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Synopsis: In Go-Adapt we analysed the governance of climate change adaptation and related comprehensive themes. In a stock-taking survey we provided an overview of how 10 OECD countries address climate change adaptation issues in terms of governance arrangements (published in the Journal of Environmental Policy and Planning). Based on the stock-taking survey we investigated regional partnerships for adaptation in Canada and the UK (two journal manuscripts, one accepted, one under review) and the role of comprehensive adaptation strategies in the Netherlands and in Germany (one journal manuscript under review). In order to learn more about the failures and success factors of comprehensive multi-sectoral strategies we analysed the rich experiences with sustainable development strategies (one journal manuscript under review). Overall, we produced 5 journal papers/manuscripts (planned were 3) and we presented the results of Go-Adapt 12 times at scientific conferences and workshops (planned were 2 presentations). Since the project deliverables exceed by far what was planned, the in-kind contributions of Reinhard Steurer as project leader exceeded by far the estimates in the proposal.

PLEASE NOTE BEFORE PRINTING: This report contains 12 pages of references!

1 Introduction

Project mandate and priorities

The disciplinary political science research conducted in Go-Adapt focused on the governance of climate change adaptation, i.e. on the ways in which adaptation policies and instruments are developed and implemented by governments in selected developed countries at different levels. Why is this governance perspective important? By focusing on interesting practices of 'how to do it', the proposed research helps to develop and implement adaptation policies that are concerned with the 'what to do'. So far, however, "[t]he governance framework of adaptation is still largely in the making" (Paavola 2008, 652) and little is known about the governance of adaptation policies because this issue has largely been neglected. Consequently, there is a lot to learn through governance research as proposed here. Not paying attention to the challenge of how to deliver adaptation policies through adequate governance arrangements any longer would inevitably hamper adaptation efforts. In this sense, "institutional requirements for adaptation" are also acknowledged as important in facilitating adaptation to climate change in the latest IPCC report from 2007 (Adger et al. 2007, 731).

The relevance of the governance research conducted here corresponds with the political salience of the governance challenges in the context of climate change adaptation. Policy makers as well as researchers acknowledge that these challenges are numerous and serious. To keep the research focused, *GO-ADAPT* explored how selected governments deal with four governance challenges that are paramount in the context of climate change adaptation, i.e. (i) improving the horizontal and (ii) vertical integration of policies, (iii) cope with various types of uncertainty and (iv) facilitate stakeholder involvement in line with the challenge of procedural justice (for a summary see table 1).

Table 1: The governance of climate change adaptation: challenges and approaches

Governance challenges		***Selected governance approaches to be analysed in GO-ADAPT***
(i) Climate change impacts and adaptation efforts cut across policy sectors[1]	Better integrate sectoral policies horizontally (cross-sectoral)	Inter-ministerial coordination bodies; national strategy processes; coordination of different strategies; 'climate-proofed' assessments,; guidelines & checklists
(ii) Climate change impacts and adaptation efforts cut across levels of government[2]	Better integrate policies vertically (across levels of government)	Inter-governmental coordination bodies, multi-level governance instruments such as treaties, voluntary agreements, guidelines, strategies

[1] OECD 2008; European Commission 2007; FAO 2007; Yohe et al. 2007; Burton et al. 2006.
[2] European Commission 2007; Klein et al. 2007; Adger et al. 2005; 2007

(iii) Uncertainty of a) climate scenarios b) impacts and vulnerabilities c) the effectiveness of adaptation measures[3]	Improve the knowledge-base of adaptation policies and facilitate participation	Knowledge brokerage mechanisms; risk assessment tools; 'uncertainty/ignorance audits'; adaptive strategies; formats that facilitate reflexivity in policy making; stakeholder forums
(iv) Those affected most by climate change are often not well organised and therefore excluded from policy making[4]	Facilitate 'procedural justice' by involving those in policy making who are affected most by climate change	Institutionalised stakeholder forums; ad-hoc participation, such as stakeholder workshops/conferences, online consultations, etc.

The overall objective of *GO-ADAPT* was to provide policy-relevant insights on how governments address the governance challenges mentioned above, in particular the challenges of integrating adaptation horizontally across sectors and vertically across levels of government (also referred to as mainstreaming adaptation). In more detail, *GO-ADAPT* aimed to:

a) Provide an overview of national and selected sub-national adaptation governance approaches in 10 OECD countries;
b) Show how some of these approaches actually function in selected adaptation policies enacted by the national and sub-national governments that have been covered already in the survey;
c) Draw lessons from experiences with similar governance approaches that are applied in closely related policy fields, such as climate change mitigation and sustainable development;
d) Provide guidance on how to advance the governance of climate change adaptation, in particular in countries that are at early stages of establishing respective policy frameworks.

Positioning of the project within the Program framework

Go-Adapt is a disciplinary political science project funded by the ACRP Program. It focuses on the public governance of climate change adaptation and related policy fields (such as sustainable development.

Structure of activities and methods employed

This final project report summarises our activities and findings with regard to these four activities:

a) *A stock taking survey of governance approaches in 10 OECD countries:* This WP has been conducted as planned and the results are already published in the Journal of Environmental Policy and Planning (SSCI-listed). The paper shows how governments aim to develop and implement adaptation policies at the national level

[3] OECD 2008; Adger et al. 2007; Yohe et al. 2007; Barnett 2001
[4] Paavola 2008; Nelson et al. 2007; Paavola & Adger 2006

in ten OECD countries. It first introduces the four challenges of climate adaptation policy making mentioned above. It then highlights a variety of institutional innovations (here referred to as governance approaches) the selected governments employ to address these four challenges. Overall, it is shown that most of these approaches are restricted to soft, voluntary ways of coordination and steering that often address more than one of the four challenges at a time, and that national adaptation strategies usually mark the centrepiece of adaptation governance around which other governance approaches emerge.

b) *Policy case studies on the governance of adaptation:* We have conducted in-depth case studies on four interesting governance approaches we encountered in the survey. The case studies cover regional adaptation partnerships in Canada and the UK, and comprehensive adaptation plans in the Netherlands and in Germany. For the regional partnerships we conclude that they are promising approaches for adaptation mainstreaming (in particular vertically between levels of government) and for the comprehensive adaptation plans we conclude that multi-sectoral adaptation strategies (as employed in Germany) are not necessarily preferable to more focused (sectoral) adaptation programmes as employed in the Netherlands. Since the two case study topics are too diverse to compare we decided to write two instead of one case study paper (one on each case study topic), plus a third one on partnerships because if fitted perfectly with a call for papers for a special issue/book project.

