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不良適應於多中心跨界共享性資源治理系統：白朗
峰案例

Maladaptation in a Polycentric Transboundary
Common-Pool Resources Governance System: The
Mont Blanc Case

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摘要

如高山地區等僅存的荒野邊界，正日益受到人類基礎建設的開發影響。山地生態系統的獨特性以及其所面臨的多重威脅，需要量身訂作創新的保育策略。國界線經常沿著山脈稜線劃定，形成無形的治理障礙，是生物多樣性保育普遍面臨的挑戰。因此，山區野生動植物的未來迫切需要跨境合作。

本研究結合 Elinor 與 Vincent Ostrom 的多中心共享性資源治（Common Pool Resources, CPR）管理系統理論，以及跨境保育相關文獻，探討位於瑞士、法國、義大利三國交界的白朗峰地區在生物多樣性保育方面的實踐與治理挑戰。我訪談了跨國界、跨部門的十一位關鍵利害關係人，並針對訪談逐字稿進行主題分析，再以法律文本及各類次級資料來源進一步驗證與豐富研究發現。

研究結果顯示，法規架構的落差、觀光產業對當地經濟與政治的主導地位、個人政治因素、現行跨境合作機構缺乏法人資格等，皆是限制當地多中心治理系統永續管理共有資源能力的因素。然而，關鍵人物的堅毅努力，加上歐盟與聯合國所提供的機會，使現行體系仍有可能逐步轉型為適應性的跨境多中心治理系統，以因應環境永續發展的挑戰。

關鍵詞：共享性資源治、跨境保育、生物多樣性、多中心治理、失調適應

ABSTRACT

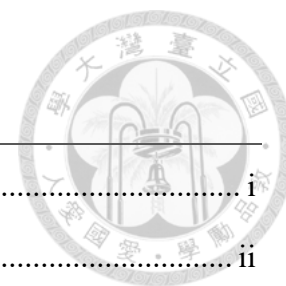
Remaining wilderness frontiers, such as high mountains, are increasingly settled by human infrastructure. The uniqueness of mountainous ecosystems and the multifaceted threats they face require tailored and novel conservation strategies. National borders, which often follow mountains' ridges, create invisible governance barriers and are a common challenge to efficient biodiversity conservation. The future of wildlife in mountainous regions thus urgently needs transboundary cooperation.

Combining Elianor and Vincent Ostrom's polycentric Common Pool Resources (CPR) management systems and transboundary conservation literature, I explore best practices and governance challenges to biodiversity conservation in the Mont Blanc Region, at the border between Switzerland, France, and Italy. I interviewed eleven key stakeholders across national and sectoral boundaries and conducted thematic analysis on the transcripts of our discussions. I then verified and enriched the findings with legal texts and various secondary data sources.

Results show that regulatory framework discrepancies, the domination of the tourism industry over the local economy and politics, personal politics, and the absence of legal personhood of the existing transboundary cooperation institution are all factors limiting the capacity of the local polycentric governance system to sustainably manage CPRs. However, the grit of key individuals and opportunities offered by the European Union and the United Nations allow for the possibility of the existing system to slowly transform into an adapted transboundary polycentric governance system that can meet environmental sustainability challenges.

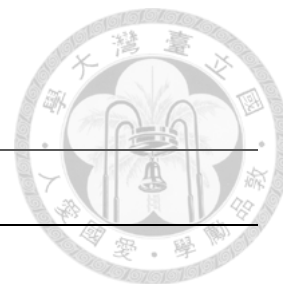
Keywords: Common-pool resources, transboundary conservation, biodiversity, polycentric governance, maladaptation.

CONTENTS



Acknowledgements	i
摘要	ii
Abstract.....	iii
Contents.....	iv
Abbreviations table.....	vi
Illustrations	vii
1 Introduction	1
2 Literature review and theoretical framework	3
2.1 Mountains as natural common-pool resources	3
2.2 Governance of mountains: local to (almost) global.....	4
2.3 Transboundary environmental conservation	6
2.4 Polycentricity in transboundary conservation projects.....	9
2.5 Research gap and hypotheses	19
3 Methodology	23
3.1 Research design	23
3.2 Study site	23
3.3 Data collection.....	26
3.4 Data analysis.....	29
3.5 Positionality.....	30
4 Contextualizing the MBR	31
4.1 Cultural and economic background.....	31
4.2 CPRs in the MBR	34
4.3 Current threats to the MBR CPRs	39
4.4 Decision-making centers for CPR governance in the MBR.....	45
5 Drawing the system: the EMB	76

5.1	The origins of the EMB	76
5.2	EMB's governance structure	78
5.3	Drawing the system: outside the EMB	81
6	Thematic analysis	86
6.1	Lack of legal existence of the EMB	87
6.2	The overarching role of the EU	90
6.3	Tourism management coordination	90
6.4	Climate change adaptation	91
7	Assessing the EMB	93
8	Discussion	107
8.1	MBR's transboundary polycentric CPR governance system: adapted?	107
8.2	Hypotheses testing	112
9	Limitations	120
10	Conclusion	121
11	References	124
12	Appendix: Translated example guide to semi-structured interviews	142
12.1	Italian EMB coordination officer	142
12.2	Director of the CREA research NGO	143



ABBREVIATIONS TABLE

Abbreviation	Definition
AO	Aosta Valley
ARA Region	Auvergne-Rhône-Alpes Région
CH	Switzerland
ComCom	Communauté des Communes
CPR	common-pool resources
CREA	Research Center for Alpine Ecosystems
EGTC	European grouping of territorial cooperation
EMB	Espace Mont Blanc
EU	European Union
FDDM	Fondation pour le développement durable des régions de montagne
FR	France
ITNCH	Interpretive Trails of Natural and Cultural Heritage
IT	Italy
IUCN	International Union for the Conservation of Nature
MBR	Mont Blanc Region
MBTC	Mont Blanc Transboundary Conference
MW	Mountain Wilderness
NGO	Non-governmental Organization
NPR	Nouvelle Politique Régionale (New Regional Policy)
PIT	Plan d'Intégration Régionale
PNRT	<u>P</u> arc <u>n</u> aturel <u>r</u> égional de la Vallée du <u>T</u> rient, de l'Arpille à la Cime de l'Est
WWF	World Wildlife Fund

ILLUSTRATIONS



Tables

Table 1. The IUCN typology of transboundary conservation areas	7
Table 2. Criteria of a functional polycentric transboundary conservation governance system	Erreur ! Signet non défini.
Table 3.	25
Table 4. Decision-making centers typology and interview records	28
Table 5. Alpine zones classification in the Western Alps	36
Table 6. Identified relevant decision-making centers.....	46
Table 7. Natura 2000 sites in the EMB	50
Table 8. INTERREG programs in the MBR	53
Table 9. NPR-supported MBR projects.....	60
Table 10. Assessment of the enabling conditions in the MBR.....	93

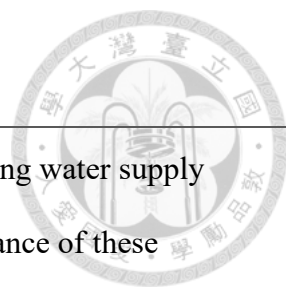
Figures

Figure 1. H1: Change through voicing	20
Figure 2. H2: Abandonment of the dysfunctional system	21
Figure 3. H3: Exit and new system creation.....	22
Figure 4. H4: No change	22
Figure 5. The Mont-Blanc and the Valley of Chamonix from the Flégère trail	41
Figure 6. Chamouni and the Mont Blanc	41
Figure 7. Vallée de Chamonix vue du Chapeau (1860)	43
Figure 8. Chamonix and mountain (2015).....	43
Figure 9. Organigram of the Mont-Blanc Transboundary Conference	80
Figure 10. Visualization of the main forces in the MBR.....	108
Figure 11. Driving factors in the MBR polycentric CPR governance system	118

Maps

Map 1. Boundaries of the study case	24
Map 2. Natura 2000 areas overlapping with the MBR.....	49

1 INTRODUCTION



Forty percent of humanity depends on mountains for their drinking water supply (Immerzeel et al., 2020). Few people, however, are aware of the importance of these landscapes for their daily lives, notably because of their peripherality. Mountains are also less accessible for researchers, leading to knowledge gaps in comparison to other landscapes. Their importance as central ecosystem services providers and as ecological niches with high endemism (Rahbek et al., 2019; He et al., 2023) cannot be understated. With expanding urbanization in mountains, human activities increasingly threaten mountains' unique ecosystems (Pauchard et al., 2009; Pereira et al., 2022; Perrigo et al., 2020), which are simultaneously made fragile by climate change (Ioan et al., 2025). Finding governance best practices for mountains' invaluable natural resources is central to the future of our planet.

Biodiversity governance in mountains faces an additional challenge, uncommon in many other natural resource-rich regions: these peripheral regions often serve as national borders (Debarbieux, 1997). Landscapes are thus politically and administratively fragmented, further complicating coherent natural resources governance.

Transboundary conservation literature has focused on sparsely populated areas where the few local communities are marginalized by the national government and international non-governmental organizations (NGO) leading transboundary governance initiatives (see, e.g., Spierenburg et al., 2006; Cardona et al., 2022). The following questions remain unanswered:

- Can a local transboundary conservation governance system achieve sustainable natural resources governance?
- What are best practices to combine biodiversity conservation and human development in mountainous border regions?

This thesis presents a case study of a locally-driven transboundary natural resources governance system in a relatively densely populated and locally empowered mountainous region, the Mont Blanc Region (MBR). Centered around Mont Blanc, the highest summit in the Alps, this region includes Swiss, Italian, and French communities, connected by their dependence on a common landscape and its resources.



Framing the numerous natural assets of the MBR as common-pool resources (CPR), I analyze the transboundary governance through the lens of a polycentric governance system. By combining transboundary conservation and polycentricity literatures, this thesis provides best practices and identifies governance bottlenecks for communities and decision-makers in other transboundary mountain regions to draw inspiration from.

The rest of this thesis is structured as follows. Section 2 builds a theoretical framework combining transboundary biodiversity conservation and polycentric CPR governance literatures. Section 3 follows with an introduction to the methodology. Section 4 presents a detailed background about the MBR to help readers familiarize themselves with the complex local context. Section 5 presents the results, first by drawing the intricate transboundary polycentric CPR governance system in the MBR in its current state and then by evaluating its functionality against criteria built in the literature review section. Section 6 discusses the results, and Section 7 offers concluding remarks.

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK



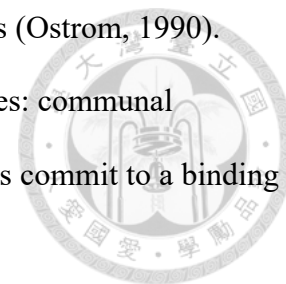
2.1 MOUNTAINS AS NATURAL COMMON-POOL RESOURCES

A useful way to look at biodiversity-rich mountainous regions is to understand them as CPRs. CPRs are natural or human-made resource systems from which it is difficult to exclude anyone, and an individual's consumption of the good reduces the availability of benefits for others (Ostrom et al., 1994, p.6). The essential issue in CPR management is that the costs of investing in and maintaining the sustainability of the CPR are carried by individuals, while the benefits are shared by all users. There is thus a strong incentive to free ride (Ostrom et al., 1994).

Biodiversity-rich mountains fall into the category of CPR. Depending on the estimation (Thornton et al., 2022), mountains host around 14% of the world's human population (Ehrlich et al., 2021) and are essential for the subsistence of half of the planet's human population (Messerli and Ives, 1997), especially as a source of water (United Nations, 1992a; Immerzeel et al., 2020). Mountain biodiversity is thus not only important per se, but also essential for our own species. They are not a private resource, but a CPR for all of humanity.

The challenges of managing CPRs have long been known. In her seminal work *Governing the Commons*, Ostrom traces the history of reflection on CPR governance back to Aristotle (Ostrom, 1990). What brought the 20th-century academic and policy attention to CPRs is Garrett Hardin's 1968 article on the "Tragedy of the Commons," in which the author posits that resources held in common, such as the air or water bodies, are doomed to be degraded by overexploitation if access to the CPR remains open and unregulated (Hardin, 1968). In light of this reflection, Hardin and other researchers defended that only two paths were possible to avoid the destruction of CPRs: either a centralized governmental regulation

regime to enforce rules and punish abusers, or the privatization of CPRs (Ostrom, 1990). Ostrom highlights a third way prevalent in many traditional communities: communal ownership (Ostrom, 1990). In this third governance scenario, CPR-users commit to a binding agreement and share the costs of contract enforcement.



2.2 GOVERNANCE OF MOUNTAINS: LOCAL TO (ALMOST)

GLOBAL

Looking at the general history of mountain governance, we can see that societies have experimented with variations of the three possible governance types: in ancient times and in traditional societies with Ostrom's third communal ownership way; then with a hybrid form of centralized governmental regulation and privatization governance strategies.

As described by Debarbieux and Price (2008), local and Indigenous human communities have inhabited mountains across the world for centuries, if not millennia, in relative harmony with their ecosystem. It was only in the 19th century that mountains entered the political discourse as common goods of nations. National governments understood mountains as sources of water, of revenue from tourism, and as national landmarks and strategic places (Debarbieux & Price, 2008). If Hardin's centralized governmental regulation model applied, we would expect that mountain resources would have been sustainably managed. However, this has not been the case, and in many places, mountain resources have been increasingly overexploited since the centralization of their governance (Ostrom, 1999).

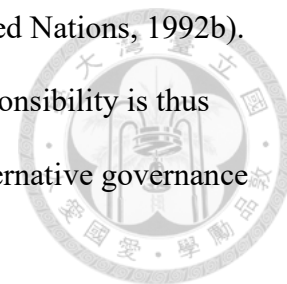
The failure of most national governments to meet their theoretically expected role as guarantors of CPRs sustainability comes from the complex contemporary interconnectedness between state power and CPRs. Wagenaar and Bartels (2024) summarize the three ways states and CPRs are related. First, similarly to what Hardin expects the centralized governmental

authority to provide, the state guarantees the rule of law. Second, in liberal democracies, the state is “the platform and the guarantor of democratic procedures” (Wagenaar & Bartels, 2024, p.341). This is where the difficulty for the modern liberal democratic state in protecting CPRs arises. Indeed, states rely on the corporate sector for financial and ideational support (Streeck, 2017; Kuttner, 2018). Since a corporation's sole purpose is to increase its shareholders' profit (Lloyd, 2007), corporations' increasing political power (Beder, 2006) diminishes the capacity of states to ensure the sustainability of CPRs.

By the end of the 20th Century, the alarming deterioration rate of mountainous environments and the lobbying work of environmental activists and scientists finally reached global decision-making platforms. Western multilateral institutions eventually recognized mountains as an important ecosystem in Chapter 13 of the UN's Agenda 21 in 1992 (Debarbieux & Price, 2008; United Nations, 1992a). This milestone document describes two key program areas. First, it calls for more research on mountain ecosystems to improve our knowledge of ecology and sustainable development in various mountains around the world. Second, it recognizes the many essential services mountains provide to humans, including water, energy, biological diversity, minerals, forest products, agricultural products, and recreation (United Nations, 1992a, art.13.1). Among these services, Chapter 13 highlights in particular the importance of mountains as sources of water and recommends carefully integrated watershed management and development to limit erosion and generate livelihood opportunities for local communities (Carroll-Foster & Pun, 1993). When the watershed is transboundary, integrated management should also be transboundary.

Unfortunately, the management of transboundary natural resources, such as watersheds, is rarely at the appropriate scale. The structure of the current international order leads to the governance of biodiversity conservation remaining in the hands of nation-states, delimited by political borders rather than ecological ones. The fifth preamble of the CBD “Reaffirm[s] that

States have sovereign rights over their own biological resources” (United Nations, 1992b). The ascension of biodiversity conservation from national to global responsibility is thus incomplete, and the conservation community urgently needs to find alternative governance systems that work within the current global order.



2.3 TRANSBOUNDARY ENVIRONMENTAL CONSERVATION

One such system that seeks to overcome the issue of national borders dividing up ecosystems is transboundary governance for biodiversity conservation. The International Union for the Conservation of Nature (IUCN) defines transboundary conservation as “a process of cooperation to achieve conservation goals across one or more international boundaries” (Vasiljević et al., 2015, p. 6). Transnational and transboundary conservation governance differ in that the study of the former is located exclusively at the country-level of analysis, whereas the latter encompasses cross-border governance relations at all scales, both horizontally and vertically (Miller et al., 2022). All transboundary conservation areas are not made equal, and the IUCN distinguishes them into three categories: transboundary protected area, landscape and/or seascape, and migration conservation area (see Table 1).

Table 1.*The IUCN typology of transboundary conservation areas*

Area type	Description
Transboundary Protected Area	A Transboundary Protected Area is a clearly defined geographical space that includes protected areas that are ecologically connected across one or more international boundaries and involves some form of cooperation.
Transboundary Conservation Landscape and/or Seascape	A Transboundary Conservation Landscape and/ or Seascape is an ecologically connected area that includes both protected areas and multiple resource use areas across one or more international boundaries and involves some form of cooperation.
Transboundary Migration Conservation Area	Transboundary Migration Conservation Areas are wildlife habitats in two or more countries that are necessary to sustain populations of migratory species and involve some form of cooperation.

Adapted from Vasiljević et al. (2015)

The theoretical advantages of transboundary conservation areas are numerous: better coordination and coherence of conservation projects' priorities and implementation, lower costs, and reduction of habitat fragmentation (Allan et al., 2019).

While engaging international, national, sub-national, and local actors is key to environmental protection in borderlands, multiscale governance is bound to face plenty of unique challenges (Gurung et al., 2019, p.3). Political entities may pursue objectives that do not align with those of their cooperation partners; participation of local stakeholders is often not institutionalized, limiting their ability to co-determine and co-implement transboundary projects (Doyle-Capitman et al., 2018). Objectives within the cooperation agreements themselves may be conflicting, such as biodiversity protection and economic development.

Most existing transboundary conservation case studies focus on initiatives whose sole purpose is biodiversity conservation and are located in sparsely inhabited border regions, and identify causes of success or failure. Lim (2014) found that the Heart of Borneo transboundary initiative, which encompasses territory in Malaysia, Brunei, and Indonesia, is not successful because of governance issues and a lack of political buy-in. For the Red Sea Marine Peace Park shared by Jordan and Israel, a combination of multiple factors, including geopolitical tensions, stakeholder disengagement, funding cuts, and unbalanced responsibility distribution, has led to the slow crumbling of the initiative (Portman & Teff-Seker, 2017). Comparing two transboundary protected areas in Africa, Schoon (2013) found that institutional structure and path dependence are determining factors for the success of the conservation initiative.

Few case studies, however, look at transboundary initiatives located in highly populated regions, and for which environmental conservation is only one of the main cooperation objectives, like the Espace Mont Blanc (EMB). With the expansion of human infrastructure and settlements in borderlands (Liu et al., 2020), understanding the challenges and opportunities of a populated case study like the EMB can inform future decision-makers designing transboundary conservation initiatives that also support the livelihoods of large human populations.

To better analyze transboundary conservation in densely populated regions, we can turn back to CPR governance theory.

2.4 POLYCENTRICITY IN TRANSBOUNDARY CONSERVATION PROJECTS



As defined earlier, transboundary conservation projects involve the shared governance of multiple actors across governmental scales and jurisdictions. Commonly, governmental authorities at the national, subnational or local levels are major, yet not the sole actors involved. Most of the time, local, national, or international NGOs and private companies are also central actors in transboundary conservation governance. This type of system, where stakeholders cross vertical and horizontal boundaries to share governance of one or multiple CPRs, is known in the public administration and governance literatures as a polycentric governance system. Ostrom (1990) identifies polycentricity as an essential design principle for CPR governance systems that are embedded in larger systems (rather than only at the community level).

The concept of polycentric governance was first used by Michael Polanyi in *The Logic of Liberty* (1951) and extensively explored in the work of Vincent Ostrom in metropolitan areas (Ostrom et al., 1961, Ostrom, 1991). After decades of scholarly debate, Carlisle & Gruby (2019) summarize the two definitional core elements of a polycentric governance system:

“(1) multiple, overlapping decision-making centers with some degree of autonomy; (2) choosing to act in ways that take account of others through the processes of cooperation, competition, conflict and conflict resolution” (Carlisle & Gruby, 2019, p.932). To fully grasp the meaning of the first proposition, we must deconstruct it term by term.

Decision-making centers are organizations or individuals that have responsibilities and jurisdiction in specific domains (Carlisle & Gruby, 2019). The power decision-making centers hold in a governance system can be classified into three categories (Morrison et al., 2017).

The first type is power by design, a formal form of authority which gives the capacity to legislate, allocate resources, collect taxes, etc. Power by design can “undertake structural adjustment, redesign markets and regulate externalities” (Morrison et al., 2017, p. 7). In other words, decision-making centers with legal, political, institutional, and administrative powers exert it by shaping the power and options of local actors. Decision-making centers with power by design usually include national governments, multinational organizations, and other high-level actors. The second type is pragmatic power, which is a functional form of authority that is exerted on day-to-day decisions. Decision-making centers with pragmatic power can interpret, monitor, certify, and implement rules and governance mechanisms, and influence other actors. Pragmatic power includes practical, social, and reputational power and is often held by bureaucrats, corporations, and activist groups (Morrison et al., 2017). The last type of power is framing power. This type of power relies on the perceived disciplinary expertise of an actor. Academics, engineers, and other experts influence decision-making centers with other forms of power by framing issues and setting norms. For instance, framing power can mean controlling knowledge production and diffusion, highlighting chosen sides of an issue, and suggesting solutions (Morrison et al., 2017). While decision-making centers’ powers differ in strength and quality, they are all driving forces shaping the governance system's objectives, structure, and effectiveness.

Decision-making centers are typically multi-level (local, subnational, national, international) and multi-sectoral (private, public, civil sectors) (McGinnis & Ostrom, 2012). Because they work at different governance levels, the jurisdictions of decision-making centers overlap. Nevertheless, each must operate with a certain level of autonomy and not on behalf of a centralized power center. If centers obeyed a centralized authority, they would merely be implementation agencies.

The second attribute stresses that the discussed autonomy does not mean working in independently. Decision-making centers act in ways that take account of other decision centers within the system through the processes of cooperation, competition, conflict, and conflict resolution, basing decisions on experiences, actions, or inactions of the others. Making decisions based on others requires reliable information and patterns of relationships, thus incentivizing self-organization into a coherent system (Ostrom, 1990).

In polycentric governance systems, the diversity of types and scales of stakeholders renders the universal agreement to a contract and the identification of an appropriate mediator more challenging (Portman & Teff-Seker, 2017). According to the original theory of CPR governance, users hire a private mediator to enforce the terms of the contract (Ostrom, 1990). The mediator does not need to monitor contracting parties. Each user has an interest in ensuring that the others respect the agreement. All users will thus monitor each other, avoiding the principal-agent use of top-down governance systems (Ostrom, 1990).

In a nation-state-based system, sovereign governments are “the only relevant legal actors” (Oksanen & Vuorisalo, 2019, p.436), and, depending on their domestic political systems, internally distribute biodiversity conservation decision-making and implementation to national, subnational and local entities. It is challenging for multiscale governments across national borders to enter into functional contractual arrangements with each other, and this difficulty increases further as more actors of various types participate in the system (Portman & Teff-Seker, 2017).

According to Carlisle & Gruby (2019), there are three theoretical advantages of the polycentric governance system of CPRs over monocentric governance systems. First, the multiplicity of overlapping decision-making centers ensures the system’s ability to adapt to ecological or social changes. The second advantage is that polycentric governance should be a better institutional fit for the problem that needs to be addressed because it is designed to

correspond to the geographical extent of the issue. Lastly, the redundancy inherent in polycentric governance increases its capacity for risk mitigation. Redundancy within the polycentric system takes two forms: decision-making centers duplicate functions, and many diverse institutions manage natural resource systems across areas (Carlisle & Gruby, 2019).

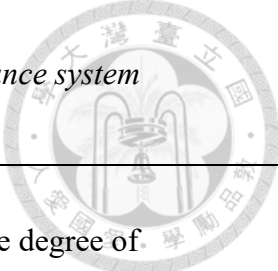
2.4.1 Polycentric transboundary conservation governance

system: criteria for success

To realize the above-mentioned advantages, polycentric governance systems of transboundary conservation areas must meet numerous criteria. In a study on the Great Barrier Reef governance regime, Morrison (2017) argues that applying polycentric governance theory to landscapes requires going beyond the analysis of its structure. She shows that the robustness of a governance system, meaning its capacity to last over time and remain aligned with its core regime goals, is a function of structural, contextual, and effectiveness factors.

Structural factors include the complexity of institutions, policies, and their actors and interactions. Context is determined by geographic, economic and political forces; and effectiveness relates to the “authority and ability of key actors and instruments” to take action (Morrison, 2017, p.e3014).

Combining primarily the framework proposed by Morrison (2017) and Carlisle & Gurby’s (2019) findings, I draw on other literature to extend the list of enabling conditions in order to account for the particular conditions of transboundary systems (Table 2).

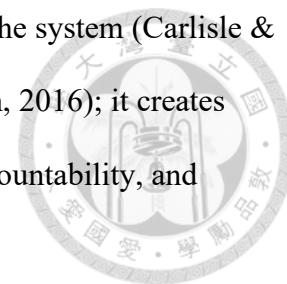
Table 2.*Criteria of a functional polycentric transboundary conservation governance system*


Factor	Condition
Structure	Decision-making centers employ diverse institutions
	Multiple, overlapping decision-making centers with some degree of autonomy
	Choosing to act in ways that take account of others through processes of cooperation, competition, conflict, and conflict resolution
	Generally applicable rules and norms structure actions and behaviors within the system
	Decision-making centers participate in cross-scale linkages or other mechanisms for deliberation and learning
	Mechanisms for accountability exist within the governance system
	Trust between the decision-making centers and other stakeholders within the system
Context	Guaranteed security
	Transparency, public awareness, and public engagement
	Issue salience for all decision-making centers
	Sound institutional beginnings, including all relevant stakeholders (path dependency)
	Stable and sufficient funding
Effectiveness	Explicit objectives, clear monitoring indicators, and evaluation criteria
	Equitable distribution of the costs and benefits
	The jurisdiction or scope of authority of decision-making centers is coterminous with the boundaries of the problem being addressed
	Integrated ecosystem approach incorporating all available science

2.4.1.1 Structure

First, an essential element of Elinor Ostrom's self-financed contract-enforcement CPR governance is often overlooked by the transboundary conservation literature: the contract. This legal agreement must be drafted and signed by the users of the CPR in question and can take various forms depending on the specific context (Ostrom, 1990). The significance of the

contract is multifold. It establishes rules and norms that apply to all in the system (Carlisle & Gruby, 2019; Portman & Teff-Seker, 2017) and enables processes (Lim, 2016); it creates multi-scale institutions within the system for deliberation, learning, accountability, and conflict resolution (Carlisle & Gruby, 2019; Lim, 2016).



In a study comparing three transboundary conservation initiatives at the US-Mexico border, Clark & Nyaupame (2025) identifies trust between the public, private, and civil society stakeholders as a key factor impacting the capacity of the governance system to successfully conserve biodiversity. Andersson & Ostrom (2008) add that the frequency of interaction between local authorities and other stakeholders (subnational or national governments, NGOs, private actors, etc) is critical for the performance of a CPR governance system.

2.4.1.2 Context

Some of the criteria for successful transboundary protected areas proposed by Portman & Teff-Seker (2017) offer various contextual conditions necessary for building trust: security should be guaranteed; efforts should be invested into transparency and public awareness of environmental issues; decision-making centers should share common values, be environmental, political, religious, or other, which should lead them to common goals.

These common values lead to the political buy-in of the transboundary conservation project, which is essential for the creation and perpetuity of a polycentric transboundary CPR governance system. For instance, while the national governments of Indonesia, Brunei, and Malaysia have jointly established the Heart of Borneo conservation initiative, Lim (2014) argues that the lack of interest of contracting parties is the main cause of the failure of the Heart of Borneo to achieve any significant result. Similarly, after comparing transboundary protected areas around the Gulf of Aqaba, Portman & Teff-Seker (2017) argue that an high

and shared sense of emergency regarding the environmental deterioration of the CPR helps decision-making centers to cooperate. Indeed, decision-making centers' environmental, financial, political, or social interests in the conservation of the CPR shape their motivation and commitment to its success (Portman & Teff-Seker, 2017). A transboundary polycentric CPR conservation governance system, however, comes with high transaction costs (Gallemore, 2017) and depends on stable and sufficient funding, mostly coming from transfers by central governments (Andersson & Ostrom, 2008).

Ensuring the financial viability of a transboundary conservation initiative is no easy task. Portman & Teff-Seker (2017) found that the location of the project has an effect on its political salience and thus on government support. If the transboundary conservation area is close to the political center, it becomes highly visible. Officials might funnel funds to it, but also make it a political project, impeding the capacity of local experts to take the most efficient conservation decisions. On the other hand, if the transboundary conservation area is in the periphery, conservationists have more freedom in their work, but the interest of national governments in the project might dwindle together with funding. Financial profitability is an effective argument to attract support and funding for a transboundary conservation project (Portman & Teff-Seker, 2017). The involvement of a third party, either a third state or an NGO, further mitigates the financial risk posed by shifting government priorities and economic conjuncture (Clark & Nyaupame, 2025; Portman & Teff-Seker, 2017).

2.4.1.3 Effectiveness

Crucially, the effectiveness of a polycentric governance system is defined by the objectives agreed upon by the stakeholders, usually in the original contract (Lim, 2016). Setting clear objectives encourages the creation of monitoring indicators and evaluation criteria, ideally leading to adaptive management practices (Lim, 2016; Portman & Teff-Seker,

2017). Without explicit CPR conservation goals, decision-making centers fall back into a situation encouraging free-riding and resource overexploitation (Ostrom, 1990).

