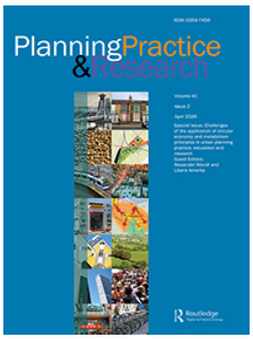

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Disaster risk reduction in Chile: a typology of planning action

Larissa Brandenstein

Institute of Regional Science, Karlsruhe Institute of Technology, Karlsruhe, Germany

ABSTRACT

Amidst global calls for resilience and disaster risk reduction (DRR), this article examines how municipal planners in hazard-prone Chile interpret and implement DRR under conditions of institutional ambiguity and resource scarcity. Drawing on actor-centred institutionalism, street-level bureaucracy, and planning theory, it analyses interviews with municipal staff to explore contextual constraints, motivational action orientations, and discretionary actions shaping local DRR. Findings disclose that planners respond to the contextually limited scope for action through five types of motivational orientations. They lead to actions such as community capacity building, the implementation of technical measures, emergency collaboration and individual as well as institutional professionalisation.

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Disaster risk reduction; spatial planning; actor-centred institutionalism; street-level bureaucracy; Chile

Introduction

Municipal planners in Chile work at the frontline of disaster risk reduction (DRR) in one of the most hazard-exposed countries in the world. Earthquakes, tsunamis, wildfires, floods, and landslides repeatedly demonstrate the need for spatial strategies capable of reducing risks, here understood as the product of hazard, exposure and vulnerability. The 8.8 magnitude earthquake and subsequent tsunami in 2010 were the main triggers for DRR moving to the centre of national policy debates. Alongside concepts such as urban resilience and climate adaptation, this has resulted in institutional changes and the development of strategic planning instruments (Vicuña & Orellana, 2018). Despite these changes, integrated spatial planning measures to reduce disaster risks remain limited.

In Chile, major risk mitigation projects – mostly implemented through master plans after the 2010 earthquake – have been widely criticised. The literature points to a pattern of short-term, technocratic and top-down risk governance that prioritises sectoral solutions over spatially integrated approaches, produces socially exclusionary outcomes, and ultimately fails to address disaster risks adequately (Contreras Gatica & Arriagada Sickinger, 2016; Herrmann Lunecke, 2016; Imilan & González, 2017; Lukas & Brück, 2018; Fuster-Farfán *et al.*, 2020; Oportus *et al.*, 2020). This shows that while awareness of the need for spatial planning measures to prevent or mitigate disaster risks, such as land-

CONTACT Larissa Brandenstein l.brandenstein@kit.edu

use regulation or physical modifications to the built environment, is growing, their implementation remains fragmented.

Existing research identifies numerous shortcomings in spatial planning. Local governments as responsible authorities navigate a challenging landscape of evolving risks, a centralised administrative structure, scarce resources, weak spatial planning instruments, inappropriate laws and the pervasive presence and influence of the private sector that not only shapes political priorities but also contributes to the production of new risks (Romero, 2015; Vicuña & Orellana, 2018; Aravena-Solís & Prada-Trigo, 2021; Lara *et al.*, 2021; Wyndham *et al.*, 2021; Consejo Nacional de Desarrollo Territorial, 2025). These institutional and political tensions reflect the broader trajectory of neoliberal restructuring that has shaped spatial planning and the production of space in Chile since the late 1970s (Hidalgo & Janoschka, 2014; Bustos Gallardo *et al.*, 2019). As Eiró and Lotta (2024) observe, neoliberal reforms in many countries of the Global South have deepened inequalities and eroded public institutions, leaving local administrations to bridge the growing gap between (inter-)national policy ambitions and the limited means to realise them.

Taken together, this body of research provides a detailed understanding of the institutional and political factors that make risk-oriented spatial planning in Chile particularly challenging. What remains largely overlooked is how municipal planners navigate these constraints in their everyday praxis, how they interpret their role, exercise discretion, and ultimately produce DRR on the ground. Rather than assuming that policy measures fail at the implementation stage because public employees behave differently than policymakers anticipated, this study examines how municipal staff engaged in spatially relevant decision-making, guided by their moral and professional convictions, interpret and give meaning to DRR in contexts where institutional guidance is ambiguous, and resources are limited.

Drawing on the concepts of actor-centred institutionalism (ACI) (Mayntz & Scharpf, 1995; Scharpf, 2006) and street-level bureaucracy (SLB) (Lipsky, 1971, 2010), this paper investigates (1) the perceived institutional and broader societal context that stimulate, enable or restrict actions, (2) the types of motivation that orient planner's actions within this frame, and (3) resulting discretionary actions that represent the locally grounded production of DRR.

This study is based on 17 semi-structured expert interviews with administrative staff who are responsible for risk-oriented spatial planning or risk management within municipalities of the Concepción Metropolitan Area. This area is threatened by multiple hydrometeorological, climate, and geophysical hazards. Those insights are complemented by interviews with regional representatives from key sectoral ministries.

