

MULTI-LEVEL GOVERNANCE THROUGH REGIONAL ADAPTATION PARTNERSHIPS

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Abstract

Since adaptation pressures and responses cut across jurisdictional levels (from the international via the national to the provincial and local levels of policy making) and across societal domains, adaptation to climate change is widely recognized as a multi-level governance challenge. Based on case studies on the Regional Adaptation Collaboratives in Canada and the Regional Climate Change Partnerships in the UK we discuss how and in how far partnerships facilitate multi-level governance of adaptation. We analyze and compare the different architectures of the partnership schemes and the resulting structures and modes of coordination across levels and domains. Our cases range between narrower government-centered and wider collaborative arrangements. Notably, besides the dominant network mode of governance also instances of hierarchical steering can be observed. We further discuss the activities, outputs and benefits of the partnerships. The cases homogeneously show that partnerships facilitate better networking, learning and awareness for climate change adaptation. The analyzed partnerships, however, differ in how far they serve the formulation and implementation of adaptation measures or policies. Overall, the paper shows that the collaboratives in Canada and the partnerships in the UK not only fulfill important coordination functions between government authorities, businesses, technical experts and semi-public organizations at regional and local levels but also act as important mediators between national/federal, regional and local levels of government as well as between regions.

Keywords: climate change adaptation, regional partnerships, multi-level governance, Canada, United Kingdom

1. ADAPTATION TO CLIMATE CHANGE ADAPTATION AS A MULTI-LEVEL CHALLENGE

Climate change impacts can affect entire continents or countries in similar ways (e.g. sea level rise or heat waves), or they can vary considerably on small scales (e.g. precipitation patterns and flooding). In both instances, adaptation pressures and responses cut across jurisdictional levels (from the international via the national to the provincial and local levels of policy making), and they concern all societal domains (i.e. governments, businesses, and civil society). Given this transboundary nature of climate change and associated adaptation responses, adaptation to climate change involves many levels of decision-making (Wolf 2011, 53). Societal steering that spans across different tiers of government and involves state and non-state actors is often referred to as multi-level governance (Corfee-Morlot *et al.*, 2009, 14, 25). What exactly does multi-level governance imply in the context of climate change adaptation? On the one hand, it implies that governments play a key role in facilitating adaptation (e.g. by building adaptation capacities or by putting capacities into action), but that they often rely on the expertise and/or the resources of non-state actors (Cimato and Mullan 2010). On the other hand, multi-level governance of climate change adaptation implies that different tiers of government (ought to) play different roles and coordinate their actions. Generally speaking, governance scholars as well as policy makers agree on the following 'political division of labor': while national governments (and supranational entities such as the European Commission) are expected to raise awareness and provide general framework and guidance on how to adapt to climate change (sometimes perhaps also necessary financial resources), sub-national entities such as provinces and municipalities are identified as key actors when it comes to the detailed planning and implementation of adaptation policies and activities (e.g. Corfee-Morlot, Kamal-Chaoui *et al.* 2009; Keskitalo 2010, 5; Galarraga, Gonzalez-Eguino *et al.* 2011). This applies to all kinds of policy issues, in particular to those that usually lie within the responsibilities of provinces and communities and that are highly relevant in the context of climate change adaptation (e.g. buildings, infrastructure, transportation, land-use planning and water management). Regions (or provinces) play an important mediating role because they are expected to be "strategic enough to establish links between all the different policy areas that need to be coordinated for climate policy" (Galarraga, Gonzalez-Eguino *et al.* 2011, 168), close enough to the local level to develop solutions that meet specific geographic, climatic and economic conditions, and not too remote from but more flexible than national governments (Corfee-Morlot, Kamal-Chaoui *et al.* 2009, 31; Galarraga, Gonzalez-Eguino *et al.* 2011, 165). Obviously, it is widely accepted that national "governments cannot effectively implement national climate strategies without working closely with regional and local governments" (Corfee-Morlot *et al.* (2009, 26), and that regional and local levels can only be effective if they coordinate their policies with other levels of government.

Since policy-making at these different levels is not always joined-up and coordinated well, the climate change literature highlights that 'cross-scale interdependencies' are often not matched with adequate 'cross-scale linkages' (Adger, Arnell *et al.* 2005, 79f). In recent years, however, governments across the OECD have recognised the need to address this challenge by establishing multi-level governance approaches, including national/federal adaptation strategies or frameworks, guidelines and partnerships (Bauer, Feichtinger *et al.* 2011).

The present paper discusses regional adaptation partnerships in Canada and the UK and analyses how partnerships serve as coordination mechanisms between different levels of government (local, regional, national), across societal domains, across sectors and between regions and how they contribute to climate change adaptation. In Canada, since 2009, six regional adaptation collaboratives (RACs) were initiated through a federal level program by Natural Resources Canada. The objective of the RACs is to provide information and advice to decision-makers in order to capacitate them to make policy, operational, and management changes in response to a changing climate. In the UK, 11 regional climate change partnerships (RCCP) have been established since 1999 (one in each of the nine regions of England, plus partnerships in Wales and Northern Ireland) by the initiative of the former regional governments and with support by the UK Climate Impacts Programme (UKCIP). The partnerships in the UK aim at investigating and advising on the regional and local impacts of climate change and the development of respective responses. In order to study the two partnership approaches an embedded case study design was chosen. Altogether six partnerships were studied, three RACs (RAC British Columbia, Prairies RAC, RAC Atlantic) and three RCCPs (London Climate Change Partnership, Climate SouthEast, Climate SouthWest). The selection of the partnerships was purposeful, i.e. we selected those that experts in the field identified as the most active ones. In the case studies, we combined a literature analysis (including reports, websites, and material published by the partnerships) with a total of 19 semi-structured interviews (ten telephone, nine face-to-face). The interviews were conducted with national level representatives responsible for the support of the partnerships, the managers and key partners of the respective partnerships. The interviews were recorded, transcribed and analysed deductively along the dimensions and categories described in section 2, and partly inductively when new aspects were identified.