c) *Lesson drawing from related policy fields:* Since other policy fields struggle with similar governance challenges we planned to learn from them and transfer lessons to the adaptation policy field. In the proposal phase, highly relevant seemed the governance of hazard management, climate change mitigation and sustainable development. However, since we have compared the role of comprehensive multi-sectoral strategies in climate change mitigation, adaptation and sustainable development already in another project we decided to narrow the focus here and further deepen our analysis of sustainable development strategies because the experiences with this instrument are the richest (10 years and more), and because there is a lot to learn from their failures. We conclude that multi-sectoral strategies can foster communication but not policy coordination across sectors.

d) *Provide guidance on how to advance the governance of climate change adaptation:* In the proposal we assumed that policy guidance will be given based on a comparison of the case studies conducted in step (b), and enriched by the lessons drawn from the extended literature review in step (c). Since the case studies are more diverse and less comparable than we anticipated in the proposal, we were not able to synthesise them and the survey results into a journal manuscript as planned. Instead, we produced three instead of one manuscript on the case studies themselves, plus one on the literature review (i.e. two additional papers). Policy recommendations are summarised in this final report.

Overall, we produced 5 journal papers/manuscripts instead of 3, and we presented the results of Go-Adapt 12 times at scientific conferences and workshops (planned were 2 presentations). Since the project deliverables exceed what was planned, the in-kind contributions of Reinhard Steurer as project leader exceed by far the estimates in the proposal.

2 Substantive presentation of results

The research activities of Go-Adapt centred around WPs and journal publications. This section mirrors this logic and summarises the key findings for each WP and each of the five papers produced.

WP1: A stock taking survey of governance approaches in 10 OECD countries:

Within this WP we have written the following paper:

1) ***Bauer, A.; Feichtinger, J. & Steurer, R. (2012): The governance of climate change adaptation in ten OECD countries: challenges and approaches, in: Journal of Environmental Policy and Planning, 14/3, 279-304.***

Key results documented in this paper can be summarised as follows:

Although the public governance of climate change adaptation gained increasing attention among both policy makers and researchers in recent years, it is still largely unclear how governments aim to develop and implement adaptation policies. This paper takes stock of respective institutional innovations at the national level in ten OECD countries. It first introduces four challenges that are key in the context of climate adaptation policy making, i.e. (i) how to better integrate adaptation policies horizontally across policy sectors and (ii) vertically across jurisdictional levels, (iii) how to integrate knowledge and, (iv), how to involve non-state stakeholders in adaptation policy making. Based on a desk research and semi-structured interviews, the paper then highlights a variety of institutional innovations (here referred to as governance approaches) the selected governments employ to address these four challenges. The governance approaches we found in the 10 countries can be summarised as follows:

Governance types and approaches addressing horizontal integration

Country	Temporary coordination and consultation for elaborating NAS	Institutionalised coordination bodies (pre-existing* or new**)	Strategies apart from NAS addressing adaptation
AU	Several intergovernmental ministerial councils	Adaptation Network across the Australian public service for capacity building**	• Water for the Future • Great Barrier Reef Intergovernmental Agreement
AT	• Series of 'informal workshops' • Participation process (workshops with public administrators and non-state actors)	• Austrian Kyoto Forum* • Inter-ministerial committee on climate change (IMK)*	
CA	• Intergovernmental Climate Change Impact and Adaptation Working Group • Interdepartmental consultation on a national adaptation framework		
ES		• Working Group on Impacts and Adaptation** • Spanish Coordination Commission of Climate Change Policies (CCPCC)* • Inter-ministerial Group on Climate Change* • National Climate Council*	
DE	Preliminary inter-ministerial working group	Inter-ministerial working group (IWG adaptation)**	• Sustainability strategy, • National strategy on biological diversity, • (In planning: Strategy on agro-biodiversity)
DK	Preliminary inter-ministerial working group	Coordination Forum for Climate Change Adaptation**	
FI	Series of seminars during the development of the NAS	Finish Coordination Group for Adaptation to Climate Change**	• Forestry strategy • Foresight report
NL	• ARK steering committee and the ARK programme team • Delta Commission	Ministerial Steering Group of the Delta Programme **	Delta Programme is included in the National Water Plan
NO	Preliminary inter-ministerial coordination team	Inter-ministerial coordination team**	Integration of climate adaptation and disaster risk reduction
UK		• DASH-Board** • Domestic Adaptation Programme Board**	• Departmental adaptation plans (2010) in all departments • Climate change Public Service Agreement

Governance types and approaches addressing vertical integration

Country	Temporary coordination and consultation for elaborating NAS	Institutionalised coordination bodies (jointly with horizontal integration*)	Networks and partnerships	Monitoring and reporting schemes
AU	Council of Australian Governments (COAG): Working Group on Climate Change and Water		Local Adaptation Pathways Program	
AT	• Series of 'informal workshops'	• Austrian Kyoto Forum* • Inter-ministerial		

	• Participation process	committee on climate change (IMK)*		
CA	Intergovernmental Climate Change Impact and Adaptation Working Group		Regional Adaptation Collaboratives (RACs)	
ES		• Working Group on Impacts and Adaptation* • Spanish Coordination Commission of Climate Change Policies (CCPCC)* • National Climate Council*		
DE	Consultation procedures in specific sectors	Standing commission on adaptation to Climate Change		
DK		Coordination Forum for Climate Change Adaptation*		
FI	Seminars	Finish Coordination Group for Adaptation to Climate Change*		
NL	ARK steering committee and the ARK programme team	Steering committees of area-based Delta subprogrammes		
NO	Norwegian Commission on Vulnerability and Adaptation to Climate Change		Cities of the Future	Decree on risk analyses (part of the planning and building act 2008) Yearly governmental assignment for regional counties to secure following up of climate change adaptation initiatives
UK	Consultation on Framework	• Local and regional adaptation partnership board, since June 2011: Local Adaptation Advisory Panel	Regional climate change partnerships (RCCP)	National Indicator 188 in the Local Government Performance Framework (2008-2011, since 2011 used on a voluntary basis)

Governance types and approaches addressing scientific knowledge integration

Country	**Assessments and studies** (year of publication)[5]	**Research programmes** (focus on adaptation*, climate change**, wider topic***)	**Scientific advisory bodies and services**	**Coordination bodies (temporary or institutionalised)**	**Monitoring reporting and evaluation schemes**
AU	• Garnaut Review (2008); • National Coastal Risk Assessment (2009), • Biodiversity Vulnerability Assessment (2009)	• National Climate Change Adaptation Research Facility (NCCARF, 2007-2012/13)* • CSIRO Climate Adaptation Flagship (2007-2011)*	National Climate Change Adaptation Research Facility/NCCARF (hosted by Griffith University)	Regular workshops with national and state administrators organised by NCCARF	Annual reporting within the Department

[5] This table reflects contracted research only if it has a clearly defined role in adaptation policy making. In addition, research with a sectoral focus is very common but also not included here.

