Final Scientific Report for the Swiss Network for International Studies (SNIS)

Project: "What International Negotiators Promise and Domestic Policymakers Adopt: Policy and Politics in the Multi-Level Climate Change Regime"

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1. Executive Summary

Many countries' current national climate change mitigation (hereafter: mitigation) policies fall short of the pledges outlined in their Nationally Determined Contributions (NDC), limiting the likelihood of reaching the goals of the Paris Agreement. This project combines insights from various (sub)disciplines and engages with multiple research methods to investigate to what extent and under what conditions countries deviate from their international pledges at the national level.

To this end, we developed two novel indices that measure countries' level of vertical policy harmonization along three key dimensions of mitigation policymaking (see Task 1). The Target Index compares the level and scope of the greenhouse gas (GHG) reduction targets (hereafter: targets) of 82 countries' NDCs and national policies – i.e., we measure whether these targets are harmonized or to what extent they deviate. The Policy Effort Index incorporates countries' climate policy mix to assess the credibility of 36 countries' targets. We find that despite a quarter of the countries covered having national targets that are either in line with or more ambitious than their NDC target, most countries (accounting for 70% of global emissions) fall short of their targets given countries' relatively insufficient policy mixes. Additionally, we show that different macro-level factors (e.g., democracy and fossil fuel dependency) are associated with greater deviations between countries' NDCs and national policies.

In Task 2, we collaborated with computer scientists to create two datasets related to participation in international climate negotiations. In the first dataset, we count how often each country makes a statement in the negotiations, and how often and in what manner it interacts with other countries or country groups. In the second dataset, we systematize information on countries' negotiation delegations, including their size, composition, experience, and affiliation of their members. We use this data to assess the extent to which countries with a stronger engagement in the UN climate negotiations, in the broader ecosystem of international climate-related organizations, and in transnational climate governance initiatives have more ambitious NDCs and stronger domestic mitigation policies; we find substantive differences between developing and developed countries. Additionally, we examine the presence and participation of small states in the UN climate negotiations to discuss the ways by which small states can compensate for their limited personnel capacities in order to meaningfully engage in the negotiations.

In Task 3, we turn our focus to the national decision-making processes with the aim to examine which factors in a climate policy subsystem drive the harmonization of NDCs and national policies. At the domestic level, actors' preferences and power resources can influence the political feasibility of policies, and thus countries' ability to keep their promises. Following this, we expect certain attributes of a policy subsystem (e.g., the level of actor involvement, the presence of "two-level connectors") to precondition the likelihood of policy adoption, in turn driving harmonization. In addressing these expectations, we draw on the Policy Effort Index. So far, we have run six policy elite surveys to collect data on the relevant factors of a policy subsystem. Our preliminary results indicate that the existence of "two-level connectors" are relevant in explaining the gap between countries' NDCs and national mitigation policies.

In Task 4, we used the Predictioneer's Game to forecast the ability or willingness of the German and Swiss governments to close the gap between their NDCs and national policies. To this end, we focused on relevant, country-specific factors that may facilitate the harmonization of NDCs and national policies.

The project makes important contributions to the study of countries' policy responses to climate change. The Vertical Policy Harmonization Indices and subsequent analysis shed further light on countries' ability to keep commitments and provide the basis for future research on the multilevel governance of climate change and other policy problems.

2. Scientific Report

Introduction

Countries' ability under the Paris Agreement to limit warming to 2˚C, if not to 1.5˚C, has been in question since the adoption of the treaty in 2015. This has prompted calls for countries to increase the ambition of their mitigation pledges in their Nationally Determined Contributions (NDCs) to close the emissions gap between countries' NDCs and global temperature goals. In addition to this emissions gap, there is an implementation gap as countries' current national policies fall short of the mitigation pledges outlined in their NDCs (Lee et al. 2023).