The paper proceeds as follows: Based on the scholarly literature, section 2 introduces the main questions and dimensions for the analysis of the two partnership schemes in Canada and the UK as mechanisms for multi-level governance. Section 3 introduces the partnerships in Canada and the UK along their history, organization and basic activities. Section 4 is dedicated to the analysis of the interaction and coordination of partnerships across levels of governments, societal domains, sectors and between regions. In section 5 we compare and discuss the role of partnerships as multi-level governance mechanisms in climate change adaptation by highlighting the scope and structures of coordination, the modes of governing, the collaboration benefits, and the main challenges.

2. PARTNERSHIPS AS MULTI-LEVEL GOVERNANCE MECHANISMS

With the rise of new forms of governance in the last two decades, collaborative arrangements such as partnerships play an increasingly prominent role in steering society (Glasbergen et al. 2007). This applies in particular to complex challenges such as sustainable development (e.g. Glasbergen 2007; Van Huijstee, Francken et al. 2007) and climate change (Kolk and Pinkse 2010; Kolk and Pinkse 2010). Partnerships are self-organizing and coordinating alliances in which actors from two or more societal domains (state, market or civil society) and often multiple levels of government strive for a common goal in a broadly defined issue area (Leach, Pelkey et al. 2002, 646; Glasbergen 2007, 1f; Van Huijstee, Francken et al. 2007, 77; Greve and Hodge 2010, 149; McQuaid

2010, 128). Partnerships have common aims and a strategy to achieve them, they share risks, resources and skills in order to achieve mutual benefits and synergies (Hutchinson and Campbell 1998, 9; McQuaid 2010, 128), and they are generally characterized by non-hierarchical interactions (Glasbergen 2007, 1f). They differ not only with regard to the issue areas and the spatial scope they are concerned with, but also with regard to their purpose, activities, outputs, funding, time frame, membership (including roles and relations between members), and the modes of governing (Glasbergen 2007, 5; Van Huijstee, Francken et al. 2007, 77; McQuaid 2010, 127f)). Regarding membership, partnerships can include any number and combination of government, business and civil society actors. Accordingly, Glasbergen (2007, 5) distinguishes government-led partnerships, partnerships arranged by private parties with a marginal involvement of the public sector, and 'private partnerships' between businesses and civil society organizations. Depending on what criteria research on partnerships focuses on, at least the following three analytical perspectives can be distinguished: The actor perspective focuses on partnerships as instruments for achieving actor-specific goals (Van Huijstee, Francken et al. 2007). It asks when and how actors choose to partner, what advantages they have and what risks they take (Van Huijstee, Francken et al. 2007). The effectiveness perspective analyses in how far partnerships are able to facilitate societal change (Glasbergen 2011). This includes an analysis of the "interactive structures and processes in which partnerships operate and the impacts of partnership activities on sustainability issues therein" (Glasbergen 2007). Finally, a governance perspective explores what implications the rise of partnerships has for the steering of societies (Van Huijstee, Francken et al. 2007, 85; Glasbergen 2011). This encompasses also a more critical reflection of the shift of decision-making power from public to private actors and the democratic legitimacy of partnerships.

The case studies here follow mainly the effectiveness perspective. Two questions guide the analysis:

1. In which way and to what extent do regional partnerships serve as a coordination mechanism between different levels of government (local, regional, national) as well as between governmental and non-governmental actors?
2. In how far do partnerships facilitate adaptation, in particular the development and/or implementation of adaptation policies and measures at the different levels of government?

In order to answer the first question, the paper looks at the governance architecture of the partnerships, i.e. their membership and organizational structures, interaction patterns and the modes of coordination. Drawing on the multi-level governance literature, we distinguish between vertical and horizontal interactions in partnerships (e.g. Hooghe and Marks 2003; Rosenau 2005, 31): Vertical interactions are concerned with relations between two or more levels of government (local, regional, national), be they formal or informal, institutional, financial or informational. Of course, vertical interactions can be shaped by the political system of a country. Thus, we will explore in how far the federal political system of Canada and the unitary system of the UK shape the partnerships in question. With regard to adaptation policy it is particularly interesting to analyze how and in how far partnerships are coordinated with the overall national adaptation policy agenda and what role they play in delivering and informing national adaptation policy. In the context of the present paper, horizontal interactions are those taking place between different policy areas (Corfee-Morlot, Kamal-Chaoui et al. 2009),

between state and non-state actors (Glasbergen 2011, 9) or between regions. Interactions in partnerships may be predominantly uni-directional (i.e. either vertical or horizontal) or multi-directional (i.e. vertical and horizontal). Structures of governance may be formal, informal or mixed formal and informal and thus leading to different types of governance (top-down, bottom-up, market, network, side-by side, mobius-web (Rosenau 2005, 42).

A related dimension for the analysis of partnerships as mechanisms for MLG concerns the modes of coordination. As the MLG literature suggests, coordination may be achieved by four basic ideal-type mechanisms of steering or combinations thereof, i.e. by hierarchy, mutual adaptation (e.g. by means of exchanging information, policy ideas and arguments that entail policy learning), competition, and/or negotiations (Scharpf 2000; Benz 2004; Schimank 2007). Most decisions in the modern state are reached by means of negotiation and mutual adaptation. Competition may be relevant as competition between communities, regions, and/or nations. Negotiation and competition imply that all persons involved follow the same rules and formulations even though they do not possess the same resources. Hierarchical structures, on the other hand, are characterized by unequally distributed rights, obligations and power. Lower levels have to obey instructions from upper levels. The four modes of coordination are ideal-types; in reality hybrids of more than one mode are mostly to be found. An important such hybrid is for example 'negotiation in the shadow of hierarchy', where negotiations are embedded in hierarchical structures and differ logically from negotiation in a 'free' negotiation system (Héritier and Eckert 2007).

The coordination function of partnerships is not an end in itself but they are expected to contribute to societal problem-solving through knowledge sharing, networking, and capacity-building, and with respect to policy making they are expected to help defining problems, develop, implement and assess policies. Concerning the latter it is often assumed that collaborative arrangements such as partnerships have a greater capacity to produce flexible, responsive, creative and innovative solutions than hierarchical decision-making procedures (e.g. Van Huijstee, Francken et al. 2007; McQuaid 2010). However, partnerships may follow different purposes. McQuaid (2010, 129), for example, differentiates facilitating partnerships, coordinating partnerships, implementing partnerships and goal agreement partnerships. With respect to climate change adaptation partnerships that 'build adaptive capacities' of actors within and outside the partnership can be distinguished from those that 'take adaptive action' (West and Gawith 2005). Regarding capacity building, important benefits include knowledge sharing, societal learning, networking, awareness raising or access to resources. In contrast, action-oriented partnerships are expected to facilitate policy making along the entire policy cycle (Van Huijstee, Francken et al. 2007, 79). Since a thorough evaluation of partnerships in shaping adaptation is beyond the scope of this paper, we explore their effectiveness by comparing their purpose with their capacity-building and policy-shaping activities.