AT	• Vulnerability assessments by the environmental agency (2008; 2010) • Status quo study (2008) • Study - Recommendations for Actions (2008)	• Austrian Climate Research Programme (ACRP)** • StartClim • Global Change Programm (ÖAW)	• Environmental agency (vulnerability assessments, participation process) • AustroClim	• Informal workshops of the BMLFUW include experts • One workshop with scientists and policy maker in the course of the participation process	
CA	• Climate Change Impacts and Adaptation - A Canadian Perspective (2003) • Assessment: From Impacts to Adaptation: Canada 2007 • Further sectoral and territorial assessments (e.g. health, forestry, Northern Canada)	Climate Change Impacts and Adaptation Programme (CCIAP)*		Experts provided advice to NAF	
ES	• Assessment: Evaluacion preliminario de los impactos en Espana por efecto del cambio climatico (2005)	National Research and Development and Innovation Programme***	Meteorological service (scenarios)	Sectoral workshops planned (implementation)	Monitoring report on activities of regions
DE	Status quo and vulnerability studies (2005)	• Klimazwei (2006-2009)** • Klimzug (2008-2014), regional adaptation research*	• Competence centre (KomPass) at the Federal Environment Agency • Climate service centre (hosted by a Helmholtz Centre)	(Through Klimzug and KomPass)	• Inter-ministerial working group first interim report to both houses of parliament (Bundesrat and Bundestag) due in April 2013 • Common indicator scheme for NAS
DK	First report commissioned by the Energy Agency (2002/03)		Information Centre on adaptation (hosted by the Energy Agency)	The Coordination Unit for Research in Climate, represented in the Coordination Forum	Coordination forum reports to the government once a year
FI	• FinAdapt (2004-2005) • Use of the international assessment of climate change impacts in the Arctic/ACIA (2005)	• Climate Change Adaptation Research Programme ISTO (2006-2010) • Government sectoral research: Climate programme (2010-2011) • Academy of Finland: Climate Programme FICCA (2011-2014)	• Finnish Environmental Institute SYKE • Finnish Meteorological Institute (scenarios)	• Sectoral seminars with experts in the course of the development of the Finnish NAS • Coordination group: research institutes, research financers	Evaluation of the NAS in 2008/2009
NL	Assessment of the effects of Climate Change in the Netherlands Routeplanner-Project (2007)	• Climate changes Spatial Planning Programme (2004-2011)*** • Knowledge for Climate (KfC, 2008-2014)*	• Platform Communication on Climate Change • Netherlands Environmental Assessment Agency	Knowledge Network Delta Programme	

NO	• Pre-study conducted by CICERO (Center for International Climate and Environmental Research) (2004) • NorACIA (2006-2010)	NORKLIMA (2004-2013)*	Norwegian Commission on Vulnerability and Adaptation to Climate Change		
UK	• Climate change risk assessment (CCRA, every 5 years) • Adaptation Economic Assessment (along with CCRA)	• Living with Environmental Change (LWEC) programme • ARCC	• Adaptation Sub-committee (ASC) of the Climate Change Committee (CCC) • UKCIP (scenarios, tools) • Environment Agency	UKCIP is involved in most coordination bodies and processes, e.g. ACC programme, local and regional adaptation board	• ACC Report: How well is the UK prepared for climate Change • Measuring success as the 4th strand of the ACC programme

Governance types and approaches addressing stakeholder involvement

Country	Coordination bodies (temporary* or institutionalised**)	Institutionalised consultation bodies	Temporary 'stand-alone consultation' (of particular stakeholders* or the public**)	Networks and partnerships
AU	Range of workshops*	Stakeholder group advising the Department of Climate Change and the CSIRO Adaptation Flagship	Consultation in developing National Climate Change Adaptation Framework*	
AT	Participation process*		• Internet consultation** • Several consultation rounds (draft of NAS)*	
CA				Regional Adaptation Collaboratives
ES	• National Climate Council** • Sectoral workshops (planned for implementation)*		Public consultation of the PNACC**	
DE	Stakeholder conferences or stakeholder-dialogues*		Online-Consultation (Action Plan on Adaptation - March 2011)**	Partnership with German Insurance Association
DK			NAS presented in a public hearing**	
FI	Sectoral workshops during the formulation of NAS*			
NL	• Regional impulse meetings with local authorities and non-state stakeholders* • Joint fact finding (Delta Programme)*	Delta subprogrammes installed advisory boards who advice the steering committees	Meetings during elaboration of NAS (ARK)*	
NO	Norwegian Commission on Vulnerability and Adaptation to Climate Change*			Partnership between county administrators, municipalities and insurance companies
UK	ACC Partnership Board**		Consultation over the Adaptation Policy Framework**	Regional climate change partnerships (RCCP)

The article has introduced the horizontal and vertical integration of adaptation policies, the integration of scientific knowledge in policy making, and participation as key challenges in

the governance of climate change adaptation, and it has shown that selected OECD countries address them with a variety of governance approaches, many of them addressing more than one challenge at once. By doing so, the present paper has outlined how the establishment of comprehensive governance settings (consisting of several complementary governance approaches) is under way, and it has shown that the soft network mode of governance (mainly characterised by mutual adaptation and persuasion) has dominated these efforts so far.

