nationally protected surface in Chile (ODEPA 2019), Northern Patagonia is a prime location for research on how environmental discourses coalesce in protected areas. Moreover, the vast area under protection holds a range of conservation categories, which consequently generates diverse relationships between protected areas and neighboring communities.

While national parks embody the wilderness ideas, multiple-use protected areas symbolize the yearnings for culture and nature protection. In addition, national parks of Patagonia are being framed as part of national and global targets, while there is still a lack of local engagement and multiple-use protected areas are still incipient.

The examples shown in this research portray different approaches to nature conservation and protected area management underpinned by the ideas of *Patagonian wilderness* and *cultural and natural heritage*. The narratives guiding the creation of protected areas, the management approaches and the livelihood practices, illustrate how different ideals of nature conservation are realized, either by protecting the wilderness or the cultural and natural heritage of Northern Patagonia.

Protected area management is closely linked to nature-based tourism. However, its future will depend on how Northern Patagonia faces the combined challenges of infrastructure development, effective protected area management, and sustainable livelihood practices, other than tourism related services only. At the same time, it will depend on how community-based management initiatives are fostered, by bringing to the fore the sense of attachment and the cultural heritage that has historically transformed the Patagonian landscapes, but somehow it has been replaced with new meanings of wild nature.

Chapter 6

General discussion and conclusions

“For Chatwin and almost all visitors, Patagonia was ‘material’ to be digested and reworked; for anyone born or living there, it is home” (Moss 2008: p. x).

6.1 Introduction

About six years have passed since the beginning of this PhD research. It is worth saying that the research project took shape after the first fieldwork campaign. In that moment, I came across a number of scientific articles addressing the study of peripheries. Among them, the concept of (de)peripheralization surfaced as a key concept informing my research. Thus, the implications of discourses and practices embedded in a remote peripheral context, could be coherently explained, as dynamic processes, instead of fixed significations.

In this thesis, I analyzed the interplay between environmental and development discourses that are taking place in Aysén-Patagonia, Chile. In doing so, synergies and tensions among environmental and development discourses, and practices, specifically in relation to nature-based tourism, salmon aquaculture and nature conservation were examined.

The following three research questions guided this thesis:

- a) What are the predominant environmental and development discourses that are currently being reproduced in Aysén-Patagonia?
- b) How are these discourses playing out in environment-related practices, specifically in relation to nature-based tourism, salmon aquaculture and nature conservation?
- c) What are the implications of environmental and development discourses and practices, for the (de)peripheralization of Aysén-Patagonia?

The remote peripheral context of Aysén-Patagonia, as I have called it in this thesis, embodies historical processes of idealization, territorial (re)invention and discursive transformations, that have shaped the common perception of the Aysén region until now, and at the same time have influenced how the region is being (self)transformed.

In analyzing contemporary discursive transformations on environment and development in the remote peripheral context of Aysén-Patagonia, this thesis has shown how those narratives have the potential to counteract peripheralization processes, but concurrently, discursive transformations can aggravate its peripheral condition. Chapter 2, identified and analyzed the most prominent environmental and development discourses that are taking place in Aysén-Patagonia. This chapter showed how synergies and tensions among discourses are playing out in (de)peripheralization dynamics. Chapter 3, built upon the nature-based tourism discourse, examining the development

of small-scale tours from a practice-based approach. This chapter showed how the reproduction of small-scale tours is particularly reliant on the competences of the tour operators, and on the (abiotic) nature of the tourist attraction. Chapter 4, exposed how the salmon aquaculture industry is being re-framed by means of discursive reproductions in the aftermath of the Infectious Salmon Anemia Virus crisis (ISAV crisis), whose effects still resonate after more than a decade. Chapter 5 explored the interplay between environmental discourses namely, *Patagonian wilderness* and *cultural and natural heritage*, and nature conservation practices that converge in various protected areas of the Aysén region.

In the next sections, I lay out the answers to the research questions aforementioned, followed by theoretical reflections about the concept of (de)peripheralization. Next, I reflect on the methodological design and data collection. Subsequently, I provide key themes for the future research agenda of Aysén-Patagonia. I finalize this chapter with the concluding remarks of this dissertation.

6.2 General discussion and conclusions of the main findings

6.2.1 Aysén's predominant environmental and development discourses

Numerous ideas exist in the Aysén region regarding the interrelation between environment and development. In general, such ideas are driven by the natural attributes of the region, the need to develop economic activities underpinned by national and regional interests, and the constraints of the national (i.e. centralized) decision making processes.

Based on semi-structured interviews, supplemented with secondary information, six discourses on environment and development were identified as common narratives emerging from across the region, namely: *Patagonian wilderness*, *cultural and natural heritage*, *regional demands*, *sustainable energy mix*, *nature based-tourism* and *salmon aquaculture* (Chapter 2). All these discourses have implications for environmental protection and socioeconomic development but based on their relative priorities and the values of nature that are highlighted, two were classified as environmental discourses and four as development discourses. Informants' views may consist of several combinations of environmental and development ideas.

Patagonian wilderness and *cultural and natural heritage* discourses were labeled as environmental discourses. The *Patagonian wilderness* discourse conceptualizes the local nature as the last wild place in the world which must be protected, while the *cultural and natural heritage* discourse emphasizes the co-existence of culture and nature, and the need for value creation based on the local heritage.

Development discourses were defined based on the narratives referring to improving living conditions, as well as in relation to economic activities based on natural resources. Thus, the *regional demands* discourse was identified based on the perceived marginalization and the asymmetric relation with the central government. This discourse foregrounds the claims for regional development based on local interests. Along those lines, the *sustainable energy mix* discourse was identified as emerging from previous narratives opposing the construction of hydropower projects, along with the public debate about the national energy mix and renewable energies, and the need for clean, equitable and affordable energy for the Aysén region.

While referring to economic activities based on natural resources, *nature-based tourism* and *salmon aquaculture* can be highlighted as the most prominent development discourses. Supported by public policies, *nature-based tourism* discourse has triggered a sort of entrepreneurship culture, encouraging small and family business to provide tourist services throughout Aysén-Patagonia. Meanwhile, *salmon aquaculture* takes place as an industrial activity along the fjords and channels of the Aysén region. However, Aysén's salmon production is mostly processed elsewhere. Consequently, the regional production has been characterized by a weak value chain and a lack of infrastructure. On the ground, the local discourse of *(un)willing acceptance* toward salmon aquaculture, condenses the (tense) coexistence of local communities with the salmon industry (Chapter 4).