3. REGIONAL ADAPTATION PARTNERSHIPS IN CANADA AND THE UK

Regional Adaptation Collaboratives in Canada

In 2009, Natural Resources Canada's Climate Change Impacts and Adaptation Division initiated the Regional Adaptation Collaboratives Program (RAC Program). The program runs over three years and supports the set up and activities of six Regional Adaptation Collaboratives. The overall aim of the program is to "catalyze coordinated and sustained adaptation planning, decision-making and action, across Canada's diverse regions" (Natural Resources Canada (NRCan) 2011). Once the program was drawn up, NRCan informed stakeholders from provinces and territories about its funding opportunities and requirements. Leaders in the designated six collaboratives subsequently identified and contacted further partners and sketched out priorities, themes and projects on the basis of the information and requirements by NRCan. Starting with the RAC British Columbia in September 2009, the six collaboratives were subsequently set up and started their activities in climate change adaptation.

The RAC program is equipped with \$30 million that are provided through the Clean Air Agenda (of a total sum of \$ 85.9M). The financial endowment of the single collaboratives ranges between \$ 6.6 million and \$ 8.2 million, of which one half is provided through the RAC program and another half is provided by the partners either in form of monetary or in form of in-kind contributions. The collaboratives are partnerships among Natural Resources Canada, provinces, municipalities and non-governmental decision-makers. However, the numbers as well as scope of partners in the collaboratives vary considerably. The RAC Prairie, for example, encompasses 12 partners, mainly consisting of provincial departments and single agencies, non-governmental organizations and academia. In contrast, the RAC Atlantic counts 66 partners with a number of municipal partners alongside provincial departments, agencies, aboriginal organizations, industry, non-government organizations and academia.

The collaboratives have set up distinct governance structures. The core of all collaboratives consists of a manager who is responsible for the daily management routines (finances, reporting, timelines) and a management or coordination committee (including the manager, the key provincial partners and Natural Resources Canada) that supports the manager in running the partnership. All management teams have a very close relation to the partners and the national level contacts; they are the central point for the communication and interchange of information within the partnerships. The coordination teams maintain very close interactions with regular (weekly or bi-weekly) phone calls and face to face meetings. Some collaboratives have additionally set up advisory, steering or supervision bodies that provide strategic guidance to the collaboratives and to which the management and coordination committees are accountable. Further, the collaboratives engage a wider network of partners in concrete projects.

The Canadian collaboratives organize their activities predominantly in predefined projects and are thematically focused, mainly on issues around water resource, coastal, ecosystem and land-use management. Complying with the requirements of the RAC program the projects mainly revolve around informing decision-makers in addressing climate change issues and recommending adaptation actions. Typical activities of the RACs include concrete risk or vulnerability assessments, the development and testing of assessment and modeling tools, checklists for planners and new or revised guidelines. Further, in many projects the collaboratives develop recommendations for the development or update of specific codes and standards, plans, programs or strategies in

specific municipalities, provincial departments, etc. Beyond that the collaboratives facilitate networking and knowledge exchange between practitioners, for example by organizing workshops.

Regional Climate Change Adaptation Partnerships in the UK

In the UK, regional climate change partnerships have evolved in a regional process driven by the perceived need of regional actors (especially former regional governance bodies, mayor, etc.) to engage in adaptation to climate change. An important trigger for the set-up of the partnerships were the regional scoping studies organized by UKCIP. In order to compile the regional scoping studies UKCIP partnered with regional stakeholders and organized, among others, regional workshops. In succession, the main regional stakeholders, in many cases the different regional bodies (government offices, development agency), in other cases the regional branches of the Environment Agency, initiated the institutionalization of this cooperation in formal partnerships. Since 1999 nine partnerships in England, covering the regions of England as well as partnerships in Wales and Northern Ireland have been set up to investigate and advise on the regional and local impacts of climate change and the development of respective responses.

In their beginnings the partnerships were self-funded by core partners (mainly regional governance organizations). From 2008 on Defra has additionally supported the through its Adapting to Climate Change Programme and has renewed this support for the years 2011 to 2012, now delivered through the Environment Agency. The financial support for each partnership per year ranges between £20k and £80k, with a decreasing tendency (UKCIP 2011, 62, bidding agreements). The support bases on agreements between Defra and the partnerships and enables the partnerships to employ a manager or coordinator and thus allows them to put their work on a more continuous basis. The membership of the regional adaptation partnerships is more flexible and has changed profoundly since 2010. Initially the regional governance organizations were main partners along local authorities, public agencies, research organizations, public service providers, non-governmental organisations and businesses. Due to the omission of the regional administrative level and other austerity measures, several regional partners from the public sector either have disappeared or were forced to cut back their activities. As a reaction to these developments, the partnerships started to rethink their membership and now try to increasingly involve the private sector (UK3), e.g. by abolishing membership fees (SouthEast), to involve other sectors (e.g. health), or to demand more effort from the private sector and from societal organisations (UK2, UK6). Overall, partners in the regional partnerships now include local authorities, public agencies like the Environment Agency or Natural England, research organisations, public service providers, business-facing organizations, non-governmental organisations and businesses.

The bottom-up emergence of the partnerships is still reflected in the different hosting institutions and organizational structures (project in the Environment Agency, 'community of interest company', etc.). The basic organizational structure of the partnerships consists of a president, chair or director, a small management team, an executive or steering group and thematic or sectoral working groups. All partnerships have a high profile personality as president, chair or director to represent the partnership

in the public and a manager or small managing team responsible for the daily management routines. Besides the partnerships are guided by an executive committee or a steering group which comprise the core funding partners. Executive or steering groups maintain close relations with the management, make strategic decisions and provide overall guidance. Some partnerships additionally have an advisory group which advice the steering or executive group and the management.