While the article provides an overview of the means governments employ to develop adaptation policies, the question of how good these means are in achieving their ends – i.e. shaping adaptation policies, and ultimately adaptation in society - cannot be addressed here. An obvious reason for this limitation is that a stocktaking covering 10 countries and about 150 governance approaches can only scratch the surface. If much needed case studies attempt to evaluate the policy relevance of selected governance approaches they have to cope with the facts that most of the governance approaches described above are still relatively young, and that most adaptation policies are rather in the formulation than in the implementation phase (making it impossible to assess impacts yet).

As we can learn from other policy fields and strategy processes, adequate governance approaches are an essential but not a sufficient condition for developing and implementing effective policies (for sustainable development, see e.g. Steurer, 2008). Once governments have established an adequate governance setup, they will have to overcome numerous smaller-scale barriers, many of which arise usually between policy formulation and implementation (Clar, et al., 2012). The fact that the interviewees frequently mentioned a lack of high-level political commitment and resource scarcity as major barriers in adaptation policy making is certainly not helpful in this respect. As it seems, adaptation pressures are still perceived as moderate and/or uncertain. Once this perception changes, these and other barriers will be overcome more easily and the now dominant network mode of governance will most likely be complemented by hierarchical approaches.

WP2: Policy case studies on the governance of adaptation:

Within this WP, we have written three papers, two on adaptation partnerships and one on strategic adaptation frameworks. Since our entire work was organised around the three papers the key findings of this WP can be summarised as follows:

2) *Bauer, A. & Steurer, R. (forthcoming): Multi-level governance of climate change adaptation through regional partnerships in Canada and England, in: Geoforum, forthcoming*

Adaptation to climate change is widely recognized as a multi-level governance challenge because expected impacts and respective measures cut across governmental levels (from the global to the local), sectors and societal domains. The present paper analyses how regional adaptation partnerships in Canada and England coordinate adaptation between governmental levels and societal domains. While the Canadian collaboratives represent a government-centered approach introduced top-down through a national program for the period 2009-2012, the English partnerships are a stakeholder-centered approach that evolved bottom-up already in the early 2000s. We describe and compare three partnerships per country with regard to their evolution, membership and governing structures, coordination across levels and domains and their activities and outputs. Despite similar limitations, we find that the partnerships in both countries act as important intermediaries

between governmental levels, provide opportunities for networking between public and private actors, and eventually build adaptive capacities and inform adaptation policies.

Comparison of Canadian and English regional adaptation partnerships

	Canadian RACs	English RCCPs
Genesis	Top-down through funding by NRCan	Bottom-up: regional authorities, supported by UKCIP
Partnership governance	Government-led: provinces, NRCan	Stakeholder-led: local authorities, public agencies, interest groups, businesses
Vertical coordination	Predominantly uni-directional top-down	Two-way interactions
Horizontal coordination across sectors	Focused on water and ecosystem management, community planning	Variety of sectors addressed: tourism, businesses, water, planning, building, etc.
	Mainstreaming of adaptation in sectors, only limited coordination between sectors Hardly coordination with climate change mitigation	
Horizontal coordination across domains	Focus on public sector Consultative role of private actors	Equal involvement of public and private actors
Modes of governance	Network mode, based on mutual trust, voluntary commitment, consensus and identification	
	Partly hierarchical steering	
Functions	Capacity building: knowledge base, guidance, awareness, learning Adaptation policies: agenda setting, policy information, (policy implementation) at (national), regional and local level	

When governments tackle climate change adaptation they are usually puzzled with, inter alia, how to better integrate adaptation policies horizontally across policy sectors, vertically across jurisdictional levels, and how to cope with the uncertainties of climate change. In recent years, governments in industrialized countries have responded with a variety of innovative governance approaches, the regional partnerships analyzed here being one of them. Despite differences between the Canadian and English partnerships with regard to their genesis (top-down versus bottom-up) and governance (government-led versus stakeholder-led), the present paper has shown that their purposes and activities are very similar: All six partnerships analysed here aim to build adaptive capacities (inter alia by means of workshops, trainings and guidance), try to establish the knowledge bases necessary for adequate climate change adaptation, and they have horizontal and vertical coordination high on their agendas. Since partnerships rely mainly on voluntary networking, they are a viable alternative to often infeasible hierarchical coordination between sectors and levels of government. With regard to vertical coordination, regional partnerships can act as effective two-way mediators between the strategic ambitions of national policy makers on the one

hand and pressing adaptation needs in municipalities on the other. More specifically, they support municipalities in coping with complex problems that often overstrain their adaptive capacities (e.g. by fitting national guidance into local contexts), and they inform national policy makers about the needs at the regional and local levels. With regard to building adaptive capacities and establishing knowledge bases, the partnerships facilitate the generation and diffusion of knowledge focusing specifically on regional and local circumstances, raise awareness for impacts and adaptation options, and they provide guidance on the process of adaptation policy making. Although these activities are overall soft in character, they nevertheless represent or establish important prerequisites for mainstreaming climate change adaptation across sectors and levels of governance.

What are the major challenges and limitations of the regional adaptation partnerships in Canada and England? Most notably, the voluntary and often informal character of their activities implies that they involve mostly those that are already aware of and willing to engage in adaptation to climate change. The outreach to important other actors who are unfamiliar with climate change adaptation proves to be an increasingly important challenge. The English partnerships in particular struggled repeatedly with involving new partners and keeping them engaged over the long-term. Second, most partnerships face difficulties when organizing the exchange between diverse partners (such as researchers, municipal decision-makers and businesses) because of their different backgrounds, rationales, and languages. As noticed by an interviewee, similar problems arise when public administrators from different sectors and/or regions who are at different stages in adaptation policymaking exchange their experiences (CA6). Third, the partnerships in both countries are obviously challenged by the same issues adaptation scholars have highlighted as barriers of adaptation in general, such as skepticism towards climate change, lacking awareness for climate change impacts and adaptation options, weak political will and a consequential lack of financial and personnel resources (CA5, CA7, UK6). Finally, while the predominant networking governance mode of the partnerships corresponds well with their main activities, it also entails two challenges. On the one hand, the Canadian collaboratives sometimes struggled with the hierarchical approach national actors have taken when interacting with the partnerships, perhaps because it conflicted with their emphasis on regional contextualisation. On the other hand, all partnerships in both countries face the limitation that they can prepare the ground for adaptation policy making but have no actual decision-making power.

