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**Territorial disparities and climate change adaptation:
old and new challenges for decentralisation processes**

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Abstract

The role of decentralisation processes and approaches in addressing climate change at the sub-national level and reducing territorial inequalities has become more critical. Decentralisation processes have been consistently questioned for their mixed experiences and results, especially in developing countries, where these reforms have failed to reduce territorial disparities. In turn, the role of each sub-national level in addressing climate change adaptation has been the subject of ongoing debate, as well as the consequences of decentralisation in weakening the capacity of states to implement systemic changes. Therefore, this paper was motivated by an interest in understanding how decentralisation processes in the context of developing countries could contribute to improving sub-national planning and response capacities to address disparities between cities and regions and the challenges of inclusive, equitable and coordinated climate change adaptation at all scales. The aim was to explore the frameworks and mechanisms through which decentralisation processes can address issues related to territorial disparities and climate change adaptation at the subnational level in the Latin American context.

A first conclusion is that reframing the understanding of adaptive actions as the outcome of an essentially political process in terms of objectives, planning, implementation, and measurement of results implies, in turn, addressing decentralisation as a political instrument and not only as a goal in itself. Thus, decentralisation processes can be seen as an interconnector between sub-national climate governance and adaptation challenges and territorial disparities, rather than as a parallel process or a challenge in itself. A second conclusion concerns the flexibilization of policy mechanisms and instruments beyond the rigid institutional reforms in which the success of these processes is analysed, implemented, and evaluated, to incorporate the diversity of local, decentralised, and polycentric approaches, as well as flexible and soft planning mechanisms that incorporate various forms of scaling, participation, and accountability.

In view of the above, this paper argues that the challenges of inclusive, equitable and coordinated climate change adaptation can contribute to deepening and rethinking decentralisation processes in Latin American countries -and in developing countries- in terms of strengthening capacities for planning and adaptive response at the sub-national level and reducing territorial disparity gaps. Finally, a conceptual framework is proposed as a starting point for future research to address the new challenges of decentralisation processes in relation to territorial disparities, climate change adaptation and the incorporation of flexible adaptive planning and governance mechanisms.

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Declaration

No portion of the work referred to in the dissertation has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning

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Chapter 1. Introduction

A growing body of evidence highlights the relevance of sub-national levels (including local and regional levels) both in generating inclusive climate change governance and in understanding contexts and implementing effective responses (IPCC, 2014). This relevance has been argued mainly in view of the role that cities and regions have played in the innovation of policies and measures as well as in the articulation of multi-actors in networks to address the climate change challenges, despite the limited progress of international agenda (Betsill and Bulkeley, 2007; Knieling, 2016; Melica *et al.*, 2018). Although the trend in efforts has been more towards mitigation measures, in recent years, the concern to incorporate adaptation measures has increased as the impacts of severe weather associated with climate change is having unequal consequences on populations and territories (Bulkeley, 2010; Bulkeley, Edwards and Fuller, 2014). However, this growing dynamic towards sub-national climate change governance is often constrained by the lack of policy and economic capacities, severe institutional barriers, territorial disparities and inequalities, especially in context of high vulnerability to climate change impacts (Bulkeley and Castán Broto, 2013; Knieling, 2016).

In view of the above, the role of decentralisation processes and approaches in addressing climate change at the sub-national level, as well as the degrees of decentralisation of institutions and public policies for the reduction of territorial inequalities has become more critical (UN-Habitat, 2014; Rumbach, 2016; Pike, Rodríguez-Pose and Tomaney, 2017; Fischer, 2021). However, decentralisation processes have different characteristics depending on the degree of powers and capacities transferred to sub-national levels, and on the institutional, economic, political and cultural contexts of each country (Tomaney *et al.*, 2011). They also have performed differently in addressing territorial disparities depending on countries' level of development, existing territorial inequalities and the strength of redistributive fiscal policies (Rodríguez-Pose and Ezcurra, 2010). In developing countries, sub-national disparities have increased and have even resulted in social political conflicts or in backflow of reforms to central level (Carrión, 2007; European Commission, 2016; Bojanic, 2018; Arestis and Phelps, 2019). Similarly, the role of each level to address climate change adaptation has been under continuous debate as well as the consequences of decentralisation in weakening the capacity of states to implement systemic change (Shi *et al.*, 2016; Dolšak and Prakash, 2018). Thus, the complexity of the relationship between territorial disparities, decentralisation and sub-national capacities for the design and

implementation of climate change initiatives, require exploring the circumstances, approaches, and practices, which produce favourable outcomes.

Research in these subjects has produced a series of theoretical frameworks and recommendations to deal with this relationship, and even evidence of the tensions between proposed goals and conditions to address them. A growing consensus establishes that climate governance requires necessarily multi-level processes and multi-actor networks through coordination mechanisms and capacities for the implementation of measures (Bulkeley, 2010) highlighting the role of cities and regions in “cross-sectoral cooperation and integration on horizontal level” (Knieling, 2016). On the other hand, climate change adaptation decisions and actions have an explicitly political character, being influenced by patterns of vulnerability and power relations between those who plan and implement these processes, those who define priorities at each scale, and those who are the beneficiaries of adaptation (Eriksen, Nightingale and Eakin, 2015). In this dynamic between the expected outcomes of climate change governance and the complex relationships between existing political and institutional patterns, decentralisation processes have played a relevant role on establishing the degree of competences, resources, and policy-making capacities required at sub-national levels.

What actions and at what level are most appropriate for effective adaptation to climate change? And how can different actors and planning and decision-making processes be coordinated across levels? The debate around these questions has been conditioned by the strong roots in the context of both governance structures and the distribution of power between levels, as well as climate change adaptation issues. This scenario has created complexity in the potential for interventions and uncertainty in outcomes, which calls for continuous exploration of experiences, but also of synergies, interrelationships and tensions between approaches and priorities. Having the above in mind, this dissertation aims to explore those frameworks and instruments through which decentralisation processes can address issues related to territorial disparities and climate change adaptation at sub-national levels in developing countries contexts. The purpose of this dissertation is to comprehend how decentralisation processes in the context of developing countries could contribute to improve planning and response capacities at sub-national levels to address inequalities between cities and regions and the challenges of inclusive, equitable and coordinated climate change adaptation across scales. To these effects, this paper reviews adaptive approaches that promote local and decentralised governance, explores decentralisation processes, policies, and instruments in long-standing processes in Latin America, and contrasts them with the current decentralisation process in Chile. In the latter country, the decentralisation

process initiated in the mid-2010s has coincided in parallel with the development of policy, regulatory and operational frameworks to comply with international climate change commitments. The research argues that the challenges of inclusive, equitable and coordinated climate change adaptation can contribute to deepening and rethinking decentralisation processes around both strengthening capacities for adaptive planning and response at the sub-national level and reducing territorial disparity gaps.

In addition to this introductory chapter, this dissertation is structured in 5 chapters. The second chapter consists of a literature review of the three main areas addressed by this work: territorial inequalities between cities and regions, the dimensions and scope of decentralisation processes, and the challenges of climate change adaptation at the sub-national level. The third chapter describes the methodology used to address the objective of this work. It incorporates the conceptual framework that delimits the scope of this research, defines the objectives and the guiding research questions. This is followed by a description of the methods and techniques used in data collection and analysis and, finally, the limitations of this work.

The results are presented in chapter four. The first part shows the results of the analysis of decentralised approaches that promote the distribution of planning and adaptive response functions at sub-national levels. The second part presents the findings on the comparison between cases of long-standing decentralisation processes in Latin America, policies and mechanism related to territorial development, planning, climate governance. The third part describes the results of the analysis of the current decentralisation process in Chile and its relation to climate change adaptation and territorial disparities.

Chapter five discusses the main findings and conclusions in relation to the proposed conceptual framework. It highlights opportunities and obstacles in the implementation of decentralisation policies and mechanisms to address the challenges of sub-national adaptation and territorial disparities. In addition, aspects of applicability in the Latin American context are analysed, and specifically, policy recommendations for the current decentralisation process in Chile. Finally, chapter six summarizes the main results of the research, the answers to the research questions posed, policy recommendations and possible next steps for further research.

Chapter 2. Literature review

This chapter consists of an overview of the relevant literature on the three main areas addressed in this dissertation: territorial inequalities between sub-nations levels, the framing and policies implications of climate change adaptation, and the dimensions and outcomes of decentralisation processes. The purpose of this general review is to identify research that has addressed the scope and complexities arising from the interrelationships of these three areas.

2.1. Territorial inequalities between levels: contexts and consequences

According to the IPCC (2014), the relevance of territorial inequality in climate change is expressed on both sides; the risks of impacts are unevenly distributed with the most vulnerable populations and communities being the most affected and, the effectiveness of responses depends on actions across multiple scales but the capacities to implement them vary by city and region. The present section therefore addresses the main characteristics of territorial inequalities in order to get an overview of contexts and implications for climate change adaptation and decentralisation processes.

In the last decade, the territorial dimension of inequality has had a wide recognition as a critical driver both in the social and economic consequences and on the success of the responses (Sellers *et al.*, 2017). These concerns have been placed on international policy agendas against a backdrop of growing disparities and socio-economic segregation in high- and low-income countries (Van Ham *et al.*, 2021), as well as the consequences on social cohesion and political stability expressed in the emergence of diverse social protests under the claim of "places left behind" (Widuto, 2019). This scenario has given way to the promotion of "place-based approaches" into international agendas¹ in order to identify the specific context of territorial issues and promote collective action at multiple scales (ECLAC, 2017), as well as new approaches and policies such as "equal opportunities" or "social cohesion" to promote the reduction of regional disparities (ECLAC, 2017; Widuto, 2019). These perspectives also seek to go beyond the measurements of income or economic performance in which territorial inequalities are commonly defined, analysed and, therefore, responded to (Mehlbye *et al.*, 2019).

In overall, territorial inequalities refer to the spatial dimension in which social, economic, politics and environmental inequalities are expressed and reproduced, being often possible to

¹ Such as the 2030 Agenda for Sustainable Development, the New Urban Agenda Habitat III, and the Sendai Framework for Disaster Risk Reduction 2015-2030, among others.

observe that these inequalities are interconnected and their drivers are long-term and structural (ECLAC, 2010). This is explained by the fact that each territory plays a key role “in the depth and reproduction in different areas of social development” (ECLAC, 2016), so that “disadvantaged places produce disadvantaged inhabitants” (Mehlbye *et al.*, 2019), who, in the context of climate change impacts, are exposed to different forms of vulnerability (Adger, 2006). However, as spatial dimension, these territorial inequalities can be expressed within or between jurisdictional levels, whether local -e.g. municipalities, cities, communes, etc- or regional -e.g. states, provinces, regions, etc.- (ECLAC, 2017). Thus, the interrelationships between vulnerability to climate change and inequalities within each level can be manifested, for example, through low-income social groups who are unable to choose where to live and are therefore relegated to high-risk areas without sufficient resources and support to prepare for or recover from a disaster (Shi *et al.*, 2016). Or the lack of urban infrastructure as a condition for local development and increased vulnerability to disasters, especially in informal areas (UN-Habitat, 2014). These consequences also are compounded by the lack of access to benefits and political, social and economic opportunities, or these places can also be a source of discrimination based on gender, race or religion (Adger *et al.*, 2013; Knieling, 2016).