The paper is structured as follows. First, it presents the theoretical framework, which conceptualises spatial planning as situated state action and analyses how the discretionary actions of municipal employees shape spatial planning outcomes. This is followed by a description of the case and the methodology. Based on ACI, the results are structured around planners' perceived context of action and five types of motivational action orientation. The discussion then highlights the resulting risk-reducing planning measures and the extent to which this differs from a linear implementation of policy. The conclusion summarises the main findings and outlines implications for risk-oriented spatial planning.

Theoretical framework

Understanding spatial planning as situated state action

Spatial planning is an administrative and political process aiming at shaping the use, organisation and design of space in the future. It encompasses the formation of policy decisions and their subsequent enactment within administrative praxis. This enactment is neither linear nor mechanical but shaped by situational contingencies and the interpretative work of those responsible for carrying it out. To conceptualise this process, this article brings together ACI, the concept of SLB and practice-oriented perspectives from planning theory. Together, these approaches illuminate how planning actions emerge within institutional structures and how they are subsequently interpreted, adapted and performed in everyday administrative work.

Following ACI (Mayntz & Scharpf, 1995; Scharpf, 2006), political decisions emerge from the interaction between institutional frameworks and the actions and constellations of individual and collective actors, all of which are embedded in a broader societal environment. ACI conceptualises the institutional context as the entirety of formal and informal rules, regulations and practices that structure options for action, allocate resources and define relationships between actors. These include legally codified material rules of conduct and procedural norms, as well as social norms, which together create path-dependent and, at the same time, dynamic institutional conditions that both enable and constrain actions. ACI further proposes that actors base their decisions on their cognitive and motivational action orientation, as well as the actual resources available for action (Mayntz & Scharpf, 1995). The cognitive orientation refers to how actors perceive and interpret the situation and available options. The motivational orientation refers to the values, goals, and professional commitments that guide actions. It is the individual, normative assessment of what is the right or best course of action.

While ACI provides a coherent framework for explaining how planning decisions emerge, its analytical focus is primarily on the decision-making process and not on how decisions unfold in everyday administrative settings. To understand this practical dimension, it is necessary to consider how public employees implement decisions within concrete situations. Practice-oriented perspectives in public administration, most notably articulated by Wagenaar (2004), emphasise that administrative work is situated, contingent and shaped by the ongoing negotiation between actors and their environment. Rather than responding passively to predefined conditions, administrative staff actively interpret and select elements of their setting in ways consistent with their intentions, understandings and tasks. Within this perspective, administrative practices refer to the situated, often routinised and experiential ways of doing their work. They include not only professional but also embodied knowledge.

These insights closely align with Lipsky's concept of SLB (Lipsky, 1971, 2010), which highlights the discretionary work of public employees operating at the interface between the State and citizens. SLBs work within very scripted, usually hierarchical structures, insufficient organisational resources, unclear and sometimes conflicting expectations about what their role should accomplish, as well as regulatory frameworks that cannot anticipate every eventuality they might encounter. As a result, SLBs must exercise discretion in interpreting goals and responding to situational demands, thereby translating 'rule into action' (Hawkins, 1992, p. 11) or performing written policy (Lipsky, 2010).

Discretion is therefore not a deviation from policy but an inherent feature of administrative systems whose regulatory capacity is structurally incomplete (Rowe, 2025).

Applied to spatial planning, these insights underscore that implementation is not a mechanical application of rules but a form of 'context-responsive improvisation' (Forester *et al.*, 2023, p. 1). However, improvisation should not be understood here as arbitrary actions by individuals. Spatial planners, like other SLBs, are authorised and expected to use this scope for action (Rowe, 2025). Their actions are shaped by morally and contextually informed planning practices through which they negotiate meaning, build legitimacy and craft workable responses (Forester *et al.*, 2023). Improvisation in this sense refers to how planners draw on their professional and embodied knowledge, experience and judgement to evaluate what is possible in a given context, making them not only street-level implementers of policy but deliberative practitioners who mediate between institutional expectations, local realities and situated knowledge (Forester *et al.*, 2023). Taken together, these perspectives underscore that planning action cannot be understood as the straightforward execution of predefined rules, but as an inherently interpretative and discretionary activity embedded in dynamic institutional environments.

Spatial planning aimed at reducing disaster risks operates in a dynamic institutional context, while the disaster risks it seeks to address are themselves subject to change. Disasters are a 'complex mix of natural hazards and human action' (Wisner *et al.*, 2004, p. 5) with substantial uncertainty about when, where and in how they occur. Moreover, successful prevention has hardly any visible effects and therefore generates little political recognition – also known as the preparedness paradox – making it difficult to maintain a stable political priority. Complexity and uncertainty together heighten the importance of context-sensitive improvisation.

Since the theoretical approaches discussed above were largely developed in a European context, their application to other socio-spatial contexts requires critical consideration. Hupe (2019) suggests that 'independent of state form, level of economic development and geographical location, any state has these kinds of public officials' (p. 3). However, the institutional conditions under which they operate vary. In what they label developing countries, Lotta *et al.* (2022) emphasise that the scarcity of resources significantly undermines the attainment of formal policy goals, which heightens the discretionary action of SLBs. Rules offer only limited guidance, making improvisation a central mode of action. They argue that this is particularly evident in Latin American countries, where fragmented state structures, uneven administrative reach and persistent legal ambiguities intersect with chronic resource scarcity and recurrent political and economic instability. Following Blanc *et al.* (2022), this leads to spatial planning systems that are unable to prevent problems. Besides, formal rules are not only difficult to implement due to limited technical and financial resources, but also because they often reflect state priorities and institutional models imposed from above or imported from abroad, which can conflict with local norms and lived realities (Eiró & Lotta, 2024; Verdini *et al.*, 2025).