To conclude, environmental and development discourses are closely entangled in remote peripheral areas, such as Aysén-Patagonia. Unraveling prominent narratives on environment and development has contributed to understand synergies and tensions among discourses, thus shedding light on their potential to counteract peripheralization trends.

6.2.2 Discourses and environment-related practices

The analysis of discursive synergies and tensions, and practices exposed how environmental and development discourses are playing out in environment-related practices that take place in the Aysén region. The next sections outline key concluding remarks in relation to nature-based tourism, salmon aquaculture and nature conservation.

6.2.2.1 Nature-based tourism

Nature-based tourism is one of the most important economic activities, and one of the most prominent development discourses that can be identified in Aysén-Patagonia.

Nature-based tourism discourse has been endorsed by the national as well as the regional government. In doing so, public funds have been made available to develop a series of regional tourism programs and promotion campaigns. The relevance of the regional tourism sector relies on small family businesses as part of the supply chain.

Despite the growing support and interest on nature-based tourism initiatives, a series of challenges have emerged in relation to the environmental impacts and lack of infrastructure, that every summer put pressure on small communities' management capacities. More recently, the COVID-19 pandemic has put on halt the tourism industry worldwide, and new ideas are contributing to re-imagining how Aysén's tourism would look like in the future. One of those ideas, foresees that it is likely that the attractiveness of tourist destinations in remote peripheral areas, such as Patagonia, may continue to grow (Gale 2020). In this scenario, tourism planning and adaptive management should become central strategies for the future of Aysén's tourism activity (Gale 2020).

Against this backdrop, findings from this research provide key insights on how a practice-based approach could be applied to analyze the future development of small-scale nature-based tours; encompassing the materials, competences and meanings that are articulated on a daily basis, which at the same time are embedded in broader policy making contexts (Chapter 3).

The reinforcement of the *nature-based tourism* discourse posits a big pressure on environment-related practices, at different tourist attractions. This means that the more tourist attractions are promoted, the more visitors may arrive. Associated trade-offs to local economy, and coping capacities are a constant challenge. By zooming in on the touring practice, Chapter 3 showed how local tour operators manage their tourism product on a daily basis: balancing tourist demand and experience, local livelihood and environmental concerns, while reproducing the tours.

In conclusion, the study of nature-based tours as social practice has shown how tours can be analyzed from a comprehensive point of view, wherein material and non-material components, as well as biotic and abiotic dimensions can be integrated into one unit of analysis, and where different symbolic ascriptions characterize the touring practices. Thus, understanding how touring practices develop on a daily basis, represent a key dimension toward local sustainable tourism. It remains to be analyzed, to what extent are local communities adapting their touring practices due to COVID-19 restrictions, and what are the local impacts in doing so. Moreover, it remains to be seen how small local communities in Aysén-Patagonia are re-imagining tourism development in a post-pandemic scenario.

6.2.2.2 Salmon aquaculture

Salmon aquaculture plays a significant role in development discourses in southern Chile. It has remained as a key national industry, even after severe fluctuations caused by economic and sanitary crises. As Chapter 4 showed, the Chilean salmon industry, and the aquaculture practices are currently being re-framed by the reproduction of three main discourses, namely: the *biosecurity* discourse, the *sustainable protein* discourse and the *Promise of Patagonia* discourse. While on the ground, local narratives confront the southward expansion of salmon aquaculture as *(un)willing acceptance*, as I have termed the local discourse. The three main discourses entail renovated meanings aiming to reposition the salmon industry and its recovery after the ISAV crisis, which caused staggering effects more than a decade ago.

Nevertheless, as the analysis illustrated, new discourses are focused on the legitimization of growth, while integrated approaches of marine ecosystems remain absent. This absence denotes a crucial gap toward environmental sustainability in salmon aquaculture. New discourses still have a limited impact on environment-related practices of salmon aquaculture. It is to be expected that further technological innovations, such as closed net-pens, off-shore aquaculture or recirculating aquaculture systems (RAS) may trigger a discursive shift toward more sustainable production practices, meaning a reduction of the environmental impacts at sea. In addition, current regulations aiming to limit the allocation of maritime concessions may constrain the future development of salmon aquaculture, prompting the implementation of more efficient management practices.

In conclusion, the analysis showed how new narratives are repositioning the salmon industry, with a strong emphasis on biosecurity standards. Nonetheless, elements of common public good and ecosystem-based management are not present yet within the industry's main narratives. Moving forward in this direction, would certainly contribute to anticipate new critical episodes and advance toward sustainable salmon aquaculture in southern Chile.

6.2.2.3 Nature conservation

In this thesis, nature conservation has been positioned within the reproduction of two environmental discourses identified in Aysén-Patagonia, namely: the *Patagonian wilderness* discourse and the *cultural and natural heritage* discourse. As it is shown in Chapter 5, their regional characteristics may also be considered a reflection of contemporary global debates on nature conservation.

Whereas the *Patagonian wilderness* discourse idealizes the ‘wild periphery’, by conceptualizing the local nature as the last wild place in the world, which must be protected, the *cultural and natural heritage* discourse envisions the co-existence of culture and nature, and the need for value creation based on the local heritage. Both *Patagonian wilderness* and *cultural and natural heritage* discourses have found synergies with the development of nature-based tourism related to protected areas, however driven by different motivations. On one side, the *Patagonian wilderness* discourse aims to finance nature conservation through tourism development within national parks. On the other side, the ideas of *cultural and natural heritage* are aiming to generate local revenues through multiple-use protected areas, wherein tourism development is considered as one of the potential uses.

Chapter 5 showed how the interplay between environmental discourses and nature conservation practices is being realized through the designation of different types of protected areas, the implementation of management approaches and the development of livelihood practices around protected areas. Protected areas analyzed in this thesis included three national parks, one nature sanctuary, and one marine protected area.

Management approaches identified in Chapter 5, showed that the rewilding and the co-management strategies portray divergent conservation imaginaries, which are aiming on the one hand, for wilder landscapes, and on the other hand for more inclusive environmental management, driven by state and non-state actors. Co-management initiatives described in Chapter 5, congregate public agencies, NGOs, research institutions and local organizations representing different interests, who dialogue through the co-management approach.