On the other hand, territorial inequalities between levels -also referred to as territorial disparities- tend to have a comparative focus on the processes and interrelationships that shape their development dynamics (ECLAC, 2010). Although the meaning and scope of local and regional levels may vary by country, there are distinctive characteristics in terms of size, scale and “systems of government and governance according to the degrees and forms of decentralisation of authority, responsibilities and resources” (Pike, Rodríguez-Pose and Tomaney, 2017). Also, jurisdictions at the same level may show different degrees of inequality between them as a consequence of the different dynamics between structural, historical, endogenous and productive factors (ECLAC, 2015b). In the context of climate change, these inequalities are expressed as significant barriers to adaptation in terms of financial resources, institutional and policy competencies, and human and technical capacities, among others, which result in widening disparities and development gaps between central and wealthier cities and regions, and secondary or peripheral (Termeer *et al.*, 2011; Carmin, Anguelovski and Roberts, 2012; Shi *et al.*, 2016). However, research in urban studies suggests that both levels are connected as growing levels of socio-economic segregation, environmental degradation and climate change impacts are a key factor in generating mobility flows beyond the city and metropolitan scale, leading to substantial changes in large territorial areas and also incubating inequalities inter-regional (UN-Habitat, 2014; Sellers *et al.*, 2017; Van Ham *et al.*, 2021), and even consequences at trans-

national level (Bastia, 2018). The consequences of this processes has led to the need to incorporate multi-level approaches to address territorial development (ECLAC, 2017) as well the regional level for the analysis of urban inequalities (Van Ham *et al.*, 2021). Considering the above, the present research focuses on addressing inequalities or disparities between local levels and regions.

Latin America is a particular concern as the region with the highest rates of territorial inequalities and regional disparities in the world (UN-Habitat, 2014; Tirado-Fabregat, Badia-Miró and Willebald, 2020). ECLAC (2015b) refers to this scenario as a result of a centre-periphery relationship between spatial productive structures differentiated by their degree of specialisation and heterogeneity. The high rates of population concentration coincide with high rates of geographical concentration of production, mainly in some capital cities regions such as Buenos Aires, Lima and Santiago accounting for around 50% of national production, while others such as Sao Paulo, Bogota and México Distrito Federal around 30% of national production (Llungo Ortiz, 2018). Furthermore, Jordan, Riffo and Prado (2017) points out that these centre-periphery patterns have impacted also on the urban-rural relationship, as well as within metropolitan areas and between urban centres, resulting in high disparities expressed in the fact that eight countries in Latin America have Gini coefficient differences of more than 45% between the most equal and the most unequal city. In turn, in 2010 about 90% of the local levels had less than 50,000 inhabitants, most of them with considerable financial limitations and restrictions on human and technical resources to carry out their respective competences (Rosales, 2012). In addition, the lack of social legitimacy on public institutions is considered a wicked problem in Latin, particularly affecting governance capacities at the sub-national levels (Jordán, Riffo and Prado, 2017). Hence, these constraints have raised concerns about the effectiveness of decentralisation in policy-making, competencies - in terms of the power of each level to exercise governance - and resources as key factors in the differences between cities and regions in addressing inequalities in Latin America (UN-Habitat, 2014).

Another particular concern is about path-dependence of inequalities in the region. After analysing the historical trend of disparities in Latin American, Tirado-Fabregat, Badia-Miró and Willebald (2020) demonstrated that causal factors and trajectory of do not correspond to patterns of an early stage towards development as has been suggested by some international organisations. On the contrary, these authors point out that territorial inequalities in Latin America could continue to worsen over time, conditioned by new technological changes, marked patterns of specialisation in commodity exports, and the lack of public policies for both welfare

and development and for the promotion and growth of production in disadvantaged regions. Indeed, Reyer et al. (2017) notes that these concerned projections could be exacerbated by the consequences of climate change in this region, where impacts are expected to accentuate pre-existing vulnerabilities and at the same time generate new conditions of vulnerability.

The complex scenario about territorial disparities put into context the growing concern of rethinking the frameworks that shape the planning and implementation of policies that link development and climate change response at subnational levels especially those related to adaptive measures as location- and context-specific (Knieling, 2016). Having the above in mind, the next section discusses the framing and policy implications of climate change adaptation for planning and implementation of responses at sub-national levels.

2.2. The framing and policy implications of climate change adaptation

The IPCC 5th Report (2014) put emphasis on characteristics that shape the effectiveness of adaptation, standing out limits to their effectiveness in the highest impact scenarios, their dependence on enabling factors -such as institutional, technological, beliefs, infrastructure, livelihoods, etc.- and the complementarity between policies and measures at local and sub-national levels. However, different approaches to understanding adaptation coexist, often expressed in tensions between those focused on technical and management factors, and those focused on the outcomes of socio-political processes (Eriksen, Nightingale and Eakin, 2015; Dolšak and Prakash, 2018). In this regard, Eriksen, Nightingale and Eakin (2015) stress that even these tensions evidence different processes and actors driving and contesting adaptation pathways and proposals, so that political and power relationships determine "which view is considered more important at different scales and for different groups" or "who is expected to adapt to climate change and who should plan and guide those processes". This author joins a growing trend that promotes the re-framing of adaptation policy, practice, and analysis around the incorporation of diverse social, political, and cultural dynamics, as well as a change of strategies.

This context brings back to the fore the old questions that shape the meaning and framing of adaptation; Adaptation to what?, Who or what adapts?, How does adaptation occur?, What is good adaptation? (Smit *et al.*, 2000). However, the outcome of these questions has shaped an overwhelming number of conceptual frameworks, strategies and approaches that may show interdependencies or tensions according to the context and place in which they are developed (Agrawal *et al.*, 2012; Vogel and Henstra, 2015). According to Fünfgeld and McEvoy (2011), a

first difficulty in understanding the framing of adaptation in local contexts lies in the different meanings attributed to the framing element, which are often taken for granted but rarely coincide with each other. **Table 1** presents a scheme proposed by these authors to distinguish the most common framing elements in adaptation policy and practice:

Table 1: Scheme of framing elements in adaptation policy and practice

Type of framing	Framing Element	Purpose in the context of adaptation
Conceptual Abstract Guidance  Practical Technical Instruction	Policy	To set out legally binding, verifiable adaptation goals and priorities and guide implementation
	Strategy	To give broad direction on objectives and priorities for adaptation
	Approach	To give broad direction to an adaptation planning process, underpinned by selected concepts (e.g. capacity-building approach, vulnerability approach, risk management)
	Operational Framework	To operationalise adaptation policy; to provide process guidance for adaptation
	Method	To provide technical, step-by-step guidance following a particular assessment process (e.g. vulnerability assessment, climate risk assessment, climate impact assessment)

Source: Adapted from Fünfgeld and McEvoy (2011)

The foregoing also helps to frame the debate on the limits of adaptive capacities and the adaptive strategies in long-term. These concepts are argued by both the increasing magnitude of climate change impacts and the inability to make progress on incremental adaptive measures represent a tipping point for adaptation strategies, requiring responses that involve long-term transformational changes within and between the systems that shape current modes of development (Lonsdale, Pringle and Turner, 2015). In other words, the adaptive limits are expressed when impact risks become intolerable or unmanageable for individuals, communities and governments, and therefore their consequences could only be addressed through transformational changes (Dow *et al.*, 2013). Revi *et al.* (2014) add that the transformational perspective on adaptation seeks to highlight the need for new policy options through "non-linear changes" in the systems that are causing the losses and damage, or also social and ecological environments with which they interact, and ethical and procedural notions of decision-making (Pelling, O'Brien and Matyas, 2015). Based on these perspectives, adaptation actions consider physical, institutional or political measures, but within the framework of new approaches to the relationship with the environment and societal behaviour (Knieling, 2016), including

incorporating justice and equity approaches in the design and implementation of adaptive responses at the local level as a first step towards transformative challenges (Shi *et al.*, 2016).

Transformational perspectives have been especially concerned by evidence of adaptive policies and practices that instead of reducing vulnerabilities, result in increasing, reinforcing or creating sources of vulnerability, also generally referred to as "maladaptive" interventions (Magnan *et al.*, 2016). In a recent research, Eriksen *et al.* (2021) notes that maladaptive interventions have mainly been consequences of the lack of understanding of vulnerability and development contexts, unequal participation in the design, implementation, and assessment of interventions, and the underestimation of the multi-scalar processes that drive vulnerability. However, even climate justice approaches have tended to focus more on responsibilities and rights between countries at the international level than on recognising the sub-national processes that generate and distribute vulnerabilities (Bulkeley, Edwards and Fuller, 2014). For example, the uneven distribution of adaptive capacity at the local level may result in areas of higher exposure and vulnerability, widening the development gap, or adaptation actions may have negative spill-over effects on neighbouring localities or even have repercussions at higher territorial scales (Shi *et al.*, 2016). Hence an increasing critical literature have called for the incorporation of pro-poor perspectives into adaptation goals and targets as a priority (Agrawal *et al.*, 2012), as well as other decentralized approaches that promote the role of local actors and institutions in effective and inclusive adaptive planning (Knieling, 2016).

As result of this concerns, it has significantly growth the number of adaptive plans and strategies, but nevertheless the implementation of actions has an important and uneven gap (IPCC, 2014). Thus, the debate on adaptation policy strategies and mechanisms have mainly focused on prioritising sub-national governance arrangements, planning and development instruments that shape to adaptative implementation and address the underlying drivers of inequality and vulnerability (Knieling, 2016). From this perspective, the recognition of adaptive capacities at sub-national levels has been underpinned by the favourable conditions for understanding specific contexts, scaling up adaptation measures, responding to the demands of communities and civil society, just as contribute to the inclusion of a diversity of actors in climate governance (Agrawal, 2008; IPCC, 2014). But also institutional constraints has been pointed out mainly related to human and financial capacities, lack of multi-level political and administrative coordination and cooperation, and the tension between long- and short-term political agendas in decision making (Knieling, 2016). Research has shown that constraints across scales can have diverse outcomes, whether as tensions between national and local levels of government in

planning and financing adaptation measures (Dolšak and Prakash, 2018), or emerging in collaborative dynamics such as the role played by regional levels especially in support of smaller local governments (Melica *et al.*, 2018). Even in context of institutional and social constraints, some local governments in Latin America have fostered alternative solutions which have subsequently been scaled up to regional and national levels (UN-Habitat, 2014).

2.3. Dimensions and result of decentralisation processes

The previous sections have addressed the complex determinants of territorial inequality and climate change adaptation, their close relationship in terms of policy and institutional constraints at the sub-national level, as well as the confluence with perspectives that promote the local levels either in effective and inclusive governance processes, or multilevel approaches for planning and integrated responses. Decentralisation processes play a central role in each country's sub-national governance structures and in the capacities of each level to address their respective -and converging- development and adaptation challenges (Rumbach, 2016; Pike, Rodríguez-Pose and Tomaney, 2017; Fischer, 2021). Nevertheless, decentralisation processes have had different outcomes depending on country contexts and the characteristics of the reforms carried out, which are discussed in this section.

The growing trend towards decentralisation dates back to the mid-1970s through the adoption of diverse state reform processes aimed at the devolution of different degrees of responsibilities, resources and/or authorities from the central level to sub-national levels (Rodríguez-Pose and Gill, 2004). This so-called “decentralisation wave” has had a wide repercussion around the world, encompassing both developed and developing countries, involving countries with unitary and federal systems, but through different trajectories depending on political, historical, geographical and cultural factors of each country (Carrión, 2004; European Commission, 2016). The political rationale for these processes has evolved over time from cultural and identity preservation to social and economic concerns in the face of the failures of centralised states, and to improvements in the conditions for differentiation and competitiveness of cities and regions into the global economy (Rodríguez-Pose and Ezcurra, 2010). Whereas in the last decade, attention has focused more on the political drivers of decentralisation reforms, highlighting the role of regional and local levels as agents of development, and of governance capacities at the sub-national level through boosting responsiveness and accountability (Faguet and Pöschl, 2015; European Commission, 2016). This trend shows a confluence with recent approaches in international agendas regarding the reduction of territorial inequalities, where the political

drivers of sub-national levels as agents of development gain relevance rather than just reforms to the structure of the state.