Chile exemplifies these dynamics particularly clearly. The neoliberal restructuring during the Pinochet dictatorship entrenched a minimal state, extensive privatisation and the commodification of natural resources (Harvey, 2005; Garretón Merino, 2012; Hidalgo & Janoschka, 2014). This has two key implications. First, the public sector, particularly municipalities responsible for carrying out central planning processes, lacks

resources, clearly defined responsibilities, and a solid legal framework that consolidates (or advances towards) a preventive rather than reactive approach to disaster risk management (Silva-Bustos, 2024). Second, the freedom that has been and continues to be granted to extractive economic activities such as forestry, mining and profit-oriented housing development contributes to the intensification of existing risks and the creation of new ones (Romero, 2015; Bustos Gallardo *et al.*, 2019; Lara *et al.*, 2021).

In sum, these perspectives highlight that risk-oriented spatial planning cannot be reduced to the technical or linear application of predefined regulatory instruments or policies. Rather, it consists of situated actions shaped by the interplay of path-dependent institutional structures, political pressures and dynamic risks, as well as by planners' individual action orientations and embodied knowledge. This theoretical framing provides the foundation for an empirical analysis that examines how municipal planners interpret, negotiate and perform spatial planning, and how their actions, including situated practices, despite numerous constraints, contribute to DRR.

Empirical context and methods

SLBs are profoundly sensitive to the contexts in which they operate (Lotta *et al.*, 2022). Those contexts are path-dependent, which implies that patterns of behaviour shaped by specific institutional arrangements cannot be assumed to hold universally across time and space (Scharpf, 2006). Consequently, research in this field relies on site-specific empirical data (Scharpf, 2006). To account for this contextual embeddedness, the present study employs a qualitative, case-based approach that enables an in-depth reconstruction of how planners interpret and respond to institutional constraints in their specific environments.

Relevant background information on municipal spatial planning in Chile

The central spatial planning responsibility of Chilean municipalities is the preparation of the legally binding Municipal Regulatory Plan (*Plan Regulador Comunal*, PRC) whose regulatory scope is defined by the General Law of Urbanism and Construction (LGUC, Decree No. 458, Párrafo 4, Art. 41). The law allows to determine land use and zoning (including *áreas de riesgo* that may only be developed under certain conditions and *zonas no edificables*, where construction is prohibited due to hazard exposure), the location of community and parking facilities, the hierarchy of the road network, urban boundaries, densities and priority areas for urban expansion. The graphical components of the PRC are typically prepared at scales between 1:2.500 and 1:20.000 and cover the entire municipal area. Within this territory, a distinction is made between urban and rural areas with the PRC only applying to the urban area. As a result, substantial parts of municipal territories remain outside its regulatory scope. Where several municipalities form a continuous urban area, Intercommunal or Metropolitan Regulatory Plans can be prepared by the regional government or the regional representation of the Ministry of Housing and Urbanism. These instruments coordinate spatial development across municipalities and may also include rural areas. According to official figures, however, only about 80% of Chilean municipalities have a PRC, most of which are outdated (>10 years) (Ministerio de Vivienda y Urbanismo, 2023). Overall, the combination of limited

regulatory powers, the relatively large scale of the plans, the exclusion of rural areas from municipal planning instruments, and the frequent lack of updates significantly reduces the binding force of urban and inter-urban planning.

Case study: Concepción metropolitan area

The Concepción metropolitan area comprises 11 municipalities with a total population of approximately one million (Instituto Nacional de Estadísticas, 2024). It is located on the Pacific coast, approximately 430 km south of the Chilean capital Santiago de Chile, in a landscape of hills, forests, river basins and wetlands. The entire region is extremely seismically active, resulting in regular strong earthquakes and tsunamis. It is characterised by the presence of strong private actors involved in forestry, port activities, and real estate development, thus exerting considerable pressure on land-use decisions. Overall, the metropolitan area is prone to a great variety of socio-natural hazards such as floods, flash floods, storm surges, snowstorms, heat waves, tornadoes, waterspouts, volcanic eruptions, landslides, liquefaction, earthquakes, tsunamis, water shortage, structural fires and forest fires (Dirección General de SENAPRED Biobío, 2025) that require planning attention in order to prevent them from arising or mitigate their consequences.

Despite their geographical proximity, the municipalities within the metropolitan area vary greatly in terms of available resources, staff qualification levels, administrative maturity, and most predominant socio-spatial problems. While the city of Concepción, for example, is a consolidated, economically powerful and financially rather independent regional capital hosting national and regional organisations, the city of Lota is still suffering today from the structural change triggered by the closure of the mines in 1997, resulting in a high dependence on external financing (Consejo Nacional de Desarrollo Territorial, 2025).