The rewilding approach can be seen taking place in national parks, while the co-management approach is mostly focused on multiple-use protected areas, which hold a greater sense of attachment and local agency. Moreover, multiple-use protected areas driven by local heritage ideas tend to have better local representation.

To conclude, environmental discourses and nature conservation practices in Aysén-Patagonia are closely entangled, and protected areas represent spatial units in which environmental discourses are materialized. Narratives guiding the creation of protected areas, management approaches and livelihood practices were found to be the key links between environmental discourses and nature conservation practices. However, different types of protected areas and management approaches portray dissimilar outcomes for local communities. Thus, if more equitable opportunities for nature conservation in line with local livelihoods are wished for, protected area management in Aysén-Patagonia should aim for a better integration of cultural components,

foregrounding the sense of attachment that local communities may convey toward particular protected areas.

6.2.3 Implications of environmental and development discourses and practices, and the (de)peripheralization of Aysén-Patagonia

This thesis has drawn upon the interplay between discourses, and their translation into practices (sensu Hajer and Versteeg 2005). In doing so, the remote periphery and the (de)peripheralization concepts have served as overarching principles to situate the reproduction of environmental and development discourses and practices, inherent to the geographic location of Aysén-Patagonia. Consequently, by building upon the (de)peripheralization concept, environmental and development discourses, and environment-related practices can be considered as active dimensions in the construction of socio-spatial relations, and therefore in the re-definition of the remote peripheral condition.

Discourses and practices identified in this thesis portray a number of implications for the (de)peripheralization of Aysén-Patagonia. The first implication of discourses and practices is based on how synergies and tensions among discourses shed light on their potential to counteract or exacerbate peripheralization processes. Chapter 2 showed how, taken in isolation, discourses may seem favorable to counteract peripheralization, such as the *salmon aquaculture* discourse and to some extent the *Patagonian wilderness* discourse. However, when considered in a broader regional context the same discourses may have the opposite effect. For instance, the tension between the *aquaculture* discourse and the *regional demands* (e.g. infrastructure, regional value chain), accentuates the uneven relation between the core and the periphery, which also implies that the peripheralization of Aysén-Patagonia is further promoted through the socio-spatial transformation of coastal areas and the declining of environmental conditions. Thus, reinforcing the connotation of the ‘resource periphery’.

Additionally, by finding synergies among discourses, innovative periphery-periphery relations emerge, which can be materialized through regional empowerment, regional identity, and sociopolitical agreements, thus changing the way peripheral areas are being (self)perceived.

Second, the reconstruction and articulation of narratives reproduced by actors in the periphery, highlight the active role of local agents in reshaping socio-spatial relations. Traditionally, the peripheral character has been ascribed by actors from the *core*, or by the media. By means of stigmatization, certain geographic areas, not only the remote ones, have been characterized in rather negative terms and as powerless. In addition,

national statistics for example, tend to generalize qualitative issues into quantitative facts (Meyer and Miggelbrink 2013), which in turn reproduce the peripheral condition, and its allegedly adverse situation (e.g. shrinking regions). On the contrary, delving into the doings and sayings of local actors (Chapter 3), along with environmental and development ascriptions, allows to reconceptualize the periphery, not as powerless and static anymore, but as powerful and dynamic.

Third, unearthing environmental and development discourses that play out in a remote peripheral context reveals how particular global, national and local narratives converge into the periphery, (re)producing new spatial imaginaries, discourses and practices, though with contrasting effects. The case studies on salmon farming and nature conservation illustrate such effects (Chapters 4 and 5). Salmon aquaculture in the Aysén region continues to develop at the expense of the ‘resource periphery’, a geographic space that meets certain environmental conditions for salmon farming, and which is embedded in national and global trade networks, while in parallel, the environmental effects and the weak value chain of the salmon industry in Aysén-Patagonia have the potential to aggravate its peripheral condition. In the meantime, new discourses such as *The Promise of Patagonia*, described in Chapter 4, depict an idyllic image, thus creating new imaginaries of the ‘resource periphery’. However, such imaginaries are not necessarily in line with the local discourse, nor with local socio-spatial processes driven by the salmon aquaculture activity.

The case of nature conservation in Aysén-Patagonia showed how nature conservation initiatives have been underpinned by the reproduction of environmental discourses. The idealization of the ‘wild periphery’ captured by the *Patagonian wilderness* discourse, has brought forward the global narrative of the ‘last of the wild’, which has gained prominence through the creation of new protected areas, and the implementation of rewilding programs. In parallel, the *cultural and natural heritage* discourse plays a local role in nature conservation, aiming to combine cultural and natural attributes in synergy with small-scale nature-based tourism, along with the creation of multiple-use protected areas. To date, the ascriptive power of the *Patagonian wilderness* discourse has positioned the local nature of Aysén-Patagonia within global narratives of nature conservation and nature-based tourism. The *Patagonian wilderness* discourse keeps on reproducing the imaginaries of pristine and untouched nature, while on the ground local organizations are striving for a better integration between nature and culture.

Fourth, drawing upon the main environmental and development discourses analyzed throughout this thesis, I claim that the deperipheralization of Aysén-Patagonia should entail the development of inclusive, equitable and resilient socio-spatial relations. These relations can be grasped from how environmental and development discourses, and environment-related practices are conceptualized and acted upon. For instance, nature

conservation in Aysén-Patagonia has been mainly fostered by representations of *purified nature* through the *Patagonian wilderness* discourse, that continue idealizing the local nature as the last wild place in the world which must be protected, while redefining the access to natural areas for tourism only. As Chapter 5 indicated, the commodification of nature in pursuit of nature conservation tends to be an “elite privilege rather than a democratic possibility” (Büscher and Fletcher 2019: p. 287), thus rendering the wild nature to the wealthy, and leaving an unequal distribution of local tourism benefits. Moreover, tourism driven initiatives do not necessarily foster local resilience. Depending on the future development of the *Patagonian wilderness* discourse and its materialization in policies and practices, it may counteract or stimulate the peripheralization of Aysén-Patagonia, thus strengthening the idea of the ‘wild periphery’. This is especially relevant considering the current national debate. Chile is still discussing the Bill on Biodiversity and Protected Areas, and is preparing to draft a new Constitution, wherein environmental values along with social equity may have a place.