Different meanings and terms are attributed to them to refer to the changes or reforms involved in the various balances of power and relations between central and sub-national levels, often leading to conceptual confusion and a lack of understanding of the particularities of these processes in each country (Tomaney *et al.*, 2011; Pike, Rodríguez-Pose and Tomaney, 2017). **Table 2** shows the concepts used to refer to the types and degrees of decentralisation: the main types of decentralisation referred to in the literature correspond to political, administrative and fiscal decentralisation, on the another, the terms deconcentration, delegation and devolution correspond to types of administrative decentralisation, which are differentiated by the degree of autonomy transferred (Tomaney *et al.*, 2011).

Table 2: Types and degrees of decentralisation

Fiscal	Related to autonomy over tax, spending or public finances ceded by central government to sub-national levels
Political	Related to political functions of government and governance undertaken at the sub-national level
Administrative	Related to administrative functions and responsibilities undertaken at the sub-national level
○ Deconcentration	Dispersion of central government functions and responsibilities to sub-national field offices; powers transferred to lower-level actors who are accountable to their superiors in a hierarchy.
○ Delegation	Transfer of policy responsibility to local government or semi-autonomous organisations that are not controlled by the central government but remain accountable to it
○ Devolution	Central government allows quasi-autonomous local units of government to exercise power and control over the transferred policy

Source: Adapted from Pike, Rodríguez-Pose and Tomaney (2017)

As UN-Habitat (2014) argues, the relevance of identifying these processes and their outcomes is related to the fact that the degree of decentralisation in policy-making, competencies -in terms of the power each level has to exercise governance- and resources are expressed as a key factor in the differences in capacities between cities and regions to address inequalities. However, the evidence from previous processes has had different outcomes, many of them inconclusive regarding the contexts, types of reforms, timing, and mechanisms to be implemented to meet

these challenges (Rodríguez-Pose and Gill, 2004; Carrión, 2007; Rodríguez-Pose and Ezcurra, 2010; Fischer, 2021).

In the quest for a deeper understanding of the effects of decentralisation, research has analysed the relationship between their types and regional disparities. The work carried out by Rodríguez-Pose and Ezcurra (2010) is categorical in pointing out that the results of decentralisation processes have depended on the level of development of the countries, the level of existing territorial inequalities and the type of redistributive fiscal policies. These authors demonstrated that while high-income countries showed a favourable relationship between decentralisation processes and a reduction of regional disparities, on the contrary, in middle- and low-income countries, there is evidence of an increase in regional inequalities following fiscal decentralisation reforms despite the positive effects of political decentralisation (Bojanic, 2018). In developing countries, decentralisation processes entail costs -political, fiscal, and administrative- and opportunities that are more feasible to address or capitalise on by regions with better capabilities and economic performance, while central fiscal systems are not strong enough to compensate for these differences (Rodríguez-Pose and Gill, 2004; Tomaney *et al.*, 2011). On the contrary, large public and private investments tend to be concentrated in central regions to the detriment of peripheral regions, which is aggravated by economic forces that favour agglomeration logic in order to improve their competitive conditions (Rodríguez-Pose and Gill, 2004). In Latin America, for example, there is evidence of fiscal decentralisation that has deepened pre-existing disparities between central regions with high agglomeration and peripheral regions, while revenue decentralisation has had a negative impact on economic growth (Bojanic, 2018). Furthermore, decentralisation in this region has its own characteristics, with processes that emerged as a response to armed conflicts and post-dictatorship scenarios, a tendency towards the municipal level, institutions with high resistance to change, processes marked by strong presidentialism and which have presented ebbs and flows, long stagnations or socio-political conflicts (Carrión, 2004, 2007; ECLAC, 2012).

Linking decentralisation processes to climate change adaptation is more recent and has been promoted mainly to understand the ways in which local and decentralised institutions can effectively act in climate governance and interact in a coordinated way with higher levels (Agrawal, 2008). In turn, research focused on climate planning points to the relevance of decentralisation in local institutional response capacities through the transfer of substantive discretionary powers -financial resources, administrative support, and technical inputs- and the generation of effective public accountability mechanisms (Fischer, 2021). In order to obtain

evidence, research based on experiences of decentralisation of natural resource governance and development has found a wide diversity of outcomes, degrees of decentralisation, powers and scope of decision-making, but a coincidence in the generation of linkage mechanisms between local and central levels (Agrawal *et al.*, 2012). This has led to the growing relevance of incorporating multi-level climate governance mechanisms that favour the integration of responses, collaboration between levels and facilitate the incorporation of new actors and innovative solutions (Betsill and Bulkeley, 2006; Vogel, 2015; Jänicke, 2017).

However, as mentioned above, reforms in these areas have sometimes exacerbated inequality and social marginalisation, limited citizen participation and resulted in a reintegration of local governance into national processes (Agrawal *et al.*, 2012; Fischer, 2021). Or from another point of view, there are criticisms that decentralisation processes hinder the capacity of states to implement systemic changes in local planning (Shi *et al.*, 2016). This suggests that there is still no clear consensus on the appropriate contexts for implementing decentralisation reforms, nor on their effects on the challenges of adapting to climate change and reducing territorial inequalities. However, this literature review shows that the reduction of territorial disparities has been a driver for decentralisation processes, particularly in the context of developing countries, and where the challenges of adaptive capacities of sub-national levels to climate change have been incorporated in the last decade. Or even recent challenges to decentralisation emerge as a consequence of the COVID-19 pandemic at the sub-national level (UCLG-Metropolis-LSECities, 2020). Thus, research on decentralisation processes presents old and new drivers and challenges that require the continued exploration of circumstances, approaches, and practices in which favourable outcomes can be produced.

Chapter 3. Methodology

This chapter discusses the conceptual and methodological frameworks that shape this dissertation. Regarding the conceptual framework, definitions are presented that frame the scope of the research in terms of inequalities between cities and regions, adaptation to climate change at sub-national levels and decentralisation processes. The methodology includes the research aim and the specific objectives, each one proposed sequentially so that allow shaping the characteristics, contexts and uses of the frameworks and instruments of decentralisation processes.

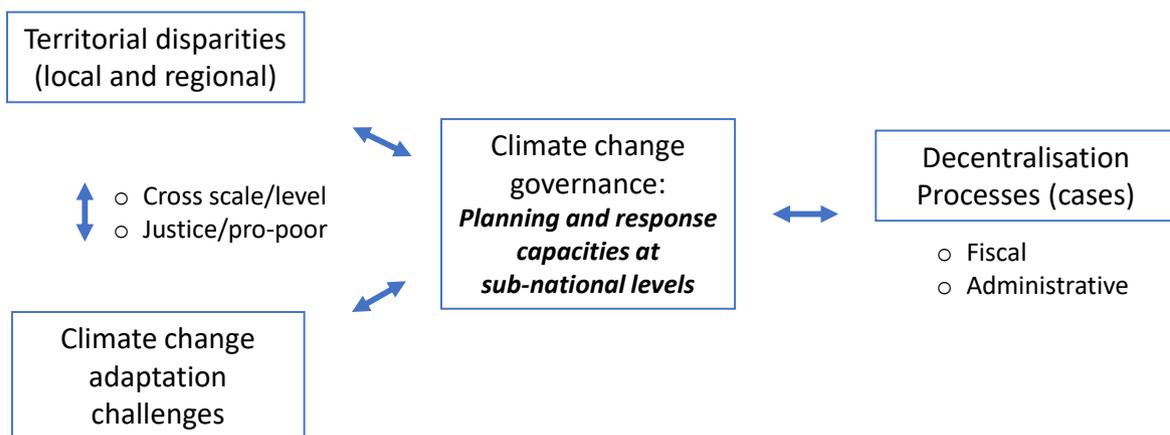
3.1. Conceptual framework

The triple scenario of inequalities between regions and cities -or disparities at sub-national levels-, the exacerbation of climate change impacts, and the promotion of sub-national levels as better responders, have put into context the growing concern to rethink the frameworks and mechanism that shape development policy planning and adaptation to sub-national climate change. Despite the opposing and controversial outcomes of decentralisation processes, they have played -and will continue to play as a growing trend- a central role in shaping the sub-national governance structures of each country and the capacities of each level to address the respective -and converging- development and adaptation challenges, especially in developing countries. Thus, there remains a need for further exploration of the characteristics and outcomes of decentralisation processes in relation to new and pending challenges linking territorial inequality and climate change adaptation, especially the pathways, mechanisms, and instruments through which these processes are implemented with an emphasis on climate justice.

In this context, questions have arisen: what action at what level is most appropriate for effective climate change adaptation? And, how can the various actors and processes of planning and decision-making be coordinated across levels? (Vogel, 2015; Dolšak and Prakash, 2018; Fischer, 2021). This debate has clearly been conditioned by the strong context-specific roots of both governance structures and the distribution of power between levels, as well as climate change adaptation issues (Agrawal *et al.*, 2012). But also the differences between territorial policies involving four mega-policies, such as territorial planning, decentralisation, the promotion of territorial economic growth and the promotion of the social development of territories (Boisier, 2014). Hence, this scenario means a complexity in the potential of interventions and uncertainty in the outcomes, requiring a continuous exploration of experiences, but also of synergies, interrelationships and tensions between approaches and priorities (Knieling, 2016).

Drawing on the work of Agrawal et al. (2012), Shi et al. (2016), Knieling (2016), and Fischer (2021), the exploration of decentralisation processes is based on the identification and analysis of conceptual frameworks and decentralised approaches, and policies and mechanism cases related to planning and implementing adaptive actions. The foregoing in the context of administrative and technical competencies at each scale, decentralisation mechanisms of financial resources, policies, instruments to address disparate institutional capacities between cities and regions, as well as those aimed at capacities for coordination and cooperation between levels. *Figure 1* shows the interaction between the variables mentioned in the conceptual framework of this dissertation. In order to contextualise and characterise decentralisation processes, reference will be made to the research results of Rodríguez-Pose and Ezcurra (2010) and (Pike, Rodríguez-Pose and Tomaney (2017), who point out that the outcomes of decentralisation processes depend on the level of development of the countries, the level of existing territorial inequalities and the type of redistributive fiscal policies.

Figure 1: Outline of the conceptual framework of the dissertation



Given the high context and location dependence of these analyses the focus was on cases from Latin America as the region with the highest rates of income inequality and regional disparities in the world, as well as where the impact of climate change is expected to be greatest (Bárcena *et al.*, 2020). Although the decentralisation processes in Latin America have their own characteristics and complexities, positive experiences in planning and development have been highlighted, such as the cases of Colombia and Brazil, and others with different drawbacks in their trajectories that have implied socio-political conflicts and refluxes (Carrión, 2007). In addition, there are decentralisation processes that have achieved a recent political momentum

and deepening of their reforms, such as the case of Chile, which presents a comparative opportunity to long-standing cases with respect to the policies and mechanisms used.

3.2. Research aim

This dissertation aims to explore frameworks and mechanisms through which decentralisation processes can address issues related to territorial disparities and climate change adaptation at sub-national levels in Latin American context.

The purpose of this dissertation is to comprehend how decentralisation processes in the context of developing countries could contribute to improving planning and response capacities at sub-national levels to address inequalities between cities and regions and the challenges of inclusive, equitable and coordinated climate change adaptation across scales.

3.3. Research objectives

The following are the research objectives for the achievement of the research aim:

- a) To identify and compare approaches and mechanisms that shape the roles and tensions between levels to address sub-national adaptive governance challenges.
- b) To compare decentralisation processes, policies and mechanisms that have addressed territorial disparities and influenced adaptive planning and response capacities in Latin America.
- c) Analyse whether current decentralisation and climate making-policy processes in Chile are addressing issues related to unequal sub-national capacities for climate change adaptation.

3.4. Research questions

The specific objectives set out above seek to address the following questions:

- a) What has been the context of the debate on the distribution of competencies and capacities at sub-national levels for climate change adaptation? Through what approaches and mechanisms can adaptive capacities at sub-national levels be addressed? What are the main tensions between approaches to adaptation? How do they relate to adaptive justice challenges and coordination across levels?