Overall, the paper has shown that regional partnerships fulfill important functions in the governance of adaptation to climate change within the limits of their network governance rationale. Although partnerships are sometimes meant to reduce state activities (Geddes, 2006; Sorensen and Torfing, 2009) the regional partnerships analysed here do not necessarily substitute but rather support the roles governmental actors play in climate change adaptation. Even when responsibilities are shifted from state to non-state actors as observed in the English partnerships, they nevertheless maintain strong links to public adaptation policies at several levels of government. Obviously, partnerships with different histories in different countries can serve as complementary approaches in the emerging adaptation governance regime.

3) *Bauer, A. & Steurer, R. (forthcoming): Regional adaptation partnerships in Canada and the UK: Catalysts for policy innovation or talking shops? (under review)*

Whereas the above paper focuses on the governance of the partnerships, this paper focuses on their impact on adaptation policy making. Partnerships are self-organizing alliances in

which actors from (multiple levels of) government, the private sector and/or civil society strive for a common goal in a particular issue area. In doing so, the partners usually share resources (including knowledge and experience) and risks in non-hierarchical interactions. Since partnerships are often regarded as key mechanisms in developing innovative solutions in all societal domains, the present paper explores in how far three regional climate change partnerships in Canada and in the UK facilitate policy innovations in climate change adaptation. The paper shows that the partnerships contribute to policy innovations for adaptation in two ways: they develop and diffuse a wide range of informational policies, and they facilitate the formulation and revision of a range of sectoral strategies and plans. Although we see the risk of partnerships becoming talking shops with little policy relevance we conclude that, so far, their informational activities represent important (albeit soft) policy innovations that address the needs of a relatively young policy field that is characterized with uncertainties and a lack of awareness.

Examples of how partnerships facilitate adaptation policy innovations

	Canadian RACs	UK regional partnerships
Involvement in regional and local policy (re)formulation	• Assistance for the initial preparation of adaptation-focused municipal climate change action plans (RAC Atlantic) • Climate change adaptation plan in the District of Saanich (RAC British Columbia) • Development of a provincial drought strategy (RAC Prairie)	• Chichester interim Statement on planning and climate change (Climate South East) • London upgrading program • London climate change adaptation plan • South East plan
Consulting national policies	General consultation on NRCan's adaptation policy, since 2012 through Adaptation Platform	Via ClimateUK: consultation within LAAP, e.g. on the National Adaptation Programme, NI 188

The paper has explored in how far regional adaptation partnerships in Canada and the UK act as catalysts for policy innovations, i.e. for policies that are novel for the decision-makers who adopt them at whatever level of government. It has shown that regional adaptation partnerships in Canada and the UK lead to policy innovations in two basic ways: first, they directly innovate soft (mainly informational) policy instruments such as studies, decision-support tools and guidance documents. By doing so they do not only provide practical guidance on how to adapt to climate change but also strive for changes in problem perceptions, framings and policy goals. Second, they facilitate the revision of various sectoral policies (in particular strategies, plans and technical standards, some of them binding) at different levels of government. This innovation pathway occurs either in the context of partnership projects, or by providing support to policy makers beyond the core partnership activities. While many partnerships focus exclusively on their core partners, all six regional adaptation partnerships aim to catalyze adaptation decisions well beyond their immediate scope among a broad variety of actors. What we did not find is that partnerships facilitate hard (i.e. binding and sanctioned) legal or fiscal policies. As the discussion in section 5 suggests, this can be attributed to the genuinely soft partnership approach that relies mainly on networking, and to the relatively young adaptation policy field that is puzzled by uncertainties and a widespread lack of awareness. In contrast to other partnerships (e.g. on unemployment in the UK), some of which have apparently produced no new projects at all

(Green & Orton 2012, 160), we took stock of a series of soft policy innovations that are directly or indirectly associated with the six partnerships we have analyzed.

The soft character of most of the adaptation policy innovations described in this paper is likely to dominate also the future activities of regional adaptation partnerships, inter alia, because of the demand-pull factors addressed in section 5, and because these activities are the essence of what partnerships are: new governance approaches that favor networks over hierarchies, coordination and learning over command-and-control, etc. Although the relatively soft activities carried out by the regional adaptation partnerships have to be acknowledged as relevant innovations in a policy field still in its infancy stage, this may not suffice once the policy field matures and climate change impacts materialise. Since the observed policy innovations hinge not only on the governance approach but also on the characteristics of the policy field, the role of adaptation partnerships will of course be shaped by how the adaptation policy field matures. Although partnerships resemble a new governance approach that refrains from hierarchical ways of steering, the regional adaptation partnerships must not predominantly soft policy innovations. If binding adaptation laws, standards and plans become more common in climate change adaptation, partnerships could also play an important role in facilitating or shaping them at or across various levels of government.

4) *Bauer, A. & Steurer, R. (forthcoming): Sectoral or integrated strategies? Comparing adaptation mainstreaming in German and Dutch water management (under review)*

Over the past decade, governments in many countries have developed adaptation strategies with the aim to mainstream climate change adaptation in a range of sectors. Comprehensive multi-sectoral adaptation strategies have emerged as the preferred governance approach in almost all European countries. The German Adaptation Strategy is a prominent example for such a comprehensive strategy. It addresses 14 sectors, defines key issues and measures at national level and provides a general frame of orientation for sub-national levels of government. Against this trend, the Netherlands have opted for a sectorally focused effort as the main national adaptation governance approach. The Dutch Delta Programme facilitates analysis and strategy development for long-term water management along current implementation programmes at a national scale with strong regional orientation. The present paper compares the two dissimilar cases of adaptation governance. To make the cases comparable it asks how and to what extent they mainstream adaptation into water and coastal zone management in the two countries. After discussing the pros and cons of multi-sectoral versus sectoral approaches of adaptation mainstreaming, we conclude that the more common multi-sectoral approach applied in Germany and most other OECD countries is not necessarily preferable to the more focused approach taken in the Netherlands. Overall, we argue that diversity in the governance of climate change can help to prevent that several countries fail in similar ways.