6.3 Theoretical reflections on (de)peripheralization

This dissertation has built upon the historical idealization and (re)invention of Aysén-Patagonia. Throughout the years, its remote and peripheral context has been (re)produced by a number of meanings and symbolic ascriptions, ranging from what was laying at the edge of *Christianity* back in the nineteenth century, to more recent denominations, such as the *last* wild place in the world, and a place for *nature and adventure*. Furthermore, several ideas about environment and development, and the spatial imaginaries they envision remain closely intertwined, re-drawing the remote and peripheral signification of Aysén-Patagonia.

Building on these observations, this thesis found theoretical ground in the work of scholars studying social processes with spatial implications, specifically in relation to the so-called peripheralization processes. In Chapter 2, I drew upon Meyer and Miggelbrink (2013: p. 208), who emphasize that if research on peripheralization aims “to go beyond a taken-for-granted structuration of the social world, (it) has to conceptualize the production and effects of *meaning*”. Therein, discursive processes can be considered as a key component in the formation of socio-spatial patterns. By consequence, meanings ascribed through discursive (re)productions are pertinent to the social construction of socio-spatial relationships and therefore may influence (de)peripheralization processes.

In the following paragraphs, and based on the empirical findings of this dissertation, I reflect upon three key topics derived from Meyer and Miggelbrink’s (2013) work.

The first reflection relates to the “subjective dimension of peripheralization” (Meyer and Miggelbrink 2013: p. 208). Throughout this thesis, I have offered a qualitative account on how discursive constructions and their materialization in practices may counteract or stimulate peripheralizing processes. I ventured to integrate the geographic location, the imaginary construct of the periphery, along with environmental and development discourses, and practices reconstructed from the periphery, which are situated in broader social and geographical arrangements. In doing so, different understandings of the remote periphery were revealed. The imaginaries of the ‘pleasure periphery’, the ‘resource periphery’ and the ‘wild periphery’, denote the blurry boundaries and the varied features of the so called *periphery*. Periphery for whom, and for what, we may ask.

Throughout the analysis I considered the core and the periphery as spatial semantics (Meyer and Miggelbrink 2013), rather than fixed structural representations. As spatial semantics, environmental and development ascriptions from the core as well as from the periphery, were reconstructed in a perception-related way, thus giving meaning to socio-spatial relations ascribed by local agents (cf. Meyer and Miggelbrink 2013). Though the subjective dimension of peripheralization remains much more challenging, in comparison with quantitative indicators of peripheralization, it offers the opportunity to explore how socio-spatial processes emerge, why certain meanings and practices are (re)produced, and what the effects of those meanings are. As it has been shown in this thesis, the effects of environmental and development discourses have the potential to transform the peripheral condition.

The second reflection relates to the “complexity of peripheralization” (Meyer and Miggelbrink 2013: p. 214). The complexity of peripheralization lies in the acknowledgment of “the nexus of ascriptions, self-ascriptions and practices” (Meyer and Miggelbrink 2013: p. 214), and its significance for the reconstruction of socio-spatial processes, and therefore for the understanding of peripheralizing processes. The nexus of ascriptions, self-ascriptions and practices give meaning to, and make sense of real-world phenomena. Within this nexus, agents experience and reproduce the remote and peripheral condition, from within and from afar; as part of the everyday life, or as an occasional event. Certainly, Aysén-Patagonia and the case studies analyzed in this thesis portray all of the above. Accordingly, this thesis represents an empirical contribution in addressing the complexity of peripheralization. By means of reconstructing and unpacking environmental and development ascriptions, self-ascriptions and practices, the periphery has been redefined, thus allowing a better understanding of its dynamic condition.

The third reflection relates to “the reconceptualization of peripheralization” (Meyer and Miggelbrink 2013: p. 218) and a subject-centered approach to study peripheralization processes. This thesis has shown how ideas, doings and sayings of local actors are

reshaping the signification of the remote peripheral space. Either by facing synergies or tensions, discursive reproductions, and practices associated to nature-based tourism, salmon farming and nature conservation have exposed how (contested) meanings have the potential to transform the *periphery*, and its discursive relation with the *core*. Consequently, the reconceptualization of peripheralization can be drawn from discursive reproductions and its ascriptive power in reshaping socio-spatial relations, wherein environmental and development discourses play a pivotal role.

6.4 Methodological reflections

Delving into environmental social sciences, based on qualitative research was an intellectual challenge. Though the data collection may seem relatively simple to conduct, the main challenge of qualitative research lies in the data analysis, on how to make sense of people's stories.

The research methodology and the methods chosen for data collection were suitable, and flexible enough to deal with unforeseen local and, more recently global events. On the ground, weather conditions and the high tourist season also affected the data collection. As a main lesson, adaptation of data collection methods was essential to carry out the research plan.

In 2016, a massive algal bloom affected southern Chile. Its consequences impacted coastal communities, as well as the salmon aquaculture industry. High mortality rates of salmon triggered the local discontent, about how the mortalities were managed as a consequence of the algal bloom. The discontent escalated, several protests took the streets, and the overall discussion of salmon aquaculture in southern Chile, became very polarized. Therefore, it was not the right moment to inquire about the industry, and the first data collection visit had to be adapted accordingly. I came back in 2018, to collect the data for the case study on salmon aquaculture (Chapter 4).

While adapting the data collection, I decided to gather the data for Chapters 2 and 3 first. The data collection took place at the beginning of the tourist season. The villages that I visited were very active, and key informants were very busy. Consequently, I had few in-depth conversations, and semi-closed questionnaires were used instead, to grab the attention of the local tour operators (Chapter 3).

Moreover, along the Pacific coast, unstable weather conditions are the norm. While visiting Melinka (Chapter 3), four days of heavy rainfall and wind, may have hindered the opportunities to casually meet informants that were not reachable by email or by phone. The same occurred when I arrived by ferry to Puerto Cisnes. Though there were

some sunny days, it was mostly raining, and streets were empty. Time limitations also affected this leg of the fieldwork. Stormy days, caused days of delay on the ferry service connecting Melinka and Puerto Cisnes.

Collecting data throughout the Aysén region is time and budget consuming. I was able to visit seven out of ten municipalities that constitute the region. I addressed this limitation by interviewing knowledgeable informants, who were able to provide a regional overview, in addition to specific accounts of each municipality.

