

Introduction

Climate Change Integration in the Multilevel Governance of Italy and Austria

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This book discusses a crucial issue for subnational governments: how to integrate climate change considerations across policy areas to contribute to our global responses to the challenges it presents?¹ This question is not easy to answer. Climate change is ‘the epitome of a multilevel governance challenge’;² the subject of a regime complex that involves countries across the globe and a history of fraught multilateral diplomacy.³ In European Union (EU) Member States like Italy and Austria, it is also an area of shared competence, precisely because an integrated approach to climate change is key to progress in coping with irreversible change and preventing further degradation. The context in which subnational policies should account for climate change is thus both complex and extremely important. The impacts of climate change are often felt most immediately by citizens at subnational or local levels, and subnational policies must respond to this, since authorities at this level hold powers in many sectors either impacted by climate change or where policies have direct effects on mitigation and adaptation goals.⁴

The following chapters make a novel contribution to the study of subnational-level climate change policy integration (CPI). They are all based on cross-national research between Italy and Austria, comparing the Italian Autonomous Provinces of Trento and Bolzano and the Austrian *Länder* Tyrol and Vorarlberg.⁵ These are governed by authorities with varying powers and institutional set-ups,⁶ which allows reflections about how to guarantee climate

1 In the joint elaboration of this chapter, section 1 has been written by Louisa Parks, section 2 by Niccolò Bertuzzi, and section 3 by both.

2 D. Brown, “Cooperative Versus Competitive Federalism: Outcomes and Consequences of Intergovernmental Relations on Climate Change Issues in Canada”, *Zeitschrift für Kanada – Studien*, 32 (2012) 9–27, at 17.

3 R.O. Keohane and D.G. Victor, “The Regime Complex for Climate Change”, *Perspectives on Politics*, 9 (2011) 7–23.

4 *Ibid.*, at 12; I. Galarraga, M. Gonzalez-Eguino and A. Markandya, “The Role of Regional Governments in Climate Change Policy”, *Environmental Policy and Governance*, 21 (2011) 164–182.

5 Research project “Climate Change Integration in the Multilevel Governance of Italy and Austria: Policy-Making and Implementation in Selected Subnational Policies” funded by the Autonomous Province of Bolzano program Research *Südtirol/Alto Adige* 2019.

6 See also Chapter 2 and Chapter 3 in this volume.

change integration within different types of settings to emerge and inform debates on other policy areas and subnational governments alike.⁷ This focus is also linked to the particular vulnerability of this Alpine area to the impacts of climate change, and the closeness of the areas, which means problems are shared across national borders. How can different subnational governments achieve a coordinated approach to climate change in their policies despite their different political, legal and institutional contexts? The chapters answer this question in detailed ways. They focus on policy sectors particularly pertinent to climate change (transport, energy and water, and spatial planning) in cross-regional discussions. They then discuss dimensions hypothesized to shape CPI (coordination, participation, information, leadership, and funding) in cross-sectoral and cross-national perspectives. The perspective taken in this volume is thus an institutional one, with the focus on how subnational governmental institutions' organizational qualities play a role in shaping CPI.⁸ The findings show what shapes effective CPI, in what policy sector, and under what circumstances, thus rendering the findings testable and informative for other subnational contexts.

In this Introduction, we next summarize the theoretical and empirical premises of the research. First, we briefly lay out the foundations on which the empirical chapters build by describing concepts and literature relevant to a study of climate governance at the subnational level, including CPI. We then outline the reasoning behind the research design in this comparative study, as well as the research framework. In particular we describe the dimensions hypothesized to shape CPI, the methodology, then reflect on how the findings from this research can apply elsewhere. We conclude with a preview of the chapters in the book.

1 Studying Climate Change Integration at the Subnational Level

Climate change is a global problem, but its effects are not uniformly distributed and different repercussions are seen at local scales.⁹ Some international

7 Subnational governments are defined in this book as those intermediate entities that form part of a federal/regional State, can exercise a number of legislative/administrative powers on selected sectors/policies, and have their own political institutions. See T. Hueglin and A. Fenna, *Comparative Federalism: A Systematic Inquiry* (University of Toronto Press 2015), at 16ff.

8 See, for example, W.W. Powell and P.J. DiMaggio (eds.), *The New Institutionalism in Organizational Analysis* (University of Chicago Press 1991).

9 W.N. Adger *et al.*, "Adapting to Climate Change: Perspectives Across Scales", *Global Environmental Change*, 15 (2005) 75–76; P. Adri  zola *et al.*, *Multi-level Climate Governance Supporting Local Action* (GIZ 2018).

actors correctly highlight the crucial role of subnational governments in reducing emissions, yet their role in integrating climate-related objectives and measures in sectoral policies has not received a great deal of scholarly attention, also because work on climate change mitigation has mainly been considered a matter of transnational (or at least national) scope.¹⁰ Though adaptation is now emerging as key in discussions of climate change policy and scholars and analysts alike agree that here the subnational level is key, the main focus in this book is on climate change mitigation measures. All climate change-related policies require tailoring to local settings. They must be calibrated to specific economic, environmental, and social contexts if they are to be effective:¹¹ a need reflected at the international level in the Paris Agreement and its shift from a regulatory approach towards a more polycentric model of governance,¹² where sub-state (and non-state) actors assume a pivotal role alongside national and transnational actors.¹³ Nationally Determined Contributions (NDC), country-level targets for lowering emissions developed by Parties on a voluntary basis, rely in many cases on subnational actions (as do adaptation policies).¹⁴ This “glocal” turn in climate governance echoes a long-term process of

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- 10 C. Adelle and D. Russel, “Climate Policy Integration: A Case of Déjà Vu?”, *Environmental Policy and Governance*, 23 (2013) 1–12; R. Steurer and C. Clar, “The Ambiguity of Federalism in Climate Policy-Making: How the Political System in Austria Hinders Mitigation and Facilitates Adaptation”, *Journal of Environmental Policy and Planning*, 20 (2018) 252–265; B. Mayer, *The International Law on Climate Change* (Cambridge University Press 2018); H. Amundsen, F. Berglund and H. Westskog, “Overcoming Barriers to Climate Change Adaptation—A Question of Multilevel Governance?”, *Environment and Planning C: Government and Policy*, 28 (2010) 276–289; S. Chan *et al.*, “Promises and Risks of Nonstate Action in Climate and Sustainability Governance”, *Climate Change*, 10 (2019) 1–8.
- 11 M.F. Byskov *et al.*, “An Agenda for Ethics and Justice in Adaptation to Climate Change”, *Climate and Development*, 13 (2021) 1–9.
- 12 S.C. Aykut, “Taking a Wider View on Climate Governance: Moving Beyond the ‘Iceberg’, the ‘Elephant’, and the ‘Forest’”, *Climate Change*, 7 (2016) 318–328; K.W. Abbott, “Strategic Ordering in Polycentric Governance”, in A. Jordan *et al.* (eds.), *Governing Climate Change: Polycentricity in Action?*, (Cambridge University Press 2018) 188–209; T. Hale, “‘All Hands on Deck’: The Paris Agreement and Nonstate Climate Action”, *Global Environmental Politics*, 16 (2016) 12–22.
- 13 *Ibid.* footnote 12; T. Hale, “The Role of Sub-State and Non-State Actors in International Climate Processes”, *Chatham House Research Paper*, (2018), available online at <https://www.chathamhouse.org/sites/default/files/publications/research/2018-11-28-non-state-sectors-climate-synthesis-hale-final.pdf>; F. Biermann and P. H. Pattberg (eds.), *Global Environmental Governance Reconsidered* (MIT Press 2012). All internet sources in this Chapter were accessed on 12 July 2022.
- 14 S.C. Aykut, E. Morena and J. Foyer, “‘Incantatory’ Governance: Global Climate Politics’ Performative Turn and its Wider Significance for Global Politics”, *International Politics*, 58 (2021) 519–540.