- b) What are the characteristics of Latin American countries in terms of the depth and performance of decentralisation processes in addressing territorial disparities? What policies and mechanisms have been implemented by the most advanced countries in decentralisation to address territorial development and sub-national climate governance? In the cases analysed, what differences and similarities can be identified? What kind of policies or mechanisms have addressed subnational disparities?
- c) Considering the current processes of decentralisation and climate policy making in Chile, are these processes addressing the issues associated with the unequal capacities of cities and regions to adapt to climate change? What kind of policies, regulations and mechanisms are addressing these challenges? What are their characteristics? What opportunities and limitations or obstacles have been identified?

3.5. Data collection and analysis

This dissertation is mainly based on the application of qualitative methods to address the three specific objectives, while a descriptive-quantitative method is used exclusively to characterise the cases of decentralisation and compare the policies and instruments implemented. Regarding the origin of the data, mainly secondary information was used, but complemented with primary information obtained through interviews to address the case proposed in the specific objective number three.

The following is a specific description of the analysis methods used for each specific objective and the respective data source:

- The first objective is addressed through two steps. Firstly, the identification and selection of approaches proposed by the climate change adaptation literature that address the sub-national or multi-level approach to planning and implementing adaptive actions. It should be noted that the comparison between approaches is only indicative of the debate on the role that each level or between levels should play in adaptation. Secondly, a comparative analysis was carried out between the selected frameworks, including the adaptive approach(es) used, the competences and/or capacities at each level, the mechanisms promoted, and the constraints identified. For this analysis, secondary information from academic journals and books obtained through the UoM Library, Scopus, WoS, and grey literature from official reports of international agencies, NGOs, think tanks and/or research centres has been used.

- For the second objective, a comparative analysis of long-term decentralisation processes in Latin America has been carried out in order to identify and differentiate, firstly, the depth and performance of these processes, and then the policies and mechanism implemented related to territorial development and planning, and climate governance. To the second point, the selected countries correspond to Colombia (unitary structure) and Brazil (federal structure), both long-standing decentralisation processes in the Latin American context that have implemented political, administrative and fiscal decentralisation reforms, and which have been studied with regard to their impact on territorial inequalities (Carrión, 2007; Llungo Ortiz, 2018). For this objective, the main sources of information have been the reports produced or published by the Economic Commission for Latin America and the Caribbean (ECLAC), such as *Panorama del Desarrollo Territorial en América Latina* 2012, 2015 and 2017, among others, alongside other reports from international organisations such as the German Agency for International Cooperation (GIZ) and UN-Habitat. As a complement, academic literature and books obtained through the UM Library, Scopus, WoS, and grey literature from official reports of NGOs, think tanks and/or research centres have been used.
- The third objective is addressed through a case study of the current decentralisation and climate-making-policy processes in Chile. This case study analyses the interactions between the two processes with respect to frameworks, policies and mechanisms that address the incorporation of sub-national levels in climate governance and the disparate capacities to adapt to climate change. This case study has been based on primary information obtained through three semi-structured interviews with key actors: a) a researcher with expertise in governance and climate change, b) a public sector official at regional level in the area of climate change adaptation, c) a representative of a recognised NGO in the field of climate change. These interviews were complemented with secondary information from academic journals and grey literature from official government reports, NGOs, think tanks and/or research centres.

The case of Chile is relevant to analyse, first, as a unitary country considered highly centralist and unequal at national and sub-national levels, which have limited the capacities for territorial development (Paredes, Iturra and Lufin, 2016; UNDP, 2018). Second, after limited reforms in the 1990s based mainly on the deconcentration of public services (Atienza and Aroca, 2012), the country began a few years ago a process of political and administrative decentralisation. This process still has reforms pending to be legislated and implemented, several of them in permanent

controversy and public debate, such as the fiscal decentralisation reform. (Ferreiro, Arís and Pinto, 2019). Thirdly, Chile's current decentralisation process has coincided with the process of climate policy development and the implementation of plans and regulations for the fulfilment of international commitments, including the "Framework Law on Climate Change" still under discussion in Parliament. The Chilean scenario therefore presents an opportunity to analyse together the processes of decentralisation and the development of policy and operational frameworks in the face of climate change, as well as for comparison with long-standing cases in the region.

Finally, based on the results obtained, the main findings are discussed in order to propose policy recommendations to address subnational disparities and adaptive challenges in the Latin American context, and a better understanding of the factors that condition strategies for strengthening institutional responsiveness at sub-national levels.

3.6. Limitations

This research is exploratory in nature based on theoretical frameworks and case studies selected by this author with the purpose of providing a general reference of the topic of study and not an exhaustive review of the published literature. Therefore, the results of this exploration are situated to the contexts and places provided by the selected case studies, and therefore may not be extrapolated to other cases in Latin America or developing countries outside the region. Similarly, the conceptual and operational frameworks analysed may not be representative of the scope of all frameworks in the published literature on the research topic.

On the other hand, the main source of data for this dissertation has been secondary, with primary information being used only for the purpose of complementing existing information to address specific objective number three. This implies that the results obtained are limited by the availability of information from academic sources, governmental bodies, NGOs, or grey literature in general. Specifically, it became evident that information from governmental bodies is limited in terms of access and/or updating, especially at sub-national levels. In addition, as the literature review publications had suggested, it could be corroborated that the academic literature on the topic under study is recent in terms of empirical research and hypothesis testing that would allow for the robustness of the proposed frameworks.

Chapter 4. Results

4.1. Decentralised approaches and subnational mechanisms: roles and tensions to climate change adaptation.

There are an overwhelming variety of approaches, mechanism, methods and procedures used in the governance of climate adaptation that may show interdependencies or tensions according to the context and place in which they are developed, and therefore can be contrasted with the competencies and capacities of each level to implement them (Vogel and Henstra, 2015; Fischer, 2021; Patterson, 2021). Agrawal (2012) suggest 4 key areas for the articulation of adaptation policies with local institutions:

- a) strengthening local capacities through the transfer of competencies and resources,
- b) decentralisation of adaptation planning and implementation for the empowerment of communities and local governments,
- c) developing mechanisms for information and knowledge transfer between sectors and levels,
- d) strengthening accountability mechanisms between local decision-makers and the community.

The analysis of adaptation approaches and mechanisms that address these key areas has been proposed through the two main trends found in the literature: local approaches and multi-level approaches. It should be noted that this differentiation does not imply that there is incompatibility between the two trends, but rather seeks to address the comparative emphases of each in the field of adaptive planning and institutional response to climate change.

Local approaches for adaptive planning and response capacities.

Local adaptive approaches are widely recognised in the theoretical and practical literature, from various experiences over the last two decades that have been documented. Initially these approaches emphasised adaptive planning towards local governance structures where impacts were taking place, while later justice and pro-poor perspectives have been incorporated in the search for equity and effectiveness of actions and the recognition of local capacities (Fünfgeld and McEvoy, 2011; Nalau, Preston and Maloney, 2015). This evolution has shaped the positioning of community-based adaptation (CBA) approaches, including operational frameworks such as participatory planning approaches and asset-based adaptive planning, among others (Moser *et al.*, 2010; Stein, Moser and Vance, 2018; Fischer, 2021).

Although CBA approaches differ conceptually and practically, in general, it can be defined as a bottom-up, inclusive participatory process, based on the strengths and empowerment of communities, in which adaptation measures are co-produced with communities and incorporate local contexts, perspectives and priorities (Kirkby, Williams and Huq, 2018). However, in practice these approaches face difficulties in implementation and scaling up, such as poor and sporadic funding, diverse local interests and perspectives, lack of collaboration between agencies and local institutions, as well as limited involvement of local governments (Forsyth, 2013; Kirkby, Williams and Huq, 2018). In turn, funding and institutional capacity constraints for local approaches to adaptation are also expressed as disparities between municipalities or cities.

Regarding local finance, research has shown that only a small share of climate finance reaches local levels and does not address vulnerability issues in long-term initiatives (Soanes *et al.*, 2019). Conversely, local evidence shows that decentralised funds, however small, can have a galvanising effect on adaptation responses and those that address the underlying drivers of vulnerability (Dodman, Archer and Satterthwaite, 2019). As such, there is a recent push to redesign climate finance systems by incorporating local approaches that allow for decentralisation of both climate and development finance, reduction of intermediaries, prioritisation of local results, collaboration between levels and incorporation of participatory mechanisms in their processes (Soanes *et al.*, 2017). Equity approaches to financing capacities have also been placed on small and intermediate cities, as the current scenario of limited degrees of political autonomy and technical and economic capacity to address adaptation and vulnerabilities may be exacerbated by the rapid population growth expected in the next decade (Carmin, Anguelovski and Roberts, 2012; Owen, 2020). Therefore, the emphasis of adaptive frameworks is promoted towards the generation of policies and mechanisms for targeting financial resources and technical capacities towards poorer and fast-growing local levels, as well as the generation of collaborative city networks (Shi *et al.*, 2016).

Although the regional level (state, provinces, or other intermediate levels) is often mentioned as part of the local levels, the differentiation of its specific role in supporting local adaptation is considered a key aspect (Pike, Rodríguez-Pose and Tomaney, 2017). Among the limitations of competencies often found at local levels are key areas for adaptive response, such as infrastructure planning (e.g. transport, energy, ecosystems and water), social services (e.g. housing and social assistance), or land-use planning, which are restricted to both urban areas and neighbourhoods, short-term and local economic development priorities (Nalau, Preston and Maloney, 2015; Shi *et al.*, 2016). In these cases, the regional level may be better placed to

acquire these competencies involving a larger scale and longer-term planning scope, as well as to assume a key role in coordinating and initiating local adaptation initiatives and support and compensation measures for municipalities with fewer resources and capacities (Knieling, 2016; Pike, Rodríguez-Pose and Tomaney, 2017; Melica *et al.*, 2018). As will be seen below, a proper distribution of roles and competences between local and regional levels can be crucial for the effectiveness of adaptive governance and the fairness of its outcomes.

As for the mechanisms applied at the local level, these can vary, among others, by type, city size and continent. Through research that collected and analysed the climate change response actions of 96 cities across 6 continents, Patterson (2021) classified them into 5 types; change or new legal frameworks, change or new policies, implementation of instruments, change or new organisations and coordination arrangements. The results showed that in Latin America, the implementation of instruments, the coordination of agreements and the generation or creation of organisations are widely used and differ markedly from the "harder" forms. This may suggest implications regarding a greater limitation of competences and autonomy in decision-making at sub-national levels in that region. In turn, the author suggests that planning is the most widely used response instrument in smaller cities, while as the size of the cities increases, the diversity of mechanisms such as incentives, mainstreaming, coordination policies and role clarification increases. According to the author, this could be evidence of the institutional limitations of small and medium-sized cities with respect to a greater variety of mechanisms. Finally, notwithstanding the cross-cutting trend towards the use of "classical" planning methods based on static objectives and control instruments, flexible and informal adaptation strategies emerge as an alternative for better adjustment to unforeseen and changing conditions, but considering their limitations as regulatory elements in case of disputes (Knieling, 2016).

Multilevel governance approaches, mechanisms, and tensions.

The promotion of climate governance frameworks that involve the interaction of different forms of coordination and constellations of actors has led to the exploration and proposal of a plurality of multi-level approaches. Broadly speaking, the distinction is made on the basis of the types of models put forward by Hooghe and Marks (2003); Type I, which maintains a hierarchical structure based on limited jurisdictional levels and focuses on how competencies and authority are shared between these levels; and Type II, based on a flexible, polycentric design, in which multiple, overlapping and interconnected horizontal spheres of authority are involved in governing particular issues. However, these authors point out that although in practice the two typologies are interrelated, the two models pursue different objectives and imply different

visions of the community. Thus, while the former seeks to promote coherent governance, the latter seeks to preserve the autonomy of the actors involved (Billi, Delgado and Jiménez, 2020). Due to its further theoretical and empirical development in connection with decentralisation processes, the multilevel climate governance approach is discussed in more detail below.