The partnerships in the UK have a broad thematic focus, encompassing issues such as water management, tourism, the built environment, businesses, land use planning. Around those issues the partnerships have established working groups in which partners with similar adaptation needs and interests are brought together to share information and to work on joint projects. From the beginning the partnerships have been strongly involved in building the knowledge base on regional climate change impacts and vulnerabilities, e.g. by working with UKCIP in compiling the regional scoping studies or more recently through their involvement in the First UK Climate Change Risk Assessment (Department for Environment Food and Rural Affairs (Defra) 2012). Beyond that, partnerships are engaged in informing and consulting national, regional and local plans, programs and strategies. Other typical activities of the regional climate change partnerships include the organization of trainings (e.g. on UKCIP scenarios and tools or on the performance indicator NI188¹), thematic workshops and awareness raising events.

¹ In the UK, the National Indicator 188, measuring the “progress on assessing and managing climate risks and opportunities, and incorporating appropriate action into local authority and partners’ strategic planning” Local and Regional Partnership Board (2010). Adapting to Climate Change. Guidance notes for NI188. Version 1.8., was part of the Local Government Performance Framework in effect from 2008 to 2011. Thereafter, Defra used the indicator to support local authorities on a voluntary basis.

Table 1: Overview on the analyzed regional adaptation collaboratives and regional climate change partnerships

	Regional Adaptation Collaboratives (CA)			Regional Climate Change Partnerships (UK)		
	RAC British Columbia	RAC Prairies	RAC Atlantic	Climate South West	Climate South East	London Climate Change Partnership
Period	2009 –2012	2010 -2012	2009-2012	Since 1999	Since 2000	Since 2000
Funding	NRCan, Match funding by partners \$ 6.6 M - \$8.2M			By partners, Defra (adaptation to climate change program) Other sources (e.g. EU funding)		
Managing / Host organization	Fraser Basin Council and the BC Ministry of Environment	Prairie Adaptation Research Collaborative at the University of Regina	The Atlantic Climate Adaptation Solutions Association (ACASA)	Environment Agency (SW)	Community of interest company	Greater London Authority
Partners	18 partners: provincial departments , agencies/associations, municipalities, aboriginal organizations, industry, academia, NGOs, NRCan	14 partners: provincial departments, agencies, associations, NGOs, NRCan	66 partners: provincial departments, agencies/associations, municipalities, aboriginal organizations, industry, academia, NGOs, NRCan, other federal departments	Network of over 750 organisations and individuals, core partners: UKCIP, Environment Agency, businesses (public service providers), Defra, academia, Natural England	Around 60 partners: Local authorities, UKCIP, businesses, Environment Agency, academia,	Over 30 partners: Greater London Authority, local authorities, Defra, UKCIP, businesses, associations, Environment Agency
Themes	<ul style="list-style-type: none"> • water allocation and use • forest and watershed management • flood protection and floodplain management • community adaptation 	<ul style="list-style-type: none"> • Managing Water Resources • Planning for Drought and Floods • Managing Forests and Grasslands Ecosystems • Adaptation and Resilience Forums 	<ul style="list-style-type: none"> • Coastal erosion and inland flooding planning • Protecting groundwater resources • Building capacity of adaptation practitioners 	<ul style="list-style-type: none"> • Agriculture and Forestry • Biodiversity • Business and Utilities • Housing and Construction • Local Government • Tourism • Transport 	<ul style="list-style-type: none"> • Communications • Planning • Business & Economy • Communities • Emission Monitoring • Biodiversity • Tourism 	<ul style="list-style-type: none"> • Health and Social Care • Weather stations • Urban Greening • Retrofitting • Flooding • Heat • Monitoring • Local Expertise
Website	http://www.fraserbasin.bc.ca/programs/bcrac.html	http://www.parc.ca/rac/	http://www.gnb.ca/0009/0373/0007/index-e.asp	http://www.oursouthwest.com	http://www.climatesoutheast.org.uk/	http://www.london.gov.uk/lcp/

4. PARTNERSHIPS AS COORDINATION MECHANISMS IN A MULTI-LEVEL SYSTEM

The partnerships in both countries include partners from different administrative levels and societal domains. This section analyzes further how and in how far partnerships serve as coordination mechanisms in a multi-level system. With respect to the vertical dimension of multi-level governance, i.e. the coordination between the local, regional and national level, two interrelated aspects are discussed. First, the partnerships in both countries have a (formal) role in the national adaptation governance agenda as a delivery mechanisms for national adaptation policy and as an intermediary between the national, regional and local levels (section 4.1). Second, the main focus of the activities of the partnerships is on engaging and informing regional and local decision-makers and we look at the ways of coordinating and influencing decision-making at these levels (section 4.2). With respect to horizontal coordination three different types of coordination can be observed in the partnerships, the coordination between different societal domains, i.e. public, semi-public and private organizations (section 4.3), the coordination across sectors and policy areas (section 4.4) and the coordination between regions and provinces (section 4.5).

4.1 Role in national adaptation governance

Regional partnerships are recognized as important instruments for adaptation governance in both countries, Canada and the UK. On the one hand they act as a delivery mechanisms for national adaptation policy and on the other hand they serve to inform national policy formulation from a regional and in particular local perspective. However, the partnerships are linked to and coordinated with national adaptation policy in different ways which can be traced back to their different origins. The regional adaptation collaboratives in Canada were introduced top-down through a federal program by NRCan whereas the regional climate change partnerships in the UK have emerged bottom-up from the regional level and only later became part of the national adaptation policy. Accordingly the role of the national level in the set up and in the operation of the partnerships differs considerably. The regional collaboratives are a national program aimed at getting adaptation action started at the municipal and provincial level. The underlying assumption of the RAC program is, that given the scattered responsibilities for climate change adaptation, collaboration between decision-makers in governments, the private sector and community organizations at different levels is a suitable approach (Natural Resources Canada (NRCAN) 2011). The program was developed by NRCan without the input of the main target groups, i.e. provinces and territories. Stakeholders from provinces and territories were only later informed about the program, its funding opportunities and requirements. Since important features of the program were already given the scope of action for the partnering organizations was to a certain degree predetermined. Most notably, the regional scope of the collaboratives was set by NRCAan. The RAC program defines the six collaboratives on the basis of the previous assessment "From Impacts to Adaptation: Canada in a Changing Climate" (2007). The six regions defined in the RAC program only partly coincide with provincial or territorial boundaries. Consequently NRCan pre-established the collaboration between specific provinces before the respective provinces were contacted. In one of the analyzed cases this approach matched the already existing collaboration on adaptation between the respective provinces, in another case, however, no such coordination existed and the

respective provinces, which were in different stages of adaptation policies, had to figure out how to collaborate in order to participate in the program. Also with respect to the thematic orientation a top-down approach can be observed, albeit less determining. In the process of setting up the collaboratives actors at the provincial and territorial levels had the possibility to look for their own needs and priorities and to develop the projects. However, NRCan strongly promoted the impacts and issue areas identified in its previous assessment. In addition, NRCan clearly defined the procedural requirements, i.e. building of the partnerships around priorities, the securing of match funding and the scope of action, i.e. the development of guidance and tools. Though the establishment of the collaboratives was in the responsibility of provincial and territorial representatives NRCan strongly steered the process:

“We told them about this program and we told them about our requirements for partnership and we talked about the national assessment. [...] So we described exactly what we expected and then they worked amongst themselves to identify what partnerships would make sense, and what priorities that they wanted to focus on, themselves. Like, we didn't tell them what to do, we told them what we know. And this report, the national assessment report, is a useful reference” (CA1).

From the perspective of the representatives of the RACs this steering of the development process at times was perceived as controlling and limiting the scope for action:

“[NRCAN] came with an agenda, certain in their ways of how they want things to be done, and we sometimes felt that they were controlling the whole process” (CA6).

Thus, with the establishment of the RAC program NRCan strived for coordinated activities at the provincial and local levels and steered the the establishment of the collaboratives. The regional collaboratives are consequently clearly regarded as an instrument to promote the adaptation policy agenda by NRCan.

The regional climate change partnerships in the UK only became part of the national adaptation agenda after they have been in place for several years. Consequently, the national level did not steer their establishment, though UKCIP, a program financed by Defra, supported the partnerships from the beginning. In 2008 the “Adapting to Climate Change Programme” (ACC) was established in order to co-ordinate and drive forward the government’s work on adapting to climate change and is intended to culminate in the statutory National Adaptation Programme. Within the frame of the ACC program Defra supports the regional climate change partnerships. Defra’s support of the partnerships bases on the recognition of their potential for cooperation and the delivery of adaptation policy. In particular, the partnerships are recognized as important intermediaries between the national and the local level and as important partners in the delivery of the adaptation program. The understanding and importance of regional partnerships as intermediaries became clear after the discontinuation of the regional administrative level in 2011. Since the different regional bodies constituted important stakeholders and funding partners their abolishment challenged the partnerships and required a re-orientation and restructuring of their work. Though the ‘regional’ had lost its importance in (adaptation) policy, Defra renewed its support for the partnerships on the basis of their work with the local level. This reflects that the initial rationale for supporting the partnerships included the advancement of regional adaptation policies but was not restricted to it. Regional partnerships were also increasingly recognized as important

actors for the communication and coordination between the national and the local level and for implementing adaptation policies.

The different origins of the partnerships influence the interactions and relations with the national level. NRCan is also strongly involved in the implementation and operation of the collaboratives. NRCan is a partner in all collaboratives and has a representative in the respective steering committees. As member of the steering committee, NRCan interacts very closely with the partnerships and participates in the weekly or bi-weekly conference calls. In the coordination or steering committees NRCan provides the federal perspective on projects and documents (CA1). Besides the coordination within the collaboratives, NRCan and all RACs meet several times a year in a National Coordination Committee. While the collaboratives value exchanging experiences and receiving information about what is happening at the national level, they also perceive the relation as predominantly uni-directional, hierarchical and paternalistic. Though NRCan officials see a role of the collaboratives in providing feedback on national policies and in informing the design of future national policies and programs (CA1), several interviewees from the provincial level doubt the willingness to take the local and regional perspective into account:

“It is a top down view of the world and it's interesting that again if you look at the program criteria it's not in the cards that this work would influence federal decision makers. It's all to do with influencing provincial or municipal or private stakeholders. So I think [...] [it] appears [...] that the federal people don't need help, or know what they are doing [...] but it's just the provincial and municipal people further down the government chain that need help. So if you are one of those provincial people or one of those municipal people you might find that paternalistic” (CA7).

Thus, the collaboratives are mainly used to implement the national adaptation policy agenda at the regional and local levels but, so far, only rudimentarily in order to inform policy formulation at the national level.

Although also the financial support provided by Defra bases on some agreed objectives and criteria, partnerships in the UK are much more independent in their activities and how they use the funding. Moreover, the relation between Defra and the partnerships is predominantly described as a two-way relationship in which the partnerships have a role in transferring national adaptation policy to the local level but are also highly sought as a consultation source for the development of national adaptation policy and support. In the past, the partnerships were crucial actors in the implementation of the performance indicator NI 188². In particular they provided guidance and trainings to local authorities. More recently, the partnerships played a crucial role in the National Climate Change Risk Assessment (Department for Environment Food and Rural Affairs (Defra) 2012) that is mandated by the Climate Change Act. The partnerships held workshops with local people and compiled reports on regional risks.

Besides their role in delivering adaptation policy, partnerships are also clearly given a role as ‘spokesperson’ for the local level. This is reflected in the involvement of the

² In the UK, the National Indicator 188, measuring the “progress on assessing and managing climate risks and opportunities, and incorporating appropriate action into local authority and partners’ strategic planning” (ibid.), was part of the Local Government Performance Framework in effect from 2008 to 2011. Thereafter, Defra used the indicator to support local authorities on a voluntary basis.

partnerships in the advisory bodies Defra set up for the coordination with the local level. The partnerships (and Climate UK) play an important role in the Local Adaptation Advisory Panel (LAAP) which is led by local governments and aims to influence the activities of Defra's Adapting to Climate Change Programme (e.g. the development of the National Adaptation Programme) (UK1). Examples of input to specific policies are rare but an official from Defra expects that the partnerships will have a role in the development of the National Adaptation Program (UK1). Partnerships are expected to be closer to the local level needs and challenges and can thus provide 'realistic' insights to the formulation of national adaptation policy as the representative of Defra admits:

"[...]you [government] can sit in a room here and make something out that is not going to work in the real world or we [Defra] really upset people. They [the partnerships] know how it works at the local level and obviously had a lot of insight they can give us to what would help or what would hinder them in adapting, so this group [ClimateUK] has a role in checking out policies and giving advice and giving feedback on how things are working and ideas what we can do to help" (UK1).