decentralization in the UN climate regime.¹⁵ As goals of effective top-down climate governance have been progressively deemed unrealistic, a turn towards bottom-up approaches has been noted within the UN climate regime.¹⁶ Whether these shifts are positive for effective climate change policy is debated. While some scholars see opportunities,¹⁷ others warn of the dangers of further fragmentation, uncertainty, ambiguity and accompanying coordination challenges that may produce “anarchic inefficiency”.¹⁸ In both scenarios, which are more complex than we have space to do justice to here, the importance of a focus on the subnational level and evidence of how CPI unfolds is nevertheless evident. The subnational level emerges as key to both effective implementation and as a source of new transnational visions for the future of climate governance.¹⁹

1.1 *Environmental and Climate Policy Integration in Local Contexts*

The basic concept underpinning the research in this volume is environmental policy integration (EPI), an established field of study that focuses on the need to mainstream or integrate environmental concerns across policy sectors.²⁰

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- 15 J. Peel, L. Godden and R.J. Keenan, “Climate Change Law in an Era of Multi-Level Governance”, *Transnational Environmental Law*, 1 (2012) 245–280.
- 16 S.C. Aykut, “Taking a Wider View on Climate Governance”, *supra*.
- 17 E. Ostrom, “A Polycentric Approach for Coping With Climate Change”, *World Bank Policy Research Working Paper*, 5095 (2009); R. O. Keohane and D.G. Victor, “The Regime Complex for Climate Change”, *supra*; A. Underdal, “Complexity and Challenges of Long-Term Environmental Governance”, *Global Environmental Change*, 20 (2010) 386–393; A. Jordan, D. Huitema, H. Van Asselt and J. Forster (eds.), *Governing Climate Change: Polycentricity in Action?* (Cambridge University Press 2018).
- 18 D. Held and A. Hervey, “Democracy, Climate Change and Global Governance: Democratic Agency and the Policy Menu Ahead”, in D. Held, A. Fane-Hervey and M. Theros (eds.), *The Governance of Climate Change* (Cambridge Polity Press 2011) 89–110 at 97; A.E. Jochim and P.J. May, “Beyond Subsystems: Policy Regimes and Governance”, *Policy Studies Journal*, 38 (2010) 303–327; J.J. Candel and R. Biesbroek, “Toward a Processual Understanding of Policy Integration”, *Policy Sciences*, 49 (2016) 211–231; T. Hustedt and T. Danken, “Institutional Logics in Inter-Departmental Coordination: Why Actors Agree on a Joint Policy Output”, *Public Administration*, 95 (2017) 730–743; R. Steurer and C. Clar, “The Ambiguity of Federalism in Climate Policy-Making”, *supra*.
- 19 A. Hsu, A.J. Weinfurter and K. Xu, “Aligning Subnational Climate Actions for the New Post-Paris Climate Regime”, *Climatic Change*, 142 (2017) 419–432; S. Bernstein and M. Hoffmann, “The Politics of Decarbonization and the Catalytic Impact of Subnational Climate Experiments”, *Policy Sciences*, 51 (2018) 189–211; K.H. Engel and B.Y. Orbach, “Micro-Motives and State and Local Climate Change Initiatives”, *Harvard Law and Policy Review*, 2 (2008) 119–137.
- 20 For a recent literature review on EPI, see for example C. Dupont and A. Jordan, “Policy Integration”, in A. Jordan and V. Gravey (eds.), *Environmental Policy in the EU* (Routledge 2021) 203–219. See also A. Jordan and A. Lenschow, “Environmental Policy Integration: A State of the Art Review”, *Environmental Policy and*

Simply put, policy integration (whether related to environment or other policy sectors) refers to two (or more) policy sectors, where one (or more) among these takes into account the goals of the other(s). Numerous policy issues are structurally multilevel and cross-sectoral, affecting different policy domains, territorial levels, governance systems, and jurisdictions.²¹ Policy integration deals with the effective orchestration needed to create cohesion between local and global levels of governance and policy sectors, thus lending itself to an institutional perspective.²² The concept was first introduced by Arild Underdal in 1980,²³ and has been honed through different approaches and definitions including “policy coherence”, “whole-of-government”, “collaborative governance”, “policy coordination”, and “holistic governance”.²⁴ In the specific case of EPI, Jordan and Schout propose a synthetic definition of EPI as “a process through which ‘non’ environmental sectors consider the overall environmental consequences of their policies, and take active and early steps to incorporate an understanding of them into policy-making at all relevant levels of governance”.²⁵ In addition to considering how this unfolds in analyses of the interactions between different sources of law, we also move beyond more simplistic

Governance, 20 (2010) 147–158; W. Lafferty and E. Hovden, “Environmental Policy Integration: Towards an Analytical Framework”, *Environmental Politics*, 12 (2003) 1–22; Å. Persson *et al.*, “Environmental Policy Integration: Taking Stock of Policy Practice in Different Contexts”, *Environmental Science and Policy*, 85 (2018) 113–115. For definitions of policy integration see P. Burstein, “Policy Domains: Organization, Culture, and Policy Outcomes”, *Annual Review of Sociology*, 17 (1991) 327–350; A.E. Jochim and P.J. May, “Beyond Subsystems: Policy Regimes and Governance”, *supra*; R.O. Keohane and D.G. Victor, “The Regime Complex for Climate Change”, *supra*; C.J. Termeer *et al.*, “Governance Capabilities for Dealing Wisely with Wicked Problems”, *Administration and Society*, 47 (2013) 680–710; G. Peters, “What Is so Wicked About Wicked Problems? A Conceptual Analysis and a Research Program”, *Policy and Society*, 36 (2017) 385–396; P. Trein *et al.*, “Policy Coordination and Integration: A Research Agenda”, *Public Administration Review*, 81(5) (2020) 973–977.

21 J.J. Candel and R. Biesbroek, “Toward a Processual Understanding of Policy Integration”, *supra*; M. Di Gregorio *et al.*, “Multi-level Governance and Power in Climate Change Policy Networks”, *Global Environmental Change*, 54 (2019) 64–77; P. Adriázola *et al.*, *Multi-level Climate Governance Supporting Local Action*, *supra*.

