1. Introduction

It is inevitable that any policy aimed at climate change mitigation or adaptation will interact with other policies. Interaction may take place during policy preparation or implementation, but happens in particular when decisions are made by target groups. When industry, energy producers or transport companies take action as a result of climate change policies, their actions are also influenced by other policies. The extent to which climate change issues are considered and integrated into existing policy fields is therefore a key issue to be tackled in the future. Furthermore, if European societies are to become low-carbon societies, and if their ability to adapt to a changing climate is to be enhanced, then the coherence between these policies and climate policy aims should be increased. If the low-carbon vision is to be achieved, it requires a comprehensive climate policy. Within such a comprehensive policy, climate-specific policies, such as emissions trading, should be complemented by general or sector-specific policies which take climate policy aims into account. In other words, annual budgets, financial policies, agricultural, traffic and regional policies would all need to integrate climate policy aims to a greater extent than hitherto in order to give consumers and producers stronger and more coherent signals.

Climate policy integration[1] and coherence should be viewed in the context of multi-level governance. Measures undertaken or suggested at the European Union (EU) level – such as the EU ”Climate action and renewable energy package” (2008) and the Green Paper on climate change adaptation (2007) – interact with those originating at the national, regional and local levels. The outcomes of policy integration materialize as concrete actions, taken partly in terms of management or regulation, but mainly in the form of the changed practices of target groups. These actions are normally implemented at the local level.

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[1] Throughout this study we use the term ”climate policy integration” and ”climate policy” although the terms ”climate change policy integration” and ”climate change policy” would be more precise. The reason is that ”climate policy integration” and ”climate policy” are the terms that have become established in the literature and are also more communicative.

This study will first and foremost aim at an increased understanding of the features and conditions for better integrated and more coherent climate policies and governance processes. In addition, the endeavour is not only descriptive and analytical, but also practical – that is, designed to help improve policy performance.

The study's aims are:

- To assess the degree of climate policy integration in different countries and policy sectors (energy, traffic, spatial planning, education, etc.), in some cases at the local level, and to determine key coherence problems between climate policies and other policies at different levels.
- To suggest means – such as institutions, processes (e.g. EIA) or measures – to enhance climate policy integration and improve policy coherence, within the context of multi-level governance.

The study is based on the view that analysing and comparing experiences across time, sectors and countries is beneficial and instructive. Oversimplified, straightforward comparisons may be seriously misleading, however; and case-specific characteristics should be borne in mind. By undertaking broad comparative studies with in-depth involvement by researchers with national knowledge and different disciplinary backgrounds, the country – and context – specific understanding can be maintained at the same time as all the new perspectives that emerge as a result of comparison using common concepts and questions are introduced. Put bluntly, none of the research institutes involved could have undertaken the study in isolation – such a task requires a network.

The study deals with both climate change mitigation and adaptation policies. The Intergovernmental Panel on Climate Change (IPCC 2007, 878) defines mitigation thus: "An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks." Mitigation policies thus refer to policies that are intended to enhance mitigation, i.e. to reduce greenhouse gas emissions or to promote sinks. IPCC (2007, 869) defines adaptation as, "Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory, autonomous and planned adaptation." Adaptation policies are therefore policies that intend to enhance adaptation.

The report is structured in the following way:

- In Section 2 we introduce the key concepts, discuss the multi-case study approach and the materials used in the study.
- Section 3 summarises the findings on climate policy integration undertaken or under way in the countries included in the study.
- Building on the empirical experience and evidence of the country studies, Section 4 analyses the potential of key measures and means for enhancing climate policy integration and improving the policy coherence.
- Section 5 then discusses and summarises the central findings of the study and makes proposals for upgrading the climate policy integration and its coherence.
- The main conclusions of the study are presented in Section 6.

2. Key concepts, approaches, materials

2.1. Key concepts

2.1.1. Policy integration

Based on the definition of policy integration made by Underdal (1980), and environmental policy integration by Lafferty and Hovden (2003), we define **climate policy integration** as:

- the incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors (non-environmental as well as environmental);
- complemented by an attempt to aggregate expected consequences for climate change mitigation and adaptation into an overall evaluation of policy, and a commitment to minimise contradictions between climate policies and other policies.