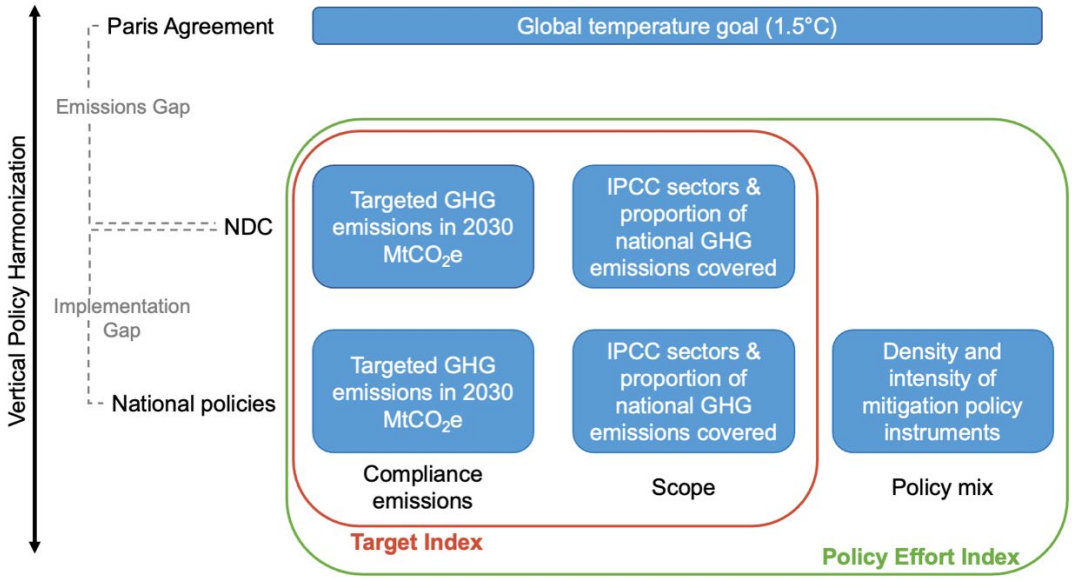

Figure 1: Illustration of Harmonization Indices and Gaps

To reach the goals of the Paris Agreement, countries must vertically harmonize increasingly ambitious international pledges with their national policies. Against this backdrop, this research project addresses the following questions:

(i) To which degree and under which conditions do countries translate their international commitments regarding mitigation into their national policies (i.e., policy objectives and instruments)?

(ii) What drives countries to under- or outperform?

This project builds upon precedent work in international relations, comparative politics, political economy, and policy sciences that seek to explain the gap between countries' international commitments and (sub-)national policies. Putnam's (1988) two-level game theorizes that negotiators face a complex task in reconciling the interests of other countries with an agreement that would be feasible to ratify domestically. Other authors devote their attention to country characteristics to explain countries' policy responses to climate change, such as vulnerability or abatement costs (e.g., Sprinz and Vaahtoranta 1994; Tubi et al. 2012), the level of democracy (Bättig and Bernauer 2009), or position in global climate governance (e.g., Wurzel et al. 2019). Yet another set of scholars investigate the gap between the international and national levels via the domestic policymaking process, such as how actors' positions and policy preferences can influence the political feasibility of policies (Bresser and O'Toole 2005; Kammerer and Ingold 2021) and thus shape the gap between a country's international commitments and national policies.

Drawing from these bodies of literature, we developed three sets of hypotheses in addressing our research questions. The first set focused on macro-level factors, specifically countries' institutions (e.g., degree of democracy) and interests (e.g., vulnerability, fossil fuel dependency). For example, we expect certain institutional settings (e.g., veto points) and interests (e.g., fossil fuel dependency) to hinder the harmonization of international commitments and national policies (see Task 1). The second set of hypotheses includes international factors with a focus on the countries' connectedness to the international negotiations (e.g., level

of active participation) and negotiation delegations (e.g., size, resources). For example, we expect that delegations with more resources, experience, and connections exhibit higher levels of vertical harmonization (see Task 2). The third set focuses on the domestic policy process, specifically actor constellations, belief conflict, and the role of "two-level connectors" that determine the adoption of national climate policies (Ingold & Pflieger 2016). For example, we expect that countries' whose climate policy networks show a low levels of actor involvement and belief conflict to exhibit smaller gaps between their international commitments and national policies (see Task 3).

In addressing the research questions and hypotheses, this project aims to quantify and qualify the gap between international promises and the national adoption of climate policies. To this end, the project developed the Vertical Policy Harmonization Indices and combine several research methods including policy network analysis, expert interviews, econometric analysis, and forecasting political negotiation outcomes to probe the relevant macro-economic and political factors.

