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Europe adapts to climate change: Comparing National Adaptation Strategies

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Abstract

For the last two decades, European climate policy has focused almost exclusively on mitigation of climate change. It was only well after the turn of the century, with impacts of climate change increasingly being observed, that adaptation was added to the policy agenda and EU Member States started to develop National Adaptation Strategies (NASs). This paper reviews seven National Adaptation Strategies that were either formally adopted or under development by Member States at the end of 2008. The strategies are analysed under the following six themes. Firstly, the factors motivating and facilitating the development of a national adaptation strategy. Secondly, the scientific and technical support needed for the development and implementation of such a strategy. Thirdly, the role of the strategy in information, communication and awareness-raising of the

adaptation issue. Fourthly, new or existing forms of multi-level governance to implement the proposed actions. Fifthly, how the strategy addresses integration and coordination with other policy domains. Finally, how the strategy suggests the implementation and how the strategy is evaluated. The paper notes that the role of National Adaptation Strategies in the wider governance of adaptation differs between countries but clearly benchmarks a new political commitment to adaptation at national policy levels. However, we also find that in most cases approaches for implementing and evaluating the strategies are yet to be defined. The paper concludes that even though the strategies show great resemblance in terms of topics, methods and approaches, there are many institutional challenges, including multi-level governance and policy integration issues, which can act as considerable barriers in future policy implementation.

Introduction

It is now widely recognised that even if stringent global emissions reductions and mitigation efforts over the next decades prove to be successful, further climate change seems to be inevitable (IPCC, 2007, CEC, 2009a). The impacts of changes in current climate have been well documented and a growing body of scientific studies anticipate that nearly all European regions will be affected by future impacts of climate change (Parry and Carter, 1989, Rotmans et al., 1994, Beniston et al., 1998, Parry, 2000, Kundzewicz et al., 2001, EEA, 2006, Adger et al., 2007, Alcamo et al., 2007, EEA, 2008, CEC, 2009a). These impacts will be unevenly distributed over European regions and climate-sensitive sectors and will put additional pressures on the existing social–ecological structures and functions (Folke et al., 2005, Eakin and Luers, 2006, Folke, 2006).

Until recently and for a variety of reasons, the primary response to climate change has been mitigation through reduction of greenhouse gas emissions. Since the late 1980s, the European Union has played a prominent role in the international arena to reduce greenhouse gas emissions, particularly through the research and ambitious policy emission reduction targets of several frontrunner EU countries (Schreurs and Tiberghien, 2007). Only with increasing evidence of climate impacts occurring (e.g. with Arctic sea ice and mountain glaciers melting, permafrost thawing, extreme heat waves, floods, storm damage) has adaptation climbed the political agenda. No longer was adaptation regarded as a ‘fatalistic strategy’ (Schipper, 2006, Biesbroek et al., 2009) but as an explicit policy response to manage the unavoidable impacts (EEA, 2008). Until the last couple of years, the European Union with the primary focus on delivering the Kyoto targets and mechanisms has played a rather limited role in adaptation. However, with the publication of the European Commission's Green Paper ‘*Adapting to climate change in Europe – options for EU action*’ June 2007 (CEC, 2007) and the subsequent White Paper ‘*Adapting to climate change: Towards a European framework for action*’ in April 2009 (CEC, 2009b), the European Commission acknowledged the need for comprehensive adaptation strategies in Member States. In addition, the Commission stressed the importance of an integrated impacts assessment and comprehensive adaptation strategy at the EU level by 2013.

But even before activities started at the European level, since the turn of the century, policy makers at national and lower levels of governance have begun to initiate dedicated adaptation practices to counter adverse impacts. Initially the most vulnerable cities, regions and sectors started to include resilience into their planning activities. These adaptation practices are anticipatory and planned

(Smit et al., 2000, Smit and Wandel, 2006) and include both national and regional adaptation strategies as well as practical steps at community level or by individuals. With the science pushing the policy agenda on adaptation, from 2005 onwards EU Member States started to develop and adopt comprehensive National Adaptation Strategies (NASs) to further encourage, facilitate and co-ordinate adaptation within countries.