In order to evaluate the degree of climate policy integration, one has to focus the evaluation by asking where policy integration should be found. Assuming that there is a political commitment that a policy objective should be integrated into other policies, this needs to be reflected in policy strategies – in general strategies such as government programmes, and in sector-specific ones – as well as in the policy instruments (e.g. laws, taxes, support schemes, information material etc.) by which the strategies are implemented. Since policy integration is designed not just to change bureaucracies but to result in actual climate change mitigation and adaptation, it is essential to extend the examination to include policy outputs[2] and outcomes[3] (Figure 1). If climate change is integrated into educational policies, it should be incorporated into the materials used in

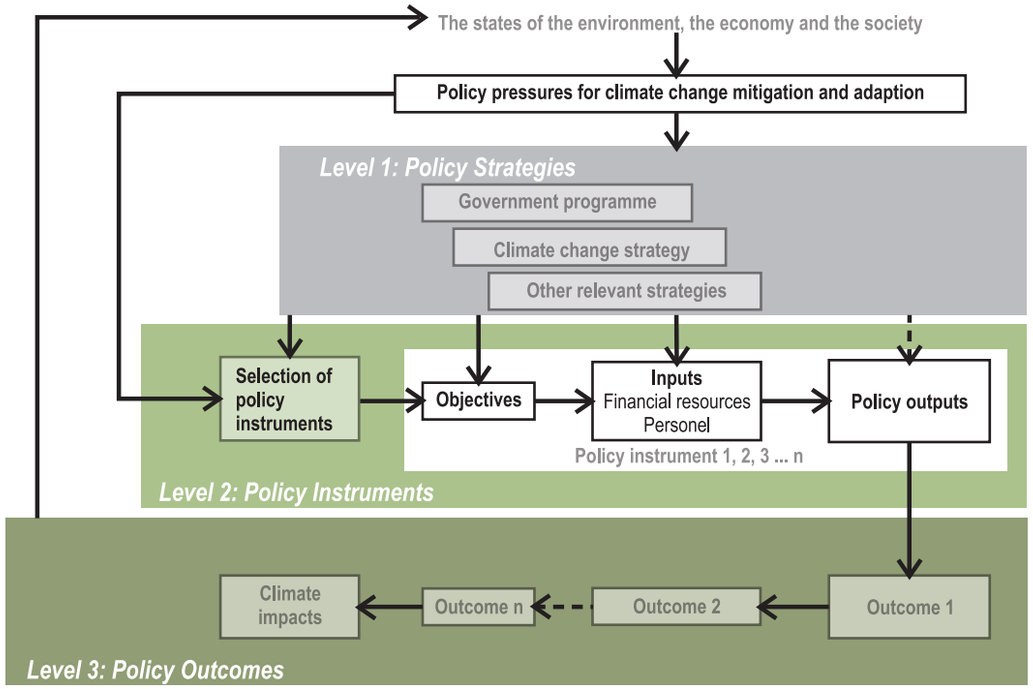

Figure 1. The policy levels at which climate policy integration may take place
(Mickwitz et al. 2008a) Arrows in Figure 1 indicate influence but not unconditional causality, since many other factors usually affect development.

schools, into lessons and ultimately into the knowledge and the daily habits of pupils. If policy integration proves to be a good way in which to promote climate change mitigation and adaptation, the more knowledgeable pupils will behave differently as adults. Furthermore, strategies and policy instruments may be formed at any governmental level, from the global to the local. The conceptual model in Figure 1 is thus not bound to any particular governmental level.

Policy integration can be divided into horizontal policy integration and vertical policy integration within and across governmental levels[4] (Figure 2). Horizontal policy integration refers to cross-sectoral measures and procedures by the government, or a governmental body, e.g. a commission, undertaken

[2] Policy outputs refer to "what the administration produces and the target groups are faced with, e.g. a seminar, an environmental permit with detailed conditions or a subsidy paid. It is often easier to distinguish outputs from the internal administrative results if one approaches outputs from the side of the target groups." (Mickwitz 2006)

[3] Policy outcomes refer to the actions taken by the target groups in response to the outputs (Outcome 1) and the consequences of these immediate outcomes (Outcome 2 … n). Very rarely is an outcome a result of policy outputs alone; rather it is affected by a variety of other factors as well.