Quantifying and qualifying Vertical Policy Harmonization (Task 1)

In Task 1, we developed the Vertical Policy Harmonization Indices along three key dimensions of mitigation policymaking (Baker et al., n.d.): compliance emissions which refers to countries' GHG emissions under the committed reduction targets, scope which captures the sectors and proportion of total emissions covered by those targets, and policy mix which relates to the portfolio of policy instruments introduced to reduce emissions. Using the compliance emissions and scope, we constructed the Target Index which compares the level and sectoral scope of the GHG reduction targets in the NDCs with those in national policies. The Target Index covers 82 countries, accounting for approximately 90% of global GHG emissions. Building on this, the Policy Effort Index evaluates the credibility of these targets by qualitatively assessing countries' climate policy mix using concepts widely applied by the public policy community (e.g., Schaffrin et al. 2015; Howlett 2014). The Policy Effort Index covers 35 countries, accounting for approximately 70% of global GHG emissions. See Figure 1.

To construct the Vertical Policy Harmonization Indices, we generate new datasets by conducting content-based coding of countries' latest NDCs and national policy documents. Moreover, we complied data on countries' GHG emissions and macro-level characteristics (e.g., GDP, population, vulnerability) from credible data repositories (e.g., the World Bank, UNFCCC, World Resources Institute). We organized this data into three main datasets. The first dataset includes information regarding countries' NDC and national-level GHG reduction targets, including the conditionality of NDC targets, reference points (e.g., base year emissions), target type (e.g., base year, business-as-usual), and estimated emissions under the NDC or national-level target. The second new dataset is an inventory of countries' national mitigation policies and includes information regarding policy types (e.g., legislation, strategy, plan), related metadata (e.g., year of adoption or amendment, status), and the types of policy instruments adopted (e.g., economic incentive, regulation). The third dataset contains the secondary data on countries' macro-level characteristics that were used as explanatory variables in the analyses.

The two Vertical Policy Harmonization Indices developed in Task 1 (Baker et al., n.d.), provide some insights on our first research question, namely to which degree countries translate their international commitments into their national policies. The Target Index shows that over a quarter of the countries covered, accounting for 45% of global emissions, have targets in their national policies that are either in line with or are more ambitious than the NDC target. Yet, the Policy Effort Index shows most countries, accounting for 70% of global emissions, fall short of their GHG reduction targets once the policy instruments, that are implemented to achieve those targets, are considered. See Figures 2 and 3.