Situated far from the political and administrative centre in Santiago, the gaps between institutional context and everyday realities of municipal planning become particularly clear, allowing for a focus on discretionary actions. Furthermore, municipal planners must balance risk considerations against economic and political pressures, revealing the moral, professional and strategic reasoning behind their choices. In sum, the constellation of multi-hazard exposure, institutional fragmentation, socioeconomic diversity and private-sector influence creates an analytically rich environment in which the discretionary actions of municipal planners become highly visible.

Methods

The data for this empirical study were generated through 17 semi-structured qualitative expert interviews (Helfferich, 2019) supplemented by observations and informal discussions. The interviewees worked either within one of the 11 municipalities that belong to the Concepción metropolitan area or in regional offices of national ministries and were recruited through two complementary strategies. First, all relevant departments for disaster risk management, spatial planning, environmental affairs and community development from the municipalities and regional offices were contacted in writing. Given the moderate response rate, a snowball sampling approach was subsequently employed, which enabled the recruitment of additional administrative staff deemed relevant by

initial contacts. This has led to 11 interviews with representatives from the municipalities Chiguayante, Concepción, Coronel, Hualpén, Hualqui, Lota, Penco, San Pedro de la Paz and Talcahuano and six with regional representatives from the Ministry of the Environment, the Ministry of Housing and Urban Development, the Ministry of Public Works, and the National Service for Disaster Prevention and Response. A quarter of those interviewed were on permanent contracts (*personal de planta*), whereas three quarters are on fixed-term contracts that can be renewed annually (*personal a contrata*). To anonymise the interviewees, municipal employees are marked as M1, M2, . . . , M11 and regional representatives as R1, R2, . . . , R6. While the interviews with regional representatives of national ministries primarily served to gather information on the overall context, the interviews with municipal employees were examined in detail for information relevant to the research question.

The interview guide combined open-ended questions about individual professional trajectories, planning projects and processes, with more targeted enquiries on the main challenges in planning, and stakeholder involvement. The interviews were conducted between July and August 2024, transcribed verbatim, and analysed in their original language. Following Kuckartz and Rädiker (2023), the interviews were analysed using a structuring qualitative content analysis in MAXQDA, which enabled both deductive and inductive coding. Subsequently, the perceived action context was reconstructed from the coded material. Through cross-case comparison, recurring motivational logics were identified. Based on these patterns, types of motivational action orientation were then developed inductively and illustrated through empirical vignettes. Finally, the discretionary actions associated with each type were analysed to show how risk-oriented planning is enacted.

Results

Perceived action context and cognitive orientation

This section reconstructs the interviewees' perceived action context and cognitive orientation by examining how they interpret the institutional, political, and societal conditions shaping their daily work. Following the ACI framework, the analysis is structured along three dimensions: institutional context, actor constellations, and the broader societal environment. Table 1 provides an analytical overview of the constraints and enablers identified across these dimensions that structure planners' room for manoeuvre.

The table provides a comprehensive overview of the factors that, from the planners' perspective, shape risk-oriented spatial planning. However, although obstacles predominate and largely prevent targeted and formal planning at the structural level, local actors still find ways to reduce risk. The next section illustrates the measures that are taken based on five different motivational action orientations.

Five types of motivational action orientation and illustrating vignettes

This section introduces the five types of motivational action orientation emerging from the interviews without going into how these are influenced by social and personal factors. They show which normative and emotional motives drive and legitimise planners'

Table 1. Constraining and enabling factors to risk-oriented spatial planning classified according to ACI.

	Institutional context	Actor constellations	Societal environment
Constraints	• Legal prioritisation of free-market principles over spatial regulation (R4, M4, M5, M9, M11) • Centralised administrative structures & approval procedures (R2, R4, R5, R6, M4, M5, M7, M11) • Rigid, contradictory & outdated legal framework that insufficiently reflects territorial diversity (R4, R5, R6, M2, M4, M5, M8, M11) • Institutional fragmentation, insufficient coordination across sectors & administrative levels (R1, R2, R5, M4, M5, M6, M7, M8, M11) • Planning instruments with limited authority over rural areas & private land (R2, R5, R6, M5, M6, M7, M8, M9, M11) • Limited financial resources & funding opportunities for local authorities (R1, R4, M2, M3, M4, M6, M7, M8, M10, M11) • Lack of specialist study programmes, resulting in a shortage of planning professionals (R1, R4, R5, R6, M2, M5, M9, M10, M11)	• Political short-termism (R1, R5, M2, M5, M11) • Influence of private sector actors in political decision-making (R4, R5, M1, M2, M4, M5) • Profit-driven pressure to develop housing in hazard-prone areas & inadequate implementation of legally mandated mitigation measures by real-estate companies (R3, R4, R6, M2, M4, M5) • Profit-oriented forestry compromises fire protection (R2, R5, M4, M6, M7)	• Informal land occupation precedes formal planning (R4, R6, M3, M5, M7, M8, M10, M11) • New hazard dynamics by climate change, as well as by formal & informal land-use changes in risk zones (R2, R4, M2, M5, M7) • Socio-cultural barriers to risk-oriented planning: unmet basic needs, distorted risk perception, strong place attachment, limited contestation of political decisions & private-interest spatial interventions, scepticism towards the state (R1, R4, R5, M2, M7, M8, M11)
Enablers	• Improvements in the legal framework & administrative structure (R1, R2, R3, R5, R6, M2, M3, M4, M5, M6, M7, M11)	• Cases of effective public-private partnerships; Corporate Social Responsibility (M3, M6, M8)	• Increased awareness about environmental issues & climate change in new (professional) generations (R2, R3, M3, M4, M8, M11)