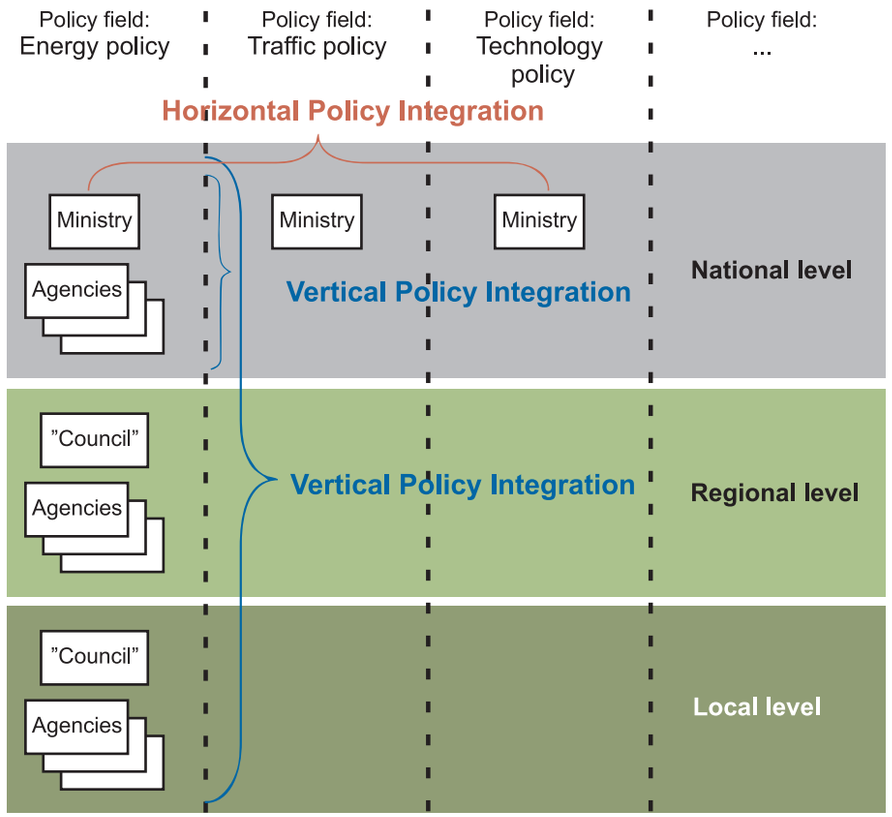

Figure 2. Horizontal and vertical climate policy integration
(Mickwitz et al. 2008a) Vertical policy integration may occur within, as well as between, levels (i.e. national state, state, region, local).

in order to mainstream or bring about a comprehensive integration of climate change mitigation and adaptation aims into public policies. Typical means include broad climate change strategies and the integration of climate policies into the preparation and adoption of new regulations and the annual state budget. Vertical policy integration within governmental levels refers to the integration of climate policies into a specific sector. It includes sector-specific strategies and decisions made at ministerial level, as well as the integration of climate policy

[4] In this report, the term "level" is used in two different ways: governmental levels according to multi-level governance (local, regional, state, national state, supranational and global) and policy levels as in Figure 1, i.e. policy strategies, policy instruments and policy outcomes. In most cases the context makes it clear as to which type of level is being referenced; in cases where this is not obvious, governmental level is used when "level" refers to multi-level governance levels and policy level when "level" refers to the levels in Figure 1.

into the strategies, measures and actions taken by different agencies under the supervision of a ministry. Vertical policy integration can be assessed at just one level, but it also refers to integration throughout many levels (i.e. national state, state, region, local). Thus, vertical policy integration across levels refers to the integration of climate policies over different levels of policy making according to multi-level governance approaches (Bache and Flinders 2004).

Some criteria are required in order to be able to assess the degree of policy integration (Table 1). Numerous researchers (e.g. Lenschow 2002, Jordan and Lenschow 2008) have studied environmental policy integration and developed methods to assess its extent. Organisations such as the OECD (2002) and the European Environmental Agency (2005a,b) have also developed criteria and checklists for assessing environmental policy integration. The criteria used in this study are developed on the basis of the definition provided above (more details are available in Kivimaa and Mickwitz 2006 & Mickwitz and Kivimaa 2007). The first criterion is ”the inclusion of climate change aims”. Some degree of “inclusion” is a prerequisite for the other criteria utilised. In order to recognise fully why climate policy integration cannot exist without any inclusion, the difference between policy integration and a policy with positive unintended side-effects from a climate point of view has to be taken into account. If a land use policy is reformed because of extreme weather, or an energy policy is renewed so as to decrease dependency on imported fossil fuel, but the first does not consider adaptation to climate change and the second does not address mitigation, this does not represent policy integration; rather, it signifies policies with synergies for climate policy aims. While inclusion in policy is necessary, it does not mean that inclusion in documents and statements is necessary. But documents and statements are written to reflect what is considered important and can thus be used as sources when examining inclusion or other criteria.