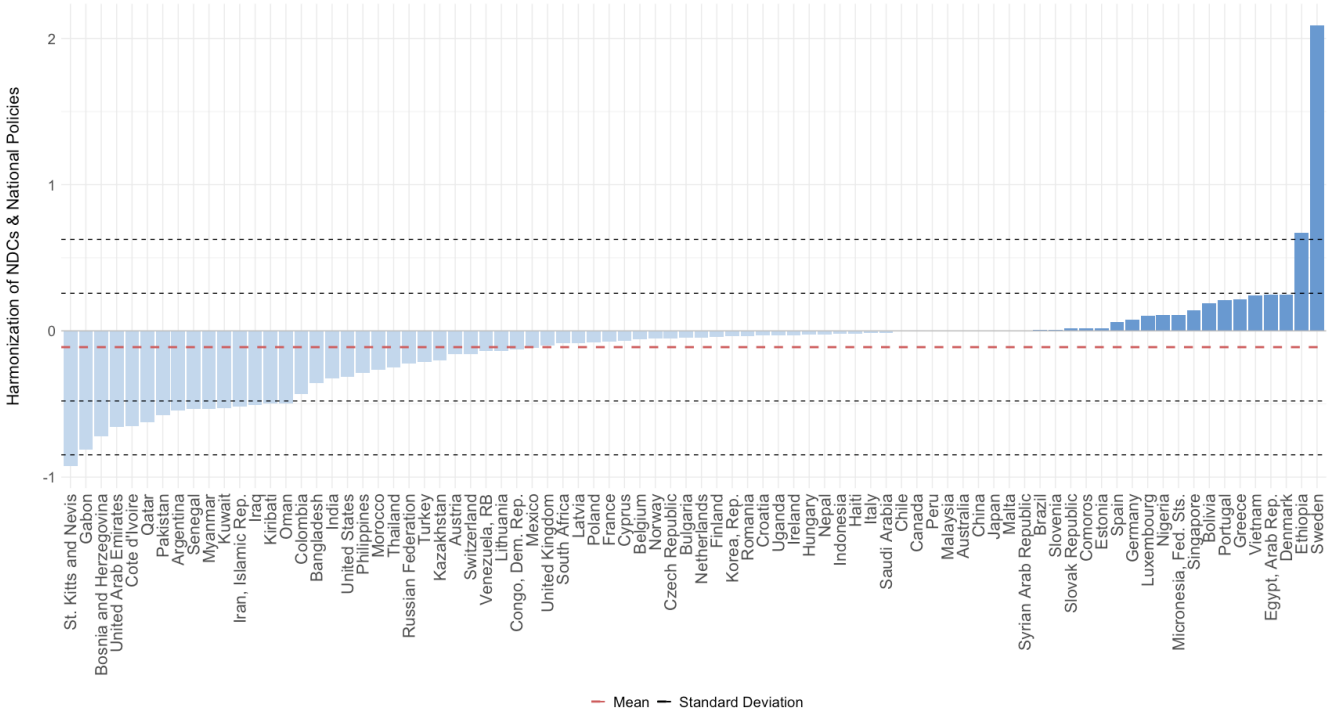

Figure 2: Target Index

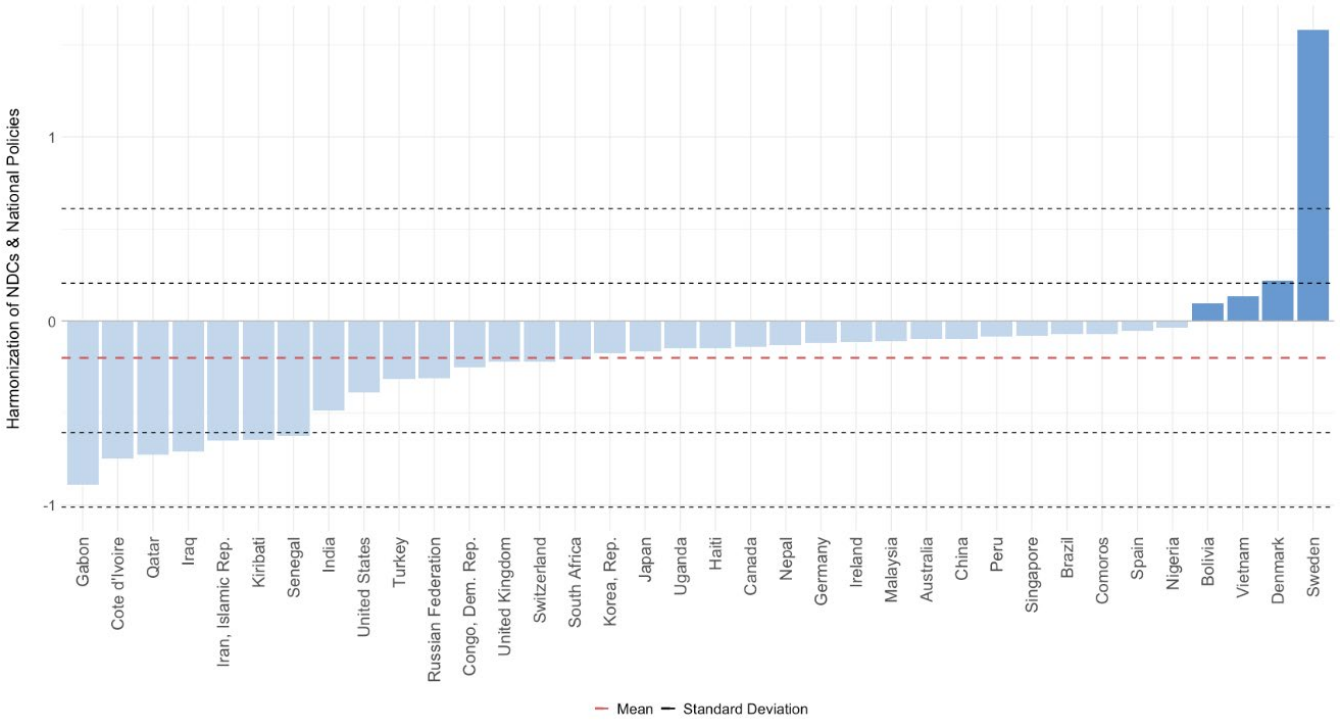

Figure 3: Policy Effort Index

Further, we utilized the Vertical Policy Harmonization Indices to assess how different macro-level factors (e.g., institutional settings, domestic interests) shape countries' level of harmonization. We started by investigating the role of institutions, interests, and ideas in shaping the vertical (dis)harmony of twenty-four democracies using qualitative comparative analysis (QCA). We find that fossil fuel dependency constrains the harmonization of mitigation commitments, even in the face of high vulnerability and low abatement costs (see Baker 2023). The results support the previous findings of an ambiguous relationship between veto points and mitigation commitment (Lachapelle and Paterson 2013). However, the roles of an established green party and public opinion in shaping disharmony remain unclear. In another working paper, we seek to explain countries' degree of vertical policy harmonization by the way of interest- and institutional-based perspectives. Using regression analysis on of the full sample of countries, this working paper shows that countries that fail to keep their international promises (i.e., "bullshitters") tend to be democracies, major GHG emitters, and have

institutions with relatively few political constraints (Kammerer 2022). Moreover, two Bachelor students have written their theses with the aim of explaining countries' (dis)harmony. By comparing five federal countries, Blindenbacher (2022) demonstrates that more decentralized federations are associated with lower levels of vertical policy harmonization. Heiss (2022) drew comparisons between three plan-rational states (e.g., China, Japan) and five market-rational states (e.g., Australia, United States) to explain (dis)harmonized mitigation commitments by the way of traditions of macroeconomic management and finds that plan-rational states are, in some respects, more harmonized than their market-rational counterparts.

Hence, the results of Task 1 not only measure the gap between international commitments and national policy, but also provide insights in the motives or reasons why countries deviate from their international commitments. Further, we investigate the normative implications of this question (Baker and Roser, n.d.). We find no clear-cut answer as to whether vertical policy