actions within their severely limited scope of action. Vignettes as condensed narrative representations of an empirical case illustrate how the five motivational action orientations are expressed concretely in an individual case and to what kind of actions they lead, thereby being based on how planners themselves describe their motivations and actions. The Vignettes are structured along the planners' perceived action context, their motivational action orientation and the resulting discretionary actions. All names are pseudonyms.

Type 1: the Civic Caregiver

Civic Caregivers focus on their function as public service providers. The limited scope for spatial planning does not frustrate them, as they see their role more in the day-to-day care of the city's residents. They have largely accepted the status quo and see themselves as trustworthy representatives of the state or even allies to the neighbours, and try to be available at all times, even outside working hours. They derive satisfaction from the small services they provide to citizens. With this attitude, Civic

Caregivers manage to endure in their jobs. In the context of risk management, they become particularly active during and shortly after an event by supporting affected households and replacing damaged goods.

Vignette 1: Mauricio, community development department

Mauricio identifies the main constraint to risk-oriented spatial planning in the legal and territorial mismatch between responsibility and authority. The municipality's primary planning instrument covers only about 10% of its territory, leaving the rest uncontrolled. This vacuum allows undesirable developments if approved at higher levels and prevents the municipality from implementing risk-reducing planning measures, despite its responsibility for any potential disaster. Limited resources further restrict action. He adds that fire breaks between forestry plantations and housing are only feasible if the forestry companies implement them voluntarily for social responsibility.

Mauricio is driven by a profound commitment to serve the public with all the means at his disposal. He states that

> staff must be prepared to open the door when residents knock, which means outside office hours, at night, at weekends or on public holidays. One of the things that should motivate administrative staff members is precisely that they are there to serve the residents who do not need resources so much. They need to feel that the state, the institutions, perhaps represented by one, are supporting them. (M6)

He ensures that all operative emergency and disaster management plans are continuously updated so that procedures and responsibilities are clear. Preventive culture is still weak, but the municipality invests considerable effort in preparing residents for future events through emergency maps, evacuation routes, security zones, and information via the municipal website, social media, schools and public spaces. Annual emergency drills reinforce preparedness. When disasters occur, Mauricio ensures affected families receive immediate assistance and institutional support where most urgently needed.

Type 2: the Loyal Leader

Loyal Leaders occupy management positions and therefore do not express themselves particularly critical about their working context. They are experienced employees who accept with a certain calmness that not every disaster can be prevented. Instead of complaining or trying to compensate for structural weaknesses, they concentrate on making professional use of the scope for action available to them. What stands out is their pride in the collaborative disaster response, which they see as part of their culture, much more than forward-looking, preventive spatial planning.

Vignette 2: Camila, planning secretariat

Camila describes limited financial resources and informal urban expansion as the main constraints on DRR in her municipality. However, she positively highlights the close cooperation with forest plantation operators and growing critical public awareness of risk-promoting urban development.

As a native in her commune, Camila is deeply embedded in local social networks. She feels safe and welcomed everywhere she goes, since 'there is always someone to welcome you, to greet you, to say hello on the street' (M3), even in more dangerous areas. She

explains that most projects don't arise from her own agenda but usually respond to public demands. Her loyalty, however, extends not only to the community but also to the institutional system she works in. Camila views political turnover and administrative reshuffling with calm acceptance, stressing that such changes are natural and should be normalised even if they jeopardise her own position.

Camila lists several implemented preventive measures, such as riverbank restoration, the freezing of building permits on unstable slopes and the protection of native vegetation on hills, which she frames as collective rather than personal achievements. Smaller interventions are usually coordinated closely with residents, whose self-organisation she seeks to strengthen. In emergencies, Camila emphasises teamwork. In case of fires, floods or storms, she follows the municipal emergency management protocols and takes pride in fighting the disaster together.

Type 3: the Resilient Firefighter

Resilient Firefighters are municipal employees who experience and interpret their job as a stressful fight, which they are only able to manage through a strong team spirit. Their desire to protect people, animals, ecosystems and material assets pushes them to their physical and psychological limits, as many systemic obstacles must be overcome. Given their strong sense of responsibility, they try to cover all phases of the disaster management cycle. As this approach requires a lot of energy, motivation and performance decline gradually.

Vignette 3: Marcelo, disaster risk management department

Marcelo describes a general lack of communication between different responsible authorities, both within his municipality and across administrative levels, resulting in key information not reaching the relevant actors. Limited resources to access scientific research reinforce this knowledge gap. Existing laws do not reflect territorial realities sufficiently, as seen in the absence of municipal planning instruments for rural areas, where most fires originate. Social and environmental changes amplify the risk landscape: urban-rural migration exposes people to unfamiliar risks, and stronger winds spread fires more rapidly. Finally, rapid seasonal shifts shorten the time available for recovery and essential analytical and preventive work. Marcelo sees positive developments in the existence of working groups, high commitment among colleagues, and gradual improvement in communication with higher administration levels. Support from the mayor has provided resources for training programmes and preventive and response measures, allowing the municipality to react quickly.