22 L.B. Andonova *et al.*, “National Policy and Transnational Governance of Climate Change: Substitutes or Complements?”, *International Studies Quarterly*, 61 (2017) 253–268; K.W. Abbott, “Strategic Ordering in Polycentric Governance”, *supra*.

23 A. Underdal, “Integrated Marine Policy: What? Why? How?”, *Marine Policy*, 4(3) (1980) 159–169.

24 For an exhaustive review of these and similar terminologies, see J. Tosun and A. Lang, “Policy Integration: Mapping the Different Concepts”, *Policy Studies*, 38 (2017) 553–570.

25 A. Jordan and J. Schout, *The Coordination of the European Union: Exploring the Capacities of Networked Governance* (Oxford University Press 2006), at 66.

visions of EPI as synonymous with policy coordination between different sectors,²⁶ to consider a wide spectrum of dimensions as holding the potential to help or hinder integration. In particular, we hypothesize that coordination (both horizontal and vertical), leadership, information and participation, and funding are key here.

EPI is also one of the key principles of transnational governance for sustainable development,²⁷ a goal intended to present a viable alternative to an industrially-oriented but environmentally dangerous mode of production, all while maintaining growth and social justice,²⁸ though many scholars have questioned whether maintaining all of these objectives is really viable.²⁹ EPI took center stage in the seminal 1987 report ‘Our Common Future’ (better known as the Brundtland Report) which first outlined the sustainable development approach in a transnational governance forum, though first developed in civil society. From that moment on, sustainable development became the watchword for environmental politics in global governance, including treaty processes, as well as at the national and subnational levels.³⁰ Accordingly, EPI was one of the leading objectives of the UN’s Agenda 2030, introduced in 2015, and began to grow in importance in EU politics from the

26 A. Jordan and A. Lenschow, “Environmental Policy Integration”, *supra*.

27 B. Bornemann and S. Weiland, “The UN 2030 Agenda and the Quest for Policy Integration: A Literature Review”, *Politics and Governance*, 9 (2021) 96–107.

28 D.W. Pearce and J.J. Warford, *World Without End: Economics, Environment, and Sustainable Development* (Oxford University Press 1993).

29 P. Descheneau and M. Paterson, “Between Desire and Routine: Assembling Environment and Finance in Carbon Markets”, *Antipode*, 43 (2011) 662–681; H. Stevenson and J. S. Dryzek, *Democratizing Global Climate Governance* (Cambridge University Press 2014); N. Carter “Greening the Mainstream: Party Politics and the Environment”, *Environmental Politics*, 22 (2013) 73–94; S.M. Lélé, “Sustainable Development: A Critical Review”, *World Development*, 19 (1991) 607–621.

30 On sustainable development in global governance see F. Biermann, N. Kanieb and R.E. Kima, “Global Governance by Goal-Setting: The Novel Approach of the UN Sustainable Development Goals”, *Current Opinion in Environmental Sustainability*, 26–27 (2017) 26–31; J. Meadowcroft *et al.* (eds.), *What Next for Sustainable Development?: Our Common Future at Thirty* (Edward Elgar 2019); S.C. Aykut, “Taking a Wider View on Climate Governance”, *supra*; H. Bulkeley *et al.* (eds.), *Transnational Climate Change Governance* (Cambridge University Press 2014). On national and local governance see K.J. Bowen *et al.*, “Implementing the ‘Sustainable Development Goals’: Towards Addressing Three Key Governance Challenges—Collective Action, Trade-Offs, and Accountability”, *Current Opinion in Environmental Sustainability*, 26–27 (2017) 90–96.

Cardiff European Council of 1998 onwards, eventually becoming a cemented objective of the EU.³¹

Despite rhetorical commitment, EPI has in practice been more complex to achieve. First, multilevel governance implies limits, amongst which one of the most evident is the cost-benefit *ratio* of a high number of policy agents, where involving more actors does not necessarily increase efficiency.³² Second, the literature demonstrates that rhetoric has not always translated into practice.³³ This has been attributed to party politics, particularly where right-wing parties have replaced left-wing coalitions in power.³⁴ Other accounts point to problems of scale: “while the rationale of the EPI concept seems straightforward and desirable at a global level, it is more complex and difficult to implement in concrete terms at sector level”.³⁵ Continents, countries, regions, and subnational territories have their own peculiarities in terms of policy-making and environmental/climate policies. In this regard, the following chapters provide a more detailed review of the transnational and European frameworks (Chapter 2), of Austrian and Italian legislation and strategies (Chapter 3), and of the single case studies considered in this book (Chapter 4).

While our general conceptual frame is EPI, the specific focus of the research in this volume is CPI,³⁶ arguably the environmental issue that attracts the

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- 31 S. Baker *et al.* (eds.), *The Politics of Sustainable Development: Theory, Policy and Practice Within the European Union* (Routledge 1997); B. Bornemann and S. Weiland, “The UN 2030 Agenda and the Quest for Policy Integration”, *supra*.
- 32 M.J. Dorsch and C. Flachsland, “A Polycentric Approach to Global Climate Governance”, *Global Environmental Politics*, 17 (2017) 45–64.
- 33 H. Runhaar *et al.*, “Environmental Assessment in the Netherlands: Effectively Governing Environmental Protection? A Discourse Analysis”, *Environmental Impact Assessment Review*, 39 (2013) 13–25.
- 34 N. Carter, “Greening the Mainstream”, *supra*; T. Bach and K. Wegrich (eds.), *The Blind Spots of Public Bureaucracy and the Politics of Non-Coordination* (Palgrave Macmillan 2019); T. Hustedt and T. Danken, “Institutional Logics in Inter-Departmental Coordination”, *supra*. On right-wing entries and effects on environmental policy integration see A. Jordan and A. Lenschow, “Environmental Policy Integration”, *supra*.
- 35 Å. Persson, “Environmental Policy Integration: An Introduction”, *PINTS—Policy Integration for Sustainability Background Paper, Stockholm Environment Institute*, (2004), at 1. Available online at <https://www.sei.org/publications/environmental-policy-integration-introduction/>.
- 36 G.R. Biesbroek *et al.*, “Europe Adapts to Climate Change: Comparing National Adaptation Strategies”, *Global Environmental Change*, 20 (2010) 440–450; N.M. Schmidt and A. Fleig, “Global Patterns of National Climate Policies: Analyzing 171 Country Portfolios on Climate Policy Integration”, *Environmental Science and Policy*, 84 (2018) 177–185; M. Nilsson and L.J. Nilsson, “Towards Climate Policy Integration in the EU: Evolving Dilemmas and Opportunities”, *Climate Policy*, 5 (2005) 363–376; C. Adelle and D. Russel, “Climate Policy Integration”, *supra*; P. Mickwitz *et al.* “Climate Policy Integration, Coherence and

most attention at present. As highlighted by Schmidt and Fleig, CPI can be seen as increasing exponentially at a global level, if one considers the number of national (and subnational) pieces of climate legislation that refer to a range of policy sectors. Climate change has been studied as a multilevel, multi-sector and multi-actor challenge,³⁷ and as such climate policies cannot be effective where limited to a discreet 'climate' policy area – by definition, climate change must be tackled through the regulation of those policy sectors that have historically created it, whether the goal is mitigation or adaptation.³⁸ All this suggests that further comparative studies are needed to supplement those few that have already tackled CPI specifically.³⁹ The current volume presents