And in contrast to the Canadian collaboratives, the representatives of the partnerships in the UK also clearly see their insights taken seriously at the national level:

"So it is actually us being able to provide the views from the local areas and from our partners and say this is what is really going on because DEFRA, I mean they try really hard but they do not really have a clue what is happening in the real world. [...] So we can feed those kinds of news back to the government as well. And we can provide an informal consultation on various policies and things like that" (UK2).

Thus, the partnerships in the UK not only serve the implementation of national adaptation policy but have a widely recognized and institutionalized role in informing national adaptation policies as well.

4.2 Coordination at regional and local levels

Though partnerships engage with and inform national adaptation policy, the main purpose of the partnerships is to inform and influence regional (or provincial) and local decision-making for climate change adaptation. In Canada, the analyzed RACs differ in whether they primarily focus on the provincial level (RAC Prairie) or the municipal level (RAC Atlantic, RAC British Columbia). In the UK, the partnerships in the beginning targeted both the regional and the local levels, but since the recent omission of the regional government bodies the focus shifted to the local level.

The membership structure and the involvement of partners in the organizational bodies and activities of the partnerships give a first indication of the ways regional and local authorities are coordinated. In Canada, main partners in the collaboratives include NRCan, various provincial departments and municipalities (with the exception of the Prairie RAC that does not focus on the local level), but the various levels are engaged in different ways. Noticeably, NRCan and the provincial departments interact in the various governing bodies of the collaboratives while the local level, i.e. municipalities, is primarily involved through the work in concrete projects and events. The provincial and national levels thus set the overall strategic frame for the activities at local level and provide the

overall coordination. In the UK, initially, regional government bodies were among the main partners in the partnerships but since they were abolished the regional level is now represented by only a few remaining agencies, for example the South East England Development Agency (SEEDA). The local level is involved in the partnerships through the county and borough councils while communities are not directly involved. The involvement of the county and borough councils in the coordination and steering of the partnerships differs among the analyzed partnerships and among the involved councils.

Besides the direct involvement of local and regional authorities in the partnerships, the partnerships fulfill important functions in building adaptive capacities and informing policies at the regional and local levels. Most importantly collaboratives and partnerships contribute to building the knowledge base for adaptation at a local and regional level and developing related guidance for decision-makers. In both countries, assessments and scenarios at the national level were available but knowledge on the impacts and vulnerability with respect to specific regional and local conditions was missing. Partnerships in both countries are thus intensely engaged in conducting risk and vulnerability assessments and case studies at the regional or local level. Thus, although the RAC program is targeted at adaptation decisions instead of research, a majority of the RAC projects involves assessments and studies. Such risk and vulnerability assessments deal with local and regional impacts in various issue areas and concern for example flood, salt water intrusion or coastal erosion. Besides their involvement in the UKCIP scoping studies and the National Risk Assessment (see above) partnerships in the UK also frequently conduct and publish case studies on adaptation activities that are already taking place in different sectors and they aim at assessing and monitoring the preparedness of regions or particular sectors to the impacts of climate change. Assessments, case studies and scenario exercises frequently result in the development and testing of *decision-support tools and policy guidance*. Decision-support tools include risk assessment tools, checklists for planners and new or revised guidelines, e.g. for building sea dykes or land management. Again, the partnerships strive for hands on tools for different local and regional authorities. In the UK, for example, partnerships 'translate' the UKCIP's guidance for the practitioners at local and regional levels. Decision-making tools and guidance are obviously targeted at coordinating decision-making at local and regional levels either through procedural convergence (i.e. mainstreaming vulnerability assessments) or through information on particular vulnerabilities and related measures. The following statement provides anecdotal insight on the actual adoption of such guidance and nicely illustrates the intended coordination of planning in communities:

"So we provided [the guidelines] to the local government engineers in our department who do planning assistance for all the smaller communities. So when the small community says we want to access funds to improve our drinking water system or drainage system so those engineers will then review those plans and they either approve them or they make recommendations for change or whatever. So they now are using these sea level guidelines to decide whether to approve new systems or not based on the design [...]. So we were actually quite surprised how quickly they started to use that we thought it was going to take a long time but they have been quite willing to use it" (CA9).

Beyond knowledge building and decision-making guidance, partnerships aim at coordination through the facilitation of networking and knowledge exchange. Partnerships

in both countries regularly organize workshops, discussion forums or public events in order to engage regional and local decision-makers, stakeholders and practitioners. Notably, these possibilities for networking are often not restricted to the partners but accessible for a wider group of stakeholders. Information and networking events are used to draw the attention of the stakeholders to potential climate change impacts and vulnerabilities, to available information and guidance.

Partnerships and collaboratives are also engaged in informing concrete decisions, plans and programs at the local and regional level. Especially the Canadian collaboratives strive for making recommendations for existing plans, for example coastal management plans, shoreline protection and setback, flood plan regulations, municipal emergency management plans. Since the collaboratives started only in 2009 and most projects are still in the process of conducting vulnerability and risks assessments examples of revisions of policies and plans cannot be given yet. The partnering municipalities serve as testing grounds for modified and updated planning but again it is intended that they serve as best practice examples for other municipalities beyond the scope of the partnerships. In the UK, the London climate change partnership provides most examples of activities targeted at shaping city adaptation planning. For example, the partnership aims at ensuring that water efficiency measures are included in London's retrofitting program which involves the upgrading of 1.8 million homes by 2015. Further the London climate change partnership supports Greater London Authority in formulating a London-wide plan to manage and reduce surface water flooding by conducting a demonstration project for adaptive pavement surface treatments that reduce flooding and overheating. In addition the partnership aims at supporting a London community at high flood risk in the development of a community flood plan. Overall according to an interviewee, the London climate change partnership tries to "be involved as much as we can in local planning" (UK2) by working with communities and the boroughs in London.