Marcelo reflects many characteristics of the Resilient Firefighter type, as he describes his work as a constant struggle that often pushes him close to his limits. Despite exhaustion, periods of little motivation, and even health impacts, he continues largely due to his sense of responsibility. His role as a volunteer firefighter further shapes his engagement and exposure to stress. He highlights the strong team spirit within his unit, which functions like a family: 'You laugh, you get angry, and you feel sorry, but you have to carry on. The ship is sailing along fine, and suddenly it sinks, but you have to raise that ship because it's your family, it's your job' (M7). Encounters with grateful residents and the culture of solidarity during emergencies motivate him.

Marcelo carries out a broad range of tasks across the risk-management cycle. In the prevention phase, he collects and analyses information to produce georeferenced risk maps for targeted interventions in vulnerable areas. He conducts micro-zoning with communities, trains residents in disaster prevention and response, develops community brigades, provides tools, and coordinates vegetation clearing. Central to his work is collaboration with municipal departments and civil-protection institutions. He is authorised to issue early warnings and supports emergency response at all levels.

Type 4: the Strategic Professional

Strategic professionals have a good understanding of the factors that influence their ability to act, enabling them to act strategically within their area of responsibility. They optimise their skills through further training, which is sometimes self-funded. They are guided by high professional standards and the conviction that systemic change is possible, even if it requires endurance, perseverance, and mental strength to cope with setbacks. However, knowing what could theoretically be achieved can quickly lead to frustration or boredom.

Vignette 4: Carolina, planning secretariat

Carolina is aware of the many constraints limiting her scope for action. Approximately 80% of the municipalities' area is classified as high-risk, especially for tsunamis and floods. Outdated, rigid, and partly contradictory laws, dependence on political changes, low political priority, strong private sector influence, the inability to regulate private property, and limited resources restrict her action. The free activity of the market often takes priority, so housing continues to be built in risk zones. Misaligned political decisions across levels result in contradictory measures, fostering societal mistrust in administration.

Carolina understands space holistically and thus integrates social, environmental and technical perspectives. Political shifts frequently override technical priorities, but she tries to act strategically within constraints, seeking gradual improvements. Her personal connection to the municipality contributes to her sense of responsibility. She has remained in the position for several years, always looking for windows of opportunity. The fact that young professionals are entering key positions gives her hope that risk-oriented spatial planning will gain prominence.

Carolina completed four different post-graduate degrees that helped her establish a geographic information system for internal and public use, into which she has been able to integrate all different risk variables. The system now informs internal planning and citizens about critical risk points and evacuation routes. She perceives herself as the link between the different departments, attempting to overcome sectoral visions. Carolina considers indigenous interests in the Municipal Regulatory Plan, which made her aware of cultural and environmental perspectives that clash with formal planning, highlighting limits she cannot overcome. Finally, to prevent risk-producing urbanisation, Carolina and her colleagues began formally recognising urban wetlands as soon as legally possible.

Type 5: the Transformative Idealist

Transformative Idealists pursue long-term transformation which can lead them to take on tasks beyond their formal responsibilities. They often work outside standard office

hours to advance their tasks, since the work fuels their personal satisfaction and is part of their identity. This way of working often meets with resistance within administrations since it clashes with the logic of clearly defined responsibilities.

Vignette 5: Hernán, disaster risk management department

Hernán mentions various reasons for inadequate risk prevention, including limited professional education and financial resources, high costs for structural solutions, political preference of popular demands over long-term risk prevention, unregulated construction in risk zones with inappropriate mitigation, and the population's historical attachment to the coast. He describes that municipalities are tasked to implement national public policy within their administrative boundaries, rather than carrying out locally informed work which becomes problematic when national policies and laws are inadequate. He positively emphasises that the 2010 earthquake has triggered a series of institutional changes and additional funding.

Hernán exhibits a strong intrinsic motivation to address the problem at its root. For him, the job is not only a source of income but a framework to pursue his convictions. Despite severe external constraints he tries 'to influence cultural change and modify the country's reactive paradigm' (M2). He declares that 'wasting time is the most absurd thing in life' (M2), refusing to be limited by administrative boundaries, working hours, or internal resistance.

After the 2010 earthquake, Hernán helped establish the first municipal disaster risk management department, initially tasked with developing a risk reduction strategy. As expertise in this field was limited, he applied for scholarships to study DRR in Japan, adopting a focus on the social dimensions of risk. This became the foundation of a well-developed community capacity-building approach centred on children's education. He has created training programmes, school activities and a wide range of educational materials – including manuals, books, comics, exhibitions, card games, documentaries and public installations – designed to strengthen people's awareness and capacity to act. In addition, he teaches at universities and maintains international networks with relevant stakeholders, translating his motivation into concrete, long-term, transformative action.