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- Governance”, *Partnership for European Environmental Research*, Report No. 2 (2009), available at <https://hal.inrae.fr/hal-02598475/document>; C. Dupont and S. Oberthür, “Insufficient Climate Policy Integration in EU Energy Policy: The Importance of the Long-Term Perspective”, *Journal of Contemporary European Research*, 8 (2012) 228–247.
- 37 A. Dewulf, S. Meijerink and H. Runhaar, “The Governance of Adaptation to Climate Change as a Multi-level, Multi-sector and Multi-actor Challenge: A European Comparative Perspective”, *Journal of Water and Climate Change*, 6 (2015) 1–8.
- 38 *Ibid.*; C. Adelle and D. Russel, “Climate Policy Integration”, *supra*; M.W. Bauer *et al.* (eds.), *Dismantling Public Policy: Preferences, Strategies, and Effects* (Oxford University Press 2012); J. Casado-Asensio and R. Steurer, “Integrated Strategies on Sustainable Development, Climate Change Mitigation and Adaptation in Western Europe: Communication Rather Than Coordination”, *Journal of Public Policy*, 34 (2014) 437–473; R. Nordbeck and R. Steurer, “Integrated Multi-sectoral Strategies as Dead Ends of Policy Coordination: Lessons to Be Learned from Sustainable Development”, *Environment and Planning C: Government and Policy*, 34 (2016) 737–755.
- 39 On CPI at the European level see A. Dewulf, S. Meijerink and H. Runhaar, “The Governance of Adaptation to Climate Change as a Multi-level, Multi-sector and Multi-actor Challenge: A European Comparative Perspective”, *Journal of Water and Climate Change*, 6 (2015) 1–8. On the specific example of water, see S. Brouwer, T. Rayner and D. Huitema, “Mainstreaming Climate Policy: The Case of Climate Adaptation and the Implementation of EU Water Policy”, *Environment and Planning C: Government and Policy*, 31 (2013) 134–153. On CPI at the national and regional levels, see C. Kettner and D. Kletzan-Slamanig, “Climate Policy Integration on the National and Regional Level: A Case Study for Austria and Styria”, *International Journal of Energy Economics and Policy*, 8 (2018) 259–269; I. Galarraga, M. Gonzalez-Eguino and A. Markandya, “The Role of Regional Governments”, *supra*; C. Wamsler and S. Pauleit, “Making Headway in Climate Policy Mainstreaming and Ecosystem-Based Adaptation: Two Pioneering Countries, Different Pathways, One Goal”, *Climatic Change*, 137 (2016) 71–87; M. Landauer, S. Juhola and J. Klein, “The Role of Scale in Integrating Climate Change Adaptation and Mitigation in Cities”, *Journal of Environmental Planning and Management*, 62 (2018) 741–765. On CPI in the Alpine region, see V. Cattivelli, “Climate Adaptation Strategies and Associated Governance Structures in Mountain Areas. The Case of the Alpine Regions”, *Sustainability*, 13(5) (2021) 1–24.

cross-national and cross-subnational comparisons amongst a number of policy sectors, as described in more detail in the following section.

1.2 *Case Studies and Policy Sectors*⁴⁰

The explorations of subnational CPI in this book focus on particular subnational governments in Italy and Austria, and specific policy areas. The subnational governments chosen are the Autonomous Provinces of Bolzano and Trento in Italy, and the Austrian *Länder* Tyrol and Vorarlberg (see Map 1). These cases are comparable for a variety of reasons, as well as shedding light on broader CPI issues. The four subnational areas are part of the Alpine macro-region, one of the four macro-regions composing Europe and defined as territories that “span several states with some common morphological or climatic features and adopt wider-scale strategies which are not mandatory or do not take sufficient account of the specificities of any included region”.⁴¹ They are geographically close, meaning that the climate issues they deal with are often shared, yet they also present variation in terms of their subnational legal and governance systems. In the language of social science research design, these cases allow us to keep our independent variable (CPI) more or less constant, while ensuring significant variation on dependent variables (the factors we hypothesize as important for determining successful CPI, outlined below).

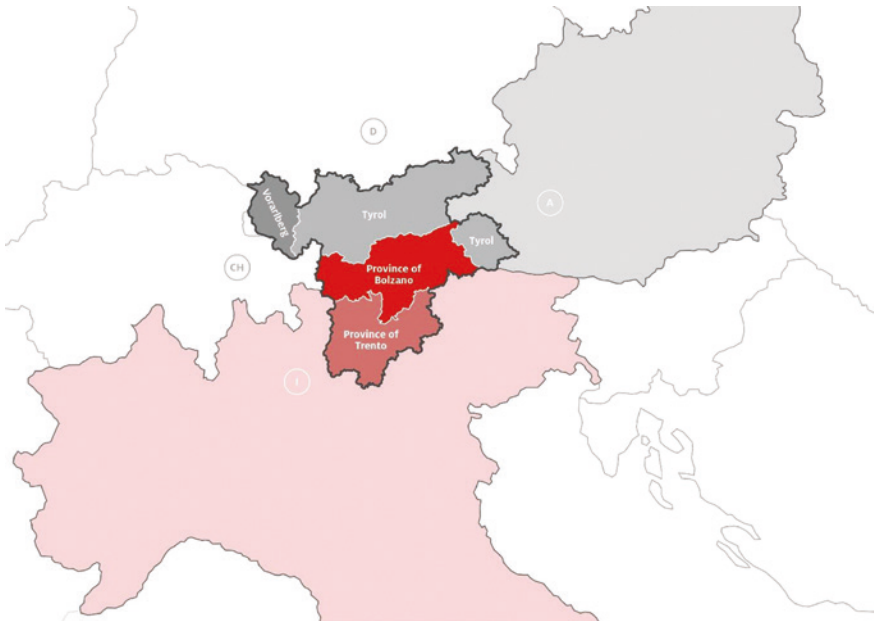
In more detail, the Euregio area, a European Grouping of Territorial Cooperation (EGTC) created in 2011 and providing an institutional architecture for cross-border cooperation between Trento, Bolzano and Tyrol, shares a common history, common problems and the political will to solve them in a coordinated way. *Land Vorarlberg* also shares a common history with the other three subnational cases but is not a member of the Euregio area, though it is involved in political coordination in the Euregio through its observer status at the *Dreier Landtag*, the biannual meeting between the legislative assemblies of Euregio members.⁴² It thus provides an interesting comparison point to evaluate the Euregio framework for CPI, since it is a clear example of a regional government that is active on issues of climate protection.⁴³

40 This section and section 2 draw on the proposal for the project this volume is based on, authored by Federica Cittadino: see footnote 5.