Besides clear objectives, another important reason to carefully plan and execute the establishment process is the sensitivity of polycentric CPR governance systems to institutional path dependency (Schoon, 2013; Biddle & Baehler, 2019; Pattberg & Widerberg, 2020). In this initial phase, the inclusion of diverse stakeholders across jurisdictions and at different scales (Portman & Teff-Seker, 2017; Carlisle & Gruby, 2019; Lim, 2016) and the resulting characteristics of governance institutions significantly influence the future of the system.

Failing to include all relevant stakeholders impedes the equitable distribution of the costs and benefits of the polycentric transboundary conservation project, which is a criterion for a functional polycentric transboundary conservation project (Lim, 2016; Portman & Teff-Seker, 2017). Restricting the number and diversity of stakeholders participating in the initiation phase is also likely to block the realization of three criteria for a functional polycentric transboundary CPR governance system: learning from existing initiatives (Portman & Teff-Seker, 2017); recognizing the complexity of the environmental and social system that is to be governed, and the capacity of each stakeholder to provide the necessary resources for this governance (Lim, 2016).

The detrimental effects of political borders on biodiversity conservation are well-documented. When fences or walls are built along them, political boundaries become physical barriers for wildlife populations, fragmenting habitats and dividing populations (Clark & Nyaupane, 2025; Li et al., 2020). National borders, even where they are not marked by a physical barrier, are costly for biodiversity, as they fragment management and governance (Dallimer & Strange, 2015; Liu et al., 2020). Functioning transboundary polycentric governance systems have the capacity to overcome this hurdle when the

jurisdictional boundaries of their decision-making centers match the ecological boundaries of the threatened area across political boundaries (Carlisle & Gruby, 2019; Lim, 2016). Lim (2016), argues that an integrated ecosystem approach is crucial for curbing biodiversity loss. This means that a transboundary protected area must be designed at a scale large enough to actually maintain populations and ecosystems. Defining this scale can only be achieved through science, and ecosystem monitoring and actions also necessitate all available science (Lim, 2016, p. 803). In other words, policy and science must work hand in hand for a transboundary biodiversity conservation project to work.

Using this conceptual model as an evaluation grid is more complex than simply deciding whether the criteria are met or not. An enabling factor might be structurally present but dysfunctional, leading to maladaptation (Andesson & Ostrom, 2008). In a comparison of two polycentric city water governance systems in the USA, Biddle & Baehler (2019) show that even if most of the enabling conditions for the adaptive capacity of a system are structurally present, if they are dysfunctional, they can lead to the maladaptation of the system and its incapacity to effectively govern the CPR it was supposed to manage.

2.4.2 Institutional change in polycentric governance systems

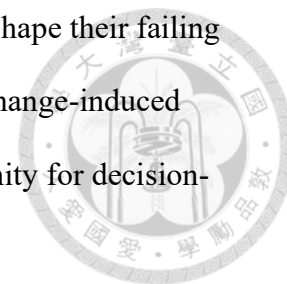
Decision-making centers' actions lead to the continuous structural transformation and reorientation of the polycentric system (Biddle & Baehler, 2019). The high complexity of a polycentric CPR governance system means that change pathways are blurry and interdependent. Thiel et al. (2019) agree with the centrality of individual actors and argue that their actions are shaped by preferences and available options. Different elements of such a system that can trigger or lead to change, and actors can use various pathways to transform existing arrangements (Thiel et al., 2019). First, bottom-up and top-down initiatives are both potential change pathways and often happen simultaneously. Second, when trying to

renegotiate governance arrangements, decision-makers typically have three pathways: voice their demands through political or administrative channels, exit the system, thereby weakening it, either financially or in terms of legitimacy; or combine an exit strategy with the self-organization of an alternative governance system (Thiel et al., 2019). Third, decision-making centers' heterogeneity, diverse problem perception and preferences can lead to either more change or increased institutional inertia (Thiel et al., 2019). Path dependency plays an unavoidable role in polycentric systems' institutional change. Effects of previous decisions and conditions are always shaping decision-making centers' perceptions, preferences, options, and actions (Schoon, 2013; Biddle & Baehler, 2019).

Despite good resilience, as discussed earlier, polycentric governance systems are not infallible. Failure to appropriately adapt to ever-changing conditions and new problems can lead to the overall failure of the system to govern CPRs. The literature identifies some processes harmful to polycentric governance. Overwhelming complexity makes it difficult for decision-making centers to deliberate, learn from each other, and work together, potentially leading to fragmentation, which is the decline in coordination between decision-making centers (Morrison et al., 2023). Power imbalances can be caused by the capture of the system by resource-rich decision-making centers acting in their own interests or by the deliberate or structural marginalization of some groups (Baldwin et al., 2024). Through power by design, state actors can recentralize both pragmatic and framing powers, thereby removing autonomy and resources from the hands of local decision-making centers and replacing polycentricity with monolithic governance (see, e.g., Adhikari, 2026).

As mentioned earlier, one of its three main advantages is that a polycentric governance system is highly adaptive. Carlisle & Gruby (2019) claim that this advantage is possible only when five enabling conditions, which correspond to Morrison's (2017) structural factors, are present. If all or most of these enabling conditions are at least

structurally present and yet decision-making centers cannot agree to reshape their failing governance system, an external shock, such as a pandemic or climate change-induced disasters, can lower the costs of change and open a window of opportunity for decision-making centers to rethink the governance system (Fulton, 2021).



2.5 RESEARCH GAP AND HYPOTHESES

While the literature offers some case studies of successful and maladapted polycentric transboundary conservation governance systems, two questions remain unanswered.

First, most, if not all, case studies look at transboundary conservation areas that are far in the periphery and sparsely inhabited or not inhabited at all by human populations. With a growing global human population, technological development, and climate change, human infrastructure is increasingly spreading up into mountains (Liu et al., 2020). We thus need to better study and plan for ongoing and future transboundary CPR management as a necessary response to the colonization of mountainous borderlands.

Second, the existing literature on transboundary conservation governance focuses on successful or failing cases to identify best practices, but little on system transformation. While this is a legitimate endeavor, it lacks insights into the adaptation mechanisms that a maladapted system can adopt to try to conserve CPRs. Indeed, if a polycentric transboundary conservation governance system is incapable of meeting the criteria listed in Table 2, it would be a shame to entirely abandon this governance system and to either give up on CPR conservation entirely or hand it to a monocentric power. On the other hand, the polycentric governance theory of change has yet to be applied to polycentric transboundary CPRs conservation governance systems in populated areas. Knowing how such a system transforms would be insightful to decision-makers in similar governance systems, and give inspiration to

other dysfunctional conservation governance systems. In other words, this thesis aims to answer the following question:

“How do decision-making centers in a maladapted polycentric transboundary CPR governance system in a populous mountainous region organize themselves to ensure sustainable common-pool resources management?”

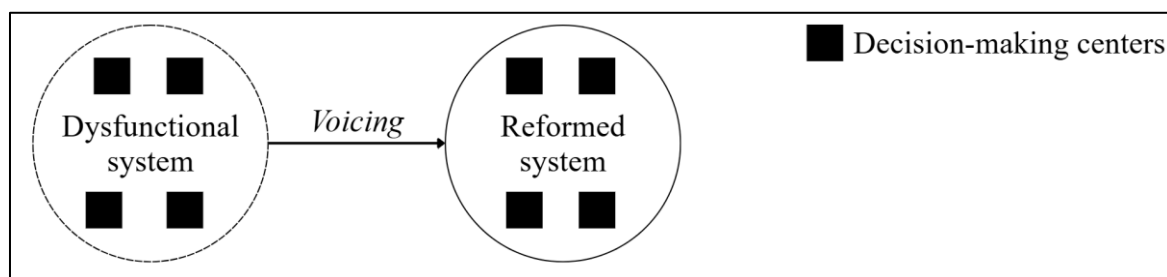
To answer this question, two steps are necessary. The first one is the identification of a maladapted polycentric transboundary CPR governance system. To do so, I will introduce the case study in Chapter 3.2 and Chapter 4, and, in Chapter 7, use the criteria table designed from the literature in Chapter 2.4 to show its maladaptation.

Second, I have to explore the pathways the decision-makers use to create change and reshape the governance system. Based on the literature on institutional change in polycentric governance systems discussed in Chapter 2.4.2., the first of the three change pathways described earlier is voicing. Decision-making centers use political and administrative channels to redefine arrangements (Figure 1).

H1: Decision-making centers change transboundary governance (institutions) through administrative and political channels.

Figure 1.

H1: Change through voicing



This first, reformist hypothesis faces some hurdles mentioned in the literature review, notably path dependency and overwhelming heterogeneity dynamics. If decision-making

centers within the system do not believe in their capacity to change the system's arrangement, they can exit the system, thereby reducing its legitimacy and/or its resources to function. This conjecture, if taken to the extreme, could lead to the total abandonment of the system. If enough decision-making centers exit the system, its legitimacy and capacity to govern CPRs can fall below a minimal threshold, leading to the end of the polycentric governance system.

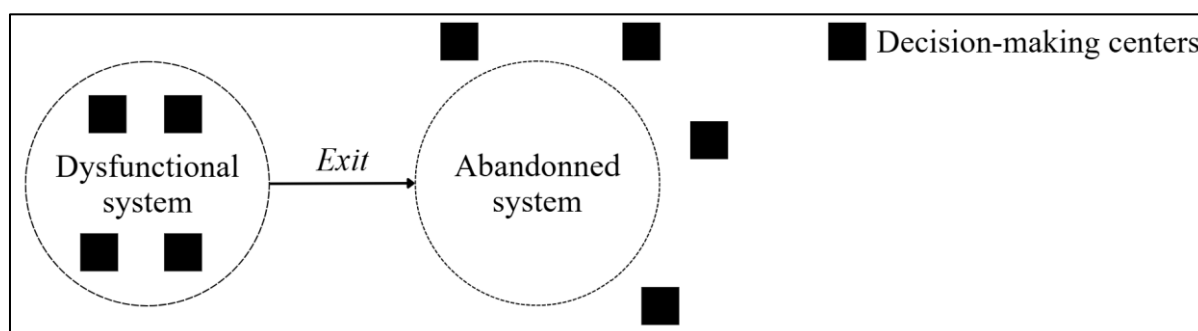
Other pathways, documented in the literature, can also lead to the failure of the polycentric governance system. Power imbalances, high coordination costs, recentralization and fragmentation are also potential causes of total polycentric governance failure.

While polycentric governance systems are more resilient than monocentric systems, they are not exempt from potential dismantlement. Hence the second hypothesis (Figure 2):

H2: The failing polycentric governance system is abandoned.

Figure 2.

H2: Abandonment of the dysfunctional system

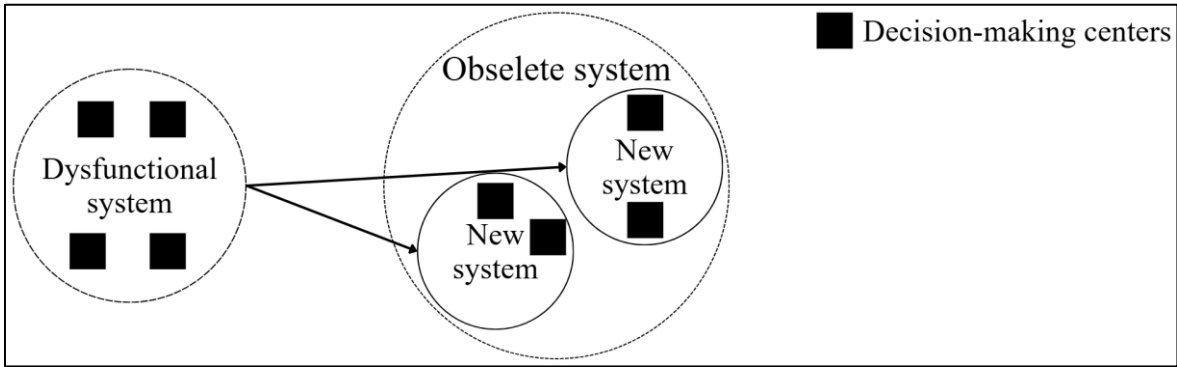


According to Thiel et al. (2019), the exit option can also be accompanied by the leaving decision-making centers creating an alternative system. Alternatively, when a polycentric governance system is weak, participating decision-making centers can remain in the system and fill in governance gaps by organizing themselves into smaller systems to conserve CPRs. Theoretically, the creation of a parallel system can either act as a complement to the original one or slowly empty it of legitimacy and capacity, leading to its total replacement.

H3: The existing transboundary institutions remain in place, and decision-making centers reorganize themselves into smaller systems to conserve CPRs.



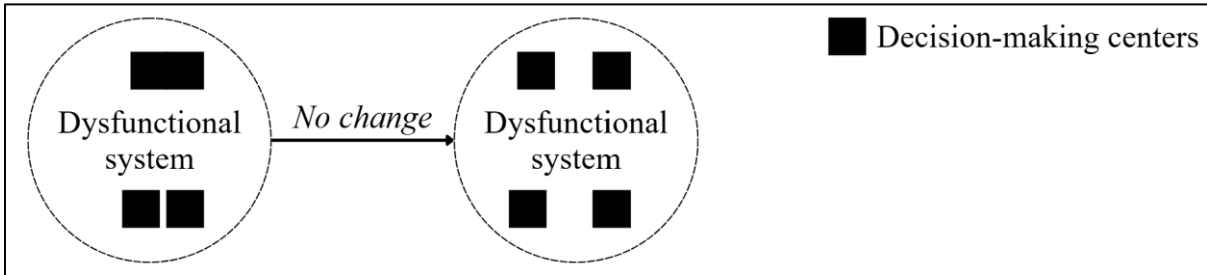
Figure 3.
H3: Exit and new system creation



H1 to H3 offer potential transformation pathways and related outcomes. A last option must still be considered: no change. Overwhelming heterogeneity, extremely asymmetrical distribution of power, absence of alternative options, and the lack of political salience of the specific CPR conservation are all causes mentioned in the literature for a polycentric governance system’s inertia. In such cases, decision-making centers might be incapable of changing or exiting the system, or might simply accept the status quo and let the CPR further deteriorate (Biddle & Baehler, 2019), such as in the Heart of Borneo case (Lim, 2014).

H4: The flawed polycentric transboundary CPR governance system remains unchanged, and CPRs keep deteriorating.

Figure 4,
H4: No change



3 METHODOLOGY



3.1 RESEARCH DESIGN

To test these hypotheses, I conducted a qualitative case study. Qualitative methodologies that blend richness and rigor have already proven their relevance in public administration research (Ashworth et al., 2019). By observing organizational phenomena as they occur and in their specific contexts (Møller, 2021), researchers advance theoretical understandings and expand the limits of knowledge. The case study method is thus ideal for understanding complex social phenomena (Yin, 2003, p.2), and exploring new questions (Bernard & Ryan, 2010, p.7), which are goals of this thesis.

Change in complex polycentric governance systems is continuous, causing significant challenges to assessment. While this problem can never be completely solved, researchers can address it by looking at outcome-related trends or at the quality of decision-making processes (Thiel et al., 2019). Because of the complex CPR network involved in the case that I will introduce shortly, I will apply Thiel et al.'s (2019) second option and focus primarily on processes and governance arrangements, while only occasionally looking at governance outcomes.

3.2 STUDY SITE

The case explored in this thesis is a small region in the Alps, specifically the area surrounding Mont Blanc, the highest peak in the Alps, towering at 4806m above sea level (Map 1). I define my study area as the territory included in the transboundary cooperation project Espace Mont Blanc (EMB). For clarity, I will refer to the geographical extent of the case as the MBR, and to the transboundary institution as the EMB. The MBR's 3,116 km²-

large territory is a craggy and steep landscape; its lowest point is Martigny in Switzerland, at 471m, but 80% of its territory remains above 1,500m. In total, around 144,000 people live within the boundaries of the MBR, spread across 49 communities in four regions of three different countries: Savoie and Haute-Savoie in France, Valais in Switzerland, and the Italian Autonomous Province of the Valley d'Aosta (hereafter Aosta Valley) (Table 3).

Map 1.

Boundaries of the study case

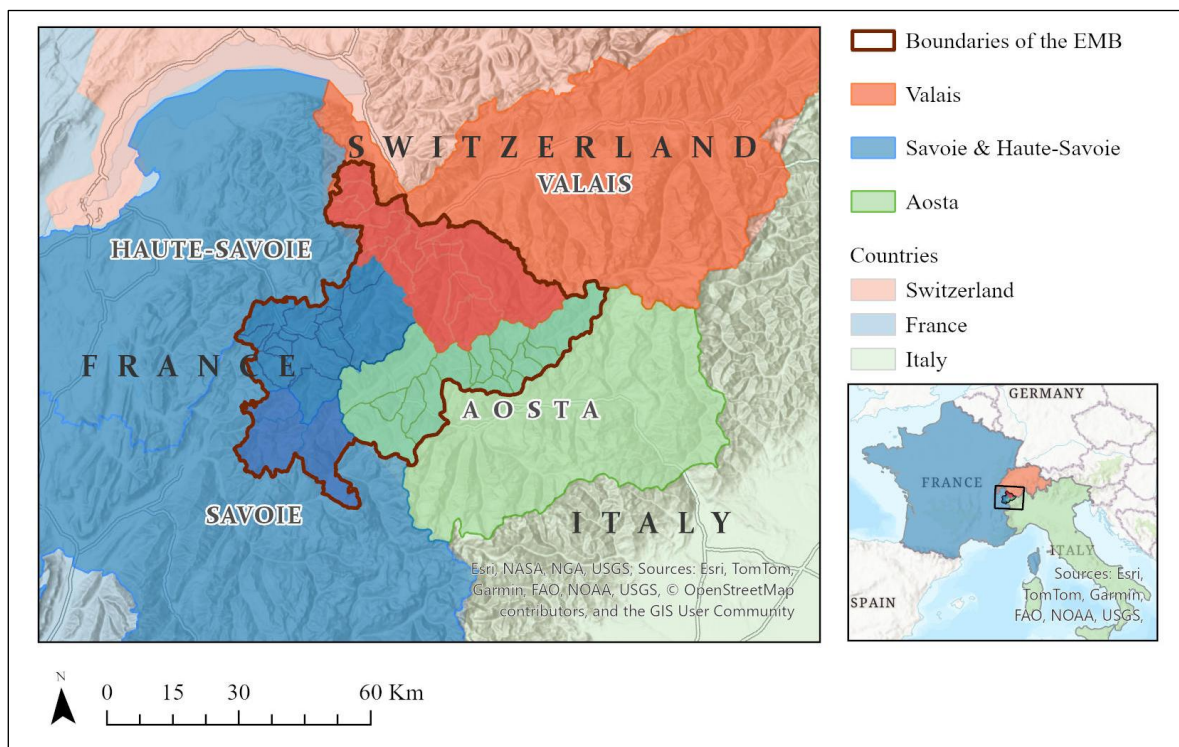


Table 3.*The communities included in the MBR*


France (FR)	Italy (IT)	Switzerland (CH)
Vallorcine	Courmayeur	Martigny
Chamonix-Mont Blanc	Pré-Saint-Didier	Martigny-Combe
Les Houches	La Thuile	Sembracher
Servoz	Mogex	Bovernier
Saint-Gervais-les-Bains	La Salle	Val de Bagnes
Les Contamines-Montjoie	Gignod	Orsières Liddes
Combloux	Etroubles	Bourg-Saint-Pierre
Cordon	Saint-Oyen	Vernayaz
Demi Quartier	Saint-Rhémy-en-Bosses	Evionnaz
Domancy	Roisan	Salvan
Megève	Doues	Finhaut
Passy	Allein	Trient
Praz-sur-Arly	Ollomont	Champéry
Sallanches	Valpelline	Val d'Illeiez
Beaufort	Oyace	Troistorrents
Bourg Saint-Maurice	Bionaz	Liddes
Hauteluce		

Inhabitants of the regions have coexisted and collaborated for hundreds of years, but the transboundary project of the EMB was only established in 1991. It is piloted by the Mont Blanc Transboundary Conference (MBTC), a board comprising of representatives of local, regional, and national governments. Civil society organizations, research institutions, and industry actors are involved in the EMB through various platforms and mechanisms. After three decades of existence, the EMB's accomplishments are limited to environmental education projects, a coordination of the hiking paths system, a couple of sustainable development plans with no coordinated implementation, and many aborted initiatives. Despite the inability of the EMB to concretize any biodiversity conservation action and the increased

anthropogenic pressures in the MBR, the local natural environment has not been degraded at the pace expected during its creation. The communities and the regional governments are increasingly taking transboundary conservation measures outside the EMB framework.

The MBR is an ideal object for a single embedded case study for two main reasons. First, the characteristics of the MBR (tri-national, mountainous, and densely populated), provide a unique case of polycentric CPR governance. Analyzing it in depth allows us to document this unique nature (Yin, 2003, p.41). Second, the evolution of the MBR's CPR governance system is determined by the transformation of the CPR governance embedded within the three subnational regions that come together in this transboundary institution. While the main unit of analysis is the MBR, understanding it requires understanding the transformation process of these three subunits, as well as the EMB as the transnational institution that brings them quasi-formally together, and their relationships with each other outside of the EMB. This is thus a typical embedded case study approach (Scholz & Tietje, 2002).

3.3 DATA COLLECTION

3.3.1 Purposive sampling

The interview participants were selected through a combination of two common nonprobability sampling methods. First, I drew a quota sampling grid in order to get as many of the existing perspectives of the polycentric multi-level governance system as possible (Bernard & Ryan, 2010, p. 362). In the sampling grid, the two axes ensure horizontal and vertical variations: the country unit, acknowledging national institutional specificities, and power and authority type (Morrison et al., 2017), because of different interests, jurisdictions, and capacities. This simple grid shows, in a simplified manner, that decision-making centers

that have formal authorities are clustered in the public sector, those who hold pragmatic power are from the private sector, and framing power is in the hands of NGOs. I divided this last category into two sub-categories because research institutions and advocacy organizations, despite both being NGOs, play very different roles in the governance of CPR in the MBR and thus deserve to be considered separately. Within the public sector, I took into account the verticality of jurisdiction, namely local and regional. In the context of the MBR, national governments and the EU mostly provide legal frameworks and funding, and, while they are crucial stakeholders, they are not considered decision-making centers. The resulting sampling grid (Table 4) is a conceptual map of the decision-making centers of different interests and capacities involved in the MBR.

Without prior personal connection, I first sent interview request emails to a handful of organizations and people I had identified as key informants for this research project. I received positive answers from most of the people I contacted. After this first round, I combined two further sampling methods: theoretical sampling and snowball sampling, also known as chain referral sampling. Theoretical sampling means sampling new informants not for representation but because the data accumulated to this point suggest that these particular people or organizations possess information that will contribute to the development of the grounded theory (Chun Tie et al., 2019).

Often, the theoretically sampled informants were busy people in positions of high responsibility. I thus used snowball sampling to access them by asking interviewees to give me recommendations. Chain referrals are particularly helpful when the people of interest are elite, in this case, high-ranking officials or organizations' leaders whose time for participating in studies is limited (Bernard & Ryan, 2010, p. 362). All first-round key informants interviewed recommended one or two further stakeholders whom they believed were relevant to my study. Thanks to them, I accessed more key informants and was even able to interview

stakeholders whom I had failed to contact in the first round. I stopped conducting interviews once the margin of new information gained from each new interview reduced significantly and when the interviewees recommended people I had already interviewed or who were colleagues of someone I had already interviewed.



The people and the institutions filling the grid of Table 4 are the key informants who kindly spent time answering my questions.

Table 4.

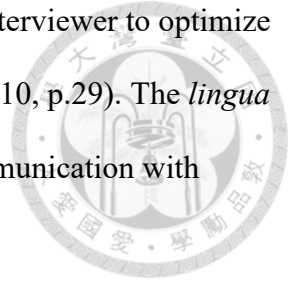
Decision-making centers typology and interview records

	Pragmatic power	Framing power		Power by design	
		Advocacy/other	Research	Regional	Local
CH	Independent UNESCO consultant	1. Parc Naturel Régional de Trient 2. proMONTBLANC	X	EMB coordinator	X
FR	Middle altitude mountain guide	Marges Sauvages	CREA	X	X
IT	X	proMONTBLANC	Montagne Sure	EMB coordinator	Unité des communes du Grand-Combin

3.3.2 Interviews

I conducted 11 in-depth 60 to 110-minute-long semi-structured online interviews with mid- to high-ranking representatives of decision-making centers in the MBR. Semi-structured interviews are guided by an interview outline with general themes that need to be discussed with all respondents in order to ensure a certain level of comparability (Bernard & Ryan, 2010, p.29) but are adapted to the specific informants' role in the system (Møller, 2021). Examples of interview guides for this research are in the appendix. In comparison to structured interviews, semi-structured interviews offer flexibility in the sequencing and

probing depth of each question, allowing both the respondent and the interviewer to optimize the quality and quantity of transferred information (Bernard & Ryan, 2010, p.29). The *lingua franca* in the MBR is French. As my own first language is French, communication with interviewees did not suffer from any language barrier.



3.3.3 Secondary data

To complete and check the reliability of the interview data, I drew on extensive research of open-source data (Bernard & Ryan, 2010). The most important sources included EMB reports, EU legislation and reports, French, Swiss, and Italian authorities' reports, news articles, and academic literature.

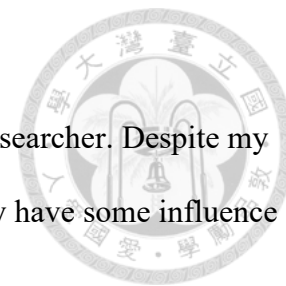
3.4 DATA ANALYSIS

For the interview coding stage, I broadly followed the step-by-step thematic analysis framework proposed by Naeem et al. (2023). First, I started with the transcription of the interview recordings using the free TurboAI software. Because the automated transcriptions were not entirely accurate, I corrected them by listening to the recordings multiple times. Consequently, I became highly familiar with the content of each interview.

Second, I then used the free software Taguette to generate codes and label interview sections for the first time. I ended up with 92 individual labels. The third step was the consolidation into themes (Naeem et al., 2023), of which I conceptualized three to discuss in the results section. Finally, I interpreted those themes into a conceptual framework.

3.5 POSITIONALITY

As for any research project, my identity impacts my views as a researcher. Despite my efforts to work as objectively as possible, personal biases will definitely have some influence on this study, and the reader should be warned.



I was born and raised in Valais, about 30 km away from the Mont-Blanc Region. I share the same cultural background as the Swiss inhabitants of the MBR, except for their proximity to the borders with France and Italy. My paternal grandparents spoke the same Franco-Provençal language and practiced transhumance cattle farming, as all communities in the MBR did. While I try to introduce the unfamiliar reader to the local culture as explicitly as possible in the following section, I might unconsciously take some important but implicit norms for granted and omit presenting them clearly.

Growing up in Valais, I witnessed the impacts of climate change on the landscape and on our lives, such as increasingly frequent heat waves and droughts in summer, less snow in winter, and the slow disappearance of insects and other wildlife species. Despite efforts to remain as close to the data as possible, my concerns for the health of my hometown's rich biodiversity might still have an effect on the interpretation of the data in this thesis.

4 CONTEXTUALIZING THE MBR

Answering this study's research question starts by contextualizing the MBR and EMB and defining and describing the polycentric transboundary CPR governance system. A deeper observation of the cultural and economic background of the region helps to understand who the users of these natural resources are. I then present the threats these CPRs are facing and the governance system around them.

4.1 CULTURAL AND ECONOMIC BACKGROUND

4.1.1 Culture

The isolating effect of the high peaks and deep gorges has allowed for a unique culture to flourish in the region. Before the annexation of Valais to Switzerland, of the Savoie to France, and the unification of Italy in the middle of the 19th Century, national borders were foreign concepts to the inhabitants of the MBR, where topographical and environmental characteristics, as well as personal relationships, were the real determinants of community (Mitschke, 2019). To this day, Swiss, Italian, and French locals of the MBR remain culturally very close. Most significantly, all three regions use French as the vernacular language and share a common indigenous language, the francoprovençal patois (Costa, 2011). The persistence of a common local language across centuries is only the most visible symptom of the deep interconnectedness of the communities around the Mont Blanc massif (Mitschke, 2019). Another salient example of a common tradition that brings the region together is the *Combat de Reines* (the Battle of the Queens), in which cows of the Hérens breed fight each other in a non-violent manner to define their relative hierarchical positions (Ehringhaus, 2012). In the past, cow fights, which occur naturally in the alpine grassland, were just one of the many aspects of local culture and an occasion for coming together and celebrating the

work of pastoralists. Nowadays, the tradition is increasingly becoming an organized sport in an arena (Dunoyer, 2014) and is broadcast live on Swiss national television. The three regions also share common traditional regional products such as alpine cheese, varieties of dried meat and sausages, and wine.

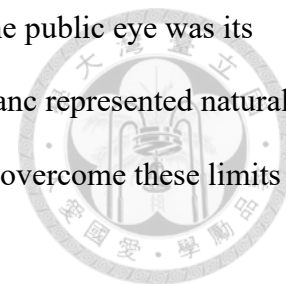


It would be misleading, however, to believe that modern national borders have not created imagined and factual differences between the communities of the MBR. Since the creation of national borders, psychological distances between the geographically near communities on different sides of the borders have grown. Nationally defined education and national histories, different identity documents have slowly divided the local identity (Mitschke, 2019), military service, taxation, and other laws (Moullé, 2020). Multiple informants confirmed that despite the common language and history, administrative cultures diverge significantly across the borders, in particular between the French and the Swiss sides.