harmonization should be encouraged or whether disharmony should be accepted as a technical feature of the global climate change regime. A norm of harmonization might lead to more intergenerational justice (e.g., increased emission reductions), increase trust amongst negotiators, and result in a net-win in terms of legitimacy within the context of all-affected principle. Yet, it may also deter countries from committing to lofty ambition in the first place. While no decisive answer was found, we conclude that we ought to be less dismissive than seems fitting at first sight as the typical prima facie response to simply insist that commitments must be kept is too shortsighted.

Explaining the Ambition of International Commitments and their Alignment with National Policies (Task 2)

The goal of Task 2 was to assess the extent to which countries' type and intensity of involvement in the international climate change negotiations is related to the ambition of the mitigation targets inscribed in their NDCs (i.e., the emissions gap described above) and to the level of vertical policy harmonization between their NDCs and national mitigation policies. We expect that the effect of involvement in the negotiations will be stronger in the case of the emissions gap, given that the global temperature goal was the direct result of those negotiations. In contrast, both the NDCs and the national mitigation policies are produced through domestic policy processes in each country. Nonetheless, their development does reflect pressures from the international system, particularly in terms of the need to increase ambition to reflect the global temperature goal.

A first subtask involved data collection. In the paper "Participation, Cooperation and Conflict in UN Climate Negotiations" (Castro et al., n.d.), we develop and describe an algorithm that automatically extracts data on negotiation participation and negotiation interactions in the UNFCCC discussions, on the basis of the negotiation summaries published by the Earth Negotiations Bulletins. The algorithm is able to count how often each country or country group is reported to make a statement in the negotiations, and how often and in what manner it interacts with other countries or country groups (e.g., speaking on behalf of them, supporting their statement, agreeing with them or opposing them). The data covers all UN climate negotiations in the period 1995-2022.