41 V. Cattivelli, “Climate Adaptation Strategies”, *supra*, at 1.

42 See <https://www.landtag-bz.org/de/dreier-landtag.asp>.

43 P. Bußjäger, “Die territoriale Dimension der österreichischen Demokratie in vergleichender Perspektive”, in L. Helms and D.M. Wineroither (eds.) *Die österreichische Demokratie im Vergleich* (Nomos 2017) 223–250.



MAP 1 Case study locations

Both the Italian Autonomous Provinces and the Austrian *Länder* share some legislative powers with their respective national governments in the sectors investigated: namely transport, energy and water, and spatial planning. In Italy, a regional state, legislation on environmental protection is an exclusive national competence of the Italian State, yet the regions and Autonomous Provinces hold exclusive or shared powers over matters concerning environmental protection. Climate change is not a discreet policy sector: it overlaps with others, and legislative measures can thus be adopted at the national or regional levels depending on whether they fall under the general competence on environmental protection, or under regional sectoral policies. In Austria, a federal state, environmental protection is not listed as an exclusive competence of the *Bund*, yet neither does it fall within the residual powers of the *Länder*. Instead, environmental protection is considered a “*Querschnittsmaterie*” (a shared area) that includes energy, water, spatial planning, and nature protection.⁴⁴ Thus, the selected policy areas are considered partly within the exclusive competence of the *Bund* (e.g. water), partly within

44 M. Stelzer, *The Constitution of the Republic of Austria: A Contextual Analysis* (Bloomsbury 2011).

the exclusive competence of the *Länder* (e.g. nature protection), and partly as “*Querschnittsmaterien*” (e.g. energy and spatial planning). In addition, *Länder* often rely on the Austrian constitutional clause on “private-sector administration” to implement climate strategies.⁴⁵

Beyond these constitutional characteristics, the territories discussed in this volume also face some common climate threats. As stated in the Climate Action Plan released by the Alpine Convention, the

Alps see a faster pace and higher impacts of climate change than other European regions. Average temperature rise in the Alpine area is nearly twice as much as in the surrounding areas and consequences of climate change such as more frequent extreme weather events and natural hazards affect society and economy in the Alps in an over-proportional way. At the same time, the Alpine area includes large emission sources, especially from transport, buildings and tourism and thus has a significant potential for becoming a model region for smart decarbonization.⁴⁶

Other assessments concur and give a more precise overview of the Alpine region’s peculiarities in terms of climate change. For example, the European Environment Agency’s report on Climate change, impacts and vulnerability in Europe (2016) identifies the following: a higher than the European average rise in temperature, a decrease in glacier extent and volume, the upward shift of plant and animal species, the high risk of species extinctions, increasing risks of forest pests, increasing risks from rock falls and landslides, changes in hydropower potential, and a decrease in ski tourism.⁴⁷ Similar observations are made in the Intergovernmental Panel on Climate Change (IPCC) Special Report on the Ocean and Cryosphere in a Changing Climate (2019).⁴⁸

A focus on the policy sectors of transport, energy and water, and spatial planning was chosen not only to delimit and thus explore the findings of the research in greater depth, but because climate change is predicted to have specific impacts in these areas, making them clear candidates for subnational CPI. Transport, for example, is the main source of greenhouse gas (GHG) emissions

45 Art. 17 Austrian Constitution. See <https://www.constituteproject.org/> for English translation.

46 See <https://www.alpconv.org/en/home/news-publications/publications-multimedia/detail/climate-action-plan-20/>.

47 See <https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016>.

48 See <https://www.ipcc.ch/srocc/>.

in the territories selected. One key area where the Euregio works is transport policy, given the volume of cross-border transit in the area, highlighting the transboundary nature of this issue. In the energy and water sector, policies on hydroelectric power may cause conflicts around water use given the long-term decrease of availability expected as a consequence of climate change.⁴⁹ Spatial planning may contribute to both climate change mitigation and adaptation in different ways. For instance, urban planning may determine the need for reduced or increased car traffic, which in turn is responsible for GHG emissions.⁵⁰ Furthermore, spatial planning may have an impact on the permeability of soil, which in turn influences the capacity to react to extreme weather events.⁵¹ In the next section, we present our research questions and the specific dimensions we hypothesize have an effect on CPI.

2 What Shapes Climate Policy Integration and the Subnational Level? A Research Agenda and Hypotheses

To investigate how CPI unfolds in different subnational authorities and policy sectors, answers to the following questions are needed:

- a) To what extent and by which means have the Autonomous Provinces of Trento and Bolzano in Italy and *Länder* Tyrol and Vorarlberg in Austria integrated climate policies in sectors where they exercise exclusive and shared legislative powers?
- b) What institutional factors prevent or facilitate this integration at the subnational and local levels, in terms of both policy-making and implementation?

Following findings in the existing literature, five main institutional dimensions can be hypothesized to play potentially decisive roles in shaping CPI:

- 1) coordination among authorities responsible for sectoral policies (horizontal/vertical and formal/informal);
- 2) public participation;

49 S. Brouwer, T. Rayner and D. Huitema, "Mainstreaming Climate Policy", *supra*; M. Zebisch *et al.*, *Rapporto sul Clima Alto Adige 2018* (Eurac Research 2018). Available online at https://www.klimaland.bz/wp-content/uploads/Klimareport_it.pdf.

50 Permanent Secretariat of the Alpine Convention, *Climate-neutral and Climate-resilient Alps 2050* (2019). Available online at <https://issuu.com/alpconv/docs/climateneutralclimateresilientalps2>.

51 M. Zebisch *et al.*, *Rapporto sul Clima Alto Adige 2018*, *supra*.

- 3) information on climate change with a main focus on availability to the public, and its communication (at what stage and by what means);
- 4) leadership (both political and in the administration);
- 5) dedicated funding.

These factors are interlinked in various ways and often mutually dependent upon one another. In the following we provide a brief overview of these, relating them to the achievement of CPI in subnational policy sectors.