Multilevel climate governance (MCG) has been the main strategic response to the implications of climate action across global multilateral frameworks at the various levels and scales where it is implemented (Jänicke and Quitzow, 2017). Although this framework has been extensively developed theoretically and empirically and used in a variety of thematic areas, there is still insufficient consensus on its scope and explanatory power (Behnke, Broschek and Sonnicksen, 2019). Broadly speaking, the conceptualisation of GCM is explained through two directions of analysis that shape its scope and action; a vertical direction, associated with various jurisdictional or sectoral territorial levels, and a horizontal direction, associated with the diversity of actors at the same level interacting in decision-making on climate action (Corfee-Morlot *et al.*, 2009; Paavola, 2016). Moreover, due to its origins in the field of international politics, the literature on GCMs has focused more on supranational-national relations than on national-subnational ones (Jänicke and Quitzow, 2017), with greater development in the European Union than in the so-called Global South (Fahey and Pralle, 2016; Sapiains *et al.*, 2021). However, recent research promotes the configuration of GCM systems for the Global South as a strategy for incorporating political actors at various scales in the management and resolution of conflicts of interest at the local level, generating possibilities for counterbalancing the high political influence exercised by transnational economic groups (Di Gregorio *et al.*, 2019)

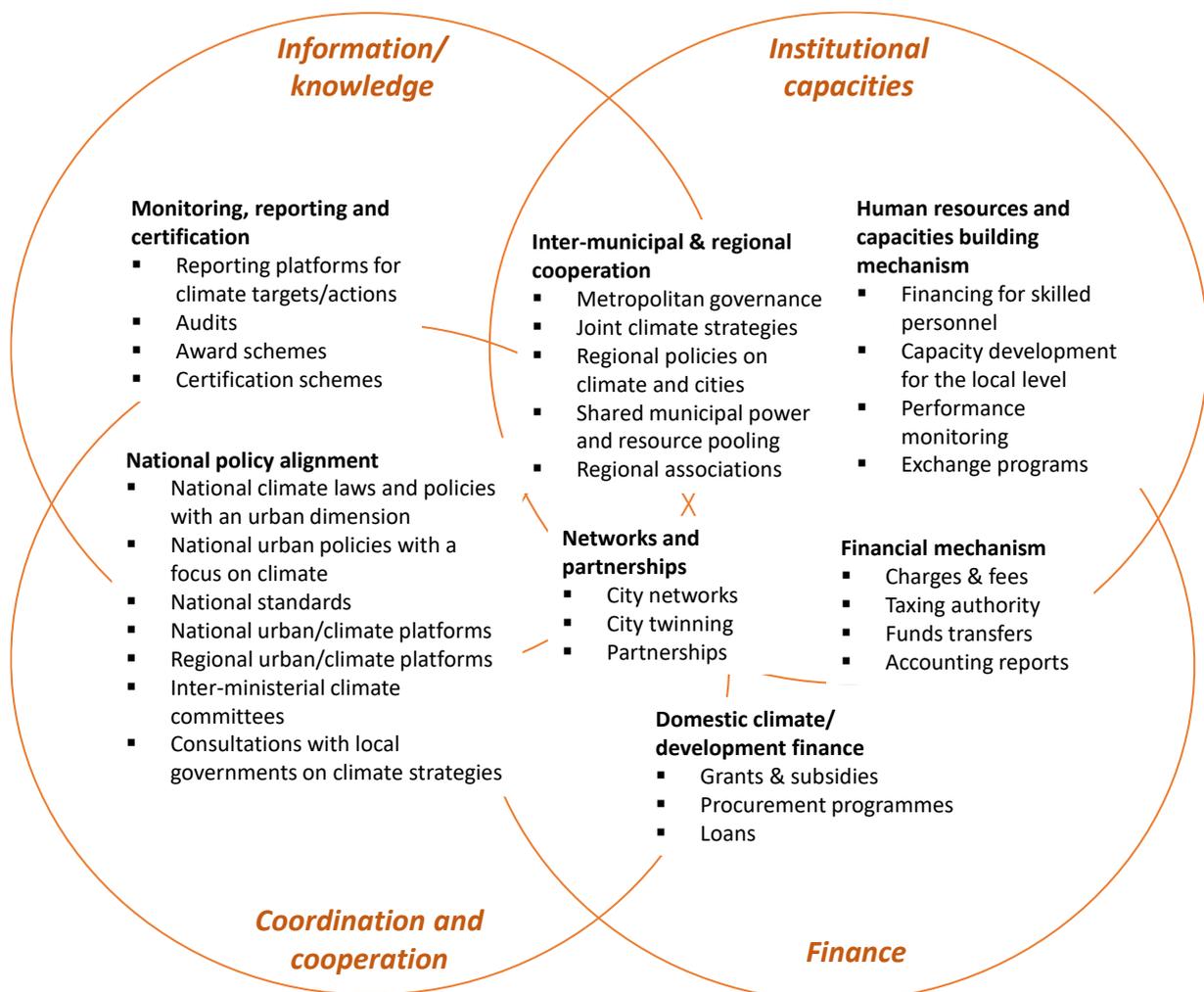
Among the most salient features of the literature on multilevel climate governance are:

- Each level should have specific roles and responsibilities in horizontal and vertical dynamics. For example, in learning, competition and cooperation between networks of cities and provinces in the context of global climate governance platforms (Jänicke, 2017).
- Vertical and horizontal interactions can work in an interactive dynamic of learning and dissemination of collective action and good practice, technical innovation and climate-related policy (Underdal, 2010).
- Solutions can emerge from top-down and bottom-up processes (based on local institutions or collective action) and can build on path dependency at each scale for alternative governance solutions (Paavola, 2016).
- Multi-sectoral forms of governance can be embedded in an interaction between levels and stakeholders around mutual benefits in climate action (Jänicke, 2017).

- From an economic viewpoint, GM solutions can minimise governance costs by generating different optimal scales of implementation; and they can articulate diverse jurisdictions, forms of governance and resource interests (Paavola, 2016).

Empirical literature about decentralized governance of resources and development puts forward various mechanisms and instruments through which GCM can support governance capacities across levels. GIZ (2018) groups them into four intersecting domains, as shown in *Figure 2*; information and knowledge mechanisms for reducing information asymmetries; financing mechanisms to ensure sufficient resources for climate action; coordination mechanisms and cooperation for coherent allocation of vertical and horizontal roles and interactions; and institutional capacities to strengthen governance and management skills at each level.

Figure 2: Outlining capacities and mechanism for multi-level climate governance



Source: Adapted from GIZ (2018) and complemented from Agrawal et al. (2012)

Although the multilevel governance approach has emerged as an alternative to the tensions between centralised coordination of interventions and demands for decentralised governance processes to address the challenges of effectiveness, inclusion, and adaptive justice, in practice it has evidenced several difficulties such as questioning the capacity to drive transformational change processes (Kim, Marcouiller and Woosnam, 2021). A first difficulty has been the complexity of the political process to effectively assign roles and attributions to each level, as well as the spatial adjustment of jurisdictional levels with the natural and social scales where impacts and vulnerabilities are generated (Knieling, 2016). On the other hand, it is noted that these approaches require abrupt effort for their proper implementation, as they cannot be managed independently due to the strong influence of path dependency especially at the sub-national level (Vedeld *et al.*, 2016). Finally, the financial and technical resource needs for bridging territorial disparity gaps as well as for effective pro-poor policy will require maintaining significant dependency on national and supranational levels, being a constraint for the autonomy of subnational levels in climate governance decision-making.

4.2. Territorial disparities and climate change adaptation in contexts of decentralisation processes in Latin America

ECLAC (2015a) outlines two main relationships that involve the complexities in Latin America - and developing countries in general- in addressing climate change impacts:

- Latin America only generates 8.3% of the world's total greenhouse gas (GHG) emissions, but geographic, climatic, socio-economic, and demographic characteristics make it a region highly vulnerable to climate change. The foregoing, coupled with the increased frequency and intensity of extreme events, makes it urgent to act with adaptation measures to limit the severe ecological, social, and economic consequences expected.
- Under conservative assumptions, the estimated economic cost of climate change by 2050 will be between 1.5%-5% of regional GDP, but with high heterogeneity at sub-national levels. Therefore, the high levels of inequality within countries are expressed as a double condition of vulnerability, affecting the poorest and most marginalised sectors, as well as spatially, secondary cities and localities with fewer resources and capacities.

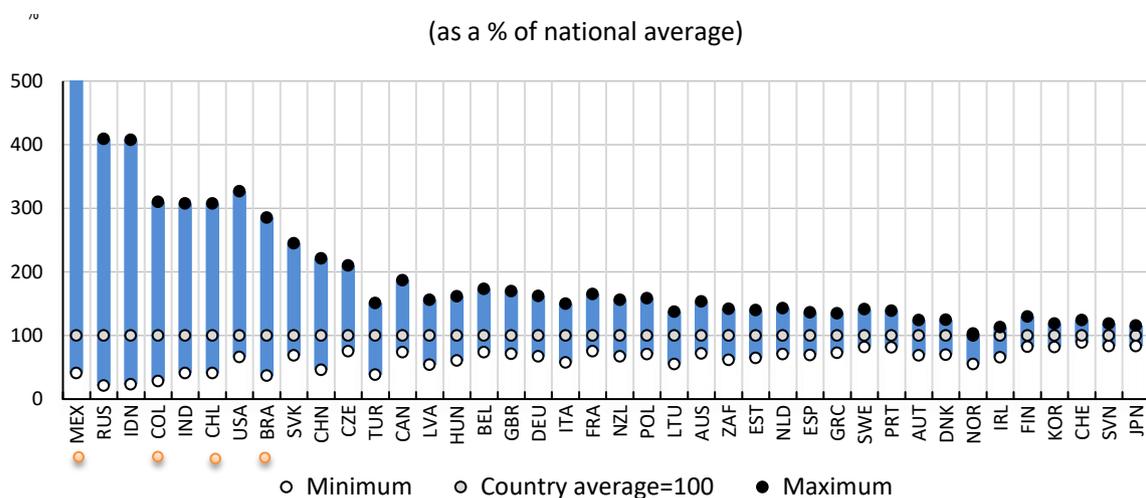
These characteristics that shape vulnerabilities and sub-national disparities are issues that have been addressed directly or indirectly through various territorial policies depending on the institutional context of each country (ECLAC, 2012). Between them, decentralisation processes

have been key in shaping the competencies and capacities of sub-national levels to address climate change adaptation and equitable development. To address this relationship, the following section analyses the decentralisation scenario of the last decade in Latin American countries, emphasising in policies and mechanism of two countries with long-standing political, fiscal, and administrative decentralisation processes in the region: Brazil and Colombia.

Depth and performance of decentralisation processes in Latin America.

Between the late 1980s and early 1990s, decentralisation processes in Latin America were initially driven by new political constitutions in response to demands for greater social legitimacy of the state, democratic governance and local participation, as well as political-economic objectives (Finot, 2007; ECLAC, 2012). After almost two decades, research has categorised these processes as heterogeneous in both the design and implementation of decentralisation policies, but also questioned their progress and results (Carrión, 2007; Finot, 2007). While several countries have made significant progress in reducing poverty, sub-national inequalities has not changed and, in some cases, has even increased (ECLAC, 2012). *Figure 3* compares regional GDP *per capita* variations in 2013 between OECD countries and countries considered as emerging economies. This graph reveals a marked difference in regional GDP per capita variations between OECD countries and Latin American countries - among other emerging economies. While the range of these variations in OECD countries is close to 100%, in Colombia, Chile and Brazil reach 200%, and even exceed 500% in the case of Mexico. However, there are no differences attributable to unitary and federal countries, but only to degrees of development.