The analytical generalizations formulated in this thesis stem from the case studies addressed in each of the preceding empirical chapters. It is worth noticing, that additional considerations may have emerged if the *regional demands* and the *sustainable regional energy mix* discourses identified in Chapter 2, would have been analyzed in depth. These two discourses fall primarily within the political and economic national domains, which move away from the scope of this dissertation. These two discourses provide opportunities for further research.

To ensure the truth value, consistency and applicability of the findings (external validity), this research relied on triangulation in the form of different data sources (Long and Johnson 2000), supervisors' advice and the scientific peer-review process. Cross-checking the primary data with secondary sources supported and added context to the informants' stories. My supervising team contributed with an unbiased perspective regarding the study area and primary data interpretation. The supervising team also guided me through how to come up with analytical generalizations. Additionally, the peer-review process endorsed the findings. One of the reviewers pointed out: "having long experience from Chile, I have no problems recognizing the main narratives" (Reviewer #2, in relation to the manuscript of Chapter 4).

More recently, due to the COVID-19 pandemic and budget limitations, the data collection had to be adapted to video calls (Chapter 5). Although online communication was very efficient to contact people located in several places, it only included those who had access to internet, and who therefore were reachable and used to online communication. Collecting data in the field, about the protected areas described in Chapter 5, would have told a more detailed story. Instead, Chapter 5 primarily focused on secondary sources, which were supplemented by a handful of online semi-structured interviews. I also relied on my knowledge, and previous visits to the selected protected areas.

All in all, doing fieldwork in Patagonia is challenging, but enjoyable. Though I have been involved in different fieldwork activities in the Aysén region since 2005, I often come across new experiences, and new ways on how scientific research and researchers

find acceptance and rejection on the field. On an anecdotal note, I encountered acceptance from the locals, when, while being at a farm, I was the only one carrying a camping knife, sharp enough to slaughter a lamb for the barbecue, a true ritual in Patagonia. By contrast, I found rejection when the explanation of my research in Spanish, got totally misunderstood as me conducting a ‘police’ *investigation*. Furthermore, I realized that in a couple of places that I visited, local residents were much more familiar with geological and oceanographic research. In this context, I took a bit longer to situate my own research within what was already understood as scientific research. Certainly, I was inquiring about the marble formations, but from a very different perspective than what some locals were used to hear.

6.5 Future research agenda for Aysén-Patagonia

Based on my research experience, I suggest the following key themes and topics that would benefit the future research agenda in Aysén-Patagonia, as well as serve for comparative studies among similar remote peripheral areas.

First, a sustainable and affordable energy mix is still a pending and urgent task in Aysén-Patagonia. The regional capital Coyhaique, is well known for its severe episodes of air pollution during the cold and dry winters. To date, the main sources of energy for domestic and industrial consumption are firewood and diesel, respectively; while hydropower sources remain highly contested. Exploring potential synergies between the *regional demands* and the *sustainable regional energy mix* discourses and practices, along with national environmental and development guidelines represent a crucial aspect for the environmental management and for the future development of the Aysén region.

Second, further research on the discursive effects of consecutive shocking events around salmon farming production and marine social-ecological systems, such as animal disease outbreaks and algal blooms, would certainly provide valuable insights on how the industry, the policy sector as well as the local communities continue to re-frame the future of the salmon production in Aysén-Patagonia, and in southern Chile. Moreover, it may shed light on what are the real opportunities for a Social License to Operate for the salmon industry.

Third, protected areas along with nature-based tourism are key elements for local livelihoods in remote peripheral areas. However, different categories of protected areas portray different challenges for local communities. Further research on multiple-use terrestrial and marine protected areas, may provide key insights on how areas such as Aysén-Patagonia, are facing the rural transition driven by nature-based tourism. Comparative studies among similar remote peripheral areas may shed light on how

community-based management initiatives persist amid the idealization of wild and pristine nature, in the North as well as in the South. Moreover, given the predominant abiotic components of Patagonian ecosystems, such as glaciers, rivers and rocky formations, a focus on ecosystem functions may enhance the efforts of nature conservation and their relation with local livelihoods.

Fourth, in light of the current developments triggered by the COVID-19 pandemic, and its effects on the global tourism industry, examining how remote peripheral areas are envisioning their future beyond nature-based tourism, would certainly contribute to better place-based and adaptive management strategies, that could enhance local resilience and sustainable local development in the future.

6.6 In sum – key conclusions

This thesis emerged from personal and scientific interests in better understanding how remote peripheral areas evolve, in which environmental and development dimensions are intertwined, and where local livelihoods are closely related to environmental conditions and landscape aesthetics. I also aimed at shedding light on meaningful local cases, positioned within national and global trends. Lastly, I may say that this thesis has touched upon a number of elements from disciplines such as human geography and rural sociology, while trying to maintain a vocabulary that may resonate with social and environmental sciences alike. The theoretical and practical contributions of this thesis are as follows:

First, this thesis has shown how environmental and development ascriptions may serve as proxies for spatial dimensions, wherein the geographic location and the natural attributes are implicitly, and explicitly, immersed in the narratives from the periphery. This is relevant for research on spatial differentiation, and specifically suggests that (de)peripheralization processes may emerge from the (self)construction of spatial imaginaries ascribed to peripheral areas and not only from social stigmas, often attributed to peripheries (Chapter 2).

Second, when analyzing nature-based tourism in a remote peripheral context, the definition of small-scale tours as social practice offered a practical conceptual tool through which the quotidian performance of a tour can be considered as an input for local policy making. Comprehending how material, competences and meanings are interlinked, in connection with local livelihoods and other tourism practices are key elements for the sustainable management of tourist destinations (Chapter 3).

Third, the analysis of discursive reproductions after shocking events, such as the ISAV crisis and their effects on the salmon aquaculture industry, provided key insights on what discursive elements are been strengthened and also what dimensions are still absent within the renovated discourses, and therefore in the practices that materialize those discourses. Acknowledging this gap may contribute to mitigate the effects of future shocking events, and may incentive the implementation of more sustainable salmon aquaculture practices (Chapter 4).

Fourth, exploring the interplay between environmental discourses and nature conservation practices, showed how idealizations of the ‘wild periphery’ are contrastingly materialized. Narratives guiding the creation of protected areas, the implementation of management approaches and livelihood practices associated to protected areas were found to be the key links between environmental discourses and nature conservation practices (Chapter 5).