Vertical integration is inherent in all multilevel systems – whether federal or regional. Such systems are characterized by the presence of national and subnational governments entitled to exercise legislative competences over a range of matters, some of which are *de jure* or *de facto* shared competences.⁵² Governing climate change poses specific challenges since it requires a high level of vertical coordination in multiple policy sectors. Mitigation and adaptation policies are transversal to a number of national, regional, and shared policy fields such as environmental conservation, energy policy, water management, spatial planning, and others. In that sense, paying attention to vertical coordination in discussions of the effectiveness of CPI is widely accepted as key. Horizontal integration, on the other hand, refers to the fact that the governance of climate change is not contained within any single sectoral policy at either the national or subnational level. Rather, to tackle climate change, national and subnational governments need to enact legislative and administrative measures in a range of sectoral policy areas where they must coordinate their interventions in separate but overlapping policy fields. Cooperation across sectors between policymakers and policy-officers operating at the same level is therefore necessary to ensure both coherence and effectiveness.⁵³ Thus, horizontal coordination is also key to understanding CPI, and attention to both horizontal and vertical coordination is needed for a more holistic understanding of policy-making at the subnational level. In addition to this, horizontal and vertical coordination can unfold in different ways. While legal scholars and political scientists alike have tended to focus on the presence or absence of formal frameworks for coordination, policy scholars point to the

52 M. Alberton and F. Cittadino, *La tutela dell'ambiente tra Stato e Regioni alla luce della riforma costituzionale* (2015); M. Alberton, F. Cittadino and E. Mitrotta, "La tutela dell'ambiente: la prevenzione delle alluvioni e la qualità dell'aria", in W. Obwexer *et al.* (eds.), *EU-Mitgliedschaft und Südtirols Autonomie II: die Auswirkungen der EU-Mitgliedschaft auf die Autonomie des Landes Südtirol am Beispiel ausgewählter Gesetzgebungs- und Verwaltungskompetenzen – eine Fortsetzung; Handbuch* (Verlag Österreich 2019) 333–379.

53 G. Peters, "Managing Horizontal Government. The Politics of Coordination", *Public Administration*, 76(2) (1998) 295–311.

need to also consider more informal, everyday occasions for coordination.⁵⁴ Our research therefore focuses on both formal and informal mechanisms of intergovernmental (vertical) coordination, such as managerial mainstreaming, and intra- and inter-organizational mainstreaming (horizontal coordination) where collaborations are promoted in more informal ways.

Turning to the next factor we consider pertinent for evaluating CPI, participation, like coordination, highlights the importance of looking at how climate-related policies are elaborated and implemented at the subnational level.⁵⁵ Environmental participation is often studied in terms of the principles and rights set at international and EU levels, yet the literature on participation at the subnational/local levels tends to be addressed with a view to either testing democratic theory or discussing community-based natural resource management.⁵⁶ Beyond these approaches, participation has been found to be key to effective policy-making and implementation in a perspective of ‘civic environmentalism’, which hypothesizes that broad stakeholder involvement in environmental policy-making will lead to both more efficient and more legitimate or accepted policies.⁵⁷ Although this view is not strictly linked to CPI, we reasoned that these types of considerations are also pertinent to understanding the integration of climate issues in subnational decision-making: CPI could be driven by public participation. We therefore include examinations of mechanisms for subnational-level participation across the policy areas focused upon, to investigate if and how participation contributes to policymaking, and the integration of environmental aims across different policy areas. It is important to acknowledge that, in line with the institutional perspective followed in this book, we consider a particular type of participation, namely institutionalized and formal participation. We do not discuss broader forms of participation, such as grassroots and local community activism or social movements. This is not to say that such participation is not important: the recent wave of mobilization that began in the late 2018 and exploded in 2019 (despite a partial stop due to the pandemic from 2020) which brought billions of people – and young people especially – to the streets to protest for climate justice during the

54 C. Wamsler and S. Pauleit, “Making Headway in Climate Policy Mainstreaming”, *supra*.

55 P. Burton and J. Mustelin, “Planning for Climate Change: Is Greater Public Participation the Key to Success?”, *Urban Policy and Research*, 31 (2013) 399–415.

56 M. Cox, G. Arnold and S. Villamayor Tomás, “A Review of Design Principles for Community-Based Natural Resource Management”, *Ecology and Society*, 15(4) (2010).

57 For example, K. Bäckstrand and E. Lövbrand, “The Road to Paris: Contending Climate Governance Discourse in the Post-Copenhagen Era”, *Journal of Environmental Policy and Planning*, 21 (2019) 519–532.

global strikes of Fridays For Future or in the civil disobedience of Extinction Rebellion certainly matter and are discussed in a wide range of literature.⁵⁸ Rather, this broader view of participation could not be integrated into the research methodology, which is not suited to tracing the influence of grassroots and social movement actions. We also take the view that subnational CPI is likely to be more directly influenced by the formal sorts of participation subnational institutions seek out themselves (and note that this may even be a response to grassroots and social movement actions).

Information is another key element and a precondition for effective coordination and robust participation: without information on climate change and thus the need for integration and specific responses in different policy sectors, no amount of coordination or participation is likely to lead to effective CPI. We understand information in two different ways and pick up on this theme across various chapters (see below). First, as regards the extent to which climate change-related data and analyses are available to policymakers, our research indicates that this can be investigated through attention to participatory mechanisms, which include consultations with experts in various aspects of climate change. The availability of such information is seen as a crucial input for CPI. As far as making information available to and communicating with the public, and especially stakeholders participating in decision-making or implementation is concerned,⁵⁹ existing literature has found that integration may be hindered by a lack of understanding among policymakers of the consequences of climate change for their sectors.⁶⁰ We pick up this theme in Chapter 9 (see below).

- 58 On Fridays For Future, see for example: J. de Moor *et al.*, “New Kids on the Block: Taking Stock of the Recent Cycle of Climate Activism” *Social Movement Studies*, 20 (2021) 619–625; L. Zamponi *et al.*, “(Water) Bottles and (Street) Barricades: The Politicisation of Lifestyle-centred Action in Youth Climate Strike Participation”, *Journal of Youth Studies*, 6 (2022) 1–22. On Extinction Rebellion, see: D. Stuart, “Radical Hope: Truth, Virtue, and Hope for what is Left in Extinction Rebellion”, *Journal of Agricultural and Environmental Ethics*, 33 (2020) 487–504; W. Ginanjar and A. Mubarrok, “Civil Society and Global Governance: The Indirect Participation of Extinction Rebellion in Global Governance on Climate Change”, *Journal of Contemporary Governance and Public Policy*, 1 (2020) 41–52. For a comparison of the two, see: J. de Moor, “Postapocalyptic Narratives in Climate Activism: Their Place and Impact in Five European Cities”, *Environmental Politics*, (2021) 1–22; B. Richardson, *From Student Strikes to the Extinction Rebellion: New Protest Movements Shaping our Future* (Edwar Elgar 2020).
- 59 K. Mogelgaard *et al.*, “From Planning to Action: Mainstreaming Climate Change Adaptation into Development”, *World Resources Institute Working Paper*, (September 2018). Available online at <https://files.wri.org/d8/s3fs-public/from-planning-action-mainstreaming-climate-change-addaptation-into-development.pdf>.
- 60 T. Rauken, P. Kristen Mydske and M. Winsvold, “Mainstreaming Climate Change Adaptation at the Local Level”, *Local Environment*, 20 (2015) 408–423.