Figure 3: Regional variation in GDP per capita between selected countries, 2013

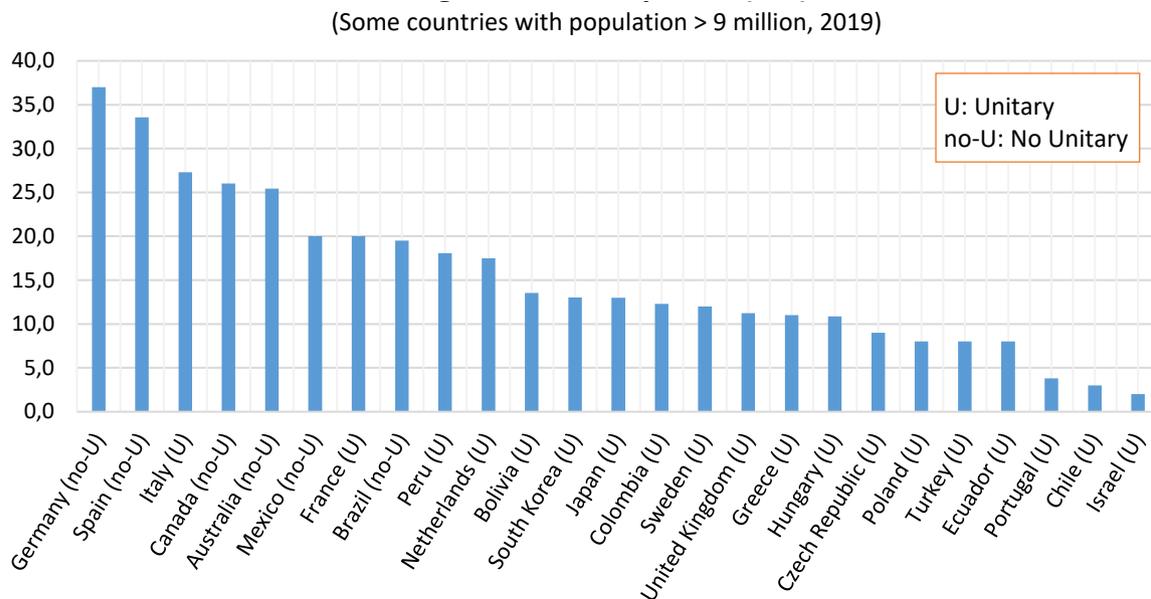


Source: Adapted from OECD (2016)

Similarly, considering dimensions beyond subnational economic performance, such as the Regional Development Index (RDI)² prepared by ECLAC for Latin America, differences in regional inequalities between these countries can be observed, but the degree of disparity remains between the central regions (or large metropolises) and those of a peripheral nature within each country (ECLAC, 2015b).

There are two indicators commonly used to have a comparative reference between countries: the Regional Authority Index (RAI)³ and the percentage of public expenditure at sub-national levels -either regional and municipal levels or both-. **Figure 4** shows the RAI for the year 2010 for selected unitary and non-unitary (federal, or other) countries in OECD and Latin America with a population of more than 9 million inhabitants⁴. Overall, this figure indicates that although regions in federal countries have higher degrees of authority, this condition is not unique to this type of state structure, as unitary countries exhibit a similar trend. Although the type of state structure -unitary, federal or other- does not determine the degree of decentralisation in each country, it does influence the characteristics of reforms and policies (SUBDERE, 2009).

Figure 4: Regional Authority Index (RAI) in selected countries unitary and no-unitary.



Source: Own elaboration based on Hooghe et al. (2016)

² Synthetic index based on 10 social, economic, and environmental indicators.

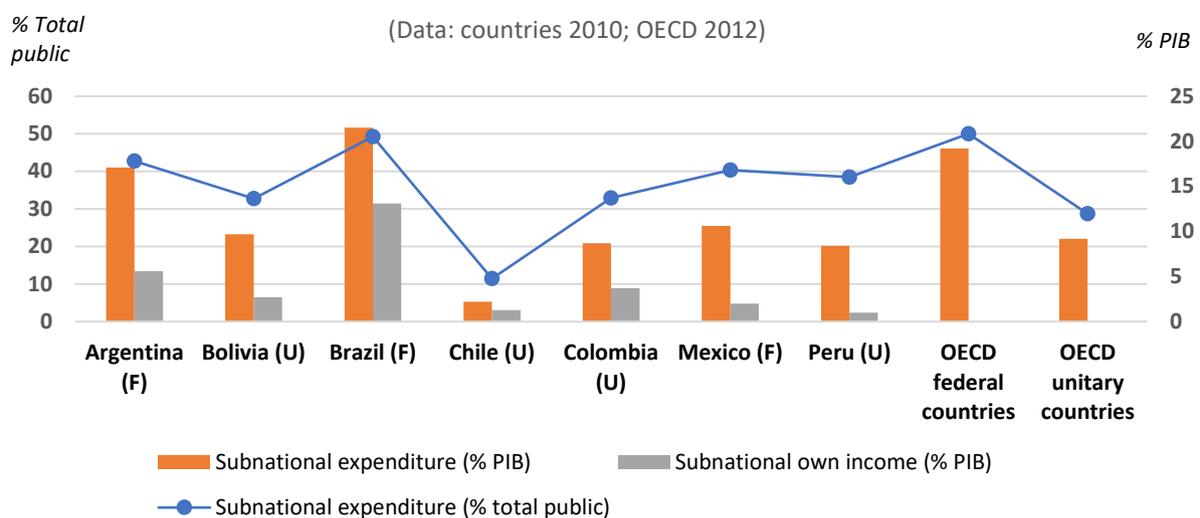
³ RAI cover 10 variables to measure the degree of authority a regional government exercises in its jurisprudence and the degree to which it co-exerts authority in the country -as shared governance- (Hooghe et al., 2016)

⁴ With the aim of comparing countries with similar populations to those analysed in Latin America.

Brazil and Colombia show degrees of regional authority in the middle range of the RAI results - 19.5 and 12.3 respectively-, showing that their decentralisation processes have been on a par with both developed countries and other Latin American countries, with the main exception of Chile. By 2010, Chile shows low degrees of authority and competences in regional government, mainly under a modality of deconcentration of public services and only a few transfers of services mainly to the municipal level. Although in 2009 the popular election of Regional Councillors was approved, their competences were restricted to the approval of plans -strategic and land use- and the distribution of domestic resources, while the regional government authority continued to depend politically on the central government (ECLAC, 2015b). On the other hand, Peru exhibits significant levels of regional authority as of 2010 as a result of the decentralisation process initiated in 2004, which has nevertheless undergone several changes and setbacks due to cases of corruption at the sub-national level and failures in the implementation of reforms, which has led to a setback in the decentralisation process after 2010 (Ferreiro, Arís and Pinto, 2019).

While the RAI addresses the regional democratisation, competences and fiscal capacity, the sub-national expenditure ratio refers mainly to the degrees of fiscal decentralisation in each country. *Figure 5* shows the percentages of subnational (regional + local) spending in Latin American countries relative to the country's total public spending and relative to the country's GDP. In addition, the average subnational spending of OECD countries, both federal and unitary, is included for reference. This distinction is made because in the case of fiscal decentralisation, significant differences have been found between the two state structures (OECD, 2016).

Figure 5: Subnational expenditure in Latin American countries, 2010.



Source: Elaborated with data from IDB (2015) and OECD (2016).

This figure displays those Latin American countries have a subnational spending behaviour as a percentage of GDP in line with the average of the OECD area of the respective structure (federal or unitary), with the exception of Mexico related to federal countries and Chile to unitary countries. Considering sub-national spending as a percentage of national public spending, while Mexico and other countries present a similar scenario to the respective OECD average, in the case of Chile it remains low, confirming its comparatively low public spending and investment at the national and sub-national levels.

However, despite this similar trend in fiscal decentralisation between the OECD area and the Latin American countries analysed - with the exception of Chile - the main problem in the region lies in the great asymmetry in the distribution of this expenditure between regions and between municipalities, with differences varying between 5% and 50% (Rosales, 2012). This condition is due, among other factors, to the large number of municipalities in countries in the region, such as Colombia with 1,123 or Brazil with 5,568, as well as the differences in demographic concentration and production, where between 30%-40% of the population is concentrated in the main metropolises of each country, while nearly 90% of municipalities in the region have less than 50,000 inhabitants (Rosales, 2012; GIZ, 2018).

Decentralisation, territorial development, and climate governance: policies and mechanisms between Brazil and Colombia.

Although Brazil and Colombia have been considered among the most advanced countries in Latin America in terms of decentralisation, there are relevant differences in their processes, particularly in areas that directly affect equitable territorial development and sub-national planning and adaptive capacity. **Table 3** presents a comparison of decentralisation, development and territorial planning and climate governance policies and mechanism between Brazil and Colombia. Overall, as expected, the picture shows differences in policies and mechanisms according to each country's structure. Brazil (federal) has focused its policies on the regional/state level for the implementation of the main local development and planning actions, placing special emphasis on the degrees of autonomy of this level, while Colombia (unitary) shows policies and mechanisms rather oriented towards integration and convergence between levels, even recognising the sub-national levels as one and the same level of territorial governance.

Table 3: Comparison of decentralisation, territorial development and planning, and climate governance policies between Brazil and Colombia.

		<i>Brazil</i>	<i>Colombia</i>
Context		<ul style="list-style-type: none"> ○ Upper middle-income country ○ 212.559.410 (2020) ○ 26 States, 1 Federal District, 5.568 Municipalities 	<ul style="list-style-type: none"> ○ Upper middle-income country ○ 50.882.880 inhabitants (2020) ○ 32 Departments; 1 Capital District; 104 Provinces or sub-regions; 1,123 Municipalities.
Decentralisation policy	Legal framework	National Regional Development Policy (PNDR) 2007; Complementary Law n°140, 2011, sets rules for cooperation between the Union and the federative entities in environmental matters.	Constitution of 1991; National Development Plan 2011-2014; Municipal Regime Code; Metropolitan Areas Law
	Governing body	Ministry of Integration	National Planning Directorate
	Policy	Regionalisation as a strategy of sub-national strengthening	Vision Colombia II Centenary: Institutional strengthening of the territorial entities and the relationship between Nation-Territories.
	Priorities	Decentralisation of powers and obligations to States and municipalities in relation to the forestry code. Increased competences to municipalities in environmental matters	Clear definition of competences between levels; Territorial financing system based on the increase of the legal minimum property tax in municipalities and cadastral updating; Unification, articulation, and modernisation of rules for territorial public governance in a participatory way; Results-oriented territorial management, consolidating instruments for measurement and supervision, monitoring and control of co-partnered resources; Dissemination of decentralisation results.
Territorial development and planning policies	National strategy or policy	National Regional Development Policy. PNDR II	National Development Plan 2010-2014. Chapter II.
	Coordinating institution	Ministry of National Integration, Ministry of the City and Ministry of the Environment (mainly planning and control competences)	National Planning Department (normative, financial, planning and control competences)
	Core objectives	Autonomy, decentralisation, coordination, cooperation. Equity, cohesion, and regional solidarity	Territorial convergence
	Central axes of the policy	Cooperative federalism. Equity. Competitiveness. Multilevel governance	Integration axes and territorial development areas; Decentralisation of competences and resources.
	National Instruments:	Basis for a proposal for a national spatial planning policy	Land Management Law; Elements for the Formulation of the National Spatial Planning Policy
	National principles of planning:	N/A	Regional Convergence; Land Use and Municipal Development Plans; Articulation of sectoral planning; Harmonisation of Urban and Regional Planning; Consideration of structuring elements of the territory; Articulation of urban and rural plans at the regional level; Focus on the particularities of specific territories; Articulation of development policies with the organisation of the territory; Incorporation of risk management in land use planning; Creation and strengthening of institutional capacities for territorial management.
	Regional	Ecological Economic Zoning	Departmental Land-Use Plans