Finally, I believe that remote areas such as Aysén-Patagonia are likely to continue evoking imaginaries of far-off lands, idyllic landscapes and wilderness, while transforming their peripheral condition. However, it is time to acknowledge the local agency and the effects of meanings of discursive reproductions in the development of socio-spatial processes, which not only take place on a local level. After all, this thesis - *Meanwhile, in Aysén-Patagonia* - has shown how remote peripheral areas keep on changing in a globalized world.

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Appendices

Appendix 1: Interview outline, Chapter 2.

1. Please describe your role within the organization, and the main activities of the organization.
2. How would you define Aysén's regional development?
3. What are the regional development priorities, and how does this institution contribute to that?
4. What's your opinion about *Aysén, reserve of life*?
5. Who do you think are the main actors in relation to the regional development?
6. What have been the main steps toward decentralization, and its effects on the region of Aysén?
7. What are the regional environmental priorities as part of the policy making process?
8. What would you say are the regional environmental and development milestones?
9. Could you characterize the situation of each municipality?
10. What do you think about the private protected areas in the Aysén region?
11. To what extent, private as well as public conservation initiatives are related to the local needs?

Appendix 2: Interview outline, Chapter 3.

1. Please describe your role within the organization, and the main activities of the organization.
2. What's the PER tourism program about?
3. What's the vision of the municipality?
4. How would you describe the situation of local tourism development?
5. Please describe the history of the Nature Sanctuary Capilla de Mármol.
6. Please describe the beginnings of the Marble Caves tour.
7. How would you describe the tourist activity in Puerto Río Tranquilo?
8. What do you think about the tourism promotional campaigns?
9. How do you see the role of the local organizations in tourism planning?
10. Do you think local tour operators have any chance to diversify their offer?
11. How do you see the future of the tourist activity in the locality, and in the Aysén region?

Appendix 3: Semi-closed questionnaire, Chapter 3.

1. General information						
Locality		Date				
Name						
Age				Gender	F	M
Permanent residence	Yes	No	How long have you been living here?			
Do you live here during the tourist season?	Yes	No	For how long?			
How do you see yourself within the community?	'Born and raised'	Local	Outsider	Outsider and adapted	Indifferent	Does not believe in 'labels'
Do you think there are conflicts among these categories?	Yes	No	(Comments)			
Where do you originally come from?						
2. Tourist activity						
Tourist service	Marble Caves	Exploradores glacier	San Rafael lagoon	Other		
How many years have you been working on that service?						
Employment condition	Independent worker		Employee			
Name of your company						
How many people do you work with?						
Role	Marble Caves	Exploradores glacier	San Rafael lagoon		Other	
	Owner of the company	Owner of the company	Owner of the company			
	Skipper	Tour guide	Tour guide			
	Crew member	Mountain guide	Mountain guide			
	Tour guide	Kayak guide	Kayak guide			
	Kayak guide	Administration	Skipper			
	Diver	Other	Crew member			
Administration		Administration				

	Other				Other		
3. Description of the tourist activity / The Marble Caves tour							
What kind of vessel do you operate?					Boat	Kayak	Other
How many boats?			How many kayaks?				
How many boat tours per day, on average do you make? (high season)			How many boat tours per day, on average do you make? (low season)				
How many kayak tours per day, on average do you make? (high season)			How many kayak tours per day, on average do you make? (low season)				
How much does a boat tour ticket cost p/p?		How long does the boat tour take?		How much does a kayak tour ticket cost p/p?		How long does the kayak tour take?	
Does your company offer tours all year round?		Yes	No	Do you work with tour operators based in Coyhaique?		Yes	No
Do you advertise your tourist company?						Yes	No
What means do you use?	Web page	Facebook	Promotional banner at the office or elsewhere		'Word-of mouth' recommendation	Other	
What language do you give the tours in?	Spanish		English	Other	Offer dissemination material		
3.1. Tour information, what do you talk about?							
Type of information	Yes	No	Type of information	Yes	No		
Historical			Popular knowledge				
Year of discovery			Nature-made marble figures				
Explorers			Other				
Other			Nature Sanctuary				
Geological (Y/N)			Year of designation				
Age of the marble			Boundaries				
Characteristics of the marble			Meaning				
Colors of the marble			Institution in charge				
Lake formation			Other				
Other			Safety measures (Y/N)				
Ecological (Y/N)			Lifejacket				

Flora			Precautions while sailing			
Fauna			Other			
Other			Caves protection (Y/N)			
Characteristics of the lake (Y/N)			Do not disembark			
Surface			Do not remove stalactite			
Depth			Do not touch the marble			
Other			Other			
3.2. Information sources						
How did you learn the information you provide as a tour guide?				Yes	No	
Participation in workshops organized by public agencies, held at the locality						
Taught by another tour guide						
Self-learning						
Participation in scientific expeditions						
Personnel training at the tourist agency						
Leaflets made by other organizations/public agencies						
Other						
Would you like to provide more information during the tour?	Yes	No	Do you think the information you provide satisfy the tourists?	Yes	No	
Does your tourist company offer tours to:						
Marble formation, Puerto Sánchez				Yes	No	
Puerto Cristal				Yes	No	
General Carrera lake mouth				Yes	No	
Another area of the lake				Yes	No	
4. Participation in local associations/organization						
Do you participate in community associations or trade unions?				Yes	No	
Type of association/organization		Active member		Does it bring you any benefit to participate in the association/organization?		How long have you been part of? (months, years)
Neighbor council	Yes	No	Yes	No	Yes	No
Chamber of tourism	Yes	No	Yes	No	Yes	No
Worker union skippers and crew members	Yes	No	Yes	No	Yes	No
Boteros association	Yes	No	Yes	No	Yes	No

Appendices

Local tours guides association	Yes	No	Yes	No	Yes	No	
Labor union artisanal marble miners	Yes	No	Yes	No	Yes	No	
Football team	Yes	No	Yes	No	Yes	No	
Other	Yes	No	Yes	No	Yes	No	
5. Nature Sanctuary							
Do you know the nature sanctuary Capilla de Mármol?						Yes	No
Do you know what does the nature sanctuary entail?						Yes	No
Do you know what public agency is in charge of the nature sanctuary?						Yes	No
Do you think your commercial activity benefit from the nature sanctuary?						Yes	No
Do you think the locality benefit from the nature sanctuary?						Yes	No
Do you know the boundaries of the nature sanctuary?						Yes	No
6. Tourism management (open questions)							
6.1. What do you think about the competition among <i>boteros</i> , and the daily number of boats that visit the marble caves?							
6.2. How do you think the number of boat should be regulated? Who should be in charge?							
6.3. What institutions/organizations do you think, should contribute to improve the tourist activity around the marble caves?							
6.4. How do you imagine the tourist activity around the marble caves in 10 more years?							