4.1.2 Economy

The status of the Mont Blanc as the highest peak of the Alps shapes the local economy more deeply than any other factor. Debarieux (1993) conceives the Mont Blanc as an icon of modernity. While depictions of the Mont Blanc appeared as early as the 15th Century, it is only with the rise of alpinism in the 19th Century that the Mont Blanc attracted growing attention. Some prominent literary figures of that century took inspiration from the sight of the highest peak in the Alps for their work. For instance, in 1816, the British Romantic poet Percy Bysshe Shelley wrote *Mont Blanc: Lines Written in the Vale of Chamouni*; the same year, Lord Byron composed a poem on Mont Blanc, which he incorporated into his drama *Manfred*; in 1877, Victor Hugo wrote an ode to the Mont Blanc in the poem *Les Montagnes*. In the works of these famous writers, the Mont Blanc is a powerful, sometimes almost godly figure that humans and other mountains bow to. The single most important event that

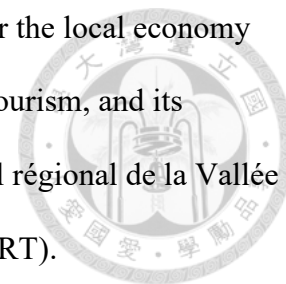
catapulted the Mont Blanc from the sphere of romantic literature into the public eye was its first ascent, in 1786, by two locals from Chamonix. While the Mont Blanc represented natural limits, the prowess of these pioneers symbolizes the human capacity to overcome these limits (Debarieux, 1993).



Since the first ascent to the summit, tourism in the MBR has grown exponentially. In the 2021-2022 season, the Valley of Chamonix alone reported 8.2 million overnight tourist stays (Chambre régionale des comptes d'Auvergne-Rhône-Alpes, 2024). The other French communities of the EMB, united under the umbrella of the Communauté des Communes (ComCom) du Pays du Mont-Blanc, reported 3,277,000 overnight tourist stays just for the winter season 2024-2025 (ComCom Pays du Mont-Blanc, 2023). Many sources claim that around 20,000 individuals each year attempt to reach the summit, an estimation that roughly corroborates the precise measurement of Ravanel et al. (2023), who recorded 17,768 alpinists over two months in 2019 on the two main routes leading to the summit of the Mont-Blanc. Thus, I decided to classify tourists as users of the CPRs too. Their sheer numbers and the dependence of the local population on them for their livelihood make them central, if unaware, users of the MBR's resources.

Tourism might be the main industry of the region, but its relevance is far from homogeneous across the Mont Blanc Massif. Because the main route to reach the peak of the Mont Blanc starts from Chamonix Mont-Blanc, the French side of the Mont Blanc has developed into a globally famous mass tourism resort. Courmayeur, in the Aosta Valley, is also an important tourism resort, but far from the oversized Chamonix. For the other communities in the EMB, the further they are from these two tourism centers, the smaller their annual tourism visits. Public transportation between the French and the Valdostan sides of the border is relatively integrated, facilitating tourism flows (Servillo et al., 2026). This is not the case for Valais, which remains barely accessible by public transportation from the two

other sides of the Mont Blanc. While tourism remains a key industry for the local economy (Ehringhaus, 2012), it takes a “softer” shape, brands itself as “nature” tourism, and its clientele is mostly local (according to the co-director of the Parc naturel régional de la Vallée du Trient, de l'Arpille à la Cime de l'Est, hereafter referred to as the PNRT).



4.2 CPRs IN THE MBR

To be able to classify governance in the MBR as a polycentric CPR governance system, I first describe the CPRs at hand.

4.2.1 Landscape

The two main tourist seasons in the MBR are the winter season, when visitors come to practice winter sports, such as skiing, and the summer, when hiking is the most important attraction. The landscape of the MBR, its shape, elevation, and most importantly, its beauty, creates specific climatic and aesthetic conditions for locals, and for the tourism industry. Visitors come to see glaciers, forests, lakes, and rivers, and to enjoy fresh natural snow. The more people visit the MBR's beautiful sites, the larger the human footprint on the landscape becomes: soil trampling, wild fauna disruption, littering, infrastructure build-up, etc. Ultimately, the overuse of the landscape for recreation reduces its attractiveness and harms the unique characteristics of the MBR's landscape. It can thus be described as a CPR.

While the destruction of this beauty would cause extensive economic damage, the initial push for transboundary environmental protection of the MBR did not emerge from the tourism industry, but from the mountaineering community. The perspective of these mountaineers, who organized under the banner of the non-profit Mountain Wilderness (MW), is relevant. Their motivation behind advocating better CPR governance in the MBR was their

fear that the wilderness of the Mont Blanc was being lost. According to MW's founding manifesto, the Biella Theses, wild mountains are places

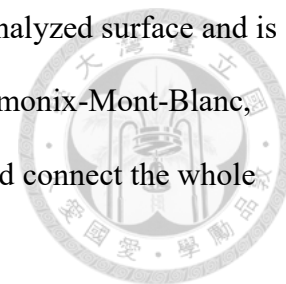
“where anyone who so wishes may come into direct contact with the wide-open spaces, experience solitude, silence, rhythms, natural dimensions, laws, and dangers. The essential value of wilderness lies, above all, in its potential to stimulate an intense creative relationship between civilized man and the natural environment” (Biella Theses, 1987, art.1b).

Accordingly, the principal CPR of the MBR that the mountaineers wanted to protect was “the savage grandeur of nature and the symbolic value of a pristine environment” (Biella Theses, 1987, art.1b).

4.2.2 Biodiversity

Wilderness, which is an aesthetic appreciation of a perceived untouched landscape through human eyes, is not to be confounded with biodiversity, which is a scientific concept of inter- and intra-species diversity. On the French side, the Atlas Mont-Blanc, a scientific platform on environmental knowledge around the Mont-Blanc managed by the CREA, used a combination of satellite images and ground surveys to identify 11 broad ecosystem types in the Valley of Chamonix. With 26% of coverage, snow and glaciers remain the predominant category, despite the fast melting of glaciers in the Alps (Sommer et al., 2020). Together with rocks and bare ground (21%), almost half of the territory of the Chamonix Valley is uninhabitable for any flora or fauna. The 10% represented by heathland also signals poor biological activities. The rest of the region, however, is divided into various ecosystem types, all conducive to biodiversity. Forest (22%) and forest border (6%) represent a quarter of the territory. Four grassland types, alpine grassland (4%), subalpine grassland (2%), montane grassland (2%), and ecotone heathland-grassland (4%), make up 12% of the territory and

indicate pastoral activities. Finally, urban habitat makes up 3% of the analyzed surface and is mostly concentrated at the bottom of the valleys, in resorts such as Chamonix-Mont-Blanc, Les Bossons, or Les Houches. Rivers, wetlands, and lakes punctuate and connect the whole landscape (Space for Climate Observatory, 2024).



This mosaic of ecosystems makes the MBR a highly diverse habitat for many plant and animal species. While more species and larger populations can be observed in the lowest regions, endemism increases with elevation (Aeschimann et al., 2011, p.232).

Ecologists typically classify alpine zones according to their elevation, climate, and main vegetation type (Ozenda & Lucas, 1987, p.91). Table 5 shows the classification for the Western Alps, which includes the MBR:

Table 5.

Alpine zones classification in the Western Alps

Level name	South faces	North faces
Collinean	< 1100m	< 800m
Montane	1100m - 1900m	800m - 1700m
Subalpine	1900m - 2500m	1700m - 2300m
Alpine	2500m - 3000m	2300m - 2800m
Nival	> 3000m	> 2800

Source: CREA Mont-Blanc (n.d)

At every level, the vegetal and animal species compositions change, leading to high biodiversity on a limited surface. The dominant combinations of tree species are common to the western and central Alps, but more unusual groupings can also be observed (Richard, 1998). As for protected and rare species, Richard (1998) lists 49 plant species, only on the French side.

The montane to the subalpine zones are home to large species of ungulates, such as the alpine chamois, the ibex, the red deer, and the roe deer. The red fox and many rodents, such as squirrels, hares, badgers, marmots, shrews, and others, are also dwellers of the lower zones.

Birds and insects can be found up to the Alpine zone, but their species composition changes. While common species can be found in the collinean and the montane zones, harsher conditions starting from the subalpine zone lead to the domination of specialized and endemic species. For instance, the subalpine zone is home to birds typical to the Mont Blanc: the great spotted woodpecker, the european green woodpecker, the black woodpecker and the black grouse. The rock ptarmigan thrives in the alpine zone and, together with the alpine chough, the alpine accentor, and the white-winged snow finch, is among the only animals that thrive in the nival zone.

The need to conserve and manage biodiversity is a recurring theme among the various sources. I purposefully use the term conserve instead of protect because the former better reflects the objectives of those advocating for it. Indeed, protection implies keeping biodiversity intact and preserved from human destruction, whereas biodiversity conservation is tightly intertwined with the concept of sustainable development (Blandin, 2019).

For instance, the co-director of the Regional Nature Park of the Trient Valley, expressed various reasons why biodiversity conservation is a central and unifying goal in the Trient Valley. Comparing his valley with Chamonix, he said: “Biodiversity measures, let’s say, sound a little bit more like pretexts to look good [in Chamonix]. In contrast, for us [in the Trient Valley], it’s really our bread-and-butter. Nature, simplicity and authenticity are one with our 'soft' tourism model” (translated from the French by the author, as will be all following quotes). Conserving biodiversity is also essential for the preservation of the local cultural heritage, notably because traditional agriculture and pastoralism heavily depend on and shape it. Preserving this natural heritage, in the co-director’s words, is ingrained in the

inhabitants' "DNA". The co-director stressed multiple times the interdependence between agriculture and biodiversity:

"If agriculture is doing well, biodiversity is doing well. It's as simple as that.

Otherwise, if agriculture is doing badly, we end up with a complete forest cover; we lose, I think, two-thirds of the species we have, grasslands, wetlands, everything that is below the tree line, which is rising, on top of that. [...]

Alpine agriculture [...] allows us to keep open environments, otherwise we would shut down".

4.2.3 Glaciers and water

Life in the MBR, as in many other mountainous regions, depends on the water provided by glaciers (Laurent et al., 2020). With global rising temperatures, the overall alpine glacier cover area is expected to diminish by 50 to 90% by 2050 (Schädler & Weingartner, 2010). Research in the Italian Alps (Aili et al., 2019) and around the Arve, the river downstream of Mont-Blanc's French side (Laurent et al., 2020), agrees that the stream flow will decrease significantly and will become unreliable, with periods of potential droughts in the summers.

Focusing specifically on the Swiss Alps, Beniston (2012) compiles the numerous impacts that climate change has and will have on water and on water-related economic activities. In Switzerland, glaciers might also lose between 50 and 90% of their mass, but the estimation is by the end of this century instead of 2050. Combined with changing rain patterns, the disappearance of glaciers will dramatically transform hydrological systems in the region. Flooding will become more frequent in spring, and droughts will become common occurrences in summer and autumn. Since a large portion of the electricity produced in the region depends on hydropower, the electricity supply might be strained. Two other key

economic sectors that Beniston (2012) identifies as facing significant challenges because of climate change-related hydrological disruptions are the tourism industry, dependent on snow and ice for winter sports, as well as agriculture. While water is now plentiful, it will become scarcer in the upcoming decades, and will require more management to ensure just and stable provision to inhabitants.

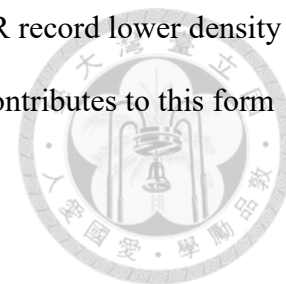
In sum, locals and visitors depend on the CPRs provided by the Mont Blanc to pursue their various interests. These variations unite them under the umbrella of sustainable development and biodiversity conservation. For the local economies and cultural heritage, decision-making centers across the national and sectoral borders agree on the need to responsibly manage the MBR's environmental resources. Agreeing that CPRs must be conserved does not necessarily mean that a polycentric governance system will emerge, especially when the ecological region is divided by national borders. The following sections examine how the EMB came to be, why the Mont-Blanc region qualifies as a polycentric transboundary CPR governance system, and what it does and does not achieve.

4.3 CURRENT THREATS TO THE MBR CPRs

4.3.1 Waste pollution

Tourism is simultaneously dependent on the majesty and the perceived wilderness of the Mont Blanc landscape, and its largest threat. A 1976 archive of the French public television already reported on environmental damage caused by unrestricted crowds of tourists leaving their waste on the slope of the iconic mountain (INA, 2020). Today, while environmental awareness is higher than it was half a century ago, the sheer number of visitors inevitably still results in heavy pollution in the region, as confirmed by interviewees on the ground. Researchers recently discovered that microplastics can be found on the summit of

Mont Blanc. Their findings also show that less visited areas of the MBR record lower density of microplastics than at the summit, suggesting that human visitation contributes to this form of pollution (Gillet et al., 2025).



4.3.2 Fauna disruption

The continuous development of the winter tourism infrastructure is another major threat to the landscape. The Valley of Chamonix, for instance, used to be a productive grazing valley governed as a CPR by local self-organized communities until the tourism boom of the 20th Century. The postcard today is dramatically different. The digital collection of the Musée Alpin de Chamonix-Mont-Blanc offers numerous historical images that testify to the radical transformation of the Valley. Figures 5 & 6 depict the Valley of Chamonix in the second half of the 19th Century, during the dawn of alpine tourism. Human infrastructure is limited to a few dirt roads and small groups of buildings. The valley is carpeted with agricultural fields, and forests dominate its lower flanks, as snow and ice make vegetation growth impossible at higher altitudes. Figure 2, in particular, represents the paradoxical relationship between the awe-inspiring landscape and tourism. This print mainly depicts the majestic Mont Blanc and its surrounding glaciers, but clearly shows signs of an emerging tourism industry with two ladies riding mules sidesaddles, accompanied by guides, and heading towards the village of Chamonix. There, the first hotels already contrast with the rural architecture through their large size and white painted exteriors. Thus, the tourism industry was already changing the face of the landscape it relies on.

Figure 5.

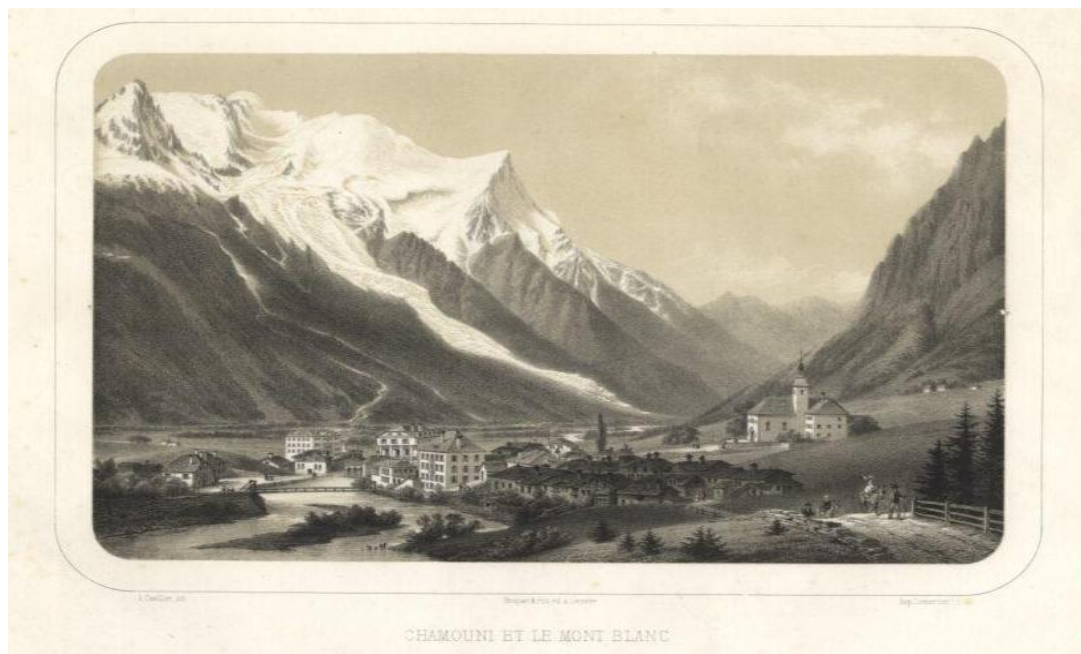
The Mont-Blanc and the Valley of Chamonix from the Flégère trail



Sabatier & Charpentier (1864).

Figure 6.

Chamouni¹ and the Mont Blanc



Cuvillier & Briquet et Fils (1860).

¹ Ancient alternative spelling of Chamonix

Prints, however realistic, retain their author's subjectivity. Personal interpretations of the Chamonix landscape are valuable for they highlight features of the landscape that are most important to the eyes of the viewers of the time, namely its grandeur in contrast to human infrastructure. Photographs, on the other hand, leave less freedom for the authors' projection on the object and thus offer more realistic data. Figures 7 & 8 attest to the significant urbanization of the Chamonix Valley. These pictures were taken from almost the same position, namely Le Chapeau, with the Mont Blanc on the left and the Mont Brévent on the right. In the 155 years that separate these two frames, a highway was built, the many plantations were replaced by residences and other buildings, on the mountain at the back, forests were shaven to make way for ski slopes and lifts, and the river was tamed from its natural curves into straight lines.

Land use change, in particular urbanization, is famously a threat to biodiversity. It leads to ecosystem deterioration or destruction, which in turn leads to habitat fragmentation and eventually changes the landscape's structures and its energy flows (Bozkurt & Basaraner, 2024). The negative impacts of urbanization are even more marked when urbanization happens on hillsides (Shi et al., 2025).

Figure 7.

Vallée de Chamonix vue du Chapeau (1860)



Bisson brothers (1860).

Figure 8.

Chamonix and mountain (2015)



Monto, T. (2015).

4.3.3 Raising temperatures

Climate change means higher temperatures and more unpredictable weather events. While variations exist at the microclimatic level and a lot remains unknown as of now, climate researchers agree that the Alps have warmed up about twice as much as the global average since the 19th Century (Dumont et al., 2025; Pepin et al., 2025). The IPCC 2019 technical report highlights the heightened vulnerability of high-elevation areas to the impacts of climate change (IPCC, 2023):

- Higher temperatures allow for diseases that could not survive in mountainous regions to reach local wildlife, which does not have built immunity (TS.B.1.1).
- Human-introduced invasive species also tend to fare better than endemic species in face of climate change, thus threatening them (TS.B.1.2; Pauchard et al., 2009).
- Mountain-top species have to migrate upwards or suffer population loss, but higher elevation areas are smaller, thus reducing their habitat range (TS.B.1.3) .
- Climate change-induced ecosystem change leads to specialized mountainous ecosystems loss (TS.B.1.4)
- Permafrost thawing will increase landslide risks (TS.C.4.2)

These effects of climate change will lead to biodiversity loss and severe disruption of food, water, and energy systems, affecting human lives all over the world (IPCC, 2023). This long list of threats presented by the IPCC is quite alarming and raises questions about who is trying to resist those threats and what their efforts look like.

4.4 DECISION-MAKING CENTERS FOR CPR GOVERNANCE IN THE MBR



The list of relevant decision-making centers participating in the governance of the MBR's CPR is long and multilayered (Table 6). Three different countries participate, meaning three different state systems, civic and political cultures, and with different accesses to resources. To dissect this complex network, I will discuss each row independently before showing how they integrate into a polycentric governance system.

To structure the discussion, I will move through the three types of power discussed earlier. I will start with the European Union (EU) because it is an important external factor that exerts important power by design, shaping transboundary CPR governance in the MBR. Public authorities, who hold both power by design and pragmatic power, will follow, before the main private actors, with pragmatic power, are introduced. Lastly, I will discuss the main holders of framing power, NGOs.

Table 6.*Identified relevant decision-making centers*


	France	Switzerland	Italy
National gov.	Ministry of the Environment	Federal Department of Foreign Affairs; Federal Office for the Environment	Ministry of the Environment
Regional gov.	Région Rhône-Alpes; Dépt. Haute-Savoie; Dépt. Savoie	Economy, Tourism, and Innovation Agency of the Canton of Valais	Assessorat of Public Works, Territory, and Environment of the Aosta Valley Autonomous Region
Gov. inter-Communal	Comcom Chamonix, Comcom Pays du Mont-Blanc	Parc Naturel Régional du Trient	Unités des Communes
Communes' gov.	Chamonix Mont-Blanc ; Saint-Gervais ; Vallorcine ;	Orsières, Finhaut, Trient, Martigny	Courmayeur
Private	Compagnie du Mont-Blanc; UTMB		
Research NGO	CREA ; La Chamoniarde ; University of Savoie Mont-Blanc ; ...	FDDM	Fondation Montagne Sure
Advocacy/Env. NGO	ProMontblanc; WWF; Mountain Wilderness; ProNatura; ...		
Supranational org.	EU; Convention Alpine; UNESCO		

4.4.1 European Union

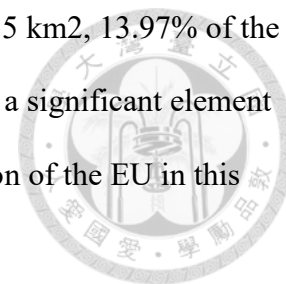
The EU plays a crucial enabling and structuring role in CPR governance in the MBR, despite not being actively engaged in the daily operational decision-making processes. We could not understand the dynamics in the MBR without first dissecting the different ways in which the EU shapes interactions between local actors.

4.4.1.1 Natura 2000

First, the EU created and still expands the largest protected area network in the world, known as Natura 2000. Natura 2000 is based on two EU Commission directives, the Habitats (92/43/CEE) and Birds (2009/147/CE) directives. These two directives require the Member States to protect core areas where either the 190 rare and threatened bird species designated in the Birds Directive are active or where some of the over 1000 plant species and 233 habitat types listed in the Habitats Directive are identified. EU Member States must first submit a list of potentially important conservation sites for the Commission to select the sites relevant to the Natura 2000 network (Habitats Directive, art.4.). Member States then have six years to designate the selected sites either as Special Areas of Conservation or as Special Protection Areas, depending on whether they correspond to the Habitats Directive criteria or the Birds Directive criteria. Within this six-year period, Member States must also define site-specific conservation objectives and, in most cases, management plans. Member States can apply to the Commission for co-financing support of conservation measures in the Natura 2000 sites (art.8).

According to the latest data, in 2024 there were 27'173 Natura 2000 protected sites, covering 18.6% of the EU Member States land area (Natura 2000 Barometer, retrieved on April 4, 2026). Switzerland, not a member of the EU, cannot be part of the network and thus has no Natura 2000 site. Together, France and Italy have established ten Natura 2000 sites

entirely or partially within the EMB boundaries (Map 2). In total, 435.35 km², 13.97% of the MBR is part of the Natura 2000 network (Table 7). Natura 2000 is thus a significant element of biodiversity conservation in the MBR and the most direct contribution of the EU in this sense.



Regarding the conservation measures in the Natura 2000 sites, Article 6 of the Habitats Directive states that Member States must take measures to avoid habitat destruction and disturbing designated species (art.6.2) and conduct environmental impact assessments of plans or project potentially impacting the site (art.6.3). If a harmful plan or project must be implemented and no alternative can be found, the Member State must implement compensatory measures (art.6.4). Capturing, killing, deliberately disturbing, deliberately destroying or taking eggs or deteriorating breeding or resting sites of animal species listed in the Annex IV of the Habitat Directive is prohibited (art.12.1). As for listed plant species, “deliberate picking, collecting, cutting, uprooting or destruction” in the wild (art.13.1a) as well as the “keeping, transport and sale or exchange and offering for sale or exchange of specimens of such species taken in the wild” (art.13.1b) are also not allowed. Natura 2000 sites are under moderate protection. Human economic activities are allowed, and socio-economic actors should be taken into consideration during the definition of conservation measures (European Commission, 2013).

Map 2.

Natura 2000 areas overlapping with the MBR

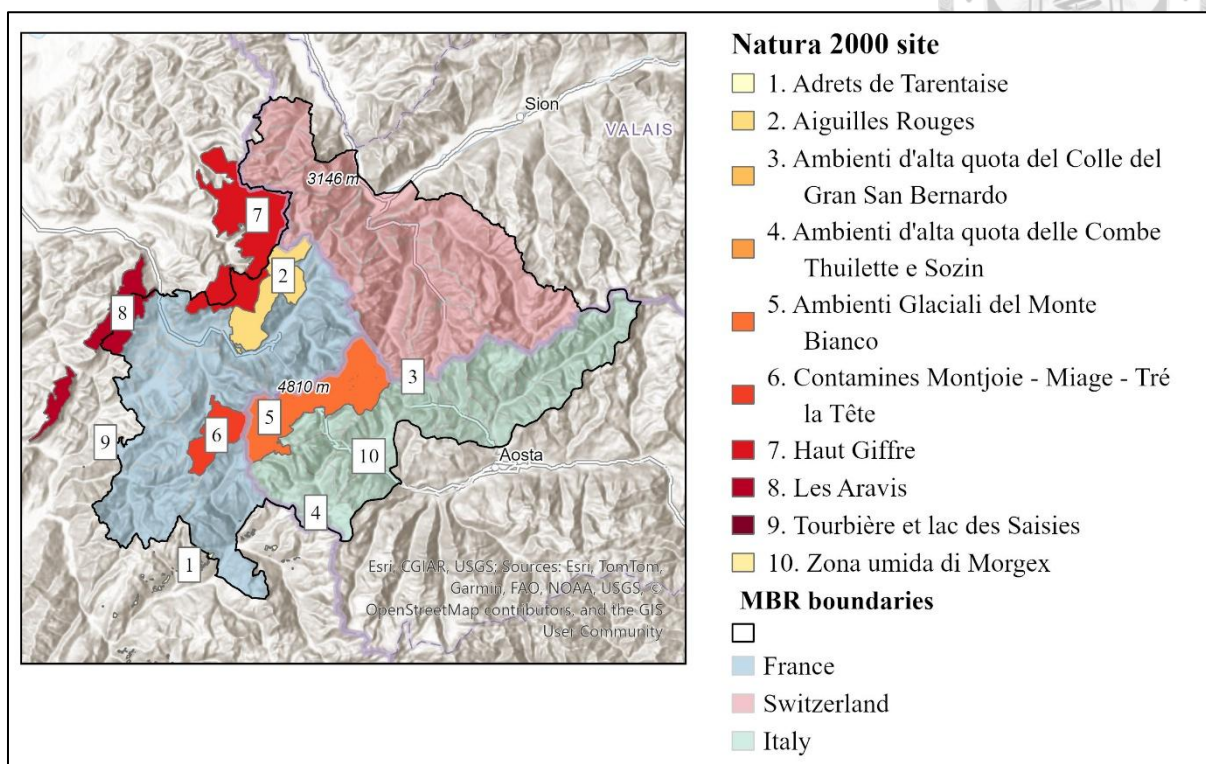


Table 7.*Natura 2000 sites in the EMB*


Site name	Country	Area (km ²)	Area in EMB	Birds / Habitats Directive
Haut Giffre	FR	181.24	35.39	Both / Birds ²
Ambienti Glaciali del Monte Bianco	IT	172.87	172.84	Both
Aiguilles Rouges	FR	90.65	90.65	Habitats
Les Aravis	FR	89.07	29.76	Both
Contamines-Montjoie – Miage – Tré la Tête	FR	55.47	55.47	Habitats
Adrets de Tarentaise	FR	9.85	0.56	Habitats
Ambienti d'alta quota del Colle del Gran San Bernardo	IT	7.51	7.51	Both
Ambienti d'alta quota delle Combe Thuilette e Sozin	IT	3.56	3.56	Both
Tourbière et lac des Saisies	FR	2.88	0.70	Habitats
Zona umida di Morgex	IT	0.30	0.30	Both
Total		613.36	435.35	

Data source : European Environment Agency, Natura 2000, 2024 version

4.4.1.2 INTERREG

A second important contribution of the EU to environmental protection is the INTERREG programs. In the words of the Italian proMONTBLANC representative, INTERREG programs are “the glue that held everyone [in the EMB] together“. INTERREG is an EU initiative founded in 1990 to encourage “cross-border, transnational, interregional, and outermost regions cooperation” (INTERREG website). It is embedded in the European Cohesion Policy, the central tenet of the EU’s redistributive efforts to reduce economic, social, and territorial inequalities (Farole et al., 2011). Currently in its 6th generation, the

² The largest part of the Haut Giffre site is protected under both Directives, but a portion of 5713ha in the North-East of the site is protected only under the Habitat Directive.

INTERREG initiative has grown in popularity, eligibility, and in budget. Starting with a small 21 million EUR budget in its pilot phase and just over 1 billion EUR in its first generation (Reitel et al., 2018), the European Regional Development Fund (ERDF) allocated 8,05 billion EUR to the ongoing INTERREG VI (2021-2027) (Regulation (EU) 2021/1059, art.9).

INTERREG is divided into 86 programs of four different categories. Category A “cross-border cooperation” programs bring together bordering regions from neighboring countries and create continuity; Category B “transnational cooperation” programs include countries across larger regions, such as around a sea basin to support territorial integration and spatial planning issues; Category C “interregional cooperation” include partners from countries all over Europe sharing knowledge and building capacity around common challenges; lastly Category D “outermost regions” programs encourage EU’s outermost regions, such as France’s oversea departments, to collaborate with their non-EU neighbors (Wassenberg et al., 2015; Regulation (EU) 2021/1059, art.3).

Various actors, including municipalities, groups of municipalities, regions, or private actors, can apply for 4-year funding with projects that meet both the cooperation and strategic objectives of their respective programs. Projects ranging from local and low-budget to regional and expensive receive funding from the INTERREG programs, allowing for a diversity of actors to receive financial support from the EU. Unlike the Natura 2000 network, Switzerland can be an INTERREG partner but cannot receive EU funding. Swiss partners of INTERREG projects are funded by the Swiss government’s New Regional Policy (fr. *Nouvelle Politique Régionale*, NPR), discussed in more detail in Chapter 4.4.2.1. Among the 86 INTERREG regional programs, four of them are relevant for the EMB (Table 8). All of them include conservation keywords such as “Green transition”, “biodiversity protection”, “climate change adaptation”, and “sustainable tourism”.