The typology of motivated planning action

The typology of planning action shows that motivation is often a key factor enabling planning action in practice. Without the personal motivation of Chilean spatial planners, DRR would likely have less practical relevance at the municipal level. It also illustrates that different motivations prioritise different dimensions of DRR. While Strategic Professionals advocate disaster prevention, Civic Caregivers focus on preparedness and responsiveness. Transformative Idealists pursue long-term change through education and cultural shifts, whereas Resilient Firefighters attempt to compensate for structural deficiencies. Loyal Leaders, in contrast, tend to stabilise existing practices. Taken together, these patterns demonstrate that motivation not only enables action under constrained conditions, but also shapes which forms of DRR are realised. In combination with the identified structural constraints presented in Table 1, the typology therefore provides a basis for identifying both leverage points and limits for strengthening DRR at the municipal level.

Discussion

Building on the empirical findings, the discussion situates municipal DRR in Chile within broader debates on spatial planning, SLB and ACI. It first examines how disaster risk reduction is translated into concrete planning actions on the ground, highlighting how different motivational orientations shape what forms of planning action become possible under constrained conditions. It then moves beyond a linear understanding of policy implementation to conceptualise disaster risk reduction as a mosaic of situated, discretionary and motivationally grounded actions through which policy objectives are selectively interpreted and enacted in practice. This perspective shifts the focus from policy implementation to motivated action as the key mechanism through which disaster risk reduction is realised.

Spatial planning for DRR

Capacity building in the community

Across municipalities, one of the most consistently mentioned planning actions is the strengthening of community capacity for disaster prevention, preparedness and response. The measures identified include a great variety of target group-specific educational measures, participatory, small-scale risk analysis, initiatives that strengthen the collective memory of past disasters, low-threshold information dissemination, exchange with neighbourhood associations, regular disaster drills and the formation of community or school brigades, thereby contributing to the reduction of social vulnerability. From an SLB perspective, this is a typical form of discretionary work in which planners compensate for gaps and contradictions in formal mandates (Rowe, 2025). Since many courses of action are systematically blocked, planners shift their efforts towards those domains in which they can deliver tangible results. At the same time, these actions can be understood through practice theory as routinised, collectively shared practices that all planners – regardless of their individual motivation – consider useful. The only motivational type for whom this type of work is not a priority is the Strategic Professional. Finally, the strong emphasis on citizen empowerment also reflects the broader process of responsibilisation characteristic of neoliberal states, in which responsibilities for safety, welfare and risk management are increasingly shifted from public institutions to individual citizens (Rose, 1999).

Collaboration in the emergency

The interviews clearly show that the administrative staff is regularly involved in dealing with emergencies. Their tasks range from activating early warning systems, analysing situational data and conducting patrols to executing on-site instructions and distributing relief supplies. In many cases, these activities interrupt their regular office work for days or even weeks. In these moments, it is primarily the Civic Caregivers, the Loyal Leaders and the Resilient Firefighters who come to the fore. To help when it is most needed is a matter of course for them, reflecting a deep-rooted reactive and collective disaster tradition in Chilean administrative culture. The ease and confidence with which planners act during emergencies indicate the presence of habitualised and collectively shared practices (Wagenaar, 2004). At the same time, this pattern highlights a structural mismatch between resources and responsibilities: the same individuals are involved in nearly all phases of the disaster management cycle because the organisational capacity is

insufficiently differentiated. As is typical for SLBs, planners must continuously compensate for resource constraints through discretionary labour, improvisation, and personal commitment (Lipsky, 1971). The consequence is a systematic crowding-out of analytical and preventive tasks, as emergency duties repeatedly interrupt long-term planning work.

Organisational and personal professionalisation

Most of the interviewees actively promote their own professional development and that of the administrative organisation to which they belong. By participating in (sometimes self-financed) post-graduate programs, the establishment of more specialised departments within the city administration, the strengthening of interdisciplinary interfaces, the implementation of new methodologies especially for spatial data analysis, teaching at universities or creating (inter-)national professional networks, the planners contribute both to their own professionalisation and that of the organisation they work at. Additionally, further individual training helps municipal planning staff to bridge the gaps between university education and professional praxis, as well as the gaps that arise when structural conditions collide with local reality. From an SLB perspective, individual professionalisation emerges as a key mechanism by which planners manage uncertainty, compensate for insufficient formal guidance, and enhance the credibility of their discretionary choices vis-à-vis superiors, politicians, and external stakeholders. The gradual professionalisation of the organisations reflects the emergence of the entire field. Individual as well as organisational professionalisation is of central importance for Strategic Professionals and Transformative Idealists. While Strategic Professionals use additional qualifications, methodological innovations and expanded organisational structures to strengthen their authority and negotiate greater room for manoeuvre within the institutional landscape, Transformative Idealists draw on professionalisation to introduce new paradigms, diffuse alternative planning norms and reshape the discursive environment in which risk-related decisions are made.