The main differences of the two approaches in mainstreaming adaptation into water management can be summarised as follows. First, the Delta Programme and the German strategies differ in their political status. The Delta Programme has a statutory role given through the Delta Act whereas the German NAS and action plan as well as the adaptation strategies of the Laender are non-binding strategy papers adopted by governments but not by parliaments. Second, the stronger political backing of adaptation in water management in

the Netherlands is also reflected in the fact that the Netherlands have already dedicated a considerable budget for the implementation of adaptation measures from 2020 onwards. In contrast, no additional budget has been allocated to adaptation strategies and most measures in Germany so far. Consequently, measures in Germany often represent ”business as usual” rather than significant policy change. This leads us directly to a third difference - the relevance of a long-term perspective. While the Dutch Delta Programme stands out with its approach to develop and decide on long-term strategies, the German strategies focus rather on short-and medium-term (often existing) approaches and measures. Fourth, while the Delta Programme is primarily concerned with water safety and management and, with the exception of spatial planning, ignores other sectors that may be affected by climate change, the German adaptation strategies aim to mainstream adaptation in a broad range of sectors and hence offer a broader spectrum of adaptation mainstreaming. However, a sectoral programme does not rule out broader activities elsewhere, and a comprehensive strategy does not necessarily imply better cross-sectoral coordination, in particular when adaptation strategies follow a sectoral structure. Fifth, with regard to vertical coordination, the Dutch Delta Programme has a strong top-down character that pays close attention to regional particularities. In Germany, the national government serves as a facilitator that sets the general frame for action and lower levels develop their own adaptation strategies with rather weak linkages to federal policies. Of course, this difference reflects the fact that the Netherlands is a unitary and Germany a federal country as well as the respective divisions of responsibilities in the water management sector.

Although the governance approaches analysed here are obviously very different, four similarities stand out. First, adaptation is a key issue of water management (and vice versa) in both countries. The existence of the Delta Programme emphasises that water management is at the core of adaptation in the Netherlands. Although the German water sector does not have its own adaptation strategy or programme, respective actors and/or issues play a key role in both national and regional adaptation efforts. Second, vertical coordination in both countries is dominated by national actors and their strategies or programmes. Third, although both the Dutch and the German approaches of adaptation governance strive for policy innovations (in particular in the long-term), they also emphasize continuity in the short and medium term. In both countries, current infrastructures and risk management approaches are assessed as adequate to deal with climate change impacts that already occur or will occur in the near future. Fourth, current adaptation measures in both countries concern predominantly research and analysis. This is reflected in the multi-annual process of long-term analysis and strategy development in the Netherlands and the many research activities that are listed as adaptation measures in the German strategies.

The discussion of similarities and differences shows that each approach has its strengths and weaknesses. The Dutch sectoral approach is well suited to advance the mainstreaming of adaptation in a particular sector. Priorities are clear, the political commitment is strong and additional resources (financial and personal) are provided. Certainly, all this hinges essentially on the considerable flooding vulnerabilities of the Netherlands, and its focused adaptation approach is a reflection of this (see section 1). On the other hand, the comparatively narrow Dutch approach may imply the risk of overlooking important adaptation issues in other sectors (such as heat stress and health issues). In contrast, the conventional approach employed in Germany addresses adaptation more comprehensively for more sectors within single strategies, albeit so far neither with a long-term perspective as explicit as in the Netherlands, nor with additional financial resources that secure the implementation

of proposed adaptation measures. The respective weaknesses of the two approaches may be partly alleviated by other governance approaches and adaptation efforts in the two countries. Thus, in the Netherlands the Knowledge for Climate Research Programme addresses a variety of adaptation issues in so-called "hotspot regions" where regional adaptation strategies are developed that focus not only on water management and spatial planning, but also on nature, agriculture and economic policies6. Similarly, in Germany, the regionally focused collaborative research programme KLIMZUG provides opportunities for the formulation of more focused adaptation strategies, e.g. for the Baltic Sea coast.

The obvious differences of the two governance approaches summarized here can but do not have to make a difference in terms of adaptation policy outputs or outcomes, and since it is too early to judge their effectiveness, we cannot conclude that the one approach is superior to the other. What we can conclude, however, is that the Dutch approach represents an attractive alternative to the common approach of adaptation mainstreaming via comprehensive, multi-sectoral strategies, in particular since adaptation is in the best interest of the sectors affected by climate change. The alternative of a thematically or sectorally focused adaptation programme appears even more attractive when we take the poor performance of other, long-established integrated strategies into account. As numerous assessments of sustainable development and climate change mitigation strategies across Europe suggest, the weaknesses summarized above for the common approach applied in Germany are symptomatic for this instrument type. Comprehensive, multi-sectoral strategies "are usually not capable of implementing the policies necessary to meet the targets they specify", inter alia because once adopted they decay into "comparatively weak administrative routines (or informational policy instruments), preoccupied with low-key communication rather than high-profile policy coordination" (Casado-Asensio and Steurer, forthcoming). As first signs from across Europe (although not explicitly from Germany) suggest (Biesbroek et al., 2010; Massey and Bergsma, 2008; Swart et al., 2009; Termeer et al., 2012), adaptation strategies run the risk of perpetuating this legacy(Casado-Asensio and Steurer, forthcoming).
So far, we have framed the German and the Dutch adaptation governance approaches as alternatives because they exist in two different countries, and because the Netherlands have abandoned their integrated adaptation strategy in favour of the more focused Delta Programme. However, since the two approaches are so different they could also complement each other in the same country. In combination, comprehensive adaptation strategies could mark one of the first steps in adaptation policy making that raises awareness and builds relevant capacities, in particular in sectors that are not already aware of likely climate change impacts and the need to respond proactively. As soon as sectoral actors recognise that facilitating adaptation is in their best interest, they could proceed with sectoral programmes that are characterised by ownership, priorities and responsibilities (in federal countries not necessarily top-down). Although the two approaches can (and should) be linked in manifold ways, experiences with other integrated strategies suggest that coopting sectoral efforts under integrated strategies is not necessarily helpful in creating sectoral momentum (Nordbeck and Steurer, forthcoming).
Irrespective of what approach is preferable and how they should be designed or linked with each other: The governance of climate change adaptation does not have to, and perhaps even should not follow a one-size-fits-all approach, in particular not since comprehensive

[6] http://climate-adapt.eea.europa.eu/countries/netherlands

strategies have already failed to deliver in other contexts. Since adaptation policy making is still in the experimentation phase, diversity is important for learning through experimentation and for resilience. In this sense we conclude with Ostrom et al. (1999, 281) that "Protecting institutional diversity related to how diverse peoples cope with CPRs [Common-Pool Resources] may be as important for our long-run survival as the protection of biological diversity", or climate change adaptation respectively.