Appendix 4: Interview outline, Chapter 4.

1. Please describe your role within the organization, and the main activities of the organization.
2. Based on your experience, please share your vision about the salmon aquaculture in southern Chile.
3. How would you describe the evolution of the salmon industry, since the ISAV crisis?
4. What's your opinion about the participation of the scientific community in these matters?
5. Please describe the new regulations affecting the density of salmon production.
6. What's your opinion about the *barrios* system?
7. What do you think about the sustainability vision within the industry?
8. How would you evaluate the *barrios* arrangement?
9. How does the ASC certification work?
10. How do you remember the ISAV crisis?
11. What's the current situation of the salmon aquaculture in the Aysén region?

12. What's your opinion about the future of the salmon industry in southern Chile, and the sanitary conditions for salmon production?

Appendix 5: Supplementary material, Chapter 5.

Protected areas in Northern Patagonia, Aysén region.

Category	N	IUCN category	Protected area
National park	9	II	Bernardo O'Higgins, Corcovado, Cerro Castillo, Isla Guamblin, Isla Magdalena, Laguna San Rafael, Melimoyu, Patagonia, Queulat
Coastal marine protected area	2	V	Pitipalena-Añihué, Tortel
Natural monument	2	III	Cinco Hermanas, Dos Lagunas
Forest reserve	7	IV	Coyhaique, Katalalixar, Lago Carlota, Lago Las Torres, Lago Palena, Lago Rosselot, Las Guaitecas
National reserve	2	IV	Río Simpson, Trapananda
Nature sanctuary	2	III - IV	Capilla de Mármol, Estero Quitralco
Biosphere reserve	1	(Not equivalent)	Laguna San Rafael
Protected national asset (BNP)	12	(Not equivalent)	Bahía Mala, Cerro Rosado, Cerro San Lorenzo, Cuenca de río Mosco, Lago Copa, Laguna Caiquenes, Laguna Vera, Nalcayec, Palena Cosa, Río Azul, Santa Lucía, Ventisquero Montt
Priority site (Biodiversity strategy and Law 19,300)	15	(Not equivalent)	Arch. Canal W Messier, Deltas General Carrera oeste, Desembocadura Lago O'Higgins-Río Pascua, Lago Presidente Rios, Mallin Grande-Furioso, Monumento Natural Dos Lagunas, Piti Palena, Sector Ventisquero Chico, Subcuenca Río Baker, Bahía Anna Pink - Estero Walker, Entrada Baker, Estepa Jeinimeni-Lagunas Bahía Jara, Isla Kent-Quitralco, Islas Oceánicas Guamblin-Ipun, Sector Hudson

Source: National Register of Protected Areas, Ministry of Environment, <http://areasprotegidas.mma.gob.cl/>. Accessed on May 31, 2021.

Appendix 6: Interview outline, Chapter 5.

1. Please describe your role within the organization, and the main activities of the organization.
2. What are the main motivations of your organization?
3. Please describe the vision of your organization/program?
4. Please describe the designation process of the protected area.
5. What's your relationship with CONAF, what kind of agreements do you have?
6. What does the NP Laguna San Rafael mean to you?
7. How do you see integration between culture and nature conservation in the Aysén region?

Appendices

8. What do you think about the Route of Parks of Patagonia?
9. How does the conservation program integrate the Gaucho culture?
10. What's the relationship between the protected area and the neighboring communities?
11. How do you see the future development of protected areas in Patagonia?

List of publications

Bachmann-Vargas, P., van Koppen C.S.A., Lamers, M. 2021. A social practice approach to nature-based tours: the case of the Marble Caves in Northern Patagonia, Chile, *Journal of Ecotourism*, <https://doi.org/10.1080/14724049.2021.1913176>

Bachmann-Vargas, P., van Koppen C.S.A., Lamers, M. 2021. Re-framing salmon aquaculture in the aftermath of the ISAV crisis in Chile. *Marine Policy* 24, 104358. <https://doi.org/10.1016/j.marpol.2020.104358>

Bachmann-Vargas, P., van Koppen C.S.A. 2020. Disentangling environmental and development discourses in a peripheral spatial context: the case of the Aysén region, Patagonia, Chile. *Journal of Environment & Development* 29(3), 366-390. <https://doi.org/10.1177/1070496520937041>

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WASS Education Certificate



Wageningen School
of Social Sciences

Pamela Loreto Bachmann Vargas
Wageningen School of Social Sciences (WASS)
Completed Training and Supervision Plan

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
Writing research proposal	ENP	2015	6
Research methodology - From topic to proposal	WASS	2015	4
Spatial thinking in the social sciences: on the local, the rural and nature	WASS	2016	4
Political ecologies of conflict, capitalism and contestation	WASS	2016	3
Qualitative data analysis with Atlas.ti: a hands on practical	WASS	2016	1
Practice based approaches and environmental governance	WASS	2018	0.5
B) General research related competences			
WASS Introduction Course	WASS	2015	1
Scientific Writing	Wageningen in'to Languages	2016	1.8
Companion modelling	PE&RC, WASS, SENSE	2016	1.5
Summer School in social simulation: Agent-based modelling for resilience	WASS	2017	1.5
SUSPLACE Autumn School, Shaping Places, Crossing Disciplinary Boundaries	SUSPLACE, Rural Sociology Group. Aveiro, Portugal	2017	2
Workshop: Comunidades locais e utilizacao do ambiente marinho	ENP-PADDLE Project. Mindelo, Cape Verde	2017	0.5
"Ecosystem services assessment based on ecosystem regulated by the Fishing and Aquaculture General Act, Northern Patagonia, Chile"	MARE Conference. Amsterdam, the Netherlands	2017	1
Sociology and political science of environmental transformations	ENP	2018	1.5
Summer School: Brilliant minds for social-ecological transformations	Institute for Social-Ecological Research (ISOE). Bad Homburg, Germany	2018	1.7
Summer School PADDLE Project	IUEM Plouzané. Brest, France	2018	1
Methodologies for sociology and political science of environmental transformations	ENP	2019	1.5