Decision-making centers within the EMB have applied for and completed numerous INTERREG projects from the different programs over the years, and many are ongoing. For instance, the INTERREG Alcotra currently supports the Parcours+ CC project, which aims at updating and spreading knowledge on the evolution of the local climate and building a scientific network around the Mont-Blanc to promote climate change adaptation in the region. The leadership structure of this project illustrates vertical and horizontal collaborations: the government of the Aosta Valley is the leader of this project and partners with the unions of Communes both in France and in Aosta, as well as with a research institute, Fondation Montagne Sure.

As for the Swiss-French INTERREG program, the JADE project, linking two research foundations across the border, is the only project currently being implemented in the MBR. The Flore-Alpe research and pedagogical botanical garden in Champex-Lac (CH) and the Research Center for Alpine Ecosystems (CREA) in Chamonix are collaborating to create a new similar botanical garden in Chamonix, with the goal of expanding the sustainable tourism offer in the MBR.

Table 8.

INTERREG programs in the MBR

INTERREG program	Geographical scope	INTERREG type	Since	Strategic objectives (2021-2027)	Ongoing MBR Project example
Alpine Space	Austria, CH, Liechtenstein, the Alpine regions of FR, Germany, IT, and Slovenia	B	2000	-Climate-resilient and green Alpine region -Carbon-neutral and resource-sensitive Alpine region -Innovation and digitalization supporting a green Alpine region -Cooperatively managed and developed Alpine region	
ALCOTRA	FR – IT	A	2000	-Economic revitalization, in particular through digitalization and competence development -Green transition, climate change adaptation, and biodiversity protection -Resilient population through equal access to health services, education, and sustainable economic opportunities -Rural development -Overcoming the principal administrative hurdles	Parcours+ CC – adaptation and resilience to climate change PREVRISK-CC – risk prevention and adaptation to climate change in the EMB



INTERREG program	Geographical scope	INTERREG type	Since	Strategic objectives (2021-2027)	Ongoing MBR Project example
Italy – Switzerland	IT-CH	A	2001	-Balanced and sustainable economic development of the cross-border area -Cooperation in territorial management and natural and cultural heritage preservation -Cultural, social, and institutional cooperation	
France – Switzerland	FR-CH	A	?	-Carbon neutrality and ecological transition -Research and innovation, digital usage development -Sustainable mobility and multimodality -Culture and sustainable tourism -Reduction of obstacles at the French-Swiss border	JADE – Botanical gardens cooperate to promote scientific tourism



4.4.1.3 European grouping of territorial cooperation (EGTC)

Another key contribution of the EU to transboundary governance is the European grouping of territorial cooperation (EGTC). Cooperation structures between public entities of two or more neighboring Member States can obtain legal personality under European law by becoming EGTCs. EU regulation for EGTCs was first created in 2006 and amended in 2013 to facilitate the establishment and operations of such entities (REGULATION (EU) No 1302/2013). The EGTC is a legal tool, just like INTERREG is a financial tool, to promote EU economic, social, and territorial cohesion to cross-border or transnational territorial cooperation (REGULATION (EU) No 1302/2013, art.1.2).

Public authorities at the national, regional or local level of EU Member States, or public undertakings or undertakings entrusted with operations of general economic interest services inside the EU can be members of a EGTC (REGULATION (EU) No 1302/2013, art.3). Members must be located in at least two EU Member States, and members from neighboring non-EU countries can also join (REGULATION (EU) No 1302/2013, art.3a).

As of March 26th, 2026, there are 93 EGTCs across the EU. The EMB is currently in the final stages of applying for an EGTC, and informants involved in this process suggest that the EMB will become an EGTC by the end of 2026. In Chapter 8.1.3., I will elaborate on the motivation for an EGTC status in the MBR.

4.4.2 State authorities

As the sovereign authorities of the territory surrounding the Mont-Blanc, the three states wield a large power over the governance decisions in the MBR, including natural resources management policies. They create and implement legislation, have the final say on transnational cooperation agreements, and determine how much symbolic and psychological

distance national borders create between geographically close citizens of neighboring states (Mitschke, 2019).

The French, Swiss, and Italian states share some similarities: they are all democracies (The Economist, 2025), organized at national, regional, and municipal levels. The three states, however, have significantly different distributions of power across the governance levels and different administrative and political cultures. The issue of hierarchical asymmetry in cross-border cooperation was already discussed by Lundén (2018) in the case of the trinational border between Switzerland, France, and Germany around the city of Basel. There, the authorities across the national borders were not able to make decisions jointly and had to rely on informal agreements implemented separately. Because it determines a large share of the capacity of governments to make decisions together, I will discuss the details of the role of each country's public sector in the MBR.

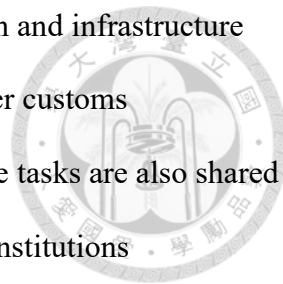
4.4.2.1 Switzerland

Switzerland is a relatively small and landlocked confederation with a highly decentralized and bottom-up power distribution, with a semi-direct democracy system. At the end of 2024, the Swiss population reached 9'051'029 (Swiss Federal Statistical Office, 2025).

The 26 Cantons and half-Cantons constitute the real sovereign units of the Confederation (Horber-Papazian, 2014). What is not explicitly delegated to the federal government is under the authority of the Cantons. They have their own three-branch governments and the power to collect and spend taxes, to determine, finance, and control education (Constitution, art.62), culture (Constitution, art.69), the judiciary, the police, and the administration, and to enforce law and order (Fleiner, 2006).

Since the 1848 civil war, the Cantons have been unified into the Confederation. The task distribution was reorganized for the first time in 2008. In broad terms, the Confederation

is in charge of foreign affairs (Constitution, art.54), public transportation and infrastructure (Constitution, Section 5), national security (Constitution, art.185), border customs (Constitution, art.132), and national defense (Constitution, art.58). Some tasks are also shared between the Confederation and the Cantons, such as tertiary education institutions (Constitution, art.63), and environmental protection (Constitution, Section 4).



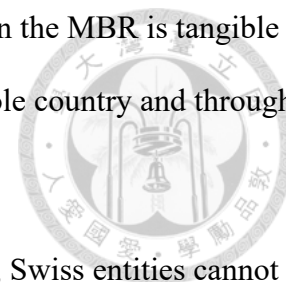
Subordinated to the Cantons are the Communes. The Cantonal law defines their competences and responsibilities, and their degree of autonomy varies greatly. In general, Communes are in charge of implementing the cantonal and federal legislation and have a sizable amount of autonomy for local affairs that the Canton does not explicitly manage. Communes collect their own taxes, executive and legislative organs (Horber-Papazian, 2014).

Direct democracy is practiced to a rarely matched extent: citizens not only elect communal, cantonal, and federal representatives, but also directly participate in the law-making process at all levels by either putting forward law projects or voting on them through the mechanisms of referendum and initiatives. These law projects can be at the federal, cantonal, or communal levels.

The governance of the Swiss side in the MBR reflects the decentralized organization of the Swiss state. The Swiss EMB coordinator, an employee of the Canton, told me that he extensively consults the Swiss Communes part of the EMB before making any decision that would impact them, such as the establishment of an EGTC. The Communes themselves are also active in the CPR governance of the MBR, but rather on their own territory or at the intercommunal level.

Two national offices, the Ministry of Foreign Affairs and the Federal Office of the Environment, are mildly involved in governance matters in the EMB. They do not participate in the meetings and engage on rare occasions, only, such as the UNESCO bid or the creation

of the EGTC. The influence of the Confederation on CPR governance in the MBR is tangible through its role in shaping the general regulatory framework of the whole country and through its financial support to INTERREG and other cooperation projects.



As mentioned earlier, because Switzerland is not part of the EU, Swiss entities cannot receive EU funding, even if they can be INTERREG project partners. Their participation to INTERREG projects is supported by the New Regional Policy (NPR). This policy has been implemented since 2007 with the goal of supporting economic development in mountainous and rural regions of Switzerland. Individuals, organizations, and public entities can build a project and apply to receive funding from the Canton and the Confederation. The national assembly defines the general priorities of the NPR on a pluriannual basis to guide the Cantons in its implementation, and environmental resource conservation was not on parliamentarians' agenda until very recently. Only in the latest cycle, 2024-2027, did “contributing to sustainable development” join the priority list next to “improving the framework conditions for small to medium enterprises”, “strengthening the regions”, “enhancing the opportunities of digital technology”, and “strengthening the attractiveness of Switzerland as an economic and tourist destination”(Swiss Federal Council, 2023, section 4.).

While it could mean that environmental sustainability was totally absent from projects supported during the first two strategic cycles of the NPR, the actual selection of projects and thus the decision-making power remains in the hands of the Cantons. In the case of Valais, the Economy, Tourism, and Innovation Agency of the Canton is in charge of the implementation of the NPR. This office is also the one leading the Swiss side in the transnational institution of the EMB. This means that their employees, in particular the EMB coordinator, who plays a key role in the EMB, have a deep understanding of both the needs of the transboundary governance project in the MBR and of the funding system to achieve their goals. As a result,

since 2010, 15 INTERREG projects part of the EMB have been supported by the NPR for a total of over CHF 3 million (see Table 9).

Most of the NPR-supported projects in the MBR focus on developing tourism in the region. Because in the MBR, this key industry relies on environmental resources, especially snow for winter activities, climate change adaptation is one of the key topics. Most notable is the INTERREG Alcotra AdaPT Mont-Blanc project, to which the Swiss side participated with NPR funding. I will come back to this project later.



Table 9.

NPR-supported MBR projects

Project title	Description	Cost CH (CHF)	Total cost (CHF)	Duration
PIT: «Autour du Mont-Blanc»	Diversify tourism offerings towards sustainable tourism. Support traditional local tourism activities by creating tools using new communication technologies, themed routes, and actions.	?	1 665 000	2010 – 2013
Implementation of the Swiss actions of Prév-Risk-Haute-Montagne	Share knowledge regarding mountain risks and hazards to provide public authorities and mountain hazard professionals with prevention tools for these and other similar regions.	40 000	80 000	2016 – 2017
Application of mountain medicines around Mont Blanc	Develop and share knowledge, practices, and innovations in mountain medicine with public authorities and healthcare professionals to combat depopulation in these areas.	40 000	80 000	2016 – 2018
AdaPT Mont-Blanc	Integrate climate change adaptation into the tools and practices of land-use planning and development in the MBR to raise awareness among local stakeholders and train municipal officials in charge of land-use planning.	65 000	130 000	2017 – 2020
Analysis of the Tour du Mont-Blanc markets	Representatives from the Communes of Trient and Orsières highlighted the need to conduct a market study to better define the users of the Tour du Mont Blanc, with a view to better targeting and improving the quality of services offered.	2 082	34 646	2017 – 2017

Project title	Description	Cost CH (CHF)	Total cost (CHF)	Duration
AdaPT Mont-Blanc, pilot project of Mont-Fort	One of the AdaPT Mont-Blanc project's activities involves the study of pilot cases distributed across the three regions of the EMB. On the Valais side, a development concept is planned for the "Mont-Fort" sector.	19 200	384 000	2018 – 2018
PIT: Interpretive Trails of Natural and Cultural Heritage (ITNCH)	Regional Integration Plan (PIT) to promote and enhance the natural and cultural heritage of the EMB through identified sites and visitor centers.	16 000	32 000	2018 - 2021
Educational trail at the Great St. Bernard Pass	Part of the ITNCH. Improve the quality of visitor services and the range of experiences offered at certain EMB tourist sites, including the creation of a cross-border educational trail at the Great St. Bernard Pass.	10 000	32 160	2019 - 2021
Flore-Alpe Alpine Botanical Garden	Part of the ITNCH. Includes the following activities: Communication and promotional tools for the heritage interpretation tourism offering, scientific contributions to the mapping of the EMB, scientific publications for the general public, and promotion of the Flore-Alpe Alpine Botanical Garden as a site for interpreting the natural heritage of the EMB.	26 225	72 450	2019 - 2022
A tool for managing and promoting the Mont Blanc area	Commission of experts of the three countries of the EMB to assess the most suitable management tools for ensuring optimal protection and enhancement of the Mont Blanc Massif (UNESCO "Cultural Landscape", Geopark, and Biosphere Reserve).	61 889	123 777	2019 - 2020

Project title	Description	Cost CH (CHF)	Total cost (CHF)	Duration
Development of the e-Rés@mont application	Create and make available to hut wardens and mountain professionals an app to handle first aid health incidents related to mountain activities.	10 000	24 870	2020 - 2020
Interpretive trail of Hannibal's Wall	Develop the site of the so-called Hannibal's Wall by implementing a concept for the in situ and ex situ enhancement. Part of the ITNCH	50 000	335 125	2020 - 2022
PITER, itinerant routes EMB phase 1	Implement a cross-border innovation initiative in transportation modes around Mont Blanc in order to meet mobility needs, primarily linked to the local tourism economy.	15 000	75 000	2020 - 2021
Prévrisk-CC	Develop knowledge about emerging risks in high mountain areas, linked to climate change, and their impacts on economic and tourism stakeholders in the Mont Blanc massif. Propose new hazard management and decision-making support methods to municipalities and tourist offices.	37 500	227 000	2022 - 2023
PITER, itinerant routes EMB phase 2	Ensure the implementation of the results of Phase 1 on the Swiss side of the EMB. Develop an integrated, cross-border, sustainable, and innovative "smart mobility" service.	30 000	75 000	2024 - 2027
TOTAL		392 896	3 371 028	

4.4.2.2 France

The governance structure of the French state is almost the opposite of that of Switzerland. Despite two waves of legislative reforms aiming at decentralizing the state, power remains mostly in the hands of the national government in Paris, with little delegation to lower levels of public authorities (Dumont, 2018; Epstein et al., 2025). Below the national government are the 2015-redrawn 18 regions, with an elected regional council, and the regions are further divided into 94 departments with legal personhood and 101 departments as administrative divisions. The national government keeps tight control over the regions and the departments through the Préfet system. Préfets are nominated by presidential decree on the recommendation of the Prime Minister and the Minister of the Interior and are in charge of coordinating the implementation of national policies at the regional and departmental level, controlling the administration, and collaborating with the regionally and departmentally elected officials for the development of the region or department (Decree No. 2004-374 of April 29, 2004).

The lowest echelon of governance is the Commune, administered by a directly elected municipal council, which in turn elects the mayor. Communes tend to be very small and allow for localized governance. According to my own calculation based on data from the French government (INSEE, 2026), as of January 2026, there are 34'875 French communes, and 96.9% of them have fewer than 10'000 inhabitants. Contiguous Communes can decide to unite and become a "Communauté de Communes" (eng: "Community of Communes", commonly and hereafter referred to as ComCom). Communes delegate to a ComCom their competences in matters of territorial planning, economic development actions, and flooding prevention, sewage and waste management, and providing and managing facilities for "gens du voyage", which include various nomadic groups. Communes can also decide to delegate

their competencies to a ComCom in other domains, notably for the context of this thesis, environmental protection and management (CGCT. Art.L5214-16).

The Environment Code mainly, but also the Tourism Code, the Sports Code, and the Urbanism Code, distribute competences and responsibilities to the four government levels. The national government, based in Paris, creates national protected areas, designs natural resource inventories, water management plans, waste management plans, territorial planning policy, and tourism industry development strategies. Regions can create regional protected areas, refine national government-enacted plans, strategies, and policies according to their regional specificities, implement policies that are in their competencies, and delegate the implementation of those that are not to lower instances. Departments, under the leadership of regions, also refine, implement, and delegate policies. Finally, Communes implement, with some degree of freedom, policies that higher instances impose on them (Direction générale des collectivités locales, 2025).

While France is relatively more decentralized now than it was fifty years ago, the autonomy of its Communes remains more restrained than that of other European countries (Dumont, 2018, p.4), including Switzerland and the Italian Aosta Valley autonomous province.

The MBR is located in the Auvergne-Rhône-Alpes Region (hereafter the ARA Region), which is among the largest and most populous French Regions. The large size and the diversity of territories of the ARA Region are disproportionate to the MBR, and interviewees active at the transboundary governance level told me that the ARA Region is “far” from them and thus not strongly involved in the local and transboundary governance of the MBR.

The personal experiences of interviewees regarding the engagement of the ARA Region in biodiversity conservation are supported by the legal nature of the protected areas on the French side of the MBR. Four main types of protected areas are defined by the Environment Code: National Nature Parks and National Nature Reserves are the prerogative of the central government, while Regional Nature Parks and Regional Nature Reserves are in the hands of the Region. In the MBR, the Region did not establish any protected area (hereafter PA), but the national government created five National Nature Reserves: Aiguilles Rouges (founded in 1974, 32.8 km²), Carlaveyron (1991, 6.0km²), Contamines-Montjoie (1979, 55.0 km²), Vallon de Bérard (1992, 5.4km²), and Passy (1980, 17.2km²).

The bypassing of the ARA Region in biodiversity protection in the MBR is further highlighted by the most recent PA. On October 1st, 2020, the Prefect of the Haute-Savoie Department signed a prefectural decree establishing the creation of a “natural habitats’ protection zone in the Mont Blanc” (Arrêté DDT-2020-1132). In the preamble clauses, the decree states that the opinions of various national, departmental, and local institutions were taken into account, but there is no mention of the Region. President Emmanuel Macron himself advertised the new protected area on various occasions, including during a visit to the MBR in February 2020.

The very initiation of the protected area project also reveals some unique dynamics of the French political process. On September 1st 2019, the Mayor of Saint-Gervais, Mr. Jean-Marc Peilleux, addressed an open letter to President Macron, asking him to take action against the “hurluberlus” (“weirdos”) that pollute the Mont Blanc. In this letter, the mayor’s language is highly emotional and ironic. He starts his letter with “worrying about the Amazon is very good, ignoring what is happening on the Mont Blanc, and letting disrespect persist is not tolerable”. Despite the informality, President Macron was quick to respond. In his November 18th letter, the President informed that he was bringing his letter to various

relevant meetings and that he mandated the Minister of the Ecological and Solidary Transition to take up the mayor's demands. The story of the creation of the natural habitats' protection zone thus illustrates the immense difference in governmental processes between Switzerland and France. Where in Switzerland Communes' Presidents would address themselves to the Canton through administrative channels, the mayor of Saint-Gervais reached out to the President of France, bypassing the Department and the Region. This strategy reflects the centralization of the French state power.

The mayor of Saint-Gervais is more influential than most of his counterparts in other French Communes of the MBR. The peak of Mont Blanc is on the territory of his Commune, and its mayor is the President of the ComCom Pays du Mont-Blanc, which comprises of 10 of the 17 French Communes in the MBR. These two factors, summit location and number of Communes in the ComCom he presides over, give the mayor of Saint-Gervais significant influence on local and transboundary politics. His influence is only matched by that of the President of Chamonix-Mont Blanc. The political power of Chamonix-Mont Blanc's mayor is legitimized by the Commune's status as the international tourism and economic hub of the MBR, and by the mayor's presidency over the second ComCom in the MBR, the ComCom Chamonix-Mont Blanc. In other words, the mayors of Saint-Gervais and of Chamonix Mont-Blanc, who are also the presidents of the ComCom Pays du Mont-Blanc and of the ComCom Chamonix-Mont Blanc, respectively, are the two most influential public officials on the MBR's French side.

In 2018, a study co-conducted by the University of Science Po surveyed 4657 French mayors. The results showed that 79% of them felt that the ComCom to which their Commune belonged had a strong influence on the Commune, while only 25% believed that their Commune significantly influenced the ComCom (Foucault, 2018). These findings are

in line with the observed dominance of the two MBR ComCom presidents in the MBR and in the EMB, which I will come back to.



4.4.2.3 Italy

Lastly, the Italian Aosta Valley offers yet another model of public authority distribution, further complicating the joint decision-making capacity of the transboundary MBR. It is rather decentralized, but unlike Switzerland, where sovereignty lies in the hands of the Cantons who created the Confederation and decide its competencies, the sovereign Italian state gave the Aosta Region legal personhood and delineated the extent of its autonomy in 1948.

According to the February 26th, 1948 law defining the special status for the Aosta Valley, the region has its own locally elected legislative and executive branch, and the competencies to collect taxes and control finances, manage environmental resources, define economic policies, including for tourism, to mention only those that are highly relevant for this study (art.2 and art.3). The administration of the Aosta Region is divided into eight Assessorats in charge of serving the inhabitants of the seventy-four Communes organized into eight Unité de Communes, similar to the French ComCom. These Unités are in charge of services to residents, water management, waste management, and the digital transition. Other competencies, such as EU project management and local development, can be delegated to the Unité by the Communes through an annual agreement.

The Aosta Region stands far in the periphery of the national government in Rome, because of the physical distance and its significant political and economic autonomy. Aosta is the smallest Italian region in terms of size and of population, as well as the most sparsely populated, with only 122'554 inhabitants (ISTAT, 2025) on a territory of just 3'260,9 km² (ISTAT, 2013). The size difference in comparison to the French ARA Region (8'303'191

inhabitants on 69'711km²) (National Institute of Statistics and Economic Studies [Insee], 2026) is striking.

Historically, the Aosta Valley belonged to Savoie until 1860, hence the equal prevalence of French and Italian in the Region to this day (Gorla et.al, 2013). Defining and defending the territorial identity of the Aosta Region is at the center of the political process, shaped since the end of the Second World War by the autonomist, francophone, progressive party Union Valdotaïne (Vesan, 2025). The fiscal autonomy of the Aosta Region also gave the regional authorities the power to create a welfare state significantly more generous than that of other Italian regions (Vampa, 2016).

The national state, however, still maintains significant control over the Aosta Region. For instance, all laws passed by the local parliament have to be communicated to the Republic's Interior Minister's representative, who has to approve it within thirty days before it can be enacted, emergency cases excepted (art.31). The Aosta Region is important in the eyes of Rome for international exchanges. It is a place of diplomacy because of its borders with France and Switzerland, but is also significant economically as a "European crossroads" linking East and West, and North and South (Janin, 1971).

All three levels of Italian state authorities are significantly involved in transboundary CPR governance in the MBR. At the lowest level, Communes bordering Switzerland and France did not wait for the creation of the EMB to start exchanging. When transhumance was the main economy of the MBR, Valdostan villagers would cross the mountains to let their cattle graze in Valais. The strong ties between the two sides have persisted to this day. When the EU created the INTERREG program in the late 1990s, even Communes that were not part of the EMB quickly seized the opportunity and applied for funding with "thousands of projects" (Interview with the Head of the Local Development and European Projects Sector of the Unité de Communes du Grand-Combin). The Unité de Communes themselves

are quite active as well in pursuing INTERREG projects and supporting the local implementation of larger projects led by the regional government.

In Aosta, two Assessorats are significant in transboundary CPR governance. First and most significant is the Assessorat of Public Works, Territory, and Environment. Its head is the Vice-President of the EMB, and the Italian coordination officer of the EMB is also attached to this Assessorat. This stands in parallel to the Economy, Tourism, and Innovation Agency of the Canton Valais, in charge of the Swiss coordination in the EMB.

A second Assessorat is often mentioned in transboundary governance, the Assessorat for Tourism, Sports, and Commerce. Indeed, since tourism is the main industry of the MBR, ensuring its coordination throughout the region is essential for coherent economic development and environmental protection. This second Assessorat thus plays an important transboundary role outside of the EMB but also within. The Assessorat of Public Works, Territory, and Environment often delegates to the Assessorat for Tourism, Sports, and Commerce when projects are more in the field of tourism than of environment and territorial planning.

Finally, unlike the Swiss and the French national authorities, the Italian state, represented by the Ministry of the Environment, takes a keen interest in the MBR transboundary governance. Working on the EMB project since 1994, the Italian Coordination Officer described in our interview the evolution of the Environment Ministry's engagement in the decision processes of the EMB. In the early days of the establishment of the EMB, the Ministry always delegated a representative to sit at the EMB's leading committee, the Mont Blanc Transboundary Conference (MBTC). After a few years, it drew back and mandated environmental NGOs, such as Mountain Wilderness (MW), to represent it in EMB debates. This choice shaped the dynamic of the transboundary governance, as this activist organization pushed for environmental protection projects. Later on, in the early

2000s, the Ministry appointed Paolo Angelini to work on the sustainable development plan of the EMB, and soon as its representative. Mr. Angelini was also the Italian Head of Delegation to the Alpine Convention until his retirement in 2025. This representative believed strongly in the EMB and facilitated the working relationships between the EMB, the Ministry, and the Alpine Convention.

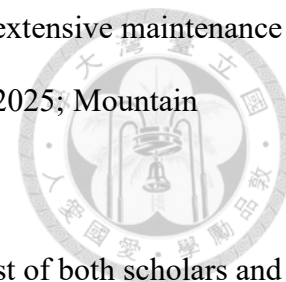
4.4.3 Private sector actors

Private actors, in particular those who exploit CPRs in their activities, are also important decision-makers in the CPR governance in the MBR. While state regulations and public opinion frame the range of actions they can take to a certain extent, they still have significant leverage, and their behavior influences the health of biodiversity in the region. Two main types of private sector actors can be differentiated: Alpine consortia and private companies, of which two key firms that interviewees repeatedly mentioned are the Compagnie du Mont-Blanc (CMB) and the Ultra Trail du Mont Blanc (UTMB).

4.4.3.1 Collective landholdings

Let us look in detail at consortia, which are a common land ownership and management structure in the Alps. Families own and pass down from generation to generation one or multiple shares of land that is used and managed in common, mostly mountain grasslands for cattle grazing. As highlighted by Louvin and Alessi (2022), the fact that the term consortium refers to both the CPR collective management and ownership, as well as to the group of people that manage and own them, shows the intimate link between the common-pool resource and its users' community. In the Valley of Chamonix, for instance, 370 families have shares in seven collective landholdings and, together, own a total of 11% of the land (Chavanon, 2025). With its roots in the Middle Ages (Mouthon, 2024), this CPR governance organization form is poorly incorporated in the modern state and thus

often not considered a central stakeholder in the territory, despite the extensive maintenance work they provide for alpine grasslands and hiking trails (Chavanon, 2025; Mountain Wilderness, 2026).



There are, however, signs that consortia are regaining the interest of both scholars and authorities. For instance, in February 2025, the University of Savoie Mont Blanc launched a new chair, the VALCOM Chair (“VALoriser les COMmuns”, eng. “valuing commons”), whose purpose is to study and raise awareness about the cultural and environmental relevance of consortia (Chavanon & Joye, 2025). In the Aosta Valley, the 2017 government regulation, co-drafted with consortia representatives (Louvin & Alessi, 2022), drastically improved the legal environment for consortia and contributed to a resurgence of dynamism (Chavanon, 2025).

4.4.3.2 La Compagnie du Mont-Blanc

On the other hand, a powerful private actor is the CMB, born in 2000 from the merger of the three main ski lift companies on the French side of the MBR and now one of the largest companies in its sector in France. The CMB also owns high-altitude restaurants and hotels in Chamonix, making it the key economic force in Chamonix, which directly and indirectly influences local CPRs governance. Building and operating ski lifts in Chamonix, it determines where human infrastructure will be deployed, causing habitat destruction, and where humans will spread and degrade habitat quality through noise disturbance and pollution. On the other hand, CMB has the means to conduct habitat restoration and will shape the local tourism industry's adaptation to climate change. In recent years, the CMB acknowledged its environmental governance responsibility in the MBR and slightly reoriented its business model toward sustainability.

In November 2023, its shareholders voted to change the CMB's status into that of "company with a mission" (fr. Société à mission), a legal status based on the French Code of Commerce, requiring a societal and environmental purpose for the company. The self-given mission of the CMB is "making the mountains accessible to everyone and, together, preserving this precious asset entrusted to us by the territory" (CMB, 2025, p.8, translated from the French). The four operational goals are 1) to make mountains accessible and safe to all, 2) to consider environmental protection of the MBR landscape in every decision, 3) to collaborate with local partners and support the local communities, 4) to ensure the well-being of and support the hundreds of employees of the CMB. The Code of Commerce requires every company with a mission to have a mission committee and an independent audit to ensure engagement in achieving the company's sustainability goals. For the CMB, a representative of MW, the environmental NGO, presided over the mission committee. In the second and latest mission report of the CMB, the committee welcomes the progress achieved regarding the second goal, environmental protection. According to the committee's assessment, the CMB implemented most of the actions it defined in its environmental action strategy, notably by studying the impact of artificial snow production on the region's water resources; recording and mapping all remnants of obsolete installations on the CMB operational territory; and prioritizing environmental education in its communication (CMB, 2025, p.24-26).

The size of the CMB (101 million EUR turnover, almost 400 full-time equivalent employees) gives the company leverage over local decision-makers, with whom it has strong connections. Since, as discussed above, the Commune of Chamonix Mont-Blanc has a tremendous impact on CPR governance in the whole region, the CMB indirectly becomes a key factor in the MBR. While its engagement for sustainability is recent, the CMB shows that it has the potential to become not only a mass tourism giant but also a model of

environmental and sustainable engagement if it genuinely continues and intensifies its engagement.



4.4.3.3 L'Ultra-Trail du Mont Blanc

The long-term, diffused impact of the CMB on the region's CPRs differs greatly from the punctual and acute harm caused by the UTMB. The UTMB is a sports event with various itinerary lengths, the longest reaching 170km, for which more than 10'000 participants (UTMB Mont-Blanc, n.d.) and between 50'000 and 100'000 supporters gather yearly in the MBR (Hagenmuller et al.,2026). While interviewees acknowledge improvements in recent years, they still lament the heavy waste pollution left behind and the itinerary's crossing over the Aiguilles Rouges and the Contamines, two sensitive PAs. Michenot (2020) reports that 20kg of waste were collected on one of the shorter tracks of the UTMB in 2017 alone. Confronting the negative impact of this massive sports event on biodiversity, the Chéserys consortium in the Aiguilles Rouges protected area decided to stop allowing the UTMB itinerary to cross its territory, starting in 2023. Accelerated soil erosion, lack of respect from visitors, waste pollution and dejections, disregard for the PA's regulations, and wildlife disruption were reasons cited for this ban (Hagenmuller et al.,2026). Forster et al. (2023) also found that ultra-trails, including the UTMB, are important sources of microplastic deposition in protected areas.