When integrating a policy, it is essential that different policy aims and instruments are consistent with each other; or, as expressed by Lafferty and Hovden (2003), there should be ”a commitment to minimise contradictions”. A common means of achieving compromises is simply to include many different aims in one policy. If this is done without any attempt to create a consistent whole, one cannot truly talk about policy integration. The second evaluation criterion is thus, ”the consistency of the integrated climate change aspect in relation to other aspects”.

Some have argued that, when there are conflicts between different policy aims, environmental issues should be prioritised (the second part of the Lafferty and Hovden definition). This argument is based on the view that environmental concerns cannot be balanced with other objectives because they relate to

preserving the carrying capacity of nature, i.e. the basis for any survival (Lafferty and Hovden 2003, 10). Climate change has been assessed as a serious threat to society. At the same time, it is clear that there will always be some emissions of greenhouse gases. There are many other pressing societal aims as well, however; and some of these are in conflict with the aims of mitigating and adapting to climate change. Some conflicts can be resolved by creating win-win options, while in other cases political choices have to be made. In these cases, the weight given to climate aims is essential for the ability of climate policy integration to promote mitigation and adaptation. The third criterion will thus be ”weighting of the integrated climate change aspect with respect to other aspects”.

The fourth criterion, ”reporting”, is based on the recognised importance of feedback for policy implementation. Reporting addresses the degree to which strategies include specifications ex ante about how climate change aims are to be followed up and reported. The reporting also takes into account the information on climate change mitigation and adaptation actually included in ex post evaluations of the policy instruments by which they were implemented.

Finally, policy integration is not just about intentions; it also requires knowledge and resources – in the form of personnel, money or time. Recognizing strategy links or the impacts of an instrument on climate change mitigation and adaptation is not an easy task. Policy integration at all levels is thus dependent on the know-how of the people involved, the time they are able to spend on these questions and the resources that they have at their disposal. The fifth criterion is thus, ”the resources for integrating climate change aspects”.

Table 1. *Summary of the criteria that will be used to assess policy integration (Based on Kivimaa and Mickwitz 2006).*

Criterion	***Key question***
Inclusion	*To what extent are direct as well as indirect climate change mitigation and adaptation impacts covered?*
Consistency	*Have the contradictions between the aims related to climate change mitigation and adaptation and other policy goals been assessed and have there been efforts to minimise revealed contradictions?*
Weighting	*Have the relative priorities of climate change mitigation and adaptation impacts compared to other policy aims been decided and are there procedures for determining the relative priorities?*
Reporting	*Are there clearly stated evaluation and reporting requirements for climate change mitigation and adaptation impacts (including deadlines) ex ante and have such evaluations and reporting happened ex post? Have indicators been defined, followed up and used?*
Resources	*Is internal as well as external know-how about climate change mitigation and adaptation impacts available and used and are resources provided?*

2.1.2. Policy coherence

Policy coherence is often taken to imply that various policies ”go together” because they share a set of ideas or aims. As pointed out by May et al. (2006) policy coherence is a relative term, and it cannot be measured directly. Policy coherence can be studied in respect of a policy sector (e.g. energy, transport, etc.), a target group (industries, energy producers, etc.) or a geographic area. Whereas some view policy co-ordination, consistency and coherence as synonyms, Jones (2002) argues that coherence goes further than the two other concepts in ”systematic promotion of mutually reinforcing policy actions across government departments and agencies creating synergies toward achieving the defined objective.” Whinship (2006) has stressed that policy coherence is not primarily about choosing between conflicting aims, but rather about enabling a process by which both aims and means can be redefined so that new win-win situations can be determined.

In this study, we shall refer mainly to the term ”policy coherence”. Policy coherence is used to imply that the incentives and signals of different policies – climate and others – provide target groups with non-conflicting signals. Policy co-ordination is one of the means of achieving coherence. An aim of policy integration is also to achieve coherence, i.e. to introduce processes and means that reduce coherence problems between sectoral and climate policies. One would thus expect there to be fewer coherence problems in cases of extensive climate policy integration, especially based on the consistency criterion. However, even though climate aims have been widely included and consistency addressed, there may be fundamental conflicts between climate aims and other policy goals – and thus coherence problems may remain unless climate aims are given overriding priority.