In addition, we collected and systematized data from the participant lists to the UNFCCC negotiation meetings, covering 54 meetings in the period 1995-2019. To this end, another algorithm was developed to extract the information from the texts in pdf format and convert it into a readable Excel dataset. The data was cleaned and classified both manually and with keyword-based coding to obtain information about various characteristics of countries' negotiation delegations attending the UNFCCC meetings over time, including delegation size, experience of delegates, and the type of affiliation of the delegates (i.e., from government, NGOs, research institutions, media, etc.). This data will be published in a paper on the evolution of countries' delegations (by Paula Castro and Axel Michaelowa) to be submitted to *Climate Policy*.

The data collected is being used in two substantive papers so far. The first one, "How does polycentric engagement relate to countries' NDC ambition and alignment with national policies?" (Castro et al., n.d.) has been accepted for submission to a Special Issue of *Global Environmental Politics* on polycentric climate governance. It uses both existing measures of NDC ambition as well as our Vertical Policy Harmonization Indices to investigate the drivers of countries' NDC ambition and alignment with domestic policies. We focus particularly on the extent to which countries with a stronger engagement in the international UN-led climate negotiations, in the broader ecosystem of international climate-related organizations, and in transnational climate governance initiatives have more ambitious NDCs and stronger domestic mitigation policies. The results suggest that developing countries with stronger involvement in the UN-led and other international climate governance processes tend to have more ambitious NDCs and stronger mitigation policies, but the

same cannot be found for industrialized countries. We explain these synergistic effects of polycentric engagement in developing countries with a discussion of polycentric systems' contribution to increasing knowledge, understanding and trust, and to the emergence of new shared norms and beliefs.

In the second paper, we examine the presence and participation of small states in the UN climate negotiations by combining the above-described quantitative long-term data on delegation size and composition with qualitative ethnographic observation of recent negotiation sessions (Castro and Klöck, 2023). The paper seeks to contribute to a better understanding of the patterns of participation in multilateral negotiations in which states are principally equal, but in practice experience stark differences in terms of capacity and access. Particularly smaller and poorer states with limited capacities struggle to meaningfully engage with complex global processes.

The role of two-level connectors for policy harmonization (Task 3)

Task 3 focuses on the national decision-making processes. At the domestic level, the preferences and power resources of the relevant actors and the prevailing actor constellation are likely to influence how well countries can keep their promises by influencing the political feasibility of policies (Sabatier and Jenkins-Smith 1993; Majone 1975; Bresser and O'Toole 2005; Kammerer, Ingold, and Dupois 2020). This balance of power in a policy subsystem is not usually static and altering actor constellations that shift the balance of power might open or close a 'window of opportunity'(Kingdon 1995) for adopting a policy. Against this background, we ask: What factors at the level of the climate policy subsystem drive the harmonization of NDCs with national policies?

In terms of the data used in this task, we draw on the Vertical Policy Harmonization Indices developed in Task 1 and on country data from policy elite surveys (e.g., Ingold 2011). These surveys deliver different variables relevant to operationalize belief conflict, actor types, actor power distribution, involvement in NDC formulation process, and collaboration structures. Therefore, for each case study we pre-define the so-called political elite through a standard procedure in policy network research, combining positional, decisional, and reputational approaches (Knoke et al. 1996). So far, we have collected data on the following countries: Germany, India, Ireland, the United States, Sweden, and Switzerland. Further, elite surveys are currently in the field in Australia, Democratic Republic of Congo, and Singapore. We expect the data to be available in autumn 2023. We have collected the datasets in collaboration with researchers from the Comparing Climate Policy Networks (COMPON) project.