Politics, and the role of politicians, is also touched upon in discussions of how leadership affects CPI. Leadership concerns the extent to which there is a clear impetus for CPI from politicians or top-level managers in subnational administrations. Leadership may also come from outside the subnational administration – for example from international and national leaders or transnational bodies such as the Euregio – but its translation into internal leadership is still hypothesized as key. Leadership is also interlinked with other factors understood as important for effective CPI, including horizontal coordination across different policy units and funding.⁶¹ The institutional perspective also guides our examination of leadership, which is based on the self-representations and claims advanced by administrative figures and politicians. We also look more critically at their effectiveness through the accounts offered by civil society and analyze the real evolution of GHG emissions in the areas under consideration. One important aspect of leadership, which also ties in with considerations on information provision, is the level of urgency attached to questions of CPI by leaders – this is suggested to be a necessary complement for leadership to advance environmental policy integration.⁶² On the other hand, politicians at all levels of elected government have been found to be more susceptible to short-term perspectives to the detriment of the long-term aims involved in CPI, which may suggest a negative effect on CPI.⁶³

Finally, a factor that needs little explanation as an important source for investigating the success of CPI is the availability of dedicated funding. Though certainly not sufficient for CPI, dedicated finances are considered potentially necessary: financial backing has been described as giving climate policy integration ‘teeth’ in this vein.⁶⁴ More generally, the budget assigned to any policy portfolio is a transversal power that is instrumental to the exercise of related substantive powers.⁶⁵ Finances can allow steps towards both horizontal and vertical coordination, for example by underpinning the creation of new positions and forums within subnational governments, and support the creation of external arenas for public participation. Finances can also bolster information sharing through dedicated communication strategies.

61 *Ibid*; A. Ross and S. Dovers, “Making the Harder Yards: Environmental Policy Integration in Australia”, *Australian Journal of Public Administration*, 67 (2008) 245–260.

62 T. Christensen and P. Lægveid, “Governmental Autonomisation and Control: The Norwegian Way”, *Public Administration and Development: The International Journal of Management Research and Practice*, 24 (2004) 129–135.

63 C. Adelle and D. Russel, “Climate Policy Integration”, *supra*.

64 K. Mogelgaard *et al.*, “From Planning to Action”, *supra*.

65 A. Valdesalici, *Federalismo fiscale e responsabilizzazione politico-finanziaria: comparazione giuridica ed esercizi di misurazione del diritto* (ESI 2018).

2.1 *A Note on Methodology*

To answer these questions and gather data on these five dimensions hypothesized as key explanatory factors for CPI, data gathering and analysis was carried out in two main stages. First, relevant written documents dealing with climate change integration in the policy sectors of the different subnational authorities were gathered and analyzed for content referring to the five dimensions. In a second stage, the data was integrated via interviews with relevant stakeholders to shed light on more procedural and informal dynamics.

In more detail, the first phase of the research consisted of a Qualitative Document Analysis (QDA), a method also used in policy integration research in other subnational contexts.⁶⁶ Documents were gathered by contacting the relevant policy departments at each subnational authority. We limited documents to those from 2005 onwards, in line with the entry into force of the Kyoto Protocol to the UNFCCC which we consider a clear milestone in climate governance as it was the first international agreement through which industrialized countries committed to reducing GHG emissions. The documents gathered were public documents relevant to our purposes whose target audience was external to the administration. The latter are particularly informative about processes of decision-making. This initial data-gathering step was then followed up by searches on publicly available websites of the subnational authorities to identify and consult sections on climate change and general plans or strategies on climate change. These general, public-facing texts helped to contextualize the approach to climate change in the different subnational areas. A similar search was then carried out for the webpages of the spatial planning, energy and water, and transport departments of each subnational authority to gather all documents referring to climate change mainstreaming. Other sources were used to supplement this dataset in order to provide more data on leadership, information and funding. For leadership, the data were supplemented with electoral programs within the timeframe considered, in order to evaluate the salience assigned to climate change (and climate change mainstreaming in particular) across time, and with data on the evolution of GHG emissions over time. For the information dimension, materials from relevant information campaigns were included wherever possible. For funding, an analysis of the budget information available for CPI in each policy sector was

66 On QDA see D. Altheide *et al.*, "Emergent Qualitative Document Analysis", in S. Nagy Hesse-Biber and P. Leavy (eds.), *Handbook of Emergent Methods* (Guilford 2008) 127–151. On its application see e.g. M.I. England *et al.*, "Climate Change Adaptation and Cross-Sectoral Policy Coherence in Southern Africa", *Regional Environmental Change*, 18 (2018) 2059–2071.

conducted, though the comparability and availability of such data varies as discussed in depth in Chapter 8. These data were then analyzed with the five dimensions of interest in mind by the chapter authors.

The documents also formed the basis for the interviews conducted in the second stage. Interviews were used to supplement, challenge or corroborate the initial data, and also served to gain more in-depth insights into CPI processes. We collected a total of thirty-nine interviews: twelve in the Autonomous Province of Bolzano, eleven in the Autonomous Province of Trento, eight in *Land Tyrol*, and eight in *Land Vorarlberg*. The interviews were conducted online, recorded, and anonymized.⁶⁷ They were held with relevant stakeholders, selected on the basis of both expert knowledge in the research team and documentary data. Different types of stakeholders were interviewed in each subnational area, with the aim being to interview key informants in specific contexts. The guiding criterion for mapping stakeholders was to achieve a balanced representation of the sectors covered in the project (transport, energy and water, and spatial planning), and to include both institutional and non-institutional perspectives. Political figures, administrative figures, technical experts and members of civil society organizations were interviewed.⁶⁸ A general but flexible guide was followed for the interviews and is included in the appendices. Minor adaptations were made for each interview according to the interviewees' profiles and fields of expertise. The interview results were summarized in an anonymized way in an interview report, available online.⁶⁹ In that report, as well as in the chapters of this book, interviews are cited using codes.⁷⁰

As noted at the outset of this Introduction, our intention was to produce not only in-depth findings about CPI in specific subnational authorities by policy sector, but also to produce findings of use beyond the cases explored here. In

67 In line with EU Regulation 2016/679 on General Data Protection Regulation – GDPR.

68 Interviews were conducted on Zoom and recorded; they lasted approximately one hour. The interview guide is available in the Appendix. Interviews were conducted from June–September 2021 by Niccolò Bertuzzi (Autonomous Province of Trento), Giada Giacomini (Autonomous Province of Bolzano), Alice Meier (*Länder Tyrol* and Vorarlberg) and Alice Valdesalici for the officers dealing with financial issues in the Provinces of Bolzano and Trento.

69 N. Bertuzzi *et al.* (eds.), *Interview Report Bolzano, Trento, Vorarlberg and Tyrol* (2021). The interview report is cited only when the opinions referred to in the book emanate not from the interviewees but on the basis of reflections drawn from the interview results more generally as contained in the report.