		<i>Brazil</i>	<i>Colombia</i>
	Local	Master Plan (Normative)	Plan Frontiers for Prosperity; Treatment and management of territorial heterogeneity; "Laboratory for Institutional Development and Territorial Public Governance".
Governance and climate policy	Climate change laws and policies	14 laws and 23 policies	10 laws and 28 policies
	Global Climate Risk Index	83,17	55,67
	National level	<ul style="list-style-type: none"> ○ Inter-Ministerial Committee on Climate Change: horizontal coordination to propose policies, support their implementation, monitoring and evaluation ○ Brazilian Forum on Climate Change: brings together government, civil society, science, and business ○ National Climate Change Fund: offers both non-refundable and refundable sources finance managed by the Brazilian Development Bank 	<p>National Climate Change System is the main institutional mechanism of climate governance in charge of coordinating actions and commitments at local, departmental, national, and international levels.</p> <ul style="list-style-type: none"> ○ Composed by Climate Change Commission (CICC) and the Regional Nodes on Climate Change ○ Coordinated between Ministry of Environment and Sustainable Development and National Planning Department (NPD) ○ Financial Management Committee: Ministry of Finance, NPD, development banks and representatives of commercial banks.
	Sub-national level	<ul style="list-style-type: none"> ○ Climate policies at the state and municipal level often emerge independently, more ambitious and in some cases even before the national level. ○ As of 2016, 14 of the 27 Brazilian states have established their own climate policies independently of national guidelines or requirements. ○ In addition, 16 states have established State Climate Change Forums to promote consultation and coordination between government, civil society, research, and the private sector. 	<ul style="list-style-type: none"> ○ Regional Nodes on Climate Change: Main instrument at sub-national level. Promote and support of climate change strategies, plans and projects in each region. <p>Finance at Sub-national level.</p> <ul style="list-style-type: none"> ○ Through the Territorial Development Bank (FINDETER) and the Commercial Development Bank (BancoIdex), to support sub-national planning, financing and technical assistance and financing of adaptation-mitigation projects, respectively. ○ The National Royalties System: based on royalties from the exploitation of non-renewable resources, which is allocated sub-nationally (about 25% of sub-national investment comes from this source). Between 2017–2018, 5.1% of this budget was made mandatory for disaster risk reduction and climate change adaptation investment.
	Other sub-national initiatives	<ul style="list-style-type: none"> ○ Different municipalities have promoted their own bills or laws to create a municipal climate change policy ○ Various climate action networks and initiatives driven mainly from larger cities (e.g. C40, ICLEI, etc.) 	<ul style="list-style-type: none"> ○ Regional Autonomous Corporations: autonomous and decentralised entities, with environmental objectives and composed of one or more geographic or hydrographic scales at regional level. ○ Formation of institutional entities of inter-municipal cooperation that bring together two or more municipalities regarding planning and management of services. ○ Various climate action networks and initiatives driven mainly from larger cities (e.g. 100 Resilient Cities, etc.)

Source: Elaborated with data from ECLAC (2015b), GIZ (2018), and LSE (2021)

The results of decentralisation processes have strengthened the capacities to generate development policies, planning and implementation of initiatives at the regional level, playing a promoting, articulating, and linking role with the local level (municipalities). However, competences and mechanisms vary, as in the case of Brazil, regional planning and territorial development is more oriented towards environmental and economic development issues -leaving planning to the local level-, while Colombia has a greater diversity and distribution of competences and mechanisms involving environmental aspects, land use planning and the differences between territories. In turn, both climate governance models are characterised by well-developed institutions and policies and "hybrid" multi-level structures involving both top-down and bottom-up policy processes and mechanisms. However, the main impetus for sub-national (bottom-up) initiatives comes from regions and municipalities with larger populations, capacities, and resources, which even influences the availability of information on actions. Furthermore, although both countries have mechanisms that promote subnational climate finance, Colombia has a diversity of institutions and mechanisms that would allow addressing a diversity of sectors and compensate for territorial differences.

4.3. Is Chile addressing unequal territorial capacities to adapt to climate change?

The previous section showed that until the mid-2010s, Chile evidenced limited degrees of sustained decentralisation in a modality mainly of deconcentration of public services to the sub-national level and the political dependence of the regional authority on the central government, as an exception with respect to the main Latin American countries. However, with the first popular election of Regional Councillors in 2014 and the subsequent enactment of laws in 2017 that empower the popular election of the Regional Governor, the restructuring of the Regional Government and the transfer of competences to the regional level, the current decentralisation process in Chile began (Henríquez Opazo, 2020). In turn, in 2014 the National Climate Change Adaptation Plan and sectoral adaptation plans were approved, and in 2017 the National Climate Change Action Plan 2017-2022 (PANCC II) was updated, and recently, in January 2020, the draft Framework Law on Climate Change was sent to Parliament (MMA, 2021). Therefore, when considering both processes in parallel, decentralisation and the strengthening of climate action, the following question arises: Is Chile addressing unequal territorial capacities to adapt to climate change? Following the literature review and the three interviews conducted, the answer to this question is "yes", but with necessary considerations and limitations that need to be reviewed for the purposes of the dissertation.

The first argument and considerations are that it has been rather the process of updating and strengthening climate policy in Chile that has driven the incorporation of sub-national levels into the climate governance structure and the concern for territorial disparities. The literature reviewed and the interviewees agree that it has been both the international commitments made by Chile -such as the Paris climate agreement and the Nationally Determined Contributions (NDCs)- and the leading role played by civil society and academia that have dynamized the strengthening climate policy and governance since the mid-2010s. Nonetheless, both the commitments and the goals in national plans have lacked a clear governance structure that defines roles and responsibilities in the implementation and financing of actions. Therefore, in the absence of a legal mandate, local action is left to the discretion of political authorities, or in some cases, planning is expressed only as "a declaration of good intentions", as described by interviewees.

In view of the above, the draft Framework Law on Climate Change is seen by interviewees as the "umbrella that will link the decentralisation process with climate governance in Chile". This draft law contemplates the role and responsibilities of the regional level through the Regional Climate Change Committees (CORECC) -currently there are no more than recommendations on how these are implemented-, the elaboration of Regional Climate Change Action Plans (PARCC)⁵ and their link with municipalities and the Local Climate Change Action Plans. However, there was tension regarding the decentralisation process over who chairs CORECC, whether the regional presidential delegate (a figure who is politically dependent on central government) or the newly elected Regional Governor, showing that there is an initial disconnect between the two processes. Finally, in mid-2021, an amendment to the Law has been approved to assign the role of chairing CORECC to the Regional Governors. But it also shows the restrictions of the current decentralisation process, which has been continuously contested by the limited transfer of competences to the regional level, the permanence of a political representative of the central government with coordination and supervision attributions over the deconcentrated public services -such as Housing and Urban Planning, Public Works, Environment, among others- and the lack of a parallel fiscal decentralisation process (Ferreiro, Arís and Pinto, 2019).

Although the draft Framework Law on Climate Change has attempted to incorporate a participatory, integral, and multilevel perspective, its structure still has a markedly sectoral component and a top-down logic (Billi, Delgado and Jiménez, 2020). This is expressed in the

⁵ the draft Framework Law gives CORECC the role of elaborating and monitoring the PARCCs. To date, only four pilot PARCCs have been developed at regional level (out of a total of 16 regions).

fact that, for example, the PARCCs will depend on the Sectoral Mitigation and Adaptation Plans that will be elaborated by six relevant sectoral ministries⁶. Therefore, a concern arises: given that they will have different origins and perspectives, what will happen if the two plans are incompatible with each other? How will territorial needs be addressed with respect to the sectoral priorities defined at the central level?. Nevertheless, the interviews highlight that despite the sectoral structure of climate governance in Chile has the difficulty of limiting a cross-cutting perspective on climate change, it is noted that the sectoral adaptation plans in Chile have achieved a relevant depth and diversification with respect to the scenario in other countries. For example, through the elaboration of an Atlas of Climate Risks (ARCLIM)⁷ by sector but identifying hazards, exposure and vulnerability at municipal scale, which would allow prioritising and focusing action on municipalities with higher risk and lower capacities.

A second argument points out that, despite the limitations of the current decentralisation process in Chile, there is a diversity of calls for decentralisation that has been expressed through the updating of various national policies on adaptation-related issues, which expresses an interest in discursive terms. These include the National Policy for Disaster Risk Reduction 2020-2022, the National Land Use Planning Policy, the Energy Policy of Chile 2050, among others, which incorporate the need to advance in the territorialisation of actions by recognising local contexts and conditions, incorporating different jurisdictional, social, and ecological scales, and articulating actions based on cooperation and collaboration (MMA, 2021). However, interviewees identify limitations in terms of how these objectives will be implemented, the technical capacities needed to carry them out, and the resources available to even initiate these processes.

As in other Latin American countries, interviewees point out that in the face of limitations or delays in national policies, it is the major municipalities and regions that have taken the lead in climate action. These initiatives have been channelled by the government through the updating of the Regional Development Strategy and the Communal Development Plan -strategic development plans at regional and municipal level respectively- which has recognised the communal base unit for the identification of vulnerabilities and exposure to hazards, the generation of communal climate change maps, among others. Or initiatives have also emerged through non-governmental links such as the articulation between international city networks such as Covenants 40 (C40), which promotes Inclusive Climate Actions (ICAs), or the generation of

⁶ the ministries of energy, telecommunications and transport, mining, health, agriculture, and housing.

⁷ For more information on this initiative see the link <https://arclim.mma.gob.cl/>

resilience strategies through the 100 Cities network. Non-governmental initiatives have also emerged within Chile that have been highlighted as bottom-up climate institutional innovations (Patterson and Huitema, 2019), such as, for example, the creation in 2014 of the Chilean Network of Municipalities facing Climate Change (RedMuniCC), promoted and coordinated by the NGO Adapt-Chile, to date involving 56 municipalities (out of a total of 345) with a scope of 38.4% of the country's population (RedMuniCC, 2021). While these local networks have facilitated both collaboration with other local networks such as the Chilean Association of Municipalities (AChM), the involvement of municipalities in central government policy-making processes, and technical transfer to small and low-income municipalities, the informality of these networks in the current governance structure has limited further growth and effectiveness of cooperation given resource constraints and the lack of dedicated climate funds. For example, changing political priorities in the recent COVID-19 pandemic scenario have generated uncertainty regarding the continuity of local initiatives towards adaptation and, in turn, the medium-term stability of these local networks. Therefore, the incipient climate governance in Chile is seen as a long-term process that will generate important opportunities, but will also require adjustments, especially in terms of sub-national mechanisms for implementing adaptive actions with respect to the targets set.

Chapter 5. Discussion

Decentralisation processes have been a long-standing policy in Latin America to address the challenges of institutional legitimacy, local participation, and equity, which have shaped varying degrees of autonomy, competences, and resources at sub-national levels. Despite having different characteristics, the depth of decentralisation in the countries analysed is comparatively similar to the average of the countries considered as more developed, with the notable exception of Chile. Thus, the transit of these reforms has shaped the implementation of various policies and mechanisms aimed at sub-national governance, development, and territorial planning capacities. However, the performance of these processes with respect to territorial equity objectives appears to have clashed with path dependency on barriers to development, especially in reducing territorial disparities. Despite its widespread study, this conditioning factor has gained greater visibility in the last decade, even in the face of theories -such as structuralism - that have highlighted the systemic determinants of inequalities and disparities in Latin America, along with an abundant literature that has suggested recommendations to address them (ECLAC, 2010, 2012). In the face of urgent calls for climate action through systemic transformations and governance restructuring models that address the complexities and uncertainties of climate change, we need to reframe our understanding of adaptive actions as the result of an essentially political process in terms of defining objectives, planning, implementation and performance measurement (Eriksen, Nightingale and Eakin, 2015; Knieling, 2016; Shi *et al.*, 2016; Dolšák and Prakash, 2018).