Regional policies are of a more strategic nature than the plans and programs at the local level. Partnerships and collaboratives inform regional adaptation strategies as well as sectoral strategies and policies (e.g. water). Most obviously this purpose can be observed in the Canadian collaboratives with a stronger focus on the provincial level. For example, the Prairie RAC aims at recommending "options for water policy and planning at the regional, provincial and inter-provincial scales". It is expected that the work of the collaborative will lead to recommendations for changes in the water allocation policy since the current policy of "first come, first served" does not respond to a changing climate (CA5). The collaborative also aims at facilitating the development of new strategies, e.g. a provincial drought strategy or drought framework and action plan. Before the omission of the regional administrative level in the UK, the partnerships were perceived as an important partner in regional adaptation policies. The partnerships are or have been major consultative partners for regional strategies and plans, e.g. the South East plan (regional planning framework); they collected responses from partners and fed them in the formulation of the plan. The London climate change partnership is now the only one of our three cases that still fulfills this function and, for example, serves as the primary consultation and refining mechanism for the London climate change adaptation strategy (UK2). The partnership organized a forum with the actors responsible for drafting the strategy and other actors in order to "examine the premises of the adaptation strategy and to comment on the different actions" (UK2). Thus the partnership serves as a facilitator for wider consultation processes. Also the partnership is understood as the primary mechanism for delivering the adaptation strategy through

its networks (UK2). Besides its role in the formulation and implementation of the London climate change adaptation strategy, the partnership also serves the consultation of the London Plan (spatial development strategy) and other strategies and policies.

4.3 Coordination across societal domains

Besides the vertical interaction between different levels of government partnerships are generally characterized by the coordination across different societal domains. The partnerships in Canada and the UK involve not only governmental institutions such as local authorities, provincial and national departments but also include research organizations, businesses, non-governmental organizations and professional associations. But what is the role of the businesses, civil society or academia in the partnerships and in how far do partnerships strive for coordinating their activities? Again we find differences between the partnerships in the UK and the collaboratives in Canada. The collaboratives overall have a stronger focus on government institutions than the partnerships in the UK. Though research organizations, industry, professional associations and NGOs are partners in the collaboratives they are generally not involved in the governing bodies of the collaboratives. Non-governmental organizations and stakeholders are involved in the projects of the collaboratives but they are not the primary target group of the activities and outputs of the collaboratives. This suggests the assumptions that partners from research organizations, business and business associations and NGOs mainly serve as consultative partners in the projects, providing knowledge and their perspectives to the assessments, decision-making tools and recommendations for adaptation policies and measures which are ultimately targeted at regional and local governmental partners.

A different pattern can be observed in the UK. Not only are businesses, NGOs and business-facing organizations more frequently represented in the partnerships but organizations from the private or civil society sector are also frequently involved in the executive or steering committees of the partnerships. Consequently, they are more intensely involved in the overall coordination and strategic orientation of the partnerships. Especially businesses which have high stakes with regard to climate change such as water companies or insurance companies are strongly engaged. The motif, however, for their involvement is not primarily to get knowledge or support for their adaptation activities but often to raise the attention for climate change adaptation and to distribute their information and experience among other actors: *“You know to give other people the opportunity to see what we are doing and we would hope to learn from them as well”* (UK5).

Also with respect to the activities and target groups the partnerships in the UK focus more on non-governmental stakeholders than the collaboratives do. Climate SouthEast and Climate SouthWest, for example, have working groups specifically dedicated to the business sector with the aim to prompt businesses to address the causes and effects of climate change. Thus trainings, for example for UKCIP scenarios, are not only provided for local authorities but for businesses as well and checklists and case studies also frequently target businesses from different sectors. A further example are the workshops, organized by Climate SouthWest, for small businesses in the agriculture, construction, food and drink, and tourism sectors in which sector-specific information on the science, impacts and adaptation responses to climate change were presented.

4.4 Coordination across sectors and policies

Climate change impacts affect very diverse sectors such as housing, landscape planning, agriculture, forestry, tourism, health, energy and water management. How do the partnerships address these different sectors and policy areas and in how does coordination take place between previously unconnected areas? The partnerships and collaboratives also differ considerably with respect to the sectors and policy areas they target with their adaptation activities. The Canadian collaboratives are only set up for three years and from the beginning it was intended that they would have a focus on the most important adaptation issues identified in the 2008 national assessment. Thus the collaboratives primarily focus on water management, land use planning and ecosystem management. According to interviewees the mainstreaming of adaptation in sectoral policies, most notably water management, has partly led to coordination between departments and agencies where no interaction took place before but partly also builds on already existing relations. The collaboratives were set up in a rather quick process and have a limited duration only. Thus, the collaboratives in Canada often base their work on already existing cooperation and in a few instances helped to induce new social relationships where traditionally work took place in isolation (CA9).

The UK climate change partnerships, in contrast, are set up on a continuous basis and aim at building “networks to generate and share climate solutions across all sectors” (Climate SouthWest). Thus, the partnerships target a wider range of sectors including business, tourism, health, biodiversity, local planning, etc. But although the partnerships induce the consideration of adaptation issues in these sectors, it does not necessarily imply that direct interaction and networking between actors from different sectors is prompted. Rather the partnerships work with the sector in distinct working groups and themes in order to target their knowledge and information. Still indirect coordination takes place through the use of the same scenarios, joint events and the overall guidance through the partnerships.

4.5 Coordination across regions

Finally, the analysis of the partnerships in both countries also shows that they contribute to an increased interaction and coordination across regions and provinces.

In Canada, coordination between provinces and territories takes place on the one hand by the partnering of several provinces in one collaborative and on the other hand by the meetings of all RACs in the National Coordination Committee. Three out of the six collaboratives involve several provinces. Consequently NRCan pre-established the collaboration between specific provinces before the respective provinces were contacted. In one of the analyzed cases this approach matched the already existing collaboration on adaptation between the respective provinces, in another case, however, no such coordination existed and new cooperation was induced by the program. In addition, all collaboratives meet twice or three times a year in person and have regular telephone conferences within the frame of the National Coordination Committee of the RAC program. The Committee is chaired by NRCan and includes the leaders of the RACs and related experts. It was established to guide RAC activities and facilitate national coordination and communication. Within these meetings the RACs not only exchange with the national level representatives but also learn from the experiences of other RACs.