Public opinion, boycott threats by athletes (Verschuuren & Perdriau, 2026), and regulations have forced the UTMB to adopt environmental protection measures, such as a biodiversity impact assessment after each iteration of the competition, the creation of an environmental commission in 2006, environmental awareness education for staff and the public, the investment of 1 EUR per inspiration fee to ecosystem protection and restoration, the instauration of a "bring your own utensils" policy and a collaboration with the EMB and

the ComCom Chamonix Mont Blanc to offer public transportation options (Michenot, 2020).



4.4.4 Environmental NGOs

While policy and territorial planning decisions are in the hands of the state authorities, the vibrant civil society on the three sides of the MBR, organized into NGOs, also significantly shapes CPR governance in the region. They can broadly be classified into two categories: research NGOs and advocacy NGOs. Research NGOs are small, independent research organizations locally implemented that study ecosystems, their evolution, and the impact of human development on them. These organizations are usually close to state authorities, who often seek out their expertise to inform decisions. In Aosta, the most significant one is the Fondation Montagne Sure, which works closely with the Assessorat for the Environment. On the French side, both La Chamoniarde and the CREA advise the Communes and the ComComs, in particular the ComCom Chamonix Mont-Blanc. Lastly, in Valais, the main environmental research partner of the Canton in the MBR is the Foundation for the Sustainable Development of Mountain Regions (fr. *Fondation pour le développement durable des régions de montagne*, FDDM), based in Sion. Nearby universities also contribute to informing decision-makers in the MBR. Research institutions and NGOs are connected in a loose scientific network, sharing data and collaborating on common projects, according to the expertise of each. In other words, research NGOs focus on creating knowledge about local ecosystems without directly pursuing a political agenda, and policymakers translate this information into the policy process.

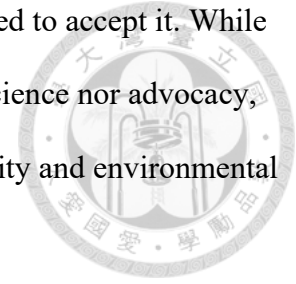
Similarly, advocacy NGOs inform and shape decision-making in the MBR. The main difference is that they have political agendas, and their energy is oriented towards convincing decision-makers to adopt their propositions. Most of the advocacy NGOs are not

purely local ones, but rather branches of major organizations. For instance, the Swiss, French, and Italian branches of the MW work within their respective borders, but also collectively at the transboundary level. The World Wildlife Fund (WWF), ProNATURA, the French and Italian Alpin Clubs are other examples. These NGOs also have their own networks of collaboration. The best illustration is the umbrella organization proMONTBLANC, which organizes regular meetings of the advocacy NGOs active in the MBR and represents them at the TCMB. Of course, the group is composed of highly diverging interests, and conflict sometimes occurs. Activists of Mountain Wilderness call for the strict restraint of human activities in high altitudes, but bringing customers to summits is the business of alpine guides. However, as the two proMONTBLANC representatives told me, the individual and collective efforts of the advocacy NGOs are essential and impactful in the MBR, even in the face of sometimes hostile political actors.

Some NGOs cannot easily be classified in either category. For instance, the recently established but already successful Marges Sauvages studies post-glacial ecosystems and strongly advocates for their protection. In collaboration with Communes, private actors and residents, they build knowledge on these little-known but fast-growing novel ecosystems and design conservation measures that all actors in a territory can accept. They differ from research NGOs in that they have a clear political agenda and are fully committed to it, but they conduct rigorous ecological research under the leadership of their president, a renowned glaciologist.

Another NGO that does not fit the binary categories described above is the Parc naturel régional de la Vallée du Trient (PNRT). This NGO was founded by the tourism offices of seven Communes in the Valley of the Trient, in Valais. Its membership is mainly composed of the Communes, although groups and individuals can also belong. This NGO's original purpose was to propose a nature regional park to the Swiss Confederation first, and

once the plan was accepted, the residents of the seven Communes voted to accept it. While the NPR has a research team, the main focus of this NGO is neither science nor advocacy, but rather the management of the park and the promotion of biodiversity and environmental protection projects for residents and visitors.



5 DRAWING THE SYSTEM: THE EMB

Now that I have introduced the main decision-making centers, it is time to unpack the various ways they are interconnected. As discussed in the literature review, a polycentric governance system does not only require “multiple overlapping decision-making centers with some degree of autonomy”, which I presented in detail in Chapter 4, but also that these decision-making centers “choose to act in ways that take account of others through processes of cooperation, competition, conflict, and conflict resolution” (Ostrom, 1991; Carlisle & Bruby, 2019). The focus of this section is on the most important transboundary CPR governance institution, the EMB, to exemplify different interaction forms between decision-making centers in the MBR.

5.1 THE ORIGINS OF THE EMB

The EMB can be traced back to the NGO Mountain Wilderness. Famous mountaineers met in Rome shortly before the bicentenary of the first ascent of Mont Blanc in 1986. This meeting led to the foundation of MW, whose main purpose is the conservation of the natural and cultural mountain heritage not for the sake of biodiversity, but for ensuring the possibility for humanity to experience wilderness (Biella Theses, 1987). Their first project immediately became the creation of an international nature park around the Mont Blanc.

Lissandro (2008) traces in detail the ensuing process. MW’s call was heard and discussed in 1987 by the Environmental Ministers of Italy, France and Switzerland during

their annual meeting on cross-border environmental issues. The French minister, Brice Lalonde, was particularly enthusiastic about the project and led the charge by launching a study on the feasibility of a system of protected areas in the MBR in 1988. This initiative was ill-received by the local authorities and inhabitants, who criticized it for being a central government decision imposed without including them in the decision-making process, as is characteristic of the centralized French government structure.

The Swiss and Italian processes followed the same pattern. National governments tried to advance the international nature park and met strong resistance from the locals. On the Swiss side, the national government delegated the project to the Canton early on, and the latter was quick to find that the population showed “total opposition to an eventual park policy” (Schwery, 2004, cited in Lissandrello, 2006). Some locals even claimed that the park would effectively transform their region into an “Indian reserve” (Ehringhaus, 2012). As for the Italian side of the Mont Blanc, there was an additional layer of tension because of the autonomous status of the Aosta Valley, leading to discussion on which government, the regional or the national, had the sovereign right to decide on a park project. Moreover, the establishment of the Gran Paradiso National Park had just been completed, resulting in the almost total absence of development opportunities for the local communities. This recent experience caused inhabitants of the Aosta Valley to be highly wary of a new park project.

Despite repeated public pressure from MW, such as their spectacular “Pour le Parc” action in 1989 (INA, 1989), local resistance to a formal transboundary protected area organized and in 1991 proposed an alternative cross-border institution to the Environmental Ministers of the three countries (Lissandrello, 2006). For the local actors, the control of their territory was at stake. Offering a “social alternative” that included both environmental protection and economic development was not driven by a desire to conserve the Mont Blanc but rather to avoid the creation of a protected area on their territory (Moullé, 2020). In

October 1991, the three ministers agreed to the local and regional stakeholders' counter-proposition to the protected area project and created the Mont Blanc Transboundary Conference (MBTC) as the leadership board for the EMB project (Ministres de France, d'Italie et de Suisse, 1992). During their following meeting a year later, the three ministers tasked the MBTC with “launching pilot projects to be presented within one year; they ask it to examine the following themes in particular:

- a common strategy for international transport prioritizing combined rail-road traffic compatible with environmental protection;
- promotion of extensive, sustainable tourism;
- revitalization of pastures and support for mountain agriculture, notably through direct payments;
- joint actions for the protection of sensitive environments (ibid. translated from the French).”

After the successful implementation of pilot projects, the ministers met one last time in November 1994 to order the implementation of “concrete actions in the three test zones (EMB, n.d.).”

Since then, the ministers stepped back from direct involvement in the MBR and local decision-making centers have taken over the governance of CPRs in the regions.

5.2 EMB’S GOVERNANCE STRUCTURE

The EMB’s governance arrangements reflect its origins as a counter-proposal to the highly formalized park-type governance idea. While it has a core structure (Figure 9), a lot of its institutions remain vague and flexible.

The MBTC, the governing board of the EMB, has three vice-presidents, one per side of the Mont Blanc: the Assessorat for Public Works, Territory and Environmental policies of the Autonomous Region of the Aosta Valley; the Head of the Department of Economy, Tourism and Innovation of the Canton of Valais, and the Mayor of Chamonix, who is also the President of the ComCom of the Chamonix Mont Blanc Valley on the French ARA Region. The leading trio already reflects the multilevel nature of the EMB governance. The Swiss vice-president is an appointed bureaucrat, while the other two are elected officials, and the French vice-president has community-level competencies, while the other two work at the regional level.

This vertical diversity is also present among the other governmental decision-making centers sitting in the EMB. Local municipality representatives are also strongly represented in the three regions, but differently. For the Swiss side, three municipal presidents are invited to sit in the MBTC. For the French and Italian sides, one and two seats are reserved for groupings of municipalities, respectively.

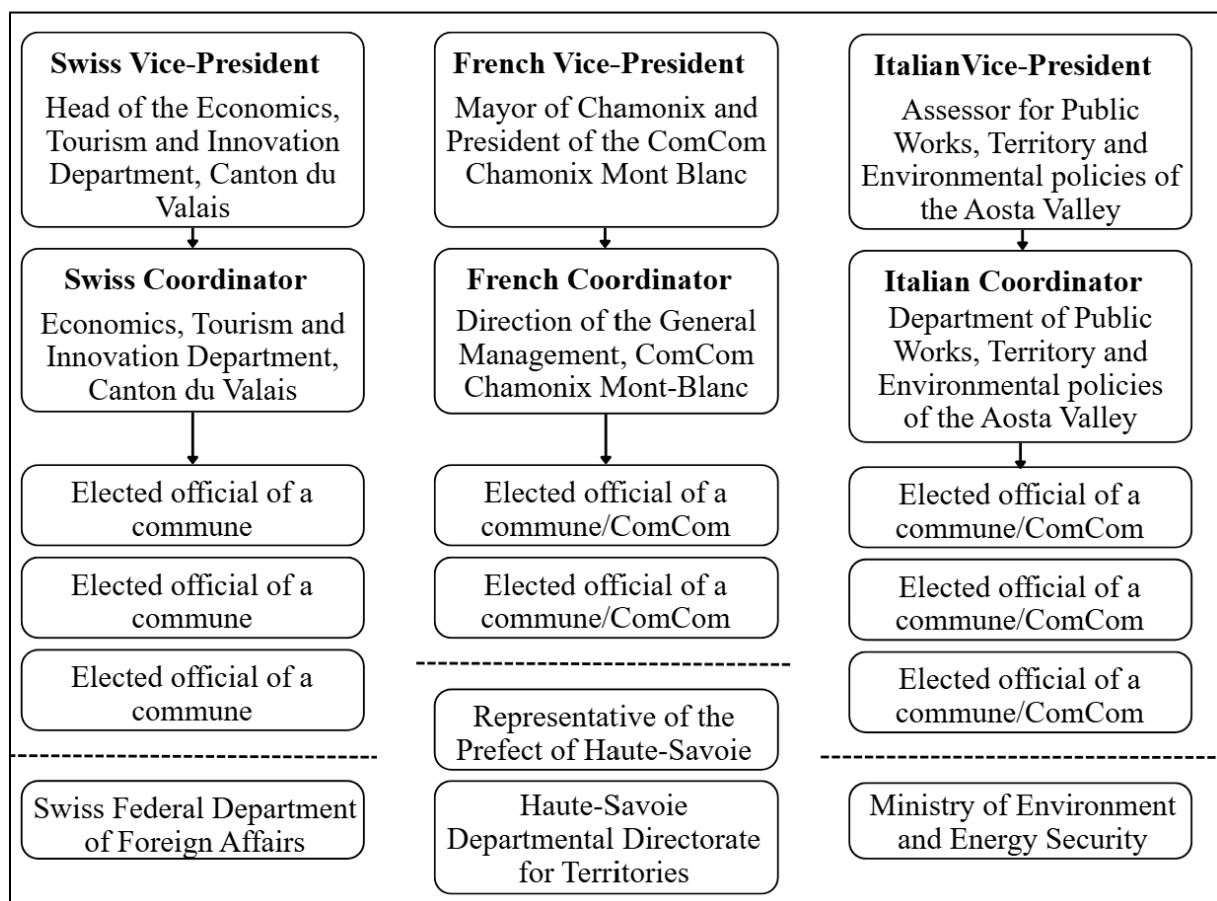
The Swiss Ministry of Foreign Affairs and the Italian Ministry of Environment each have a seat. On the French side, the national government is not represented, but the two Departments whose territories include parts of the EMB are invited. The remarkably low level of engagement of national authorities in the EMB's daily operations in recent decades does not mean that Paris, Rome, and Bern have entirely given up on weighing in on EMB affairs. Indeed, their approval remains essential for the EMB to apply to international programs, such as a UNESCO protection or an EGTC in the EU, as discussed later.

The three coordinators, who are bureaucrats appointed to this position by each of the Vice-Presidents, are key decision-makers. They are in charge of coordinating not only elected officials on the three national sides of the Mont Blanc, but also act as chiefs of operations and project managers.

Among the informants interviewed for this project, those who do not come from the public sector underlined the fact that the EMB is primarily a public authorities' cooperation platform. This observation is also supported by the organization chart above, where the three or four government levels are represented, but other organizations are absent. Local associations, professionals, environmental NGOs, and research institutes are regular observers to the MBTC, but who gets invited has varied over the decades and is not set in stone.

Figure 9.

Organigram of the Mont-Blanc Transboundary Conference



Lastly, and I will come back to it later, the decision-making centers never signed an agreement for the EMB; there is no convention or statute. Most importantly, neither the EMB nor the MBTC has legal existence. Thus, the institutional arrangements that are in place today are the result of decisions taken in the early days of the EMB.

5.3 DRAWING THE SYSTEM: OUTSIDE THE EMB

A lot of the interactions between decision-making centers take place outside of the EMB. Drawing again on the definition of a polycentric system, I will now give some examples of the four different interaction forms in the context of the CPR governance system in the MBR.

5.3.1 Cooperation

The poster child of cooperation are the research NGOs, which cooperate with every type of decision-making center. Let us take the CREA Mont-Blanc as an illustration. First, it knows all the other research NGOs in the MBR and is part of the loose network that connects them all through data sharing and collaboration on specific projects. For instance, the botanical garden Jardin Flore-Alpe, operated by the Jean-Marcel Aubert Foundation in Valais, and the CREA Mont-Blanc in Chamonix currently receive INTERREG funding to create a similar botanical garden in Chamonix and to improve and expand educational offerings in and between the gardens, focusing on participatory sciences. Because this JADE project is part of the Franco-Swiss INTERREG program, the EU, the Swiss Confederation, and the Canton of Valais all funnel money into it, thus cooperating in a financial manner. The director of the CREA Mont-Blanc also told me that they have cyclical collaboration with the Montagne Sure Foundation in Aosta. Listed scientific partnerships on their website is long and include the University of Savoie Mont Blanc, along with other regional and national scientific institutions.

Second, the CREA Mont-Blanc plays an important role as an ecological consultant for local actors. Local authorities, especially the ComCom Chamonix Mont-Blanc, often seek out the scientific advice of the CREA Mont-Blanc on ecological matters. Private companies, most importantly the CMB and the UTMB, also turn to the CREA Mont-Blanc for scientific

assessments of their impacts on the local ecosystems and for recommendations on how to optimize their ecological actions, such as ecosystem restoration projects.

Environmental activist NGOs also cooperate closely in the MBR. Marion Sevaz, from Marges Sauvages, talked about complementarity between the different organizations, as well as presenting “a united front” of environmental protection associations to “amplify the voices of these [glacial and post-glacial] ecosystems”. Not all NGOs can be on all fronts across the MBR and collaborating ensures that at least one environmental NGO is present on each issue across the entire territory.

Lastly, an interesting and relatively new collaboration is between the Chaire VALCOM of the University Savoie Mont-Blanc and the consortia of the Valley of Chamonix. Since 2018, the researchers have conducted research on and in partnership with the local consortia with the objectives of accompanying consortia in their journeys to defend and revitalize the common landholdings culture and of advocating for the improvement of the legal framework (Chaire VALCOM, 2025).

5.3.2 Competition

In the MBR CPR governance system, tourism is the main cause of both competition and conflict between decision-making centers. Chamonix and Courmayeur are the two mass tourism hubs in the region, but most localities hope to attract tourists and their associated expenses. It was with this goal in mind that the Unité de Communes Grand-Combin in Aosta joined the EMB. While this rural Unité is quite far from the Mont Blanc itself, joining the EMB allowed it to claim the prestige of the mythical peak and hopefully direct some tourists to its villages.

While the French and the Italian sides of the MBR mostly target tourists interested in the majestic and symbolic appeal of the Mont Blanc, Communes in the Canton of Valais do

not promote themselves based on their proximity to the Mont Blanc. According to the co-director of the PNRT, there is an understanding across the Communes members of this park that the Mont Blanc tourism market is already saturated and that the lack of transportation infrastructure directly connecting Chamonix and Valais makes it unrealistic for the Communes of the Trient Valley to join this market. The Tourism Offices of the Communes of the Trient Valley created the PNRT project with the aim of differentiating their tourism offer and promoting “soft tourism”. Unlike the massive hotels and heavy touristic infrastructures found in Chamonix and Courmayeur, the Communes in the PNRT offer biodiverse environments, quaint villages, and nature-based tourism activities. Thus, this competitive dynamic in the tourism industry pushed the Communes of the Trient Valley to become more environmentally friendly, which is the theoretical expectation of competition in a polycentric CPR governance system (Carlisle & Gruby, 2019).

Interestingly, the PNRT also has a transboundary side. Despite the legal impossibility for a Commune outside of Switzerland to formally join a regional nature park, the Communes of the Trient Valley tightly collaborate with the French Commune of Vallorcine on tourism matters, as this village is closer to the Trient Valley Communes than to Chamonix, both geographically and in terms of tourism style, despite being in the ComCom Chamonix Mont-Blanc.

In an exchange with a professional mid-mountain guide, I discovered that competition over tourism is also palpable in the mountain guides' communities on the highly sought-after cabins along the itinerary of the Tour du Mont Blanc. Large travel agencies, mostly in Chamonix and Courmayeur, book cabin beds months in advance because they know that they will have customers for it. Independent guides, who customize experiences for fewer groups, do not know exact trip dates early enough to compete for beds with large agencies. Additionally, their fees are significantly higher, especially for Swiss guides. The difficulty

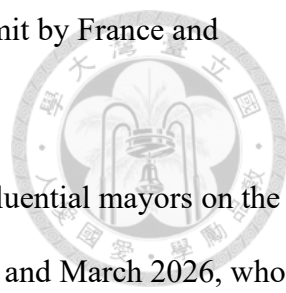
faced by independent guides is an issue for CPR governance, as they are often more aware of the environmental impacts of their business and more willing to act and educate on this issue. Guides hired by a travel agency have to prioritize the number and satisfaction of customers over sustainable CPR governance, leading to more harmful practices, such as littering and unauthorized crossing of strictly protected ecological areas, leading to wildlife disturbances. Two other interviewees confirmed that high-altitude mountain guides and travel agencies hiring them often feel threatened by proposed measures to extend or reinforce regulations in protected areas.

5.3.3 Conflict

Conflict in the MBR is mostly concentrated in France and Italy. Switzerland, as an interviewee put it, “gets along with everyone and agrees to everything” (independent UNESCO consultant).

Two main conflicts were mentioned multiple times by the informants. First, the Mont Blanc summit and two other peaks of the massif are the object of a border dispute between France and Italy. In 1860, the Treaty of Turin ceding Savoie to France suggested, as is customary, that the border should run along the watershed line, meaning that both countries would share the summit. France never accepted this delimitation and claims sovereignty over the entire summit. While this discrepancy went almost forgotten for many decades, it reemerged at the end of the 20th Century. Since then, the dispute has been attracting the attention of both national governments and local authorities (Malaspina, 2024). With regards to CPR governance, it is possible, as an interviewee told me, that this border dispute fueled the prompt abandonment of the UNESCO bid by the French state. Indeed, a formal application of the Mont-Blanc to UNESCO would require the correction of the border in line

with conventional practices, leading to a shared sovereignty of the summit by France and Italy.



The second conflict is a personal issue between the two most influential mayors on the French side of the MBR. The mayor of Chamonix between March 2008 and March 2026, who also acted as the president of the ComCom Chamonix Mont-Blanc and as the French Vice-President in the EMB, has a very tense relationship with the mayor of Saint-Gervais in office since 2001, who is also the president of the ComCom Pays du Mont-Blanc, and on whose territory stands the summit of the Mont-Blanc. While the origins of this animosity are not public, its consequences significantly affect CPR governance in the MBR. The two mayors disagree on most things and, in some instances, try to block the other's initiatives. The Swiss coordinator for the EMB called it an "open war". Because of the dominant position of the Mayor of Chamonix in the EMB, multiple informants told me that the Mayor of Saint-Gervais either refuses to engage in transboundary and transcommunal cooperation or actively tries to hinder it, as in the case of the UNESCO bid. The recognition of the Mont Blanc as a UNESCO Heritage site would be tightly linked to the notoriety of Chamonix, despite the location of the summit on the territory of Saint-Gervais. Combined with the probability of having to share the summit with Italy, the mayor has been a vocal opponent of the UNESCO bid. Interviewees who brought up this conflict were hopeful that the election of a new mayor in Chamonix in March 2026 would improve the conflictual dynamic between the two ComComs.

Other conflicts in the MBR not included here are generally either in the past or on a very small scale, such as the refusal of the Commune of Chamonix to engage with Marges Sauvages, as this NGO is perceived as a threat by the local influential mountain guide lobby.

5.3.4 Conflict resolution

Conflict resolution is the weakest interaction form in the MBR out of the four cited in the polycentric governance literature. Because of the informal nature of the EMB, this transboundary governance institution has no means to offer conflict resolution solutions. For instance, the exclusion of proMONTBLANC from the EMB by public officials could not be settled internally, as no mechanism exists, and lasted until the Swiss Confederation insisted on the re-inclusion of the NGO umbrella organization.

The personal feud between the two ComCom mayors ran unchecked for almost two decades, and the only resolution option in the eyes of other actors was a leadership change in one of the ComComs, although this solution does not necessarily lead Saint-Gervais and the ComCom Pays du Mont-Blanc to actively rejoin transboundary CPR governance. As for the border issue, it is not in the hands of local authorities but rather in those of the national governments in Rome and Paris. Thus, the resolution of disputes in the MBR relies solely on time and on national forces. Local actors are often helpless in solving polycentric CPR governance conflicts.

6 THEMATIC ANALYSIS

Now that I have proved and depicted the existence of a coherent transboundary polycentric CPR governance system in the MBR, I will turn to the main themes identified in the interviews. In the semi-structured interviews, I asked informants broad open-ended questions, then manually labelled relevant parts of each interviewee's answers before consolidating them into themes. In the end, I identified four overarching themes from the interviewees: 1) the lack of legal existence is the largest threat to the EMB, 2) the future of polycentric transboundary CPR governance in the MBR is almost entirely dependent on the EU, 3) many actors want to sustainably manage CPRs as a tool to protect and develop the

tourism industry, and 4) climate change adaptation is a rallying issue. I have already discussed many of these themes within their context in the previous section, but a short systematic analysis will help clarify their relevance and implications for CPR governance in the MBR.



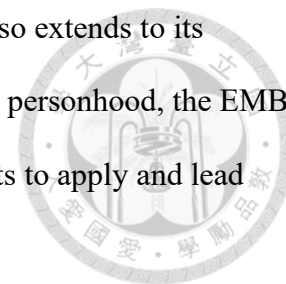
6.1 LACK OF LEGAL EXISTENCE OF THE EMB

All the key informants I interviewed believe that the MBR benefits from the existence of the EMB, as a transboundary platform for representatives of the three regions to meet, discuss, learn from each other, collaborate, and coordinate on transboundary issues. Nevertheless, they all identified the same core weakness that prevents the EMB from growing and further improving the cohesion of the CPR governance system in the MBR: its lack of legal personhood. That the EMB and its MBTC have no status and are not based on any convention leads to multiple structural issues.

First, because no official document gives a clear mandate to the EMB, the coordinators and the vice-presidents refer to the four goals defined by the Environment Ministers of the three countries in 1991 as themes to be examined in particular for the initial one-year-long pilot projects (Ministres de France, d'Italie et de Suisse, 1992). While the themes are relevant and broad enough to be adapted to contemporary needs, there is no mechanism for EMB members to change them. As a result, the EMB draws its general direction from a more than thirty-year-old communiqué that was not designed as a long-term strategy.

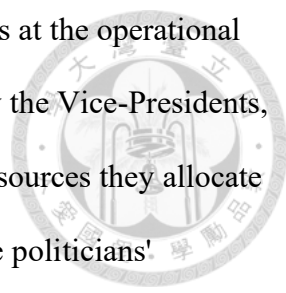
Second, another consequence of the unofficial nature of the EMB is that this institution does not have its own personnel. The three coordinators are employed by their respective Vice-President and are usually in charge of multiple projects, not only the EMB. For instance, the Swiss coordinator for the EMB also coordinates all INTERREG A and B projects for the Canton of Valais and is responsible for the “quality, environment and sustainability” of the Economy, Tourism and Innovation Agency of the Canton of Valais.

Third, the difficulty of the EMB to mobilize human resources also extends to its incapacity to secure financial means on its own. Because it has no legal personhood, the EMB cannot directly receive EU funding and has to rely on its individual parts to apply and lead INTERREG projects in its name.



Fourth, despite their participation on multiple projects, the coordinators are the drivers of the EMB. The current Swiss and Valdostan coordinators and the recently retired French coordinator firmly believe that the EMB is a necessary platform for cooperation that can truly contribute to the region's development. They encourage local Communes to participate in EMB projects, coordinate with national institutions when necessary, organize MBTC logistics, and collaborate closely with one another. Their excellent relationships and their capacity to maintain momentum in the EMB rely on one essential factor that was mentioned repeatedly across interviews: continuity. The Swiss coordinator has assumed this position since 2008; the coordination officer for the Aosta Valley, since 1994, and the retired French coordinator, also since the early days of the EMB. Crucially, the latter's retirement has drastically changed the collaboration dynamic between the coordinators. Both the Valdostan and the Swiss coordinators said that the ComCom Chamonix Mont-Blanc struggled to find a person to fill the retired coordinator's shoes. The operational dynamism of the EMB was significantly affected by this continuity crisis, showing the institution's overreliance on the continuity of individuals' engagement. The two veteran coordinators tried to support the successive tentative French coordinators and had to slow down the pace of their transboundary collaboration, waiting for a French counterpart to catch up. As of March 2026, they both believe that the current employee in charge of EMB coordination in Chamonix will remain, and hope that this continuity crisis is solved.

The fifth and last structural issue caused by the EMB's lack of legal personhood is the recent political uncertainty due to the election of a new mayor for the Chamonix Mont-Blanc



Commune and ComCom, coinciding with the end of the continuity crisis at the operational level. The informal nature of the EMB gives elected officials, especially the Vice-Presidents, leverage over the quantity of monetary, personnel, time, and political resources they allocate to the EMB. Interviewees often mentioned that the EMB depends on the politicians' "goodwill". This time, as mentioned above, the long-time President of Chamonix and of the ComCom Chamonix Mont-Blanc did not run for a new term. Interviewees praised the mayor's engagement for the EMB and expressed their concerns ahead of the municipal elections, which took place at the end of March 2026. In the months running up to the election of a successor, the coordinators reported that ongoing projects, especially the application to an EGTC, are, to some extent, paused. The direction that the EMB will take is partly dependent on the interest and engagement of the new mayor in transboundary cooperation. While they expressed uncertainty regarding the effects of the French elections' results, interviewees were also not overly worried about this political continuity interruption. Some are even hopeful that a new Chamonix mayor will relax the relationship between Chamonix and Saint-Gervais and maybe bring the ComCom Pays de Mont-Blanc, presided over by the latter's mayor, back to the transboundary table. Informants have also experienced a much longer political leadership crisis a few years prior, when consecutive elections in the Aosta Valley caused a fast turnover in the position of Environment Assessor, who is also the Valdostan Vice-President for the EMB.

In summary, the lack of legal existence makes it impossible for the EMB to set clear strategic objectives in all fields, including environmental protection, limits its capacity to increase its financial and personnel resources, and renders it dependent on the willingness and the continuity of both political and operational actors.

6.2 THE OVERARCHING ROLE OF THE EU



The second theme that I drew from the interviews is that without the EU, CPR governance in the MBR would look entirely different today. While this continent-wide institution does not directly participate into the decision-making process in the MBR, its various programs and laws significantly shape the region's governance. For starters, the EMB might not even exist anymore. As discussed earlier, INTERREG projects are a central, if not the main, funding source for transboundary projects in the MBR. INTERREG project applicants have to design their proposal in a way that is in line with the specific INTERREG program's strategic priorities. Since these objectives are based on the EU's five major challenges, the INTERREG programs relevant to the MBR generally share similar objectives: innovation, environment, social inclusion, territorial approach, and transboundary cooperation. Consequently, as local INTERREG coordinators told me, MBR projects mostly include components of climate change adaptation, biodiversity conservation, renewable energies, and mobility.

The EU also shapes biodiversity through the Natura2000 network discussed earlier and through other regulations that require Member States to improve their biodiversity conservation efforts and their overall sustainability. France and Italy, being EU Member States, have to meet the EU's objectives by requiring implementation of EU strategies and regulations at the local level, such as in the MBR.