This reframing should not only be expressed in terms of a certain "idealisation" or "objective vision" of how policy and governance processes should work, but also in terms of the current conditions or starting point for each country and specific level to engage in climate governance schemes and the implementation of actions that have a systemic effect. In other words, for example, in the discussion on the allocation of more appropriate roles by scale, rather than questioning the ability of the local level to assume adaptive responsibilities due to its constraints and conflicts (Nalau, Preston and Maloney, 2015), the questioning may lie in the reforms or mechanisms needed to provide the local -and regional- level with the capacities to address the proposed development and adaptive objectives. This implies, as Carrión (2007) points out, thinking of decentralisation as an instrument rather than an objective in itself. Under this consideration, the outline of the conceptual framework proposed to address this dissertation (*Figure 1*) should consider decentralisation processes as an inter-connector between sub-national

climate governance and adaptive challenges and territorial disparities, and not as a parallel process or challenge in itself.

As noted in the interviews, climate governance in the Latin American context is still incipient, however, it has had a rapid and growing position on the public agenda in several countries in the last decade. In the cases of Brazil and Colombia, policy implementation in the area of climate adaptation addresses various governance mechanisms such as sectoral coordination arrangements (public-private partnerships, inter-sectoral committees, sub-national networks, etc.), strategic planning, land-use planning, funding sources, new forms of organisation, among others. In turn, while it is possible to observe that climate governance modalities have been based on government structures resulting from decentralisation processes, it can be noted that climate policies and mechanisms have tended to deepen the levels of decentralisation. This can be seen, for example, in the case of Brazil, where more ambitious regional (state) and municipal climate plans than the national ones have been drawn up, and laws have been created that give new powers to the regional and local level, or in the case of Colombia, where the conception of sub-national levels towards a "territorial convergence" based on a governance mechanism, powers and greater financing mechanisms has strengthened the adaptive response capacities of these levels of government.

In Chile, with an ongoing decentralisation process that has so far been limited to the popular election of regional governors and the transfer of some competences to the regional level, various policies and plans related to climate adaptation have pushed for the recognition of territoriality, the assignment of greater roles to sub-national levels and proposals for new sub-national governance structures. Even, the case of Chile highlights how academia and organised civil society had promoted the deepening of climate policies and regulations towards territorialisation, showing that public interest is not only expressed through demands but also through concrete proposals in the debate on decentralisation reforms. Therefore, it is possible to argue that the challenges of inclusive, equitable and coordinated climate change adaptation can contribute to deepening and rethinking decentralisation processes decentralisation processes in Latin American countries -and developing countries in general- around strengthening capacities for adaptive planning and response at the sub-national level and reducing territorial disparity gaps. Thus, there is little doubt that urgent calls for adaptive action constitute a new challenge for decentralisation processes.

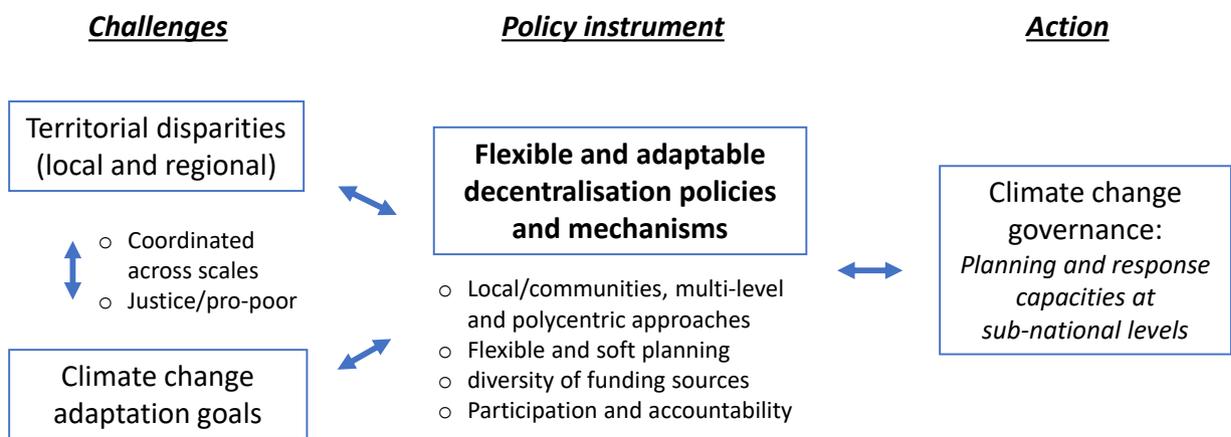
Having addressed the analysis of long-standing decentralisation processes, such as Brazil and Colombia, with a recent and ongoing process such as Chile, allow us to identify evolutions in the debate and/or new concerns or limitations, but also has the virtue of identifying recommendations in the midst of a contingent debate. One of the main gaps lies in fiscal decentralisation mechanisms as crucial and sensitive aspects for the results of these processes, a conditioning factor that has meant that Chile has not yet implemented a fiscal decentralisation reform. While the first fiscal decentralisation policies in Brazil and Colombia have been questioned for their low or null effectiveness in reducing sub-national disparities, fiscal decentralisation mechanisms implemented in the context of climate policies have been specifically highlighted for their distributive role towards sub-national levels (GIZ, 2018). For example, in Colombia, national funds from royalties from natural resource exploitation can be oriented towards adaptive objectives that involve reducing disparities in resources between sub-national levels.

In turn, the generation of coordination arrangements that facilitate associativity and collaboration between small municipalities or between large and small -disparate- municipalities in a framework of cooperation that allows the shared use of resources and technical capacities in the face of common adaptive objectives is emerging as an alternative from the sub-national governance level. Or along the same lines, the configuration of regions based on relational or soft approaches, i.e. that do not circumscribe jurisdictional limits but can be adapted depending on the policy objective (environmental, infrastructure, housing, others) or be diffuse limits that articulate different areas, even from different geographical zones (Deas, Haughton and Hincks, 2014). These soft space formats have gained relevance for their flexibility and multi-functionality to address diverse policies according to specific local contexts as unequal capacities (Hincks, Deas and Haughton, 2017). This point is directly related to flexible planning formats that can adjust to different territorial scales as well as involve informal planning and participation mechanisms that can be useful for regions or municipalities with limited technical capacities and resources. The incorporation of these modalities in decentralisation processes, i.e. their recognition as formal institutional instruments, could become an incentive for the strengthening of local competences, accountability and sub-national cooperation that would imply a systemic re-structuring of current governance models in Latin America.

Considering the above, reframing decentralisation as an instrument and inter-connector between climate governance and adaptive challenges and territorial disparities implies making policy mechanisms and instruments more flexible beyond rigid institutional reforms, so as to allow for

the incorporation of the diversity of local, decentralised, polycentric approaches, as well as flexible and soft planning mechanisms that incorporate diverse forms of scales, participation, and accountability. *Figure 6* therefore shows the proposal for a new conceptual framework outline to address further research on the challenges of decentralisation processes related to climate change adaptation and territorial disparities.

Figure 6: New conceptual framework outline about decentralization processes, climate adaptation and territorial disparities.



Chapter 6. Conclusion

This dissertation has been motivated by an interest in understanding how decentralisation processes in the context of developing countries could contribute to improving sub-national planning and response capacities to address disparities between cities and regions and the challenges of inclusive, equitable and coordinated climate change adaptation across scales. For this purpose, the results and discussion presented in the previous chapters provided an overview of conceptual frameworks and the implementation of policies and mechanisms in Latin American cases that link decentralisation approaches and processes with the issues of territorial disparities and the challenges of adaptive governance. A first aspect that allows contextualising the conclusions drawn from these relationships is the significant gap between the conceptual frameworks that promote decentralisation and what the political, social, and historical-cultural dynamics allow in terms of results. A second aspect along the same lines is the direct relationship between development strategies and conditions, and the adaptive challenges at each country and territorial level.

After analysing decentralisation processes in Latin American countries in terms of their depth and performance in terms of territorial disparities, a first conclusion is that reframing the understanding of adaptive actions as the outcome of an essentially political process in terms of objectives, planning, implementation, and measurement of results implies in turn approaching decentralisation as a policy instrument and not only as a goal in itself. This reframing should not only be expressed in terms of a particular "idealisation" or "objective vision" of how policy and governance processes should work, but also in terms of the current conditions or starting point at each level and the competencies and capacities needed to participate in climate governance schemes and in the implementation of inclusive and effective adaptive actions. Decentralisation processes can thus be seen as an inter-connector between sub-national climate governance and adaptive challenges and territorial disparities, rather than as a parallel process or challenge in itself.

Considering the above, a second conclusion is that rethinking decentralisation as an instrument and inter-connector between climate governance and adaptive challenges and territorial disparities implies making policy mechanisms and instruments more flexible beyond the rigid institutional reforms in which the success of these processes is analysed, implemented and evaluated, so as to incorporate the diversity of local, decentralised and polycentric approaches, as well as flexible and soft planning mechanisms that incorporate various forms of scales,

participation and accountability. The analysis of long-standing decentralisation processes, such as Brazil and Colombia, with a recent and ongoing process such as in Chile, made it possible to identify evolutions in the debate, new concerns or limitations, and experiences of policies and mechanisms. It is observed that while the first decentralisation policies have been questioned for their low or null effectiveness in reducing sub-national disparities, the mechanisms implemented in the context of climate policies have been oriented towards a distributive role at sub-national levels. Thus, a variety of mechanisms are incorporated to strengthen subnational capacities such as sources of funding, the generation of coordination arrangements that facilitate associativity and collaboration between small or disparate municipalities, as well as the generation of new forms of organisation that involve the emergence of new territorial scales and flexible forms of planning.

Having the two previous conclusions in mind, a third conclusion emerges that supports the argument of this dissertation. While climate governance in the cases analysed has been based on current governance structures, it can be observed that climate policies and mechanisms have tended to deepen the levels of decentralisation in each country. Brazil and Colombia have shown evidence of a strengthening of adaptive response capacities at sub-national levels where regulations, plans, governance mechanisms and financing have been developed. In turn in Chile, despite a limited and contested decentralisation process, the elaboration of climate policies and plans has promoted the recognition of territoriality and the assignment of greater roles to sub-national levels, highlighting the active participation of academia and organised civil society in the reforms. Therefore, it can be argued that the challenges of inclusive, equitable and coordinated climate change adaptation can contribute to deepening and rethinking decentralisation processes in Latin American countries -and in developing countries in general- around strengthening capacities for planning and adaptive response at the sub-national level and reducing territorial disparity gaps.

With regard to recommendations, the conceptual framework proposed in the discussion chapter and the previous conclusions allow proposing a starting point for further research addressing the old and new challenges of decentralisation processes in relation to territorial disparities and climate change adaptation. At the same time, it raises the need to broaden the contrast with other developing country case studies involving additional political constraints to decentralisation processes, such as the incorporation of forms of participatory democracy at the local level and social legitimacy, both of which are also considered to be old policy objectives of decentralisation. Finally, it also raises the need for further research and debate on what is

involved in incorporating flexible planning and adaptive governance mechanisms through decentralisation processes. This dissertation has suggested, for example, considering the configuration of regions based on relational or soft approaches, i.e. that do not circumscribe jurisdictional boundaries but can be adapted according to the policy objective (environmental, infrastructure, housing, others) or be diffuse boundaries that articulate different areas, even from different geographical zones. In turn, flexible planning formats that can adjust to different territorial scales, as well as involve informal planning and participation mechanisms can be useful for regions or municipalities with limited technical capacities and resources. The recognition of such modalities in decentralisation reforms could become an incentive for the strengthening of local competences, accountability and sub-national cooperation that would imply a systemic restructuring of current governance models in Latin America and in other developing countries.

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