WP3: Lesson drawing from related policy fields:

Within WP3 we have written a paper that analyses the rich experiences with sustainable development strategies. We have excluded climate change mitigation strategies because we have investigated them in comparison with adaptation and sustainability strategies already in another paper. The key findings of the paper can be summarised as follows:

5) Nordbeck, R. & Steurer, R. (forthcoming): Multi-sectoral strategies as dead ends of policy coordination: Lessons to be learned from sustainable development (under review).

Until the mid-2000s, the rise of a "new pattern of strategy formation" in the context of sustainable development seemed to be a promising shift from mostly ineffective one-off-planning to more iterative and cyclical governance processes. The present paper revisits this once promising approach. Based on studies, evaluations and peer reviews, it synthesizes how national sustainable development (SD) strategies have failed as policy documents and as governance processes that aimed to better integrate policies across sectors and levels of government.
The empirical findings presented in the paper dismantle the once reasonable hopes that SD strategies represent a promising "new pattern of strategy formation in the public sector" that has the potential to navigate policy making between too rigid planning and day-by-day incrementalism (Steurer & Martinuzzi 2005). Three general achievements of SD strategies are worth mentioning:

- They raised awareness for cross-cutting issues such as SD;
- They helped to institutionalise SD in the public domain;
- The cyclical monitoring of economic, social and environmental trends with comprehensive indicator sets provides insights on positive and unsustainable trends that require further action.

Three major points stand out in explaining why SD strategies have failed to better coordinate and integrate sectoral policies:

- Most SD strategies were not able to translate a general vision of SD into a concise, cross-sectoral policy program.
- SD strategies did not help to resolve sectoral turf battles but they concealed them, inter alia by using a win-win rhetoric that made it difficult to actually tackle trade-offs strategically.
- Once SD strategies have been adopted by governments, most of them never became political.

Overall, we conclude that SD strategies have largely failed as politically relevant policy documents, partially as capacity building efforts, and particularly as governance processes.

With few noteworthy measures implemented, SD strategies have become crumbling remnants of a failed institutionalization of SD in the public sector.

If our only concern were SD strategies, the disappointing balance drawn above would be the end of the story. Our concern, however, is broader. On the one hand, the failing of SD strategies revives the puzzle of how to navigate between ad-hoc policy making and rigid (environmental) planning (Mulgan 2009; Steurer & Martinuzzi 2005). On the other hand, governments around the world have adopted several other multi-sectoral strategies in recent years, among them climate change mitigation and adaptation strategies (Howlett & Rayner 2006a; Casado-Asensio & Steurer forthcoming). Since such broad strategies are a significant aspect of contemporary environmental governance, the importance of learning from the failure of SD strategies goes well beyond this instrument. Finally, we draw two main lessons from the shortcomings of SD strategies in Europe, discuss three options on how to proceed from here, and highlight what all this signifies for other, similarly broad multi-sectoral strategies.

What lessons can be learned from SD strategies? First, the fact that the new pattern of strategy formation has not been successful in providing for the necessary integration, coordination and mainstreaming of policy goals suggests that comprehensive policy integration can hardly be achieved with a single cross-sectoral strategy process, no matter how well it is designed. While the cyclical pattern of strategy formation can work in more focused exercises, it is likely to fail in comprehensive, multi-sector settings (see also Casado-Asensio & Steurer, forthcoming). Meaningful policy making is still mainly in sectoral hands - and this is unlikely to change. Second, SD strategies often replaced previous environmental strategies and plans, inter alia because they were perceived as being sectorally too narrow. By doing so, policy-makers robbed the environmental policy field of its own comprehensive strategy while processes for economic and social planning still exist in most European countries. Consequently, SD strategies may have diluted environmental policy planning, rather weakened environmental capacity-building, and in the end maybe even undermined more ambitious environmental policies.

Considering these lessons, what options do governments have in promoting the coordination and integration of policies on complex challenges? Without necessarily sharing the lessons above, the scholarly literature, existing evaluations and recent policy changes suggest two extreme options and a middle ground, namely: (a) better institutionalizing SD strategies or, (b) abandoning them as a failed attempt of policy coordination, and between these extreme ends, (c) recalibrating SD strategies as communication tool and striving for environmental or climate policy integration in more focused ways.

The idea of strengthening the institutionalization of strategy processes in political, organizational and legal terms is not new. All international guidelines for SD strategies request a strong institutionalization (see e.g. UNDESA 2002), e.g. via cyclical implementation and monitoring mechanisms. More recently, Ross (2010: 1119) argues that the currently inadequate UK approach to SD should be amended with a strong legal foundation that turns SD into the central organizing principle for all governmental bodies and/or that reiterates the UK SD strategy as the central framework for implementing sustainable development. While Ross (2010: 1117) is aware that this is everything but simple, we doubt that a legal basis for a fuzzy concept such as SD would provide the substantive details necessary for a meaningful implementation. Overall, we are skeptical about this “idealist option” because neither comparatively high levels of institutionalization in the sense of cyclical strategy

features described above nor constitutional provisions for SD (e.g. in the EU, Switzerland or France) strengthened SD strategies.

Second, governments can abandon or fade out integrated strategies. So far, this option is ignored in the scholarly literature, but a glance at table 1 and the explicit abandoning of the EU SD strategy (Pisano & Berger 2013) suggest that several governments have put it already into practice in recent years (see also Quitzow 2011, 143). Although this radical option is certainly preferable to beating a dead horse, it nevertheless implies losing functions that even weak SD strategies can fulfil. This leads us to the middle ground option situated between these two extremes.

Third, SD strategies could be recalibrated towards communication and awareness raising instruments that are not concerned with policy coordination but with communicating a long-term vision. Although most contemporary SD strategies are either symbolic or serve at best communication purposes (Quitzow 2011), they are not very good at this because they were never geared towards this end. If SD strategies were designed as communication tool, there is a chance that they can provide long-term orientation to policy makers (in particular to other, more focused and short- to medium-term strategies), businesses and civil society more effectively (SRU 2012: 608). Governments that want to minimize still omnipresent incrementalism in policy making can (and have already) shifted coordination functions to more focused sectoral or thematic policy processes, concerned e.g. with energy (see e.g. BMWI & BMU 2010, the German strategy for the "Energiewende") or climate change adaptation in water management only (see e.g. Ministry of Infrastructure and the Environment and Ministry of Economic Affairs Agriculture and Innovation 2012, the Dutch Delta Programme). These focused efforts differ from environmental policy integration prior to SD strategies (such as the Cardiff Process) in the sense that they prioritize only a few key issues instead of targeting virtually all sectors at the same time.