Realisation of technical measures

In several, mostly better-resourced municipalities, planners have succeeded in implementing single technical or structural measures to mitigate hazards. These include the restoration of water bodies, the protection and expansion of native vegetation to reduce surface runoff, the construction of green areas along rivers, hill containment measures, the use of evergreen trees to prevent flooding by fallen leaves, and the establishment of firebreaks. From an ACI perspective, the realisation of such technical measures requires strategic and forward-looking action in coordinating the path-dependent and dynamic structural context, including political dynamics, the legal framework, budget availability and various stakeholders both within and outside the city administration. They are especially likely to be carried out by Strategic Professionals. Unlike community-based activities, which can often be carried out autonomously and with few resources, the realisation of technical measures signals that planners have carved out a room for manoeuvre in which they successfully managed to implement a project.

Disillusionment: when motivation reaches its limits

Despite the high level of motivation among many planners, the interviews also reveal many moments of disillusionment and frustration. The high stress levels, an overstretched range

of responsibilities, and the realisation that neither their own efforts nor the system in which they work is sufficient to reduce disaster risks in a meaningful way, gradually lead to a loss of motivation. The interviews show that Resilient Firefighters and Strategic Professionals are particularly susceptible to this. Resilient Firefighters tend to burn out because they try to compensate for systemic shortcomings through personal dedication and constant availability. Strategic Professionals, in contrast, become frustrated when, despite strategic intent, technical competence and sustained effort, no significant improvements materialise. For both types, disillusionment emerges when their motivational orientation no longer aligns with the institutional opportunity structures available to them.

From policy implementation to motivated action: rethinking planning for DRR

Taken together, the analysis shows that DRR at the municipal level in Chile cannot be understood as the straightforward implementation of national policies, nor as the simple consequence of system failure. Instead, it emerges from the situated, morally charged and professionally motivated actions of planners operating in structurally heavily constrained environments. By identifying five distinct motivational orientations, this study demonstrates that planners' discretionary actions are not random deviations from policy intentions, but patterned responses rooted in how individuals interpret their role, their community and the meaning of risk governance. Across all types, municipal staff navigate ambiguous mandates, fragmented governance structures, and persistent resource shortages within a context that favours market-driven land-use decisions, granting economic actors significant influence over landscape transformation and risk production while constraining public regulatory authority. As a result, municipal staff operate as SLBs whose discretionary judgement temporarily compensates for structural gaps, often at high personal cost. Rather than signalling effective risk governance, these discretionary actions point to the incompleteness and precariousness of formal, risk-oriented spatial planning in Chile, which relies on individual overcommitment, informal workarounds, and unpaid emotional, cognitive, and time-intensive labour. At the same time, the analysis reveals a set of collectively shared and habitualised practices that exist across municipalities as pragmatic responses to these conditions and are routinely enacted by planners (Wagenaar, 2004).

The five motivational types differ in how they cope with constraints and where they locate the most effective entry points for risk reduction. While Civic Caregivers and Loyal Leaders maintain the reactive, community-oriented tradition of Chilean disaster governance, Strategic Professionals and Transformative Idealists push for preventive measures and structural change. Resilient Firefighters attempt to cover all gaps at once, often by exceeding their personal limits. Importantly, these orientations do not simply produce variation. Together, they form the mosaic of what DRR actually is. They reveal that meaningful DRR does not depend solely on technical instruments or legal reforms, but on the alignment between individual motivation, organisational culture and structural opportunity. Recognising these motivational orientations is essential for understanding not only why planners act as they do, but also which structural conditions systematically undermine risk-oriented planning. The findings point in particular to the need for stronger regulatory authority over land use, stable financial and human resources at the municipal level, and institutionalised spaces for preventive planning that are shielded from short-term political and market pressures. Taken together, the findings show that risk-oriented spatial planning at

the municipal level in Chile remains episodic and fragile, emerging primarily where individual motivation, informal practices and momentary windows of opportunity align. Rather than being institutionally embedded, DRR is repeatedly assembled in praxis and just as easily dismantled when personal capacities are exhausted or contextual conditions shift.

Conclusion

This paper sought to understand how the motivational action orientation of planners in local Chilean administrations shapes DRR within extremely constraining institutional and societal contexts. By combining actor-centred institutionalism (Mayntz & Scharpf, 1995), street-level bureaucracy (Lipsky, 2010) and practice-oriented planning theory (Forester *et al.*, 2023), the Concepción case shows that discretionary action, shaped by five types of individual motivations, has a significant impact on DRR. Rather than merely implementing policy documents negotiated on national and international stages, municipal planners make use of their discretion to create windows of opportunity amid political fluctuations, inadequate legislation, insufficient financial resources, changing risk landscapes, and the influence of private actors. In doing so, they strive to mitigate threats to their communities in whatever ways available to them. In this sense, the study highlights that, especially in less established planning systems, planning outcomes are shaped less by formal strategies than by the motivated actions of those working at the frontline.

Beyond the Chilean case, these insights suggest that meaningful DRR, as well as the achievement of other planning goals, depend not only on changing structures and policies but also on recognising and empowering the people who shape, navigate, and bring these efforts to life on the ground. Focusing on the perspectives of those involved in implementation helps identify structural bottlenecks, effective leverage points and core professional competencies, informing more context-sensitive institutional reform and planning education.

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ORCID

Larissa Brandenstein http://orcid.org/0009-0006-9124-8176

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