Also in the UK, the regional climate change partnerships frequently meet and talk to each other in the context of ClimateUK. Climate UK started as a rather informal rather informal network (previously called UK Interregional Climate Change Group). Although the network is supported by Defra, ClimateUK is working more independently from the national level (Defra) than the Canadian National Coordination Committee. In summer 2011, ClimateUK became a more formal group: it was transformed into a 'community of interest company'. ClimateUK still is an umbrella organization that provides access to new funding possibilities and facilitates collaboration between the individual partnerships (UK6) and acts as a kind of "self help group" (UK3) but that does not interfere with their policies (UK2). In addition, several partnerships have worked together on specific projects in adaptation, e.g. on tourism, on the built environment, on joint publications or checklists.

5. DISCUSSION AND CONCLUSIONS

Climate change impacts are cutting across scales and levels of traditional policy making and the governance of climate change adaptation consequently requires multi-level coordination. Regional partnerships have evolved as an institutional response to the challenge of adaptation as a multi-level and multi-sectoral problem. Both analyzed partnership schemes are intended to serve as coordination mechanisms across administrative levels, societal domains and sectors and eventually to contribute to capacity building for climate change adaptation and adaptation decision-making at different levels.

The collaboratives in Canada and the partnerships in the UK, however, deliver this coordination function in distinct ways. Due to different origins, purposes and designs, they vary in the scope of collaboration, forms and modes of coordination and the adaptation issues and activities they address. Notably, the collaboratives in Canada are short-term oriented, project-focused and with a fixed membership, while the partnerships in the UK are long-term oriented and continuous, network-focused and with a more flexible membership. Moreover the different origins of the collaboratives and the partnerships, the former emerging from a federal level program, the latter emerging from the regional level, influence their relations with the national level and the scope and activities of the collaboratives and partnerships.

At first appearance both partnership schemes seem to equally aim for the coordination across levels and across societal domains since both consist of local, regional and national authorities as well as businesses, research organizations and civil society organizations. A closer look, however, reveals that the scope of collaboration of the collaboratives in Canada is predominantly government-centered. Though private stakeholders are named as addressees and included in the collaboratives, the main focus of the RAC program is on the vertical dimension of multi-level governance, i.e. the collaboration between the federal, provincial/territorial and municipal levels. This is especially reflected in the different forms of involvement of the partners in the collaboratives. The national and regional level is involved in the steering and coordination of the collaboratives while the local level is the main target for the adaptation activities. In the UK, in contrast, partners from the private sector are both involved in the governing bodies of the partnerships and are a main target group addressed in specific working groups and events. Thus, the UK partnerships equally strive for vertical

coordination across levels and for horizontal coordination across domains. With respect to vertical coordination, the partnership in both countries serve as important intermediaries between the local and the national level. Notably, the interactions between the partnerships and the national level are restricted to only a few national actors in both countries: In Canada, NRCAN is the main and often only regular contact. In the UK, regular interaction takes place with Defra and the two delivering organizations UKCIP and the Environment Agency. Only little and rather ad hoc interaction takes place with other departments or national organizations in both countries.

Overall the analysis of the partnerships in both countries reveals various mechanisms through which different levels and sectors are coordinated. The most straightforward coordination takes place through the interaction of organizations and stakeholders in the governing bodies, working groups or projects of the partnerships. Further possibilities for exchange of experiences and learning are given through the many events or workshops the partnerships organize for a wider audience. But also the assessments, scenarios, studies and guidance produced by the partnerships have a strong coordinating function. The many capacity building activities of the partnerships build on the assumption and expectation that knowledge will lead to action. Knowledge about the impacts of and vulnerabilities to climate change as well as knowledge on how to act is seen as a trigger for motivating and capacitating decision-makers to take adaptation actions. Eventually this should result in better decisions, i.e. decisions taking into account climate change risks and vulnerabilities. Partnerships thus strive for coordination by information.

Collaborative arrangements such as partnerships are categorized as soft steering mechanism with generally non-hierarchical interactions between partners (Glasbergen 2007, 1f). The case studies have shown that the forms and coordination may differ with the direction of coordination. Thus, for the coordination between regions and between partners within the partnerships a network mode of governance, with voluntary cooperation, mutual trust and little competition as basic characteristics can be observed in both countries. The reported strengths of the partnerships in both countries include the good personal relations and good communication between the main actors involved. However, the case studies have also shown government authorities, in particular national level authorities, may have varying roles in the steering of the partnerships and rely on different forms and modes of coordination. In Canada, a top-down approach of coordinating adaptation activities through partnerships can be observed. The RACs serve the transmission of the national adaptation policy agenda to the regional and local level. Not only did the national level set the overall frame for the collaboration of regions and municipalities, including the geographic and thematic scope but NRCAN also stays involved in the coordination and steering of the activities of the collaborative. So far, the collaboratives only serve rudimentarily to inform policy formulation at the national level. The network mode of coordination between provinces and partners within the region is thus complemented by a partly hierarchical coordination with the national level. In the UK, in contrast, the independence from the national level is seen as a main asset of the partnerships, and according to interviewees, contributes to their credibility with local actors. The relation between the partnerships and the national level is described in a two-way relationships with strong mutual interaction patterns. Given that Canada is a federal state and the UK is a unitary state it may at first appear surprising that the Canadian collaboratives are subject to stronger supervision and hierarchical steering and that the English partnerships function more autonomous. This shows that the features of

the instrument ,partnerships' and its integration into the overall governance of adaptation are rather determined by the evolution of the instrument (top-down or bottom-up) than by the political system (i.e. unitary versus federal).

The coordination between the various levels and domains is not an end in itself and partnerships in both countries fulfill important functions in building adaptive capacities and informing policies at the various levels. Most importantly collaboratives and partnerships contribute to building the knowledge base for adaptation at a local and regional level and developing related guidance for decision-makers. Additionally they contribute to awareness raising for climate change adaptation, networking building and societal learning. With respect to informing policies, the work of the collaboratives and partnerships is targeted at informing decision-makers at the local, regional and national level. And while at the local and regional level the partnerships inform on a range of policy issues (including water management, spatial planning, tourism, etc.) the feedback given to the national level is mainly restricted to climate change adaptation strategies and policies in a narrower sense. The advantage of partnerships is to be driven by local and regional needs and thus to provide flexible and targeted products. The lack of political awareness and interest, little public funding, and decreasing funding capabilities of main partners jeopardize the continuous work of the partnerships.

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