70 By way of example, the first interview conducted in the Autonomous province of Trento is referred to as IntTN_01, the second as IntTN_02, and so on. Abbreviations of codes are explained in the Acronyms, Abbreviations and Symbols in this volume.

this vein, the comparative research design also generates context-specific findings that point to solutions that could be applied under similar conditions in other subnational authorities.⁷¹ By relying on qualitative methods to generate rich and detailed descriptions of CPI in practice across different policy areas and subnational authorities, the research framework lays the foundation for contextualized findings to emerge that can contribute to theorize “the drivers of policy coordination and integration beyond the simple listing of explanatory factors”.⁷² In the same vein, most studies on EPI and CPI have tended to adopt approaches that are outcome-focused. Here, we also seek to pay attention to outcomes, but predominantly to policy processes as the sites where CPI is actually shaped,⁷³ including to how those processes have changed and evolved over time. This focus on policymaking also bolsters the potential for the findings to migrate to other geographical contexts and policy sectors.

3 Structure of the Book

Part 1 of the book (Chapters 1, 2 and 3) present legal analyses of climate change legislation and policy at the international, European, national and subnational levels. Part 2 (Chapters 4, 5 and 6) brings together the chapters on the policy sectors, namely transport, energy and water, and spatial planning. Each is discussed in a cross-national and cross-subnational perspective. Part 3 (Chapters 7, 8 and 9) focuses instead on the role of each of the five dimensions hypothesized to shape CPI. In Chapter 10, the main results are summarized and the comparative results discussed with a view to the lessons they suggest about achieving CPI under specific conditions and in specific policy areas.

In Chapter 1, Mariachiara Alberton explores the challenges and opportunities for international and European climate governance. Starting from the observations presented in this Introduction, she explores the orientation of climate change mitigation policies around the goal of limiting the increase in global average temperatures to well below 2 degrees Celsius following the adoption

71 F. Palermo and K. Kössler, *Comparative Federalism: Constitutional Arrangements and Case Law* (Hart Publishing 2017).

72 P. Trein *et al.*, “Policy Coordination and Integration”, *supra*, at 3; see also G. Capano and M. Howlett, “Causal Logics and Mechanisms in Policy Design: How and Why Adopting a Mechanistic Perspective Can Improve Policy Design”, *Public Policy and Administration*, 36 (2021) 141–162.

73 *Ibid.*; J.J. Candel and R. Biesbroek, “Toward a Processual Understanding of Policy Integration”, *supra*; A. Jordan and J. Schout, *The Coordination of the European Union*, *supra*.

of the Paris Agreement. Under the same, states have committed to developing and implementing adaptation plans and actions. In this arena, the EU aims to become the world's first climate-neutral economy by 2050. Chapter 2 focuses instead on the national dimension, bridging the international and European climate governance approaches with the subnational authorities at the heart of the book. Maria Bertel and Federica Cittadino describe the relevant norms at the constitutional and sub-constitutional levels. As Austria and Italy can be characterized as decentralized systems (Austria as a federal state, Italy as a regional state), an analysis of the distribution of competences (regarding spatial planning, energy and water, and transport) between the national and subnational levels helps set the scene for the following empirical chapters. In addition, the Chapter outlines the main strategies and legislation in the policy fields of transport, energy and water, and spatial planning, with a view to understanding to what extent national legislation integrates climate change in its normative production in the abovementioned fields of activity. Chapter 3 moves to the core of our research, investigating how and to what extent the two Autonomous Provinces of Trento and Bolzano and the *Länder* Tyrol and Vorarlberg address the challenges of climate change in sectors where they exercise either exclusive or shared legislative powers. Mariachiara Alberton, Peter Bußjäger, Alice Meier, and Sara Parolari clarify the reasons why the success of any climate policy at the subnational level depends mainly on the extent to which an authority is able to include climate-related objectives in their sectoral policies. This Chapter also includes valuable insights on the availability and provision of information to policymakers, a theme touched upon once more in Chapter 9.

In Part 2, the analyses assume an empirical nature. Chapter 4, by Alessio Claroni and Ekkehard Allinger-Csollich, focuses on the transport sector, examining the different strategies for a switch to more sustainable models of mobility. This variation derives from different legal and financial frameworks, and more importantly from the political will for and public acceptance of real and effective changes. Transport is a key sector, representing the most important challenge to reducing emissions in the Alpine region. While GHG emissions are falling in other policy sectors, in transport change is slow, with emissions either falling only slightly or increasing. Chapter 5 examines energy and water, another milestone in CPI and more generally in the fight against climate change. Giada Giacomini and Arnold Autengruber provide an assessment of the level of harmonization between climate change-related energy and water policies in the subnational cases in hand and the international legal regime. They investigate how and to what extent actors address the challenges of climate change given the varying competences assigned to subnational

authorities in Austria and Italy. In the final chapter of Part 2, Friederike Bundschuh-Rieseneder, Maria Tischler, and Esther Happacher consider the spatial planning sector. Chapter 6 discusses the rules around land use and the prevention of natural hazards, examining this topic from a cross-border legal perspective. In their analysis, both direct (such as explicit references in legal objectives) and indirect climate-relevant aspects are considered, alongside various steering elements such as land use plans.

In Part 3 discussions move to the dimensions identified as possible drivers (or obstacles) shaping CPI in the sectoral policies at the subnational level. In Chapter 7, Niccolò Bertuzzi, Peter Bußjäger, and Alice Meier analyze horizontal and vertical coordination and leadership, recognizing that climate change requires joint action and poses coordination challenges to be tackled through cooperative mechanisms at different levels of government and in different policy sectors. They note that commitment to climate change goals among political leaders and managers directly impacts CPI and shapes mitigation and adaptation actions in practice; at the same time, looking at the evolution of GHG emissions, they highlight that leadership rhetoric does not always translate into effective results, and that there is still room for improvement. Leadership at different levels of government and also across borders is in turn deemed to influence coordination, translating into tasks and measures that stimulate synergies between and within subnational authorities. In Chapter 8 Alice Valdesalici and Mathias Eller discuss funding. They take the view that the implementation of climate policy in the Autonomous Provinces of Trento and Bolzano and the *Länder* Tyrol and Vorarlberg depend to a great extent on whether and to what extent financial resources are available for this purpose. They explore the financing for climate change policy across the different sectors, reasoning that this dedicated funding may facilitate CPI but that better and comparable data are needed before full conclusions can be drawn. The final chapter of this section is authored by Martina Trettel, Franz Koppensteiner, and Melanie Plangger, and deals with the remaining dimensions of information for citizens and their participation, which they see as sometimes underestimated but increasingly relevant, at least at the rhetorical level. The Chapter focuses on information for citizens since research revealed that information for policymakers was mostly gathered through expert consultations, also discussed in the part on participation. Generally, the authors make the case for interlinking information and participation, with the former a clear precondition for the latter to be meaningful. The Chapter also focuses on how formal, institutionalized participation is organized and contributes to CPI.

The last chapter in the book brings all of the main findings together. In it, Federica Cittadino, Louisa Parks, Peter Bußjäger, and Francesca Rosignoli

reflect on how the dimensions considered in Part 3 shape CPI in the areas and policy sectors investigated in Part 2. The Chapter calls into question the possibility of creating a 'one size fits all' model for subnational CPI and takes a comparative, cross-sectoral approach in order to point to how different models might fit different contexts and suggest future research agendas.