6.3 TOURISM MANAGEMENT COORDINATION

In the EMB, one of the main topics of discussion and cooperation is the Tour du Mont-Blanc (TMB). The TMB is an iconic and popular hiking itinerary that goes across the three countries. To complete the journey entirely on foot, a hiker takes between ten and fourteen

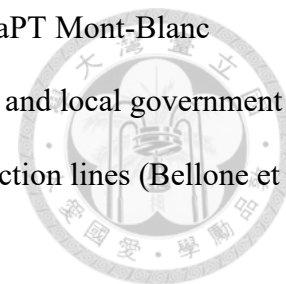
days, but modern tourists demand shorter trips, not exceeding a week. According to interviewees, international tourists want to experience the Mont-Blanc and challenge themselves, but with more comfort and often without consideration for the local inhabitants and the environment. Excessive traffic caused by cars and vans shuttling tourists and their luggage around the mountain, limited cabins' capacity, illegal camping, and littering are challenges that all actors, in the three countries, at every level, and across sectors face. The EMB is the preferred platform for many to meet, discuss, and coordinate efforts, and some important successes have been achieved, notably the unification of the cabin reservation system through an INTERREG project.

The overtourism issue remains a key environmental challenge that the MBR needs to take more seriously. This must be done through reinforcing the EMB, which, in its current state, is not a powerful enough institution to effectively manage overtourism in the region.

6.4 CLIMATE CHANGE ADAPTATION

Climate change adaptation could be considered part of the tourism coordination theme, but it also extends further. The AdaPT Mont-Blanc project, an INTERREG ALCOTRA project also joined by the Canton of Valais, predicts increases in the frequency of summer droughts and extreme weather events, in the number of pest generations per year, and in the pace of glacier withdrawal. Not only will tourism be affected, but also agriculture and citizens, as water shortages and unstable soil will challenge the resilience of the local communities. Additionally, the natural landscape will change, with the colonization of higher mountains with forests, an increase in the number of deciduous trees in lower altitudes, the vertical migration or disappearance of animal and vegetal populations, and the total or partial disappearance of snow on valley floors and of permanent glaciers (Cremonese et al., 2019).

Next to the ecological diagnosis conducted by scientists, the AdaPT Mont-Blanc project conducted participatory roundtables with citizens, professionals and local government officials to co-create a strategic roadmap. The process resulted in five action lines (Bellone et al., 2020, p.22, translated from the French):



1. Establish a consulting body at the scale of the EMB.
2. Envision ethical and non-destructive development, where local resources are key.
3. Increase risk awareness at multiple levels.
4. Adapt, yes; pollute or degrade, no: avoid "maladaptation."
5. Understand, monitor, and assess the effects of climate change.

AdaPT Mont-Blanc's participatory methodology and results highlight two things. First, citizens, as private individuals, private sector representatives, and elected officials, are active decision-making actors in the EMB and in the MBR in general. Second, the five axes reveal citizens' preferences regarding adaptation to climate change. They recognize the necessity of transboundary cooperation that makes ecological sense; they prefer a focus on building resilience based on local resources rather than a focus on economic development at all costs; and they demand better information for citizens and decision-makers to understand and minimize the costs of climate change-induced risks.

Local citizens show an attachment to the MBR, which, according to interviewees, large companies transplanted into the region do not share. Consequently, the sustainability and community resilience approaches favored by locals can and do act as a counterweight to the primarily economic interests endorsed by private companies in the tourism industry. These two interest groups, the second more organized than the first, compete over the support of policy-makers through lobbying and voting, respectively, but also depend on each other. The tourism industry needs local inhabitants for legitimacy and workers, while locals need the

tourism industry to flourish, at least enough to maintain the high living standards currently enjoyed in the region.

These four themes extracted from the interviews all reveal different aspects and their related issue of the polycentric transboundary CPR governance in the MBR. It is now time to turn back to theory to answer the following questions: Is this system working? Is it efficient at protecting the regions' CPR? What are its strengths and weaknesses?

7 ASSESSING THE EMB

To assess the polycentric transboundary CPR governance in the MBR, I turn to the extended Morrison (2017) and Carlisle & Gurby (2017) conceptual model described earlier. Table 11 summarizes the evaluation, and I discuss each criterion in detail afterwards.

Table 100.

Assessment of the enabling conditions in the MBR

	Enabling condition	Present in MBR	Evaluation
1	Multiple, overlapping decision-making centers at different levels and across political jurisdictions, with some degree of autonomy	PRESENT and ADAPTED	Multiple, at different levels and across jurisdictions, with significant but varying autonomy.
2	Choosing to act in ways that take account of others	PRESENT and MIXED	Cooperation, competition, and conflict are present; conflict resolution mechanisms are absent.
3	Decision-making centers employ diverse institutions	PRESENT and MALADAPTED	Some platforms exist, but not strong enough to counterbalance the challenges caused by national borders.
4	Generally applicable rules and norms	ABSENT	No common clearly defined rules and norms.
5	Cross-scale linkages or other mechanisms for deliberation and learning	PRESENT and ADAPTED	Decision-making centers are highly connected and seek each other out to learn and discuss common issues.

	Enabling condition	Present in MBR	Evaluation
6	Mechanisms for accountability	PRESENT and MALADAPTED	Public opinion, INTERREG, and laws are externally given, with no mechanism within the system.
7	Integrated ecosystem approach	PRESENT and MIXED	Willingness to incorporate an ecosystem approach in decision-making, data discrepancies across national borders.
8	Explicit objectives, monitoring indicators, and evaluation criteria	PRESENT and MIXED	Objectives are not explicit and uniform across the MBR, so no evaluation is possible. Scientific monitoring exists.
9	Jurisdiction or scope of authority matches ecological boundaries	PRESENT and ADAPTED	“Variable geometry” and large participation around the MBR.
10	Sound and inclusive institutional beginnings	ABSENT	The EMB was a reactionary project to environmental action.
11	Issue salience for all decision-making centers	PRESENT and ADAPTED	Specific interests are all threatened by climate change.
12	Transparency, public awareness, and public engagement	PRESENT and MIXED	Transparency is high; public awareness and engagement vary across regions and projects.
13	Stable and sufficient funding	PRESENT and MALADAPTED	INTERREG funding available but not constant, and demanding application process.
14	Trust between the decision-making centers and other stakeholders within the system	PRESENT and ADAPTED	Currently a general atmosphere of trust between all decision-makers.

1. Multiple, overlapping decision-making centers at different levels and across political jurisdictions with some degree of autonomy

This first criterion is present in the MBR CPR governance system, as shown by the number of organizations that have been mentioned so far: the local, supra-local, regional, and national state institutions; the dozens of various NGOs, private sector actors, and the EU.

They are multiple and at different levels and across jurisdictions. The level of autonomy of the public institutions varies greatly, from the Canton of Valais, which, according to the principle of subsidiarity of the Swiss state, can make its own decisions for almost everything, to some of the smaller French Communes, under the leadership of a ComCom, within a centralized French state. As for private and civil society organizations, they are independent from the state, but their autonomy is limited by state legislation.

The only downside is the limited overlap at the international level. Decision-making centers' jurisdictions overlap within each country, but not across national borders. As highlighted by informants, it is hard for any organization or individual to exist as a unit in multiple countries. For instance, MW and the WWF, which are international and global organizations, respectively, are involved in the MBR CPR governance system through their three national branches, rather than as one NGO. The EU can be said to provide this overlapping jurisdiction, but only for the Italian and French sides of the Mont-Blanc, as Switzerland is not part of the EU.

2. Choosing to act in ways that take account of others through processes of cooperation, competition, conflict, and conflict resolution

I discussed these four processes at length in Chapter 5.3. While cooperation, competition, and conflict are common forms of interaction, conflict resolution is not. There is no transboundary, nor local in the French case, platform for conflicting parties to solve their issue. Informants within the system often rely on time and on changes in personnel or elected officials to solve conflicts.

3. Decision-making centers employ diverse institutions

MBR decision-making centers choose from a significant range of institutions to govern CPR in the region. For public authorities, the lowest level of cooperation across

jurisdictions is transcommunal, where Communes join in a ComCom or in a Unité de Communes, or in the PNRT in the Trient valley and coordinate their actions in various fields. Some Communes, notably Vallorcine in France and Finhaut in Switzerland, collaborate directly across the border, especially for soft tourism development and promotion.



The INTERREG programs are crucial institutions for all decision-making centers across sectors, borders, and levels to collaborate on CPR governance in the regions.

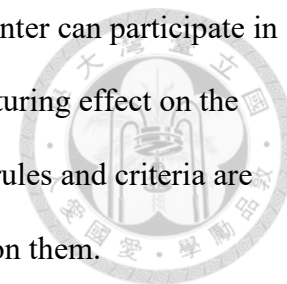
The EMB is also a central platform, and maybe the one with the most potential for transboundary cooperation in the MBR. It is self-governed by its members and deepens the personal relationships between public actors. However, while non-state actors are sometimes invited as observers or as partners on specific projects, they do not directly participate in the EMB's decision-making. This limited participation in the most autonomous and localized transboundary decision-making platform reduces the capacity of the entire system to be cohesive. The EMB is also limited by its unofficial nature and absence of political power.

National borders in the MBR are an extra cooperation hurdle that many studied polycentric CPR governance systems do not have. Decision-making centers in the MBR thus need more and stronger platforms to overcome the numerous barriers created by the lack of jurisdictional overlap. Unfortunately, to this day, there is no platform strong enough to meet this need. It remains a challenge for decision-making centers to govern together, rather than coordinate governance.

4. Generally applicable rules and norms structure actions and behaviors within the system

At the most theoretical level, all decision-making centers share a belief in democracy and want the best for the region, whatever this means. At a slightly more practical level, the financial dependence of the system on the INTERREG programs means that applicants have

to meet their criteria and follow its rules. Since any decision-making center can participate in an INTERREG-funded project, this EU program has a significant structuring effect on the CPR governance actions in the MBR. It is important to note that these rules and criteria are externally imposed, and that MBR decision-makers have no influence on them.



The administrative culture—the way projects are conducted, decisions are taken within a decision-making center, and the regulatory processes—differs greatly across the region along national borders. Informants from all three sides identified this issue as a significant hurdle to cooperation. According to them, Swiss partners design projects in detail and follow the plan to the letter. Getting green lights from power holders is easier than in the two other countries. For France and Italy, which some interviewees reckon are more administratively similar, projects are designed with less detail and can be adapted as implementation goes. Administrative paperwork, especially in France, is more demanding and can demotivate some in even starting any project. A French informant, citing a representative of the Mission Opérationnelle Transfrontalière (MOT), an association created by the French national government to promote and facilitate transboundary cooperation between France and its neighbors, finds the concept of a shared language to be misleading. In his words:

There's a trap here: we get the impression that we understand each other because we speak the same language. But in fact, there are still different cultural backgrounds and approaches that create more misunderstandings than if we were speaking different languages and talking to each other.

Additionally, transboundary collaboration between decision-making centers is entirely dependent on individual commitment, leading to the earlier-mentioned constant worry about personnel and elected officials' continuity and succession.

5. Decision-making centers participate in cross-scale linkages or other mechanisms for deliberation and learning

If the capacity of the MBR CPR governance system to make unified decisions is close to non-existent, its strength lies in the decision-making centers' interest in learning best practices from each other and discussing common issues. The EMB is an excellent example of a platform where public authorities at different levels meet regularly to learn from each other and invite private and civil sector organizations to share their expertise or conduct research to increase the knowledge of all. AdaPT Mont-Blanc, for instance, was an EMB-led INTERREG project. The leadership funded local research NGOs to study the effects of climate change and invited private companies to showcase climate change adaptation actions.

NGOs learn through their transboundary networks. Advocacy NGOs joined under the proMONTBLANC umbrella to discuss environmental issues and develop action plans. Research NGOs do not yet have an official transboundary network, but all know each other and reach out when a need arises.

Research NGOs, with their strong framing power, play an important role in connecting other types of decision-making centers. Their role as advisers to both private and public decision-making centers enables them to diffuse knowledge throughout the system.

The MBR decision-making centers do not shy away from looking outside the region to learn from others' experiences. For instance, the PNRT learns from the experiences of older Swiss Natural Regional Parks, the EMB mandated a UNESCO expert and ex-manager of a UNESCO site to support them in the Mont-Blanc UNESCO bid, and the director of the CREA has experience in Swiss-French transboundary cooperation from another border region.

All in all, the willingness of all decision-making centers in the MBR to learn makes the governance system aware and well-informed about the challenges it faces and the potential solutions that it can implement.



6. Mechanisms for accountability exist within the governance system

As demonstrated by the case of the Mayor of Saint-Gervais refusal to participate in the EMB and attempts to slow down the institution's progress, the system itself is not able to hold its parts accountable to the transboundary process.

The democratic feedback created by local elections makes public approval an accountability mechanism. Public authorities have an incentive to meet their voters' demands if they want to be reelected. While environmental sustainability has become an increasingly salient issue for voters, transboundary cooperation, for most voters, is not at the center of the public debate.

Public opinion is also important for the private companies operating in the region. Their image is central to their success. As an illustration, the UTMB is under pressure from both residents and international participants who worry about the environmental sustainability of the event. Over the years, the UTMB has tried to understand and reduce its environmental footprint to reshape its image and to prevent new boycott calls, like the one in 2024, from happening again (Faugère, 2026).

INTERREG, again, provides a form of accountability. Project partners have to report to the funding INTERREG program that the project is meeting its objectives. National or regional laws are evident forms of accountability mechanisms but are externally given and apply only to their jurisdiction, not across the entire MBR. Local decision-centers have no mechanism to hold each other accountable and can only rely on external, higher authorities.

7. Integrated ecosystem approach incorporating all available science

Public authorities and private companies actively and frequently seek out research organizations to help them map and understand local ecosystems, identify the most sensitive ones, and provide recommendations to best balance economic development and environmental sustainability. Research findings are readily incorporated in strategic documents across the MBR. For instance, the results of the scientific report of AdaPT Mont-Blanc were the basis for public authorities at the ComCom level on the French side and at the regional level in the Aosta Valley to draft territorial planning strategies. In the private sector, the Mission Board of the CMB is presided over by a representative of MW and some of its other members are from research institutions.

The main challenge for an MBR-wide ecosystem approach is the incompatibility of data across the three countries. Indeed, most ecological data is produced according to national standards and do not match across the whole MBR. Standardizing data is costly in money and time, two resources that the rather small local research NGOs do not have in abundance. This issue is known by all decision-making centers, and hopefully, solutions will be found in the future.

8. Explicit objectives and clear monitoring indicators and evaluation criteria

Over the decades, the EMB has released three strategic documents: the Sustainable Development Scheme (“Schéma du Développement Durable”) in 2005, Strategy for the Future (“Stratégie d’Avenir”) in 2014, and the Roadmap for Adapting to Climate Change (“Feuille de Route Adaptation aux changements climatiques”) in 2022. These documents, co-designed by decision-making centers and citizens across the MBR, provide goals at the MBR level and are the basis for the largest EMB-led INTERREG projects. They mostly include ecosystem, tourism, and agriculture research and coordination, and public awareness objectives. Explicit CPR management goals are typically not in these strategic documents. Without management objectives, evidently, there are no evaluation criteria.

At least, over the years, two main ecological and societal monitoring programs were developed in the MBR. In 2012, the EMB developed the Mont-Blanc Observatory in response to the Sustainable Development Scheme and through an INTERREG-funded project. Updated in 2019 during the AdaPT Mont-Blanc INTERREG project, the Observatory now monitors 32 indicators from 7 categories across the MBR with a societal focus . 14 of those are environmental indicators, including air quality, waste production, glacier size, number of hot days, and length of the vegetation growth season. While these few indicators are better than nothing, there is a large gap in terms of ecosystem monitoring. How are, for instance, habitats and species populations evolving?

Such questions are partially answered by the Atlas Mont-Blanc, an initiative by the CREA. The NGO measures various ecological indicators based on various rigorous protocols. Strong believer in participatory sciences, the CREA invites citizens to help monitor certain variables when appropriate. To extend the relevance of their monitoring efforts, the protocols used by the CREA and its partners are either replicates from other research projects across the Alps or innovative ones that can be replicated elsewhere in the Alps. Indicators include the length of the vegetation growth season, the dates of red frogs laying eggs, etc. The website also compiles all the ecological studies based on the CREA indicators and others for everyone to access.

These two large monitoring projects are extremely valuable for decision-making centers, but without objectives, they cannot be used as evaluation criteria.

9. The jurisdiction or scope of authority of decision-making centers is coterminous with the boundaries of the ecological problem being addressed

As wildlife populations and glaciers are blind to national borders, all decision-making centers within the MBR ecological boundary share the common responsibility for the region's

CPR. The Communes' membership in the EMB covers this landscape, including the glaciers, the water systems, the regional centers (Martigny, Chamonix, and Courmayeur), as well as small rural communities. Consequently, the public authorities that can shape territorial planning in MBR are all included in the EMB. Informants often refer to governance with “variable geometry”, because ecological systems, subsystems, and issues do not have clear, fixed boundaries. This concept and the large participation of decision-making centers in the MBR show an understanding of the importance of matching jurisdictional and ecological boundaries.

10. Sound institutional beginnings, including all relevant stakeholders (path dependency)

The origin story of the EMB, described in Chapter 5.1, is far from suggesting that this main transboundary governance institution's purpose is CPR management. Indeed, it was created as a way to appease national authorities' appetite for an international nature park, as proposed by MW environmental activists. By design, local authorities are overrepresented in the EMB, and scientific, civil, and private actors can only participate as much as the public sector leadership allows them to. As mentioned earlier, in the early years, the governing body of the EMB decided to exclude environmental NGO representatives from the EMB until national government actors intervened.

However, the relationship between local authorities and the civil sector has positively evolved over the decade, and attention is paid to including all relevant decision-making centers and the general public. NGO representatives participate in working groups and as observers to the MBTC, and citizens and research NGOs are often called upon to co-create strategic roadmaps and co-implement projects.

11. Issue salience for all decision-making centers

In the early days of the EMB, environmental NGOs, consortia, and national governments were generally the only decision-making centers concerned with deteriorating CPRs in the MBR and the need to improve their conservation. Local and regional authorities and private sector actors resisted conservation measures that would slow down economic growth or limit perceived local autonomy. The situation has greatly changed in recent years and continues to evolve.

The different MBR CPRs have different levels of salience for the decision-making centers. For instance, glacier melting is a concern for local authorities, as it threatens the future water security of their communities. The reduction of snowfall at low and middle altitudes is a concern for tourism industry actors who recognize the need to transform their offers, notably through more summer and nature-based tourism activities. Biodiversity loss and the conceptually linked wilderness disappearance remain the main concerns of civil society organizations. Climate change and its effects present themselves as a common threat to all CPRs in the MBR, providing a salient issue for all decision-makers to rally around. As a consequence, climate change adaptation has become an umbrella issue encompassing all CPRs and has triggered substantial coordinated systemic and subsystemic initiatives.

12. Transparency, public awareness, and public engagement

The willingness of decision-making centers in the MBR to contribute to this thesis and the large array of reports freely available on their websites attests to their transparency. The EMB also releases regular updates, reports, and the strategic documents mentioned earlier on its website.

There is unfortunately, no public survey measuring public awareness of and engagement in the MBR governance system. Regarding the EMB, interviewees often shared their personal assessments, allowing me to draw the anecdotal observation that EMB

awareness and engagement seem to vary greatly across the region. Swiss informants affirmed that most residents were not aware of MBR transboundary governance and had never heard of the EMB. In the Aosta Valley, the public awareness rate of residents in Communes part of the EMB is reportedly somewhat higher and is positively correlated with the proximity to the EMB. As for the residents of the French Communes, it seems that EMB awareness is quite common. The EMB is officially headquartered in Chamonix Mont-Blanc, and, because the Tour du Mont-Blanc is a main source of the region's wealth, transboundary collaboration is more visible. Public engagement in the EMB is punctual and project-based. Often, participatory roundtables allow locals to share their inputs on transboundary CPR issues, or some awareness-raising activity invites young people to participate.

Public awareness and participation in CPR governance subsystems outside of the EMB are higher. For instance, most, if not all, adult residents in Communes' partners of the PNRT know of it, not least because they had to vote on its creation. Strategic goals and projects of the PNRT are designed by residents every planning cycle and are co-implemented by the locals and the PNRT's staff. Numerous participatory science projects led by various research NGOs across the MBR also allow residents and tourists to contribute to the local ecosystem knowledge.

Generally Communes along national borders, such as Vallorcine (FR) and Emosson (CH), or Saint-Rémy-en-Bosses (IT) and Bourg-Saint-Pierre (CH), are more aware and engaged in transboundary CPR governance. According to interviewees, neighboring Communes share decades, if not centuries, of friendly relationships and exchanges, and the transboundary criterion for INTERREG project funding further strengthened their cooperation. Because of the generally small population of these rural Communes, residents are usually quite involved in public life, including in transboundary CPR collaboration.

13. Stable and sufficient funding

The attentive and perceptive reader will have understood by now that funding for CPR governance in the MBR relies heavily on the EU's INTERREG programs. Even if the Canton of Valais cannot receive EU funding, Switzerland has a fund to financially support its border Cantons to participate in INTERREG partnerships. For the MBR's mostly small and rural Communes and for research NGOs, INTERREG funding is an essential financing instrument.

While the funding is abundant, it can hardly be described as stable and sufficient. First, applying to INTERREG financial support takes over a year, requiring many resources prior to receiving any funding. Second, the funding is tied to specific activities, leaving little maneuverability to participants. Third, INTERREG projects are always limited to a maximum duration of four years, after which a new project proposal must be submitted. INTERREG funding thus also suffers from continuity issues as it depends on the decision-making center's capacity and willingness to constantly invest in new funding applications. Insufficient funding for approved projects does not seem to be an issue, but there are many other issues that need solutions, for instance, in the field of biodiversity conservation. More funding is definitely needed for effective CPR governance.

14. Trust between the decision-making centers

Generally speaking, decision-making centers trust each other both at the organizational and individual levels. The synergy between the regional coordinators of the EMB and the collaboration between research NGOs and public and private actors attest to a generally friendly atmosphere. In Aosta and Valais in particular, regional authorities always inform and consult Communes before making any CPR governance decision, even if the authority is at the regional level. Both levels of government engage in a participatory process to also involve other stakeholders, such as local private actors and civil society representatives.

Advocacy NGOs are the only category of decision-making centers that sometimes do not fully trust public and private entities. Interviewees from such organizations expressed doubts regarding the genuineness of Communes' mayors or private companies' intentions to actually pursue the sustainability aspect of sustainable development, beyond the economic development part.

NGO informants told me that the current trust level is a great improvement from the relationship in the early days, where proMONTBLANC and MW were perceived as outside threats to the autonomy and the right to develop by public and private actors. After years of perseverance and efforts to build personal relationships with elected officials and company executives, advocacy NGOs are now involved in many projects as advisers and observers certifying the environmental sustainability of institutions and projects.

8 DISCUSSION



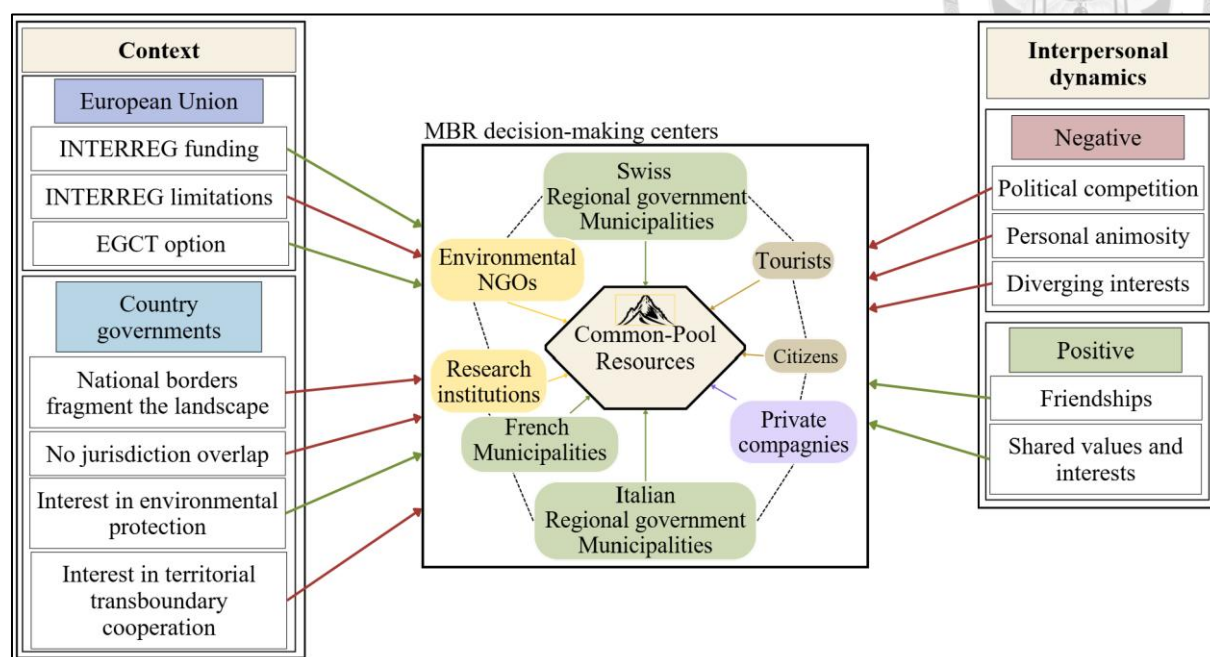
8.1 MBR'S TRANSBOUNDARY POLYCENTRIC CPR

GOVERNANCE SYSTEM: ADAPTED?

Out of the 14 criteria assessed, five are present and adapted, four are present and mixed, three are present and maladapted, and two are absent. These mixed results mirror the diversity of opinion regarding the MBR's decision-making center's success in governing CPR. Some informants and news reports assert that public sector authorities only have economic development at heart, at the cost of the local environment's health, and that NGOs are the only voices standing up to protect glaciers, wildlife, and the landscape. Others believe that local authorities' transboundary cooperation has led to significant progress in CPR management, supporting the region's quest for sustainable development. These different perspectives can both be explained through two axes: what are the strengths and weaknesses of the governance system, and which CPRs are consequently (un)sustainably governed. Figure 10 offers a visualization of the positive (green arrows) and negative (red arrows) forces shaping the MBR's CPRs governance system.

Figure 10.

Visualization of the main forces in the MBR



8.1.1 The governance system's strengths

Criteria 1, 2, 5, 7, 8, 9, 11, 12, and 14 are either present and adapted or present and mixed, reflecting that at least some elements exist that meet the expectation. These positive elements point in a clear direction. The governance system is interested in and successful at learning about the region's CPRs at the ecosystem level. Learning happens through funding research projects at different scales, depending on the CPR in question. The EMB leads projects on climate adaptation research, and local Communes or groupings of Communes mandate research NGOs to study their local ecosystems and provide advice on best management practices. This "variable geometry" allows for landscape, ecosystem, and species-based knowledge creation. Decision-making centers are also keen on exchanging their scientific knowledge and their experiences within the system as well as seeking out external expertise when needed. As a result, decision-making centers know the health of the local CPR

and often promise to act upon this knowledge to improve it, for example, in the various climate change adaptation charters adopted after AdaPT Mont-Blanc.



8.1.2 The governance system's weaknesses

While a desire for ecological knowledge is essential to sustainable CPR management, the MBR fails to fully translate this knowledge into tangible actions. The maladapted, mixed, or absent criteria (2, 3, 4, 6, 7, 8, 10, 12, and 13) display a pattern explaining this governance limitation.

The diversity and political strength of transboundary polycentric institutions are insufficient to counterbalance national borders' overpowering effects. These effects are twofold: the activities and functioning of decision-making centers on each side of the border are shaped by their respective national and regional legal frameworks and administrative culture, and not by common rules and norms within the system. It follows that what a decision-making center can do and has to do often does not match the externally imposed rules and goals that the other two abide by. Second, national borders act as invisible walls. Extra paperwork and authorizations are required for cross-border cooperation. It is for instance, easier for an NGO like the WWF to have three branches in each nation rather than having one representative working on the MBR case. Private sector actors, such as mountain guides, need to apply for a working permit to cross back and forth between Switzerland and the other two countries if they often bring customers around the three sides of the Mont-Blanc.

The trans-communal Regional Nature Park of the Trient Valley (PNRT) in the Canton of Valais offers a great illustration of the dividing effects of national borders. This project involves the tourism offices in the seven Swiss Communes in the Valley of Trient, elected officials, and the local population for its creation and implementation processes. Usually, the

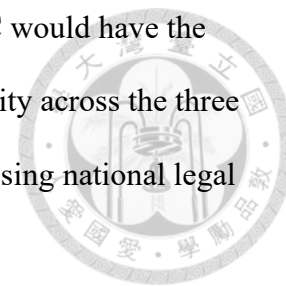
French Commune of Vallorcine is fully integrated into the Trient Valley tourism partnership because of its geographical proximity and excellent relations with its Swiss neighbors, but national regulations for natural regional parks do not allow for foreign membership. Despite the exclusion of Vallorcine, the PNRT still shows some transboundary elements, such as its partnership with the NGO Marges Sauvages.

8.1.3 The EGTC as the solution for a more unified governance system

The EMB has the potential, in the eyes of its members, to become a tool to facilitate this cooperation. Without legal personhood, however, it has no independent political power. The EGTC status, which EMB members have been wishing for since at least the 2005 Sustainable Development Scheme, could alleviate these barriers. The founding document of the EGTC, which informants hope will be ratified by all relevant public authorities by the end of 2026, will create rules and norms, define governance objectives, and create accountability and conflict resolution mechanisms, which are absent today. The temporary document states that the EGTC's

primary mission is to implement a proactive mountain development policy that promotes sustainable development by combining climate change adaptation with the promotion of socio-economic activities and the support of local populations. Its task is to protect natural environments and landscapes and to enhance cultural heritage. The EGTC is committed to working on joint initiatives aimed at achieving international recognition of the iconic Mont Blanc Massif and its outstanding universal value, notably through a UNESCO World Heritage nomination (EGTC draft founding document, unreleased, translated from the French).