We argue that two dimensions precondition the likelihood of the adoption of a specific policy within a political subsystem: the level of actor involvement and the level of belief conflict (Kammerer, Ingold, and Dupois 2020). In line with policy network literature, we argue that policy adoption is not a decision by single actors, but the outcome of government agencies and stakeholders coordinating their activities and cooperation to advocate for their interests (Kenis and Schneider 1991; Knill and Tosun 2012). They form a policy network of interactions and venues of participation (Knoke et al. 1996). If this policy network is dominated by a small number of key actors, policy adoption is in the hands of few, and thus, happens more in a top-down fashion, simplifying the policy process. In contrast, when many actors compete for influence, decision-making processes are usually more complex (e.g., in federal or corporatist political systems). Hence, we expect that the degree of vertical policy harmonization is higher in policy networks showing a low level of actor involvement. Moreover, we expect that a low level of belief conflict is associated with more policy harmonization. Standard principal-agency theory predicts that even the mere presence of homogeneous preferences amongst domestic principals already increases harmonization as it decreases the discretionary freedom of the delegation by giving delegates a clear mission. In the case of heterogeneous preferences, the structural power of key actors is relevant (Kammerer et al. 2020; Ingold and Pflieger 2016). Here, we expect that the degree of vertical policy harmonization is higher when domestic political power is centralized in the hands of a small number of key actors, usually key governmental agencies (Lachapelle and Paterson 2013), or when there are fewer veto players (Tsebelis 1995; Madden 2014). Finally, we also expect that how policy actors connected to both policy formulation processes decisively affect the degree of vertical policy harmonization. Specifically, we expect countries that have influential "two-level connectors", i.e., individuals or organizations strongly involved in both decision-making processes, to show a higher degree of vertical policy harmonization (Ingold and Christopoulos 2015; Ingold and Pflieger 2016; Angst 2018).

So far, we have analyzed four of the six completed surveys (see Kammerer et al. 2023). Our preliminary results indicate that the existence of "two-level connectors" seem to be relevant regarding the implementation gap between national policies and international commitments in climate policy: in countries with less harmony, two-level connectors are on average less active, less popular, and less influential. Hence, the implementation gap might be closed, when there are actors at the center of the climate policy subsystem able to connect two processes, namely the decision-making process around the NDCs and the national policies.

Predicting policy harmonization (Task 4)

In Task 4, we strive to predict how likely governments are able or willing to close their implementation gap. To this end, we applied the Predictioneer's Game (Bueno de Mesquita 2010; 2011), which is a tool to simulate the outcomes of negotiations on an experimental basis. We have selected Germany and Switzerland as case studies for this task. Both countries perceive themselves as forerunners, at the international level and have adopted ambitious both in their NDCs and their national policies. However, both struggle with the implementation of effective climate mitigation policy at the national level (Kammerer and Ingold 2021). Consequently, both countries show negative values regarding our Policy Effort Index, see Figures 2 and 3.

To simulate the respective negotiation outcomes, the Predictioneer's Game relies on a so-called input matrix. This matrix contains data on political actors, their positions, their potential influence (i.e., power) in comparison to the other stakeholders, the salience of the issue, their flexibility vis-à-vis the negotiation position, and the actor's formal veto power (or absence thereof, Sprinz et al. 2016). The data for the German input matrix was collected with the help of expert interviews combined with the assessment of publicly available information (Lenk 2023). For this Swiss case study, we drew on the elite survey, described under Task 3.

Germany has adopted statutory climate protection measures and sectors targets to achieve net-zero GHG emissions by 2045. A key milestone towards this end is to reduce emissions by 65% as compared to 1990 levels by 2023. To reach this ambitious goal, Germany must on one hand, drastically mitigate its GHG emission in the energy sector, but also increase carbon sinks, like forests and peat lands. To secure the sink function of forests, compensation payments are an efficient tool. In Germany, a respective funding instrument, i.e., the enumeration of ecosystem services is currently under negotiation in context of the Forest Climate Package (BMEL, 2020).

In June 2023, Switzerland adopted a new climate protection framework policy ("Klimaschutzgesetz", see FOEN website). The path towards this new law was long and rocky. Its predecessor, the CO2-Act, was for many years the centerpiece of Swiss climate legislation. It is based on the mix of different policy instruments such as a levy on combustibles, compensation payments of oil imports, passenger car standards, etc. As response to the ratification of the Paris Agreement, Switzerland had to amend its climate legislation, with a higher reduction target (that aligns with its NDC) and new, more ambitious instruments. However, this process turned out to be complex and tedious. Attempts to adopt a revised CO2-Act failed twice, 2018 in parliament, three years later by popular vote. The new law circumvents some of the aspects that thwarted the adoption of a revised CO2-Act, by focusing on funding instruments, instead of taxes and levies which are unpopular with right-wing parties and many business actors. Moreover, the new law also represents a compromise solution; a reconciliation of the interests of typical pro-climate actors (e.g., civil society organization, left-wing and green parties) with actors that are more concerned with the economy (e.g., interest groups, right wing parties). It combines ambitious climate goals with policy instruments with a rather low level of constraint.