Whether emerging strategies on greening the economy match these focused efforts or continue the failed legacy of comprehensive SD strategies depends inter alia on their thematic breath and prioritization.[7] This leads us to our last point: What can we learn from the experiences with SD strategies for other, similarly comprehensive challenges such as greening the economy, climate change mitigation or adaptation? Experiences with SD strategies and similar findings for multi-sectoral mitigation and adaptation strategies (Casado-Asensio & Steurer, forthcoming) suggest that comprehensive strategies can at best communicate a vision and some policy goals. As Mullan (2009) highlights with examples from around the world, reflexive and adaptive strategy formation and implementation can work, but it requires a different sectoral and political setting: When it comes to formulating and implementing far-reaching policies, sectoral approaches with a few clear priorities seem to be indispensable. Ideally, these sectoral approaches acknowledge the key priorities laid out in a comprehensive long-term vision. Whatever role multi-sectoral strategies on SD and other issues play in this respect: since multi-sectoral policy strategizing has obviously led into a dead-end of policy coordination, they have to come to terms with the fact that policy making follows sectoral polity, rules and logics that can neither be dissolved nor joined-up by a few (or even a single) multi-sectoral strategy.

[7] At least in the developing world Green Economy strategies are about to replace SD strategies. See e.g. http://www.oecd.org/greengrowth/countries.htm; http://sustainabledevelopment.un.org/index.php?menu=1224

WP4: Provide guidance on how to advance the governance of climate change adaptation:

The key findings of this WP are documented in section 3 below.

3 Results and conclusions

The main conclusions in the five deliverables of the project (to be published in peer reviewed journals) are highly policy-relevant. They can be summarised as follows:

- The logic of action in the adaptation policy field is in stark contrast with the logic in to climate change mitigation policy field: While most sectors have a strong self-interest in adaptation because it increases their resilience, this is often not the case for mitigation. Consequently, the difficulties encountered in the mitigation policy field are unlikely to be replicated in the adaptation policy field, given that actors are aware of climate change threats and their self-interest in tackling them.
- Although climate change adaptation is usually in the self-interest of a broad variety of actors, governments still struggle with the challenges analysed in the Go-Adapt project, in particular with the challenge of climate policy integration horizontally across sectors and vertically across levels of government, and with overcoming uncertainties (for more details see table 1).
- OECD countries tackle the governance challenges of climate change adaptation in very similar ways. Most of them have a national adaptation strategy, inter-ministerial coordination bodies, research programmes and some sort of stakeholder involvement in place. National adaptation strategies often serve as a hub for other adaptation governance initiatives.
- Although national adaptation strategies often play a central role in adaptation governance, they still focus mainly on reducing uncertainties and raising awareness for adaptation needs and options. So far, most of them did not succeed in coordinating and implementing specific adaptation policies. Thus, adaptation strategies are still communication rather than policy coordination tools.
- As an in-depth analysis of SD strategies in Europe shows, this much older type (most of them were formulated in the early 2000s) of multi-sectoral strategies was also supposed to better coordinate (environmental, economic and social) policies. Although some SD strategies worked better than others did, we conclude that none was able to actually improve the coordination of policies. If they still exist, SD strategies are low-key communication instruments. The causes for their failure in coordinating policies are manifold. Among other things, their scope was too broad, they lacked clear priorities, and they never gained ownership in non-environmental sectors. Ultimately, they failed because they were not able to change the fact that policy making follows sectoral interests and logics.
- Against this background, there is a risk that adaptation strategies will never be able to coordinate substantial adaptation policies but will continue to raise awareness for the issue. As long as adaptation is a relatively new policy field, raising awareness is a legitimate cause. Once the policy field matures, however, a stronger focus on sectoral ownership and policy making may become inevitable.
- As our comparison of the German adaptation strategy and the Dutch Delta Programme shows, there are alternatives to comprehensive, multi-sectoral national

adaptation strategies. The Delta Programme is the most important adaptation governance initiative in the Netherlands and it focuses exclusively on water management and related issues (such as spatial planning). Although it is too early to tell whether the Dutch approach is more effective in delivering adaptation, it highlights at least that there are alternatives or complementary approaches to what most other countries do, i.e. formulating comprehensive adaptation strategies and action plans that may have difficulties shaping sectoral policy making.

- A rare approach of climate policy integration are regional climate change partnerships, to be found e.g. in Canada and the UK. As our case studies show, partnerships are a network-based mechanism that aims to raise awareness for adaptation issues among a broad variety of state and non-state stakeholders at and across all levels of government.
- Since adaptation to climate change is a highly context-specific challenge, governments should be cautious when they apply governance approaches (such as national adaptation strategies) in very similar ways. As experiences with SD strategies suggest (a similarly comprehensive governance tool), standardising governance routines with strategy processes is risky because it leaves little room for experimentation and learning, and because different governments will fail in very similar ways in case the standard approaches have flaws.
- Adequate governance approaches are an essential but not a sufficient condition for developing and implementing effective policies. Once governments have established an adequate governance setup, they will have to overcome numerous smaller-scale barriers (such as a lack of high-level political commitment and resource scarcity), many of which arise usually between policy formulation and implementation.
- Overall, we found that the governance of climate change adaptation is dominated by soft, often network-like approaches. This may have to do with the fact that adaptation pressures are still perceived as moderate and/or uncertain. Once this perception changes, the now dominant network mode of governance will most likely be complemented by hierarchical approaches.

These conclusions are relevant for policy makers working on adaptation and for researchers interested in governance and policy analyses. I also use them in my teaching at BOKU University.

4 Outlook

We will continue our work on the governance of climate change adaptation in a new project concerned with success factors of adaptation governance in 8 OECD countries, with a particular focus on multi-level governance challenges. The project is funded by the German Umweltbundesamt (Umweltforschungsplan) and it is coordinated by adelphi research. Our expertise gained in the Go-Adapt project was a prerequisite for this new project.

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