A President and a Secretariat would be installed, and the EGTC would have the competencies to conduct its own projects at the MBR level, creating unity across the three nations. The EGTC would be mostly regulated by EU law, partly bypassing national legal framework differences.



Interviewees all believe the EGTC is necessary but have different opinions regarding its benefits. Many are looking forward to the EMB not to rely on politicians' willingness to participate in transboundary governance, nor on their continuity or that of operational staff. A keyword linked to the EGTC in the eyes of interviewees is “*pérénité*”, which does not have an exact English equivalent but holds meanings close to “lastingness”, “resilience”, and “durability”. Another advantage will be its capacity to take quasi-autonomous political decisions, given the approval of its members. The EMB would have its own staff pursuing MBR-level objectives, rather than the current coordination system, where the three main operational personnel are representatives of the three regions. Third, the EGTC will re-ignite the possibility of a UNESCO World Heritage nomination, because the MBR’s decision-making centers could prove that they have a solid governance structure adapted to the preservation of a UNESCO site. Environmental NGOs in particular are looking forward to this potential UNESCO nomination, as the strictest national possible protections must be deployed to conserve the landscape. Lastly, some believe that a EGTC will facilitate EMB access to EU funding and simplify the coordination of MBR-wide INTERREG projects. Others, however, think that the implementation of INTERREG projects should remain at the lowest governance level and that an overreaching EMB EGTC would complicate project management and implementation. Nevertheless, all agree that the EGTC is a step in the right direction for the EMB and the integration of the MBR into a more unified system.

In sum, the current polycentric transboundary CPR governance system is ecologically adapted and self-aware, but governance reforms are needed to overcome barriers such as the

incapacity to officially conduct projects at the MBR scale as a unit and political and operational continuity issues. Existing transboundary collaboration, both through the platform of the EMB and outside of it is limited to learning, experience sharing, and mobility/ tourism coordination. Tangible policies and unified actions for CPRs are rendered almost impossible by the absence of a transboundary jurisdiction.

8.2 HYPOTHESES TESTING

In this chapter, I explore the extent to which the evidence and the results so far support the research hypotheses.

8.2.1 Decision-making centers change transboundary governance (institutions) from within.

The first hypothesis is partially supported. Over the decades, decision-making centers in the EMB, aware of the political weakness of the transboundary institution, have attempted multiple times to solve its main issue: its lack of legal recognition. The EGTC was first envisaged in 2005, before the UNESCO bid took center stage. When, in 2023, hope for a UNESCO nomination was temporarily suspended, the whole attention of the EMB turned back to the EGTC. These unsuccessful endeavors might soon be solved, according to hopeful interviewees, as the EGTC is in the final approval stages. This assessment of failing to solve the issue of lack of legal personhood might need to be revised soon.

Governance of the EMB has still seen some internal changes over the decades. The hostile and suspicious attitude of public authorities and of the tourism industry towards environmental NGOs slowly transformed into mutually beneficial relationships. Local governments and private companies seek out the expertise and the legitimacy that

environmental activist and research NGOs offer, and NGOs can push for their agendas to be heard and included in territorial planning and CPR governance decision-making processes.

The increasing inclusivity and strength of vertical and horizontal collaboration can mostly be traced back to two factors: individuals changed, and relationships between actors changed. First, since the establishment of the EMB in the early 1990s, environmental awareness has grown tremendously. The effects of climate change and other anthropogenic environmental harms have become visible to all, and environmental education has led the new generation of political leaders, bureaucrats, and citizens to seek mitigation and adaptation solutions. Second, three decades of regular interactions between the highly heterogeneous decision-making centers and their efforts to influence CPR governance in the MBR mean that individuals have been forced to build strong relationships within the system. Interpersonal trust and respect have increased, leading to a more conducive environment for transboundary polycentric CPR governance. Voicing through political and administrative channels has become possible at the local and regional level, and the EMB attempts to call on national-level authorities to trigger change.

The success of the MBR in achieving sustainable CPR governance remains limited, reflecting the limited capacity of local decision-making centers to face the important barriers they face. They have little to no influence over the three different sets of national legal frameworks that exert sovereignty over the MBR. The heterogeneity of decision-makers' interests, because of political, administrative, or economic differences across national borders or sectoral differences, also makes consensus harder to reach. As for governance reform, only the UNESCO and the EGTC options attract support across the board, but achieving either is a complex, demanding, and uncertain process.

8.2.2 The failing polycentric governance system is abandoned.

This second, “exit”, hypothesis is not supported. While some informants identified a small “loss of momentum” in the EMB, this is partly due to the slightly declining popularity of the INTERREG programs. Demanding and long application processes are pushing some local decision-making centers to national funding sources, thereby reducing incentives to act at the transboundary level. EMB coordinators also offered another potential reason for the perceived momentum loss: the EGTC application monopolized a lot of the time and financial resources available to them. Lastly, the continuity crises, discussed in Chapter 6.1, impose temporary pace reduction periods, leading to apparent pace slowing. Despite it all, no one thinks that the EMB has or will collapse any time soon.

As for interactions outside of the EMB regarding CPR between MBR decision-making centers, there is no evidence suggesting a declining trend. Recent years have seen at least a stable frequency and intensity of transboundary cooperation, notably through the INTERREG programs, and thanks to NGOs whose purpose is ecosystem understanding and protection. Private companies are also increasingly partnering with NGOs to improve their environmental sustainability, and the growing and diverse offer of participatory science projects empowers individual citizens to contribute to CPR governance in the region.

8.2.3 The existing transboundary institutions remain in place, and decision-making centers reorganize themselves into smaller systems to conserve CPRs.

The third hypothesis is supported. The inquiry results teem with examples of small groups of decision-making centers taking CPR management into their own hands, rather than relying on the entire system. The PNRT in the Trient Valley is a trans-communal example

with transboundary elements; Marges Sauvages and the CREA collaborate with public authorities, private companies, and research institutions within and around the MBR, illustrating trans-sectoral and sometimes transboundary partnerships. INTERREG projects encourage transboundary projects, often with a CPR management angle, and the local university is trying to help traditional common landholdings gain resilience in Chamonix.

Unfortunately, as some interviewees deplored, some desirable and meaningful cooperation is impeded by the secluding effects of borders. Administrative burden, political discrepancies, or funding limitations mean that barriers to transboundary collaboration are higher. Consequently, small CPR governance subsystems tend to cluster within national boundaries, rather than according to ecological ones. The EMB remains the only governance platform at the MBR level and therefore conserves its relevance.

8.2.4 The flawed polycentric transboundary CPR governance system remains unchanged, and CPRs keep deteriorating.

The fourth hypothesis can neither be accepted nor rejected because of mixed evidence. The limiting effects of national borders, power imbalances in favor of public authorities, and the heterogeneity of interests are the roots of the numerous maladapted elements of the governance system in general and the structural inertia of the EMB. These shortcomings, which can be traced back to the creation of the EMB, if not to the establishment of national borders in the late 19th Century, prevent the decision-makers from pursuing meaningful ecosystem-wide CPR governance policies. For instance, despite being a well-known threat to biodiversity since the 1970s, overtourism continues to litter, disturb, and destroy habitats; grasslands continue to lose ground to human infrastructure or forests, causing habitat destruction and population declines in some species.

While some internal changes (H1) and subsystemic reorganization (H3) have occurred since the creation of the EMB, the system remains quite similar in many respects. The EMB remains an unofficial institution with little power, the tourism industry still dominates the economic sectors and strongly influences the political one, and some key positions are held by the same individuals for more than two decades. Unbalanced power distribution and the weak unity of governance at the landscape level allowed for unsustainable resource exploitation, such as infrastructure development in ecologically sensitive high-altitude zones, the very loose environmental protection requirements for the UTMB, or the extravagant number of tourists attempting to summit every year.

Not all CPR deterioration results from dysfunctional governance. That glaciers melt ever faster, and vegetal and animal distributions shift ever higher are mostly the results of climate change—not only local mismanagement. Nothing at the MBR level can be done to stop temperatures from rising. Climate change adaptation can be qualified as a success of the MBR polycentric transboundary governance system. All types of decision-making centers joined hands through the EMB to study climate change and its present and future local effects, understand what residents wish, and learn possible best practices from outside the region. The public, private, and civil sectors are committed to implementing state-of-the-art knowledge and technology to ensure the resilience of the region. While the above-mentioned difficulty in creating and implementing unified actions across the MBR holds, most decision-making centers are currently trying, within their own jurisdiction and capacity, to implement adaptation measures, often in collaboration with each other across the system.

In sum, the CPRs are deteriorating, and some of this deterioration is caused by governance flaws, but not all. Some cases show that the governance system is able of internal cohesion and decision-making centers to effectively cooperate on some issues, such as climate change adaptation.

All in all, the third hypothesis, which claims that the not fully functional CPR governance system remains in place, but decision-making centers reorganize themselves to try to improve its efficiency, is the most supported hypothesis. This finding is in line with the expectation that polycentric governance systems are constantly in the process of change (Biddle & Baehler, 2019). Through this process, the MBR CPR governance system tries to adapt to evolving contexts and remain institutionally fit to address the biodiversity issues (Morrison, 2017; Carlisle & Gruby, 2019). The structural lack of cohesion of the MBR CPR governance system, however, limits its capacity to act as a transboundary unit, as illustrated by the weakness of the EMB. Its efficiency thus remains impeded and its robustness rather fragile.

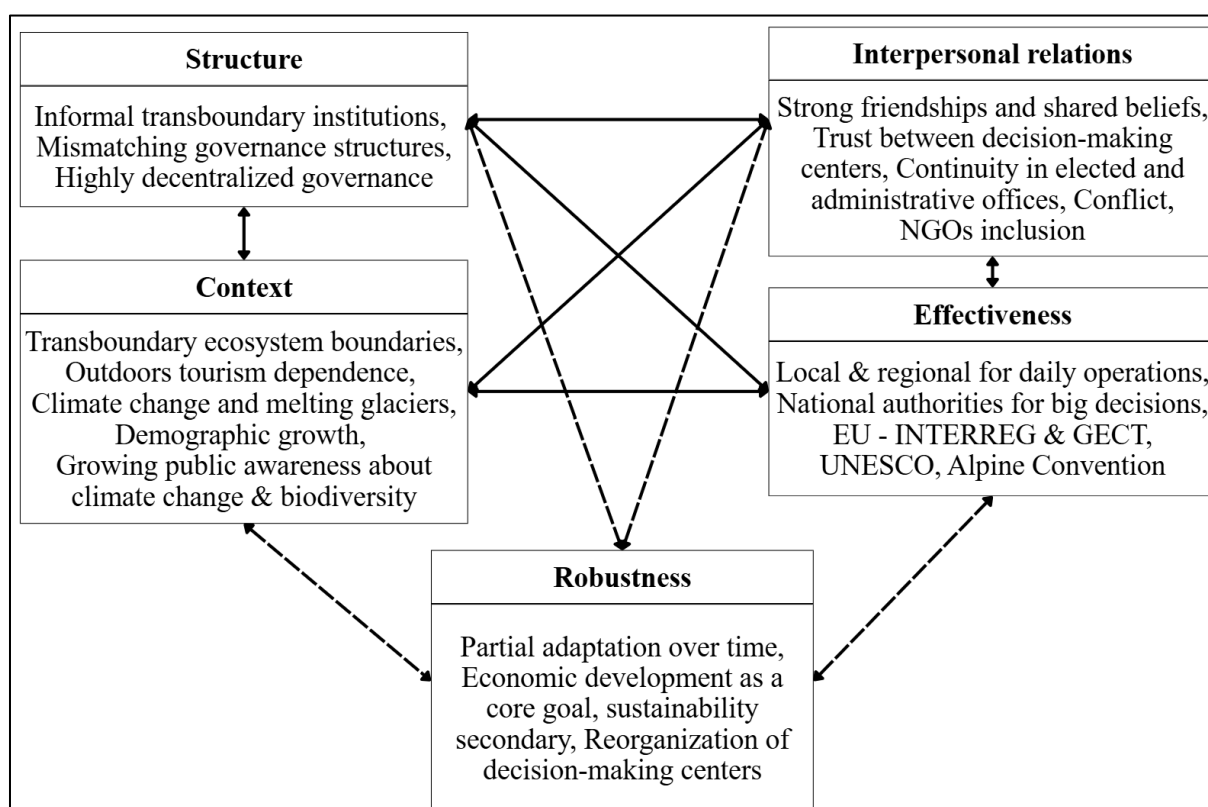
What the MBR CPR governance system highlights with more emphasis than previous research is the centrality of interpersonal relations. Strong, longstanding collaboration among the three coordinators in the EMB is the driving force behind this transboundary institution. Without their shared and continuous belief in this project, it is not certain that the EMB would still exist today. Indeed, the lack of formal agreements and contracts between the decision-making centers at the system level is only compensated by the willingness of actors in the system to continue the challenging transboundary governance project. The succession difficulties after the retirement of the French coordinator and the disengagement of the President of the ComCom Pays du Mont Blanc from the EMB because of, according to interviewees, his bitter relationship with its counterpart at the ComCom Chamonix Mont-Blanc are two examples of interpersonal dynamics negatively impacting the capacity and the robustness of the polycentric governance system. NGOs, both research and advocacy ones, also spend a considerable amount of time and resources in developing and maintain conducive relationships with public officials and private companies. This is central to ensuring that their voices are heard and taken into account in decision-making processes in

the almost informal polycentric governance system in place. If civil society actors do not proactively seek out participation, there are no formal mechanisms ensuring their inclusion.

In light of the importance of interpersonal relations in this informal polycentric CPR governance system, the driving factors presented by Morrison (2017) can be slightly adapted to the quasi-informal nature of the MBR (Figure 11). By extracting interpersonal relations from the structure and context factors from Morrison's (2017), I highlight the significance of individual-to-individual connections in the MBR.

Figure 11.

Driving factors in the MBR polycentric CPR governance system



Numerous situations presented throughout this study show that the relationship between individuals in positions of power can mitigate or amplify the force of the other factors. Moreover, the key role of the long-term EMB coordinators and of the personal continuity of political officials in maintaining the EMB on its feet testifies to the direct effect

of interpersonal relations on the robustness of the system, which Morrison (2017, p.E3013) defines as the capacity of a governance system to “[adapt] longitudinally while still maintaining alignment with shared regime goals.”



This study shows that, in the MBR, national borders, which bring mismatched regulatory frameworks and sometimes clashing administrative cultures and socio-economic context, are the biggest obstacle to a functional polycentric transboundary CPR governance system in the MBR. The system has been coping with this issue by relying heavily on the willingness of bureaucrats and politicians to drive transboundary cooperation, while at the same time reaching out to supranational institutions, such as the EU and UNESCO, to achieve a transboundary status above the level of national jurisdictions. The work of local decision-making centers is thus going in the right direction, with one caveat. Because the EGTC, the most likely status that the EMB will achieve soon, is signed by public authorities only, it is important that the new structure explicitly and meaningfully incorporates private and civil sector actors. Otherwise, governance might become centralized in the hands of public authorities, thereby losing its inclusive and polycentric characteristics, together with all their potential advantages.

9 LIMITATIONS

This research has some limitations. First, I only interviewed a limited number of decision-making centers. While I was able to reach out to most, I was not able to talk with some individuals whom I had identified as potential key informants. Additionally, I did not interview national- and EU-level representatives. Interviewees mentioned that such higher-level decision-making centers often show little interest in the MBR governance. While they are important, their main impact is regulatory. I therefore studied their effects on the MBR through regulations and reports.

Second, polycentric CPR governance systems are highly complex social and ecological systems. This paper provides an overview of the functioning of the MBR CPR governance system through the lens of maladaptation. Deeper analysis is beyond the scope of this paper. Further research could focus on the origins of the growing environmental awareness in the local tourism industry and explore further their strategies to align their business activities with sustainable CPR governance. Another interesting research angle would be to study over time the evolution of water governance in the MBR. This resource is now plentiful but the glaciers on which the entire region depends are melting fast, and droughts are becoming an increasing threat. How will decision-making centers and citizens distribute increasingly scarce water? The exploitation of the landscape, which, as discussed in Chapter 4.2, can be considered a CPR, could also be further explored in a combination of sustainable tourism and CPR frameworks.

Third, the single-case design limits the power and the generalizability of findings because they could be related to the uniqueness of the case (Yin, 2003, p.52). Replicating this study in another case would immensely increase the strength of these findings.

10 CONCLUSION

In this thesis, I combined both polycentric CPR governance and transboundary conservation theories to describe and analyze the complex web of decision-making centers that make up the polycentric transboundary CPR governance system in the MBR. I showed that because of its unique geographical and political setting, ecologically centered around the Mont-Blanc and across three countries, the MBR simultaneously requires transboundary and polycentric governance but cannot fully realize it.

This unique case contributes to the polycentric CPR governance literature in multiple ways. First, it provides empirical support for the necessity of overlapping decision-making centers' jurisdictions. There are no institutions in the MBR that have jurisdiction across the three regions. Thus, no unified action can be taken at the system level, leading to significant governance issues. Decision-making centers themselves recognize this gap and have been considering solutions since at least 2005.

Second, the MBR case highlights the relevance of at least one institution where all decision-making centers can deliberate and learn from each other. The EMB is a key element of the polycentric transboundary governance system. The political weakness of the EMB and its incapacity to act as a unit refine the criteria for assessing a polycentric governance system's quality. Not only do "Decision-making centers employ diverse institutions," but *at least one of these institutions within the system must be formal*. The informal nature of the only system-wide polycentric institution, the EMB, creates important governance gaps, such as the absence of conflict-resolution and accountability mechanisms.

Third, this study shows that the distancing effects of national borders also apply to CPR governance and that the willingness of public, private, and civil sector actors to

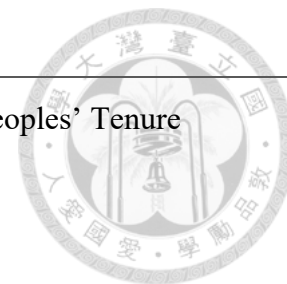
coordinate their CPR management actions across the entire system is not sufficient to counterbalance these effects.

However, the strong support and engagement from all decision-making centers is essential for the robustness of the system. This thesis extends Lim's (2016) political buy-in criterion for successful transboundary conservation to the private and civil sectors' buy-in. In the MBR, the tourism industry significantly shapes the landscape by building infrastructure and shaping humans' dispersal patterns into natural habitats. Because they have the power to disturb wildlife and destroy ecosystems, they can also mitigate their harmful impacts. Initiatives in recent years show a growing awareness that their entire industry relies on the health of the local CPRs, including the aesthetic appeal of the landscape. Consequently, their willingness to engage in transboundary CPR governance has increased, and some results are already visible. The many and diverse civil society decision-making centers engaged in environmental conservation, which I classified into three NGO categories (research, advocacy, and others), are crucial to the system. They generate and disseminate ecological knowledge, advise private and public entities, and nudge transboundary governance toward sustainable CPR management.

Lastly, it is interesting to note that attempts by decision-making centers to solve the lack of institutions with transboundary jurisdiction have been made with solutions based on supranational institutions. The World Heritage Site nomination is from UNESCO, and the EGTC is under EU law. MBR's decision-making centers are trying to bypass national-level imposed borders through higher-level political institutions, thus reaching for transnational existence. National borders are the main challenge that the EMB tries to overcome, signaling its centrality. Further research is needed to unpack this observation, find similar cases, identify trends, and understand what it means for frontier communities and nation-states.

Becoming a fully-fledged transboundary institution would certainly increase the ability of the EMB to take meaningful landscape-level actions for CPR management. On the other hand, since the main signatories of a EGTC or of a UNESCO nomination would be local governments, CPR governance would fall further into the hands of the already dominating public authorities, unless other actors are explicitly included. Would CPR governance in the MBR remain polycentric, or would the grasp of public institutions tighten? Only the future will tell us.

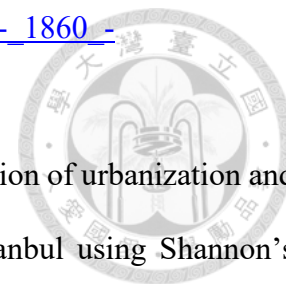
11 REFERENCES



1. Adhikari, D. (2026). Critical Polycentric Governance: Indigenous Peoples' Tenure Security in India's Forest. *Society & Natural Resources*, 0(0), 1–27.
<https://doi.org/10.1080/08941920.2026.2616822>
2. Aeschimann, D., Rasolofo, N., & Theurillat, J.-P. (2011). Analyse de la Flore des Alpes. 2: Biodiversité et Chorologie. *Candollea*, 66(2), 225–253.
3. Aili, T., Soncini, A., Bianchi, A., Diolaiuti, G., D'Agata, C., & Bocchiola, D. (2019). Assessing water resources under climate change in high-altitude catchments: A methodology and an application in the Italian Alps. *Theoretical and Applied Climatology*, 135(1), 135–156. <https://doi.org/10.1007/s00704-017-2366-4>
4. Allan, J. R., Levin, N., Jones, K. R., Abdullah, S., Hongoh, J., Hermoso, V., & Kark, S. (2019). Navigating the complexities of coordinated conservation along the river Nile. *Science Advances*, 5(4), eaau7668. <https://doi.org/10.1126/sciadv.aau7668>
5. Andersson, K. P., & Ostrom, E. (2008). Analyzing Decentralized Resource Regimes from a Polycentric Perspective. *Policy Sciences*, 41(1), 71–93.
6. Arrêté DDT-2020-1132 du 1er octobre 2020 portant création de la zone de protection d'habitats naturels du Mont-Blanc — Site d'exception (Espinasse, A.). *Recueil des actes administratifs de la Haute-Savoie*. <https://www.haute-savoie.gouv.fr/contenu/telechargement/34279/202066/file/APHN-ARP-SIGNE.pdf>
7. Ashworth, R. E., McDermott, A. M., & Currie, G. (2019). Theorizing from Qualitative Research in Public Administration: Plurality through a Combination of Rigor and Richness. *Journal of Public Administration Research and Theory*, 29(2), 318–333.
<https://doi.org/10.1093/jopart/muy057>

8. Baldwin, E., Thiel, A., McGinnis, M., & Kellner, E. (2024). Empirical research on polycentric governance: Critical gaps and a framework for studying long-term change. *Policy Studies Journal*, 52(2), 319–348. <https://doi.org/10.1111/psj.12518>
9. Beder, S. (2006). *Suited themselves: How corporations drive the global agenda*. Earthscan.
10. Bellone, C., Fiou, A., Corbain, S., Cremonese, E., Carlson, B., Alvarez, I., Délèze, G., Garzena, C., Castello, P., Coquillard, S., Fasson, J.-P., Mondardini, L., Motta, E., Piccardi, M., Muti, S., Parrod, C., Strosser, P., Ravanel, L., & Tonetti, R. (2020). *Les résultats du projet AdaPT Mont-Blanc* (S. Muti, R. Tonetti, & F. Vivoli, Eds). Région autonome Vallée d'Aoste: Assessorat de l'environnement, des ressources naturelles et du corps forestier, département de l'environnement. https://www.espace-mont-blanc.com/asset/adapt-mont-blanc_pub-finale_fr_web-1.pdf
11. Beniston, M. (2012). Impacts of climatic change on water and associated economic activities in the Swiss Alps. *Journal of Hydrology, Hydrology Conference 2010*, 412–413, 291–296. <https://doi.org/10.1016/j.jhydrol.2010.06.046>
12. Bernard, H. R., & Ryan, G. W. (2010). *Analyzing qualitative data: Systematic approaches*. Sage.
13. Biddle, J. C., & Baehler, K. J. (2019). Breaking bad: When does polycentricity lead to maladaptation rather than adaptation? *Environmental Policy and Governance*, 29(5), 344–359. <https://doi.org/10.1002/eet.1864>
14. Biella Theses. (1987). Biella Theses. <https://www.mountainwilderness.org/biella-theses/>
15. Blandin, P. (2019). *De la protection de la nature au pilotage de la biodiversité*. Éditions Quæ.
16. Bisson Brothers. (1860). *Vallée de Chamonix vue du Chapeau* [Valley of Chamonix seen from Le Chapeau] [Photograph]. Bibliothèque nationale de France.

https://commons.wikimedia.org/wiki/File:Fr%C3%A8res_Bisson_-_1860_-_Vall%C3%A9e_de_Chamonix_vue_du_Chapeau.jpg



17. Bozkurt, S. G., & Basaraner, M. (2024). Spatio-temporal investigation of urbanization and its impact on habitat fragmentation in natural ecosystems of Istanbul using Shannon's entropy and landscape metrics in GIS. *Environment, Development and Sustainability*, 26(10), 26879–26907. <https://doi.org/10.1007/s10668-023-04410-7>
18. Cardona, W. C., De Jong, W., & Pokorny, B. (2022). The Future of Nature Conservation in Amazonia: Evidence From Transboundary Protected Areas. *Frontiers in Forests and Global Change*, 5, 647484. <https://doi.org/10.3389/ffgc.2022.647484>
19. Carlisle, K., & Gruby, R. L. (2019). Polycentric Systems of Governance: A Theoretical Model for the Commons. *Policy Studies Journal*, 47(4), 927–952. <https://doi.org/10.1111/psj.12212>
20. Carroll-Foster, T., & Pun, H. L. (1993). Managing Fragile Ecosystems: Sustainable Mountain Development. In *Assessment of Agenda 21*.
21. Chaffin, B. C., & Gunderson, L. H. (2016). Emergence, institutionalization and renewal: Rhythms of adaptive governance in complex social-ecological systems. *Journal of Environmental Management*, 165, 81–87. <https://doi.org/10.1016/j.jenvman.2015.09.003>
22. Chaire VALCOM. (2025). *VALCOM: Une Chaire participative pluridisciplinaire pour valoriser les communs fonciers*. University of Savoie Mont Blanc.
23. Chambre régionale des comptes d'Auvergne-Rhône-Alpes. (2024, February). *Commune de Chamonix-Mont-Blanc et Compagnie du Mont-Blanc (Haute-Savoie) — Enquête : l'adaptation des stations de montagne au changement climatique* [The municipality of Chamonix-Mont-Blanc and the Compagnie du Mont-Blanc (Haute-Savoie) — Inquiry: the adaptation of mountain resorts to climate change] [Summary report, No. ARA-2023-

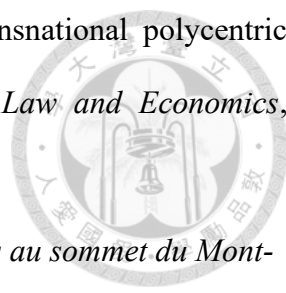
- 86]. Cour des comptes. https://www.ccomptes.fr/sites/default/files/2024-02/202402_ARA202386_Synthese_ChamonixDSPCieMont-Blanc.pdf
24. Chavanon, O. (2025). Vieillir en commun: Le rôle social des systèmes fonciers collectifs ancestraux dans les territoires ruraux de montagne. *Journal of Alpine Research | Revue de géographie alpine*, (113–1). <https://doi.org/10.4000/13wov>
25. Chavanon, O., & Joye, J.-F. (2025, February 5). *Manifeste de la Chaire VALCOM - VALORISER LES COMMUNS FONCIERS* [Discours]. Launch of the VALCOM Chair.
26. Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, 7, 2050312118822927. <https://doi.org/10.1177/2050312118822927>
27. Clark, C., & Nyaupane, G. P. (2025). Polycentricity and Private-Led Governance of Natural Resources at the U.S.-Mexico Border. *Society & Natural Resources*, 38(2), 91–112. <https://doi.org/10.1080/08941920.2024.2431488>
28. Communauté de Communes Pays du Mont-Blanc. (2023). *Bilan de l'observatoire touristique* [Tourism observatory report] [Report No. 023-CP]. <https://ccpmb.fr/uploads/2025/06/023-CP-bilan-obs-touristique.pdf>
29. Costa, J. (2011). Patois, gaga, savoyard, francoprovençal, arpitan. Quel nom pour une langue? *Langues et cité*, (18).
30. CREA Mont-Blanc. (n.d.). Climate change and its impacts in the Alps. Retrieved June 20, 2026, from <https://creamontblanc.org/en/climate-change-and-its-impacts-alps/>
31. Cremonese, E., Carlson, B., Gianluca, F., Pogliotti, P., Alvarez, I., Fosson, J.-P., Ravel, L., & Delestrade, A. (2019). *Rapport Climat: Changements climatiques dans le massif du Mont-Blanc et impacts sur les activités humaines* (Rédigé Dans Le Cadre Du Projet AdaPTMont-Blanc Financé Par Le Programme Européen de Coopération Territoriale

- Alcotra Italie-France 2014-2020). <https://www.espace-mont-blanc.com/asset/rapportclimat.pdf>
32. Cuvillier, A., Lemercier, J., & Briquet et Fils. (1860). *Chamouni et le Mont Blanc* [Chamonix and Mont Blanc] [Engraving]. In *Souvenirs de la Suisse* [Memories of Switzerland]. IALP Mountain Museums Digital Catalog. <https://www.mountainmuseums.org/en/items/chamouni-et-le-mont-blanc-2/>
33. Dallimer, M., & Strange, N. (2015). Why socio-political borders and boundaries matter in conservation. *Trends in Ecology & Evolution*, 30(3), 132–139. <https://doi.org/10.1016/j.tree.2014.12.004>
34. Debarbieux, B. (1997). *La (M)montagne comme figure de la frontière: Réflexions à partir de quelques cas*. <https://doi.org/10.3406/globe.1997.1377>
35. Debarbieux, B., & Price, M. F. (2008). Representing Mountains: From Local and National to Global Common Good. *Geopolitics*, 13(1), 148–168. <https://doi.org/10.1080/14650040701783375>
36. Decree No. 2004-374 of April 29, 2004, on the powers of prefects and the organization and action of State services in regions and departments (as amended August 1, 2025). *Journal officiel de la République française*. <https://www.legifrance.gouv.fr/loda/id/JORFTEXT000000249712>
37. Direction générale des collectivités locales. (2025, August 22). *Tableau de répartition des compétences* [Synthetic table, updated version]. Ministère de l'Intérieur, République française. https://www.collectivites-locales.gouv.fr/files/files/3.%20Animer%20les%20territoires/Tableau%20r%C3%A9partition%20des%20comp%C3%A9tences_actualisation%20au%20220825.pdf

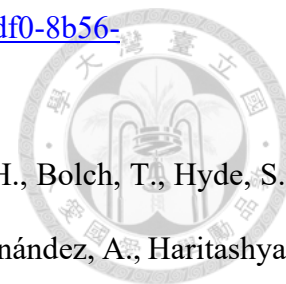


38. Doyle-Capitman, C. E., Decker, D. J., & Jacobson, C. A. (2018). Toward a model for local stakeholder participation in landscape-level wildlife conservation. *Human Dimensions of Wildlife*, 23(4), 375–390. <https://doi.org/10.1080/10871209.2018.1444215>
39. Dumont, G.-F. (2018). GÉOPOLITIQUE DES TERRITOIRES FRANÇAIS: DÉCENTRALISATION VERSUS RECENTRALISATION. *Diploweb.com : la revue géopolitique*, 1–21.
40. Dumont, M., Monteiro, D., Filhol, S., Gascoin, S., Marty, C., Hagenmuller, P., Morin, S., Choler, P., & Thuiller, W. (2025). The European Alps in a changing climate: Physical trends and impacts. *Comptes Rendus. Géoscience*, 357(G1), 25–42. <https://doi.org/10.5802/crgeos.288>
41. Dunoyer, C. (2014). Combats de vaches et virilité dans la région Nord-occidentales des Alpes. *Orma*, 22, 122–155.
42. Ehringhaus, B. (2012). Transboundary Protection of Mont Blanc: Twenty Years of Tri-national Negotiation around the Roof of the European Alps | Parks, Peace, and Partnership. In M. S. Quinn, L. Broberg, & W. Freimund (Eds), *Parks, Peace, and Partnership*. <https://ucp.manifoldapp.org/read/parks-peace-and-partnership/section/38512bb6-e5b2-4c85-872d-78c6645d7ed4>
43. Ehrlich, D., Melchiorri, M., & Capitani, C. (2021). Population Trends and Urbanisation in Mountain Ranges of the World. *Land*, 10(3), 255. <https://doi.org/10.3390/land10030255>
44. Espace Mont-Blanc. (s.d.). *Espace Mont-Blanc : les principales étapes*. <https://www.espace-mont-blanc.com/ligne-du-temps>
45. Epstein, R., Frinault, T., & Pinson, G. (2025). Décentralisation et métropolisation en France. Chronique d'un découplage dans la gouvernance multi-niveaux dans la gouvernance multi-niveaux. *Action publique. Recherche et pratiques*, (24), 39–52.