In both cases, we were not able to directly predict the implementation gap, since it involves an overwhelming number of factors for one prediction model. Hence, we selected for each country relevant aspects that might help to close the implementation gap. For the German case, we focused on the negotiations related to the renumeration of ecosystem services, and strived to predict how likely and to what extent nature conservation criteria, conservation aspects, and the renumeration of forest carbon will be integrated in the Forest Climate Package (Lenk 2023). For the Swiss case, we investigated the role of civil society organizations in the negotiation related to the new climate act to gain a better understanding of different actors in the policy process (see Braissant 2023). For Germany, the model predicts that while the climate resilience of forest will be considered in the Forest Climate Package, any payments for eco-system services will be held at a minimum due to veto power of the EU. Hence, at least in the forestry sector, it might be harder for Germany to close its implementation gap due to rather weak regulation. The Swiss case shows that a higher issue salience for

specific actor groups does not necessarily mean that policy negotiations will end in favor of the group with higher salience. In contrast, according to our predictions the opposite will be true due to lower levels of compromise. To close the implementation gap, Switzerland should draw on compromise solutions that will help bring diverse interests to the table. In fact, the new "Klimaschutzgesetz" in Switzerland is a first step in this direction.

Conclusion and Outlook

In this project, we developed the Vertical Policy Harmonization Indices to quantify the gap between countries' NDCs and national mitigation policies and used various research methods to investigate why countries deviate from their international commitments at the national level. With these indices, we demonstrate that the translation of international commitments into national policies continues to pose a challenge in the global effort to mitigate climate change. Moreover, we find that certain country characteristics (e.g., level of democracy, fossil fuel dependency), international factors (e.g., polycentricity, development status), and attributes of domestic policy processes (e.g., the presence of two-level connectors) shape countries' ability to harmonize their NDCs and national mitigation policies.

The research efforts undertaken during the course of this project constitute scientific, practical, and methodological contributions to the study of countries' policy responses to climate change. Scientifically, the indices and subsequent analyses contribute to the literature that studies the implementation gap, thereby shedding further light on the multi-level governance of climate change and establishing empirical links between various factors and countries' ability to harmonize their NDCs and national policies. Practically, the public policy approach taken in the Vertical Policy Harmonization Indices can enable researchers modeling the gap between countries' NDCs and the global temperature goals to develop informed assumptions regarding the policies adopted to implement NDCs at the national level. Moreover, the Vertical Policy Harmonization Indices were developed in systematic and transparent manner using publicly available policy documents and data, making the indices highly replicable and easy to update and expand. Methodologically, we have applied and fine-tuned the operationalization of public policy concepts and have engaged in a mixed methods approach to analyze climate policy by generating data from policy documents, interviews, and surveys. In particular, we have provided a transparent coding framework to assess the vertical harmonization of countries' policy goals and instruments that can be applied to various policy domains.

We are planning to continue our work on various aspects of this project. For example, we plan to develop a Cambridge Elements series that explores interplay between policy harmonization and climate ambition. Moreover, we will continue with working papers started during the course of this project, such as our interest in how factors of the national decision-making process contribute to harmonization of countries' NDCs and national policies. Additionally, the developments and findings listed in this report, and the nature of a constantly evolving climate policy landscape, indicate that there are many avenues for further research. In investigating countries' implementation gap, future research could take up factors not yet fully studied, such as the role of market ideology or countries' membership to the European Union (see e.g., Baker 2023). In quantifying the gap between countries' NDCs and national policies, there is the potential for future work to expand the coverage of the Vertical Policy Harmonization Indices and further refine its coding framework by taking into account policies (e.g., fossil fuel subsidies) that exacerbate climate change. Moreover, the indices provide a basis to track not only the evolution of countries' climate commitments over time, but also the gap between their NDCs and national policies. Such an endeavor would enable researchers to probe whether this gap is a bug or a feature of the global climate change regime and could indicate to what extent the international community is on track in implementing the Paris Agreement.

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