There are many definitions and characteristics of adaptation strategies (Carter et al., 1994, Burton et al., 2005). For the purpose of this paper, adaptation strategies in general are defined as '*…a general plan of action for addressing the impacts of climate change, including climate variability and extremes. It will include a mix of policies and measures with the overarching objective of reducing the country's vulnerability. Depending on the circumstances, the strategy can be comprehensive at a national level, addressing adaptation across sectors, regions and vulnerable populations, or it can be more limited, focusing on just one or two sectors or regions*' (Niang-Diop and Bosch, 2005, 186). In this paper, the focus is on formalised and comprehensive NASs that have been developed by governments for adoption by national policy makers. The structure and focus of the NASs differs between countries, but often they provide a comprehensive overview of the main impacts and vulnerabilities in a country and propose measures to adapt to the projected impacts. This paper critically analyses the recent developments of those NASs, based on a study performed by six research institutes of the Partnership for European Environmental Research (PEER[1]) (Swart et al., 2009).

The following section describes the data gathering methods and the analytical framework to analyse and compare the different NASs. Then we discuss the various themes that are covered by NASs in the subsequent six sections. Finally, we synthesise the results in a number of key findings.

Section snippets

Method

The main goal of the study was to assess the current status and rapid developments of NASs in Europe, which up until then had only been assessed in a superficial manner (EEA, 2006, Massey an Bergsma, 2008). To compare the efforts of the different countries, a simple inductive framework of themes was applied that were shared in most of the analysed NASs. The project was also intended as a first step in further collaborative research in this emerging area, giving recommendations to improve …

Factors driving the development of a National Adaptation Strategy

Several supportive or contrasting factors explain why countries decided to develop a National Adaptation Strategy that can be identified based on both document analysis and interviews with

policy makers and experts who have taken part in the formulation of NASs. We distinguished between factors that were motivators, levers or drivers in the development of a strategy, and those that were required to facilitate the development processes (Fig. 1). Motivating factors include any pressures, …

Science, policy and societal interactions in the development and implementation of NASs

The development of NASs is triggered and supported by scientific information about the climate system, the potential impacts of climate change in vulnerable regions and sectors, and possible measures to manage the unavoidable impacts through adaptation strategies. There is a need for both fundamental scientific knowledge on the climate system and context-specific knowledge of impacts, vulnerabilities and adaptation options. In general, three phases of research focus can be distinguished across …

Information dissemination and awareness-raising for adaptive practices

In general, NASs are long-term visions that include both hard and soft measures, with the purpose of reducing climate change impacts and vulnerabilities and enhancing the adaptive capacity of society (Kabat et al., 2005, EEA, 2008). One of the soft sets of measures proposed is to raise awareness and communicate about the possible individual and collective adaptive actions (Moser, 2010). Lay people often lack a clear understanding of the climate problem and the potential impacts and consequences …

Multi-level interactions in developing and implementing NASs

Adapting to the impacts of climate change is a significant challenge at all relevant administrative, temporal and spatial scales (Adger et al., 2005, Urwin and Jordan, 2008). Although climate change mitigation may be suitable for top-down approaches such as the Kyoto targets and other emission reduction objectives (Sovacool and Brown, 2009), bottom-up approaches are likely to be more appropriate for adaptation, given the multitude of variables, context dependencies and cultural settings (Hulme, …

Policy integration and coherence in NASs

Integration or ‘mainstreaming’ of adaptation into new and existing sector policies is a common feature found in all adaptation strategies. Creating coherence and integrating adaptation into climate-sensitive policies in and between governmental scales requires an active role for the national government, as most strategies confirm. Another approach, e.g. in Denmark, argues that vulnerable actors have a direct incentive to adapt, and adaptation could be treated as a societal challenge to be left …

Implementation and review of NASs

Most of the NASs mark the beginning of a process rather than the end, putting the issue on the national policy agenda but often without elaborating concrete proposals or processes for implementation and measuring effectiveness of the NAS. Flexible mechanisms to implement, evaluate and revise adaptation strategies will be required, including metrics to gauge progress and policy effectiveness, as well as sets of regulatory, economic and other instruments.

In order to provide for a regular review, …

Reflections and discussion

In this paper we have analysed the recent, rapid development of National Adaptation Strategies in Europe. The study looks at six cross-cutting themes and shows that EU countries are taking a variety of approaches to developing adaptation strategies, in part reflecting their own cultural norms, political systems and assessment of climate risks, but also that a number of common themes can be identified across all NASs. A number of general observations can be made.

First of all, there is the issue …

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