46. European Commission. (2013, September 18). *Commission note on establishing conservation measures for Natura 2000 sites* [Guidance note].
<https://circabc.europa.eu/d/a/workspace/SpacesStore/888c5c78-c58b-48b0-865f-af833be1c223/Commission%20note%20on%20establishing%20conservation%20measures.pdf>
47. Farole, T., Rodríguez-Pose, A., & Storper, M. (2011). Cohesion Policy in the European Union: Growth, Geography, Institutions. *JCMS: Journal of Common Market Studies*, 49(5), 1089–1111. <https://doi.org/10.1111/j.1468-5965.2010.02161.x>
48. Faugère, T. (2026, May 1). "On n'est pas des robots" : il avait très vivement critiqué l'épreuve, Kilian Jornet participera finalement à l'UTMB, un surprenant revirement expliqué par la direction. *ladepeche.fr*. <https://www.ladepeche.fr/2026/05/01/on-nest-pas-des-robots-il-avait-tres-vivement-critique-lepreuve-kilian-jornet-participera-finalement-a-lutmb-un-surprenant-revirement-explique-par-la-13351528.php>
49. Fleiner, T. (2006). Swiss confederation. In *Distribution of Powers and Responsibilities in Federal Countries* (McGill-Queens University Press, pp. 1–27).
50. Forster, N. A., Wilson, S. C., & Tighe, M. K. (2023). Trail running events contribute microplastic pollution to conservation and wilderness areas. *Journal of Environmental Management*, 331, 117304. <https://doi.org/10.1016/j.jenvman.2023.117304>
51. Foucault, M. (2018). *Les maires de France: Entre résignation et incertitude* [Enquête]. Observatoire de la démocratie de proximité, Association des maires de France (AMF) & CEVIPOF/SciencesPo.
<https://medias.amf.asso.fr/docs/DOCUMENTS/e61f51f351ae658290553f4121fd1d51.pdf>
52. Fulton, E. A. (2021). Opportunities to improve ecosystem-based fisheries management by recognizing and overcoming path dependency and cognitive bias. *Fish and Fisheries*, 22(2), 428–448. <https://doi.org/10.1111/faf.12537>

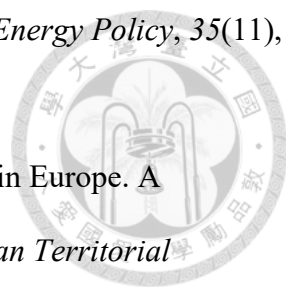
- 
53. Gallemore, C. (2017). Transaction costs in the evolution of transnational polycentric governance. *International Environmental Agreements: Politics, Law and Economics*, 17(5), 639–654. <https://doi.org/10.1007/s10784-016-9335-8>
54. Gillet, F., Naffrechoux, E., & Gateuille, D. (2025). *Microplastiques au sommet du Mont-Blanc* (Aqualti). Université Savoie Mont-Blanc.
55. Gorla, G., Lacour, C., Mignot, D., & Resmini, L. (2013). Introduction Aoste: Territoire, identité et qualité. *Revue d'Économie Régionale & Urbaine*, (1), 5–10. <https://doi.org/10.3917/reru.131.0005>
56. Gurung, J., Chettri, N., Sharma, E., Ning, W., Chaudhary, R. P., Badola, H. K., Wangchuk, S., Uprety, Y., Gaira, K. S., Bidha, N., Phuntsho, K., Uddin, K., & Shah, G. M. (2019). Evolution of a transboundary landscape approach in the Hindu Kush Himalaya: Key learnings from the Kangchenjunga Landscape. *Global Ecology and Conservation*, 17, e00599. <https://doi.org/10.1016/j.gecco.2019.e00599>
57. Hagenmuller, N., Meunier, C., & Robert, V. (2026, April 7). *Prendre soin de la vallée depuis un millénaire : les Consortages de Chamonix, des acteurs à écouter*. Mountain Wilderness France. <https://www.mountainwilderness.fr/actualites/consorts-de-chamonix>
58. Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162(3859), 1243–1248. <https://doi.org/10.1126/science.162.3859.1243>
59. He, X., Ziegler, A. D., Elsen, P. R., Feng, Y., Baker, J. C. A., Liang, S., Holden, J., Spracklen, D. V., & Zeng, Z. (2023). Accelerating global mountain forest loss threatens biodiversity hotspots. *One Earth*, 6(3), 303–315. <https://doi.org/10.1016/j.oneear.2023.02.005>
60. Horber-Papazian, K. (2014). Les Communes. In *Handbuch der Schweizer Politik = Manuel de la politique suisse* (5th edn, pp. 275–306). Verlag Neue Zürcher Zeitung.

<https://api.unil.ch/iris/server/api/core/bitstreams/97790224-72bc-4df0-8b56-369b653025da/content>



61. Immerzeel, W. W., Lutz, A. F., Andrade, M., Bahl, A., Biemans, H., Bolch, T., Hyde, S., Brumby, S., Davies, B. J., Elmore, A. C., Emmer, A., Feng, M., Fernández, A., Haritashya, U., Kargel, J. S., Koppes, M., Kraaijenbrink, P. D. A., Kulkarni, A. V., Mayewski, P. A., ... Baillie, J. E. M. (2020). Importance and vulnerability of the world's water towers. *Nature*, 577(7790), 364–369. <https://doi.org/10.1038/s41586-019-1822-y>
62. INA. (1989). *Le parc international du Mont Blanc* [Video recording]. JT FR3 Rhone Alpes. <https://www.ina.fr/ina-eclaire-actu/video/lyc8908233006/le-parc-international-du-mont-blanc>
63. INA. (2020, February 12). *1976, le Mont-Blanc croulait déjà sous les déchets*. ina.fr. <https://www.ina.fr/ina-eclaire-actu/1976-le-mont-blanc-croulait-deja-sous-les-dechets>
64. Intergovernmental Panel On Climate Change (Ipcc). (2023). *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (1st edn)*. Cambridge University Press. <https://doi.org/10.1017/9781009325844>
65. INSEE. (2026, March 16). *Population municipale des communes — France entière* [Municipal population of French communes — Whole of France] [Data set, updated annually]. data.gouv.fr. <https://www.data.gouv.fr/datasets/population-municipale-des-communes-france-entiere/>
66. Ioan, S., Roseo, F., & Brambilla, M. (2025). Mountain ecosystem services under a changing climate: A global perspective. *Ecosystem Services*, 73, 101732. <https://doi.org/10.1016/j.ecoser.2025.101732>

67. Istituto Nazionale di Statistica (ISTAT). (2025). *Monthly demographic balance and resident population by sex, year 2025* [Data dashboard]. Retrieved June 15, 2026, from <https://demo.istat.it/app/?i=D7B&a=2025&l=en>
68. Janin, B. (1971). *Le trafic aux tunnels du Mont-Blanc et du Grand-Saint-Bernard et sur l'autoroute du Val d'Aoste*. <https://doi.org/10.3406/rga.1971.1449>
69. Laurent, L., Buoncristiani, J.-F., Pohl, B., Zekollari, H., Farinotti, D., Huss, M., Mugnier, J.-L., & Pergaud, J. (2020). The impact of climate change and glacier mass loss on the hydrology in the Mont-Blanc massif. *Scientific Reports*, 10(1), 10420. <https://doi.org/10.1038/s41598-020-67379-7>
70. Li, J., Weckworth, B. V., McCarthy, T. M., Liang, X., Liu, Y., Xing, R., Li, D., Zhang, Y., Xue, Y., Jackson, R., Xiao, L., Cheng, C., Li, S., Xu, F., Ma, M., Yang, X., Diao, K., Gao, Y., Song, D., ... Beissinger, S. R. (2020). Defining priorities for global snow leopard conservation landscapes. *Biological Conservation*, 241, 108387. <https://doi.org/10.1016/j.biocon.2019.108387>
71. Lim, M. (2014). Strengthening the Legal and Institutional Effectiveness of Transboundary Biodiversity Conservation in the 'Heart of Borneo'. *Asia Pacific Journal of Environmental Law*, 17.
72. Lim, M. (2016). Governance criteria for effective transboundary biodiversity conservation. *International Environmental Agreements: Politics, Law and Economics*, 16(6), 797–813. <https://doi.org/10.1007/s10784-015-9296-3>
73. Lissandrello, E. (2006). *The utopia of cross-border regions: Territorial transformation and cross-border governance on Espace Mont-Blanc*. E. Lissandrello.
74. Liu, J., Yong, D. L., Choi, C.-Y., & Gibson, L. (2020). Transboundary Frontiers: An Emerging Priority for Biodiversity Conservation. *Trends in Ecology & Evolution*, 35(8), 679–690. <https://doi.org/10.1016/j.tree.2020.03.004>

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75. Lloyd, B. (2007). The Commons revisited: The tragedy continues. *Energy Policy*, 35(11), 5806–5818. <https://doi.org/10.1016/j.enpol.2007.07.005>
76. Lundén, T. (2018). Border Regions and Cross-Border Cooperation in Europe. A Theoretical and Historical Approach. In E. Medeiros (Ed.), *European Territorial Cooperation: Theoretical and Empirical Approaches to the Process and Impacts of Cross-Border and Transnational Cooperation in Europe* (pp. 97–113). Springer International Publishing. https://doi.org/10.1007/978-3-319-74887-0_6
77. Malaspina, P. (2024). Franco–Italian Mont Blanc Dispute and Climate Change: Policy Perspectives after the Quirinal Treaty. *Borders in Globalization Review*, 5(2), 49–59. <https://doi.org/10.18357/bigr52202421690>
78. McGinnis, M. D., & Ostrom, E. (2012). Reflections on Vincent Ostrom, Public Administration, and Polycentricity. *Public Administration Review*, 72(1), 15–25. <https://doi.org/10.1111/j.1540-6210.2011.02488.x>
79. Messerli, B., & Ives, J. D. (1997). Agenda for sustainable mountain development. In *Mountains of the world: A global priority* (pp. 455–466). Parthenon.
80. Michenot, M. (2020). Manifestations de sports de nature et préservation de la biodiversité. *Sciences de l'ingénieur [physics]*.
81. Miller, M. A., Rigg, J., & Taylor, D. (2022). Transboundary environmental governance: Emerging themes and lessons from Southeast Asia. *Environmental Policy and Governance*, 32(4), 275–280. <https://doi.org/10.1002/eet.2012>
82. Ministres de France, d'Italie et de Suisse. (1992). *Communiqué conjoint des ministres* [Joint ministerial communiqué]. Espace Mont-Blanc. <https://www.espace-mont-blanc.com/asset/communiqué-conjoint-des-ministres-1992-1.pdf>
83. Mitschke, A. (2019). *L'intensité des contacts sociaux dans le domaine francoprovençal au fil des siècles*. *Nouvelles du Centre d'Études Francoprovençales René Willien*, 27–81.

84. Møller, A. M. (2021). Deliberation and Deliberative Organizational Routines in Frontline Decision-Making. *Journal of Public Administration Research and Theory*, 31(3), 471–488. <https://doi.org/10.1093/jopart/muaa060>
85. Monto, T. (2015). *Chamonix and mountain* [Photograph]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Chamonix_and_mountain.jpg (Original work licensed under CC BY-SA 3.0; cropped for comparison)
86. Morrison, T. H. (2017). Evolving polycentric governance of the Great Barrier Reef. *Proc. Natl. Acad. Sci. U.S.A.*, 114(15), E3013–E3021. <https://doi.org/10.1073/pnas.1620830114>
87. Morrison, T. H., Adger, W. N., Brown, K., Lemos, M. C., Huitema, D., & Hughes, T. P. (2017). Mitigation and adaptation in polycentric systems: Sources of power in the pursuit of collective goals. *WIREs Climate Change*, 8(5), e479. <https://doi.org/10.1002/wcc.479>
88. Morrison, T. H., Bodin, Ö., Cumming, G. S., Lubell, M., Seppelt, R., Seppelt, T., & Weible, C. M. (2023). Building blocks of polycentric governance. *Policy Studies Journal*, 5(3). <https://doi.org/10.1111/psj.12492>
89. Moullé, F. (2020). L'Espace Mont-Blanc, un laboratoire de coopération transfrontalière au service des territoires locaux: *L'Information géographique*, Vol. 84(4), 9–23. <https://doi.org/10.3917/lig.844.0009>
90. Mouthon, F. (2024). Appropriation et exploitation collective des ressources naturelles au Moyen Âge. L'invention des communs. In *La nature en tant qu'expérience historique/Natur als Geschichtliche Erfahrung*. Universitätsverlag Winter.
91. Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S. (2023). A Step-by-Step Process of Thematic Analysis to Develop a Conceptual Model in Qualitative Research. *International Journal of Qualitative Methods*, 22, 16094069231205789. <https://doi.org/10.1177/16094069231205789>

92. National Institute of Statistics and Economic Studies. (2026, January 13). *Population estimate by region, sex, and broad age group, 1975 to 2026* [Data set]. Insee. <https://www.insee.fr/fr/statistiques/fichier/8721456/estim-pop-nreg-sexe-gca-1975-2026.xlsx>
93. Oksanen, M., & Vuorisalo, T. (2019). Conservation Sovereignty and Biodiversity. In E. Casetta, J. Marques Da Silva, & D. Vecchi (Eds), *From Assessing to Conserving Biodiversity* (Vol. 24, pp. 435–452). Springer International Publishing. https://doi.org/10.1007/978-3-030-10991-2_21
94. Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
95. Ostrom, E. (2011). Background on the Institutional Analysis and Development Framework. *Policy Studies Journal*, 39(1), 7–27. <https://doi.org/10.1111/j.1541-0072.2010.00394.x>
96. Ostrom, E., Gardner, R., & Walker, J. (1994). *Rules, Games, and Common-pool Resources*. University of Michigan Press.
97. Ostrom, V. (1991). *The Meaning of American Federalism*. Institute for Contemporary Studies Press.
98. Ostrom, V., Tiebout, C. M., & Warren, R. (1961). The Organization of Government in Metropolitan Areas: A Theoretical Inquiry. *The American Political Science Review*, 55(4), 831–842. <https://doi.org/10.2307/1952530>
99. Ozenda, P., & Lucas, M.-J. (1987). Esquisse d’une carte de la végétation potentielle de la France à 1/1500000. *Documents de Cartographie Écologique*, XXX, 49–80.
100. Pattberg, P., & Widerberg, O. (2020). Global Sustainability Governance: Fragmented, orchestrated or polycentric?: *Civitas Europa*, N° 45(2), 373–392. <https://doi.org/10.3917/civit.045.0373>

101. Pauchard, A., Kueffer, C., Dietz, H., Daehler, C. C., Alexander, J., Edwards, P. J., Arévalo, J. R., Cavieres, L. A., Guisan, A., Haider, S., Jakobs, G., McDougall, K., Millar, C. I., Naylor, B. J., Parks, C. G., Rew, L. J., & Seipel, T. (2009). Ain't no mountain high enough: Plant invasions reaching new elevations. *Frontiers in Ecology and the Environment*, 7(9), 479–486. <https://doi.org/10.1890/080072>
102. Pepin, N., Apple, M., Knowles, J., Terzago, S., Arnone, E., Hänchen, L., Napoli, A., Potter, E., Steiner, J., Williamson, S. N., Ahrens, B., Dhar, T., Dimri, A. P., Palazzi, E., Rameshan, A., Salzmänn, N., Shahgedanova, M., Vidal Jr, J. D. D., & Zardi, D. (2025). Elevation-dependent climate change in mountain environments. *Nature Reviews Earth & Environment*, 6(12), 772–788. <https://doi.org/10.1038/s43017-025-00740-4>
103. Pereira, P., Inacio, M., Bogunovic, I., Francos, M., Barceló, D., & Zhao, W. (2022). Servicios ecosistémicos en áreas de montaña: Beneficios y amenazas. *Pirineos*, 177, e068. <https://doi.org/10.3989/pirineos.2022.177001>
104. Perrigo, A., Hoorn, C., & Antonelli, A. (2020). Why mountains matter for biodiversity. *Journal of Biogeography*, 47(2), 315–325. <https://doi.org/10.1111/jbi.13731>
105. Polanyi, M. (2013). *The Logic of Liberty: Reflections and Rejoinders*. Routledge.
106. Portman, M. E., & Teff-Seker, Y. (2017). Factors of success and failure for transboundary environmental cooperation: Projects in the Gulf of Aqaba. *Journal of Environmental Policy & Planning*, 19(6), 810–826. <https://doi.org/10.1080/1523908X.2017.1292873>
107. Rahbek, C., Borregaard, M. K., Colwell, R. K., Dalsgaard, B., Holt, B. G., Morueta-Holme, N., Nogues-Bravo, D., Whittaker, R. J., & Fjeldsø, J. (2019). Humboldt's enigma: What causes global patterns of mountain biodiversity? *Science*, 365(6458), 1108–1113. <https://doi.org/10.1126/science.aax0149>
108. Ravanel, L., Mourey, J., Tamian, L., Ibanez, S., Hantz, D., Lacroix, P., & Duvillard, P.-A. (2023). Ascension du mont Blanc (4808 m): Quels risques prend-on dans le Grand

- Couloir du Goûter et dans la face nord du mont Blanc du Tacul ? *Journal of Alpine Research* | *Revue de géographie alpine*, (111–2). <https://doi.org/10.4000/rga.11728>
- 109.Reitel, B., Wassenberg, B., & Peyrony, J. (2018). The INTERREG Experience in Bridging European Territories. A 30-Year Summary. In E. Medeiros (Ed.), *European Territorial Cooperation: Theoretical and Empirical Approaches to the Process and Impacts of Cross-Border and Transnational Cooperation in Europe* (pp. 7–23). Springer International Publishing. https://doi.org/10.1007/978-3-319-74887-0_2
- 110.Richard, L. (1998). Biodiversité dans l'Espace Mont-Blanc: Enjeux d'aménagement. *Écologie*, 29(1/2), 117–121.
- 111.Benoist, F., Sabatier, L., & Charpentier, H.-D. (1864). *Le Mont Blanc et la Vallée de Chamonix* [The Mont Blanc and the Chamonix Valley] [Engraving]. In *Nice et Savoie : sites pittoresques, monuments, description et histoire des départements de la Savoie, de la Haute-Savoie et des Alpes-Maritimes (ancienne province de Nice) réunis à la France en 1860* [Nice and Savoy: picturesque sites, monuments, description and history of the departments of Savoy, Haute-Savoy and the Alpes-Maritimes (former province of Nice) reunited with France in 1860]. IALP Mountain Museums Digital Catalog. <https://www.mountainmuseums.org/en/items/le-mont-blanc-et-la-vallee-de-chamonix-vue-prise-du-sentier-de-la-flegere/>
- 112.Schädler, B., & Weingartner, R. (2010). Impact of Climate Change on Water Resources in the Alpine Regions of Switzerland. In U. Bundi (Ed.), *Alpine Waters* (pp. 59–69). Springer. https://doi.org/10.1007/978-3-540-88275-6_3
- 113.Scholz, R., & Tietje, O. (2002). *Embedded Case Study Methods*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412984027>

- 114.Schoon, M. (2013). *Governance in Transboundary Conservation: How Institutional Structure and Path Dependence Matter*. 11(4), 420–428. <https://doi.org/10.4103/0972-4923.125758>
- 115.Servillo, L., Cestaro, L., Del Fiore, M., Coletti, R., Jaschitz, M., Dubniczki, K., Hesz, R., Jánosi, V., Darányi, L., Chilla, T., Günther, E., Hippe, S., Gaugitsch, R., Badouix, M., & Dallhammer, E. (2026, March). *CROSSGOV case study report I: Espace Mont-Blanc (CH/FR/IT) — Governance mechanisms for cross-border functional areas* [Research report, ISBN 978-2-919839-45-2]. ESPON EGTC. https://www.espon.eu/sites/default/files/2026-03/crossgov_case-study-report-i_espace-mont-blanc-ch-fr-it.pdf
- 116.Shi, K., Wu, Y., Sun, X., Cui, Y., Chen, Z., Song, L., Fang, F., Cao, W., Ma, J., Huang, C., Gao, L., Yu, B., & Bryan, B. A. (2025). Extensive terrestrial biodiversity threats from global hillside urban expansion. *Nature Cities*, 2(10), 937–947. <https://doi.org/10.1038/s44284-025-00316-9>
- 117.Sommer, C., Malz, P., Seehaus, T. C., Lippl, S., Zemp, M., & Braun, M. H. (2020). Rapid glacier retreat and downwasting throughout the European Alps in the early 21st century. *Nature Communications*, 11(1), 3209. <https://doi.org/10.1038/s41467-020-16818-0>
- 118.Space for Climate Observatory. (2024). *ORION: Biodiversity Management in Chamonix Valley (France)*. GEO Knowledge Hub. <https://doi.org/10.60566/VX1E0-C2Y11>
- 119.Spierenburg, M., Steenkamp, C., & Wels, H. (2006). Resistance of local communities against marginalization in the Great Limpopo Transfrontier Conservation Area. *Focaal*, 2006(47), 18–31. <https://doi.org/10.3167/092012906780646479>
- 120.Streeck, W. (with Internet Archive). (2014). *Buying time: The delayed crisis of democratic capitalism*. London ; Brooklyn, NY : Verso. <http://archive.org/details/buyingtimedelaye0000stre>

121. Swiss Federal Council. (2023, January 25). *Message sur la promotion économique pour les années 2024 à 2027* [Dispatch on economic promotion for the years 2024 to 2027] [Federal Gazette No. FF 2023 554]. Fedlex.
<https://www.fedlex.admin.ch/eli/fga/2023/554/fr>
122. Swiss Federal Statistical Office. (2025, August 27). *Effectif et évolution de la population en Suisse en 2024 : résultats définitifs* [Population size and trends in Switzerland in 2024: final results] [Statistical report, No. 2025-0343].
<https://www.bfs.admin.ch/bfs/fr/home/statistiques/population/effectif-evolution.gnpdetail.2025-0343.html>
123. Thiel, A., Garrick, D. E., & Blomquist, W. A. (2019). *Governing Complexity: Analyzing and Applying Polycentricity*. Cambridge University Press.
124. Thornton, J. M., Snethlage, M. A., Sayre, R., Urbach, D. R., Viviroli, D., Ehrlich, D., Muccione, V., Wester, P., Insarov, G., & Adler, C. (2022). Human populations in the world's mountains: Spatio-temporal patterns and potential controls. *PLoS ONE*, 17(7), e0271466. <https://doi.org/10.1371/journal.pone.0271466>
125. United Nations. (1992a). Agenda 21—Chapter 13: Managing Fragile Ecosystems: Sustainable Mountain Development. In *Agenda 21: Programme of action for sustainable development*. <http://un-documents.net/a21-13.htm>
126. United Nations. (1992b). *Convention on Biological Diversity*. United Nations Environment Programme. <https://www.cbd.int/doc/legal/cbd-en.pdf>
127. UTMB Mont-Blanc. (n.d.). *Meet your extraordinary*. Retrieved June 15, 2026, from <https://montblanc.utmb.world/fr/discover/the-event/concept>
128. Vampa, D. (2016). The (Re)emergence and Strengthening of the Centre-Periphery Cleavage in Italy: (Old and New) Regionalist Parties and Sub-state Welfare Building. In



- D. Vampa, *The Regional Politics of Welfare in Italy, Spain and Great Britain* (pp. 57–82). Springer International Publishing. https://doi.org/10.1007/978-3-319-39007-9_4
129. Vasilijević, M., Zunckel, K., McKinney, M., Erg, B., Schoon, M., & Rosen, T. (2015). *Transboundary Conservation: A systematic and integrated approach* (M. C. Groves & A. Phillips, Eds; No. 23; Best Practice Protected Area Guidelines Series). IUCN. <https://portals.iucn.org/library/sites/library/files/documents/PAG-023.pdf>
130. Verschuuren, P., & Perdriau, F. (2026). Understanding the process of athlete eco-activism between individual and organisational conditions: The case of ultra-trail runners. *International Review for the Sociology of Sport*, 10126902261435850. <https://doi.org/10.1177/10126902261435850>
131. Vesan, P. (2025). *The Return of the Rampant Lion: Regional Elections in the Aosta Valley*.
132. Wagenaar, H., & Bartels, K. (2024). Introduction: Advancing the Commonsense: The Political Economy of The Commons. *International Journal of the Commons*, 18(1), 337–350. <https://doi.org/10.5334/ijc.1400>
133. Wassenberg, B., Reitel, B., Peyrony, J., & Rubió, J. (2015). *Territorial cooperation in Europe: A historical perspective*. Publications Office of the European Union. https://ec.europa.eu/regional_policy/sources/policy/cooperation/european-territorial/interreg_25years_en.pdf
134. Yin, R. K. (2003). *Case Study Research: Design and Methods*. SAGE.

12 APPENDIX: TRANSLATED EXAMPLE GUIDE TO SEMI-STRUCTURED INTERVIEWS



12.1 ITALIAN EMB COORDINATION OFFICER

1. Could you briefly explain your role within the EMB?
2. What are the main interests of the Aosta Valley in participating in the EMB? Do these interests differ from those of the other two sides of the mountain?
3. What are the main challenges of cross-border collaboration within the EMB?
4. As coordinator for the Aosta Valley, you have to work with a wide variety of stakeholders, including municipalities, associations, scientists, the federal government, private companies, and so on. Which are the most involved, which less so, and whose interests do you primarily defend within the EMB?
 - a. The participation of two actors in particular intrigues me: the Italian government and the Mountain Wilderness Association.
 - b. Is the public in the Aosta Valley aware of the EMB's activities?
5. In 2019, there was AdaPT Mont-Blanc. What is the follow-up to this? Have its recommendations been implemented? If so, how?
6. Several sources mention a loss of momentum in the EMB. Do you share this interpretation, and why? (INTERREG)
7. Few environmental protection measures have been taken within the framework of the EMB. Are the Aosta Valley government or the Valdostan municipalities taking initiatives independently of the EMB?
8. How do you see the future of cross-border collaboration around Mont Blanc, particularly with regard to natural resource management?
9. Considering my research, is there any topic we haven't yet addressed that you consider important?
10. Could you recommend people playing important roles in the governance of the EMB, from which side of Mount Blanc, with whom it would be interesting for me to discuss?

12.2 DIRECTOR OF THE CREA RESEARCH NGO



Participation in the EMB

1. Can you tell me about the AdaPT Mont-Blanc project in which your organization played a significant role—how did it go?
2. There haven't been any events related to the EMB at CREA events since 2020. What explains this?
3. What other past or ongoing projects have the EMB undertaken? (Why not the ORION project?)
4. Is your organization represented and heard within the EMB?
5. Do you have other cross-border projects outside the EMB?

Governance in the Region

6. Do you think current environmental protection measures are sufficient?
7. Your strategic priority includes “Promoting the effective integration of mountain biodiversity into local territorial strategies, in the context of climate change.” This idea is also present in your 2025-2030 strategy. How do you do it and what is the reception at your work?