C) Career related competences/personal development			
Data Management Planning	WUR Library	2016	0.4
PhD Workshop Carousel	Wageningen Graduate Schools Courses	2017	0.3
Communication with the media and the general public	Wageningen Graduate Schools Courses	2017	1
Introduction to collaborative design of sustainable projects	WASS	2017	0.2
Wageningen Centre for Sustainability Governance (WCSusGov) PhD Day	CSPS	2017	0.5
ENP activities (PhD representative, co-authorship committee, research colloquium, organisation of PhD trips)	ENP	2016-2018	2
<i>“Conceptualizando el turismo de naturaleza como práctica social: análisis del Santuario de la Naturaleza Cavernas de Mármol, Patagonia, Chile”</i>	X Conference Latin American Association of Rural Sociology. Montevideo, Uruguay	2018	1
Secondment PADDLE project (four workshops on qualitative assessment of coastal ecosystem services)	Federal University of Pernambuco. Recife, Brazil	2019	1
BSc thesis supervision	ENP	2020-2021	1
Paper reviewer	Progress in Development Studies	2021	1
Total			41.9

*One credit according to ECTS is on average equivalent to 28 hours of study load.

Acknowledgements

This thesis would have not been possible without the support of many people. First and foremost, I would like to thank all the respondents who kindly shared their stories. Either face-to-face or via online meetings it was a pleasure to learn from those who are on the ground. Fieldwork activities require quite a lot of support, for that I would like to thank the Ortiz-Cárcamo family (Pepe, Vale, Pepa, Rocio, Tomas, Adolfo), who ‘adopted’ me while staying in Coyhaique. And thanks to Carla Ortiz who put me in contact with her lovely southern family. I would also like to thank Blanca Barría and Hector Vargas, for their support while I stayed in Puerto Río Tranquilo. My gratitude also goes to those who helped me to expand my contact network, and to those who took me on a day trip to get to know their work better.

At the ENP, I would like to thank my supervisor Kris van Koppen and my promotor Machiel Lamers for their support throughout these years, and for the good supervision and co-authoring spirit. Thanks Kris for your wise comments, and for always being sympathetic and attentive to the details, and thanks Machiel for your pragmatism and interest in Patagonia. I would also like to extend my gratitude to my former promotors Arthur Mol and Jan van Tatenhove. To Arthur for being a welcoming face when I just arrived at ENP, and to Jan for always having an encouraging attitude. I would also like to thank Corry Rothuizen for her cleverness navigating the WUR system, and to Simon Bush for supporting our ENP PhD courses and our PhD trips to Germany, Switzerland and China, what an adventure! Thanks to the great ENP community, and to those with whom I shared the ups and downs of the PhD throughout these years, especially: Alexey, Alita, Anke, Eira, Fan, Frank, Harry, Helena, Hilde, Jillian, Joeri, José, Kari, Linde, Maíra, Mandy, Mattijs, Moises, Phatra, Robin, Sake and Sayel. Thanks to Hanne and Nila for our chats and long walks during the pandemic. And thanks to Mariska for our unforgettable music experience, in pre-pandemic times (looking forward to seeing Metallica again!). I would also like to thank my paranymphs ‘dream team’: Nila, Mattijs and Sayel for their support before and after the defence.

At the end of this PhD journey, I would also like to thank my Chilean friends in Wageningen. We founded the Chilean Student Association, we organized epic wine tastings during the One World Week, and we had a lot of fun! Thanks to Chiqui, Decap, Diego G., Jorge V., José, Luis, Maite, Marcelo, Mauricio and Niko. Special mention to the members of our wanderlust team *aka* ‘Olguitas’: Begoña and Marcia, and thanks a lot to Begoña who made possible the ideas that I had in mind for the cover of this thesis. Also, thanks to Mariana and Daniela for the chats, the trips, and for the best birthday

cakes in town!. I would also like to thank Orianne, Loreto and Henk for their help when I needed the most.

I am also grateful for my friends in the North and in the South, that despite the years and the distance we have kept in touch. Thanks to Marcela Torres-Gómez for her 24/7 ArcGIS remote assistance. Finally, I would like to thank my mom, my dad, my aunts and cousins, who have always supported me no matter where I wanted to go, no matter what I wanted to do. Thanks to those who are no longer present.

About the author

I was born on the 14th of April 1983, in Puerto Montt, Chile. From a young age, my parents always encouraged me to explore the beautiful landscapes of southern Chile, which led me to volunteer as a park ranger assistant in the National Park Huerquehue when I was 15 years old, going on a number of hitch-hiking adventures, and later on moving to Santiago, to pursue my bachelor in Biology at the University of Chile.

Throughout my bachelor, though I very much enjoyed the zoology courses and going on excursions to the mountains, I always had a great interest on how people relate to nature and vice versa. All this led me to do my bachelor thesis at the Ecological Modelling Lab (Faculty of Sciences, University of Chile). While working in this Lab, I had the opportunity to participate in several research projects that took place in the Aysén region, which increased my interest in studying the social-ecological aspects of this beautiful area. Also in this Lab, one day my supervisors said: “Pamela, you should do a PhD in Germany!” and that’s how my adventure abroad began, and two years later I did come to Germany, but for master studies. I had an awesome time in my beloved Kiel.

In Wageningen, I came to the Environmental Policy Group to acquire the social sciences knowledge that I always missed from my previous studies. It was not easy though. After all these years, I can say that I do have a greater and better understanding of social dynamics in relation to nature. I am glad that this is finally over, and I look forward to combining social and ecological dimensions in my future career.

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The research described in this thesis was financially supported by the National Commission for Scientific and Technological Research - CONICYT, Chile under Grant no. 72150473/2014, Becas Chile. Since 1 January 2020, CONICYT has been substituted by the National Agency for Research and Development (ANID).

Financial support from Wageningen University for printing this thesis is gratefully acknowledged.

Photographs by Pamela Bachmann-Vargas.

Cover design by Pamela Bachmann-Vargas and Begoña Arellano Jaimerena.

Printed by ProefschriftMaken on recycled paper.