2.1.3. Multi-level governance

For the purpose of policy integration, the perspective of multi-level governance is especially important. Bache and Flinders (2004) state: ”The multi-level governance concept thus contained both vertical and horizontal dimensions. ‘Multi-level’ referred to the increasing interdependence of governments operating at different levels, while ‘governance’ signalled the growing interdependence between governments and non-governmental actors at various territorial levels.”

Policy interdependency as such is nothing new but well recognized from federal systems in various countries. It presents additional challenges for policy integration, because interdependencies frequently lead to unclear competencies or responsibilities for government agencies at different levels, often in respect of the problem of budgeting. Reforming such policy interdependency and improving policy integration is by no means a trivial matter. At the same time, multi-level governance offers the opportunity to mandate policy response to the most appropriate level, as expressed by the subsidiarity principle. The subsidiarity principle states on the one hand that the EU should act where the objectives to be pursued can be better attained at the Community level, but stipulates on the other hand that it should not act if objectives can be satisfactorily attained by the Member States acting on their own (Newman 2001). The principle is frequently extended to the regional and local levels as well, in support of the argument that action should be taken as close to the citizens as possible.

For climate policies to be effective, both aspects are of key importance. If one follows the principle of subsidiarity, action should be taken at the lowest appropriate level, which includes the local or regional level. One the other hand, given the issue at stake, action should also be taken at the national or European level. This allows concrete action on climate change adaptation at the regional level, for national legislation on greenhouse gas reduction, as well as for European leadership on binding reduction targets and funding. On the other hand, the European multi-level system needs additional policy integration because of the existence of complex decision-making structures and specific failures of governance (e.g. unclear or overlapping responsibilities), as addressed under the concept of meta-governance (Jessop 2004). Moreover, horizontal and vertical aspects of policy integration are strongly interconnected and multi-player processes are entangled with multi-level problems in complex, multi-level games, representing new forms of the internationalisation of the state (Brand et al. 2008).

2.2. A multi-case study approach based on a variety of materials

The research tasks of this study (Section 1) required two types of approach: a comparative approach and more detailed case-specific approach. The comparative approach is based on assessing different cases in terms of policy integration and coherence by using reasonably similar methods, concepts and data so as to allow for a comparison of the results. This has been done at different levels (country-region-local) and focused on one or two sectors in particular. The main materials were documents, interviews and in some cases focus group discussions (as elaborated upon in the country studies). A key principle of the study was triangulation; that is, the combination of several perspectives to gain an increased understanding. Four types of triangulation can be identified: multiple methods, multiple data sources within one method, multiple analysts, and multiple theories (e.g. Scriven 1991, 364). All four types of triangulation were used in this study. In addition to this main, comparative approach, specific approaches were used in some of the case studies. These are described in detail in the country studies; but, for example, the Spanish study used an actor-based assessment combined with a policy experiment, developed through participatory workshops.

This study is based on a case study approach. Case studies are typically studies of a case of something, i.e., they are not studies of a unique object. At the same time, generalisations cannot be made statistically from cases to any group of similar objects. This is because the cases are not selected on the basis of statistical sampling from a well-defined population of possible cases. Often, this is because the issues studied are not sufficiently well understood to determine the population, or the nature of the issues is such that it is not possible to determine the population precisely. For example, it is not possible to determine once and for all into which policy sectors it would be appropriate to integrate climate policy aims, or even how to divide public policy into sectors or levels; it depends on time and context. While statistical generalisations are not possible in case studies, they aim at ”analytical generalisation”, based on theory, previous knowledge and comparison of several cases. (Yin 1994)

This study is a multi-case study because it is based on several cases at several levels. It is based on studies of several countries, and in each country of many policies, but mostly centred on one or two, and on some regions and municipalities. The results can be compared and combined to give a deeper understanding, but it would not be useful to do this statistically.

In case study research, a critical issue is what the chosen case is a case of. As stated by Bent Flyvbjerg (2006: 238): ”The goal is not to make the case study be all things to all people. The goal is to allow the study to be different things to different people.” For those interested primarily in national climate policy integration, the relevant cases are the countries involved in the study, while for those interested in mechanisms (e.g. budgeting) or in a specific policy (e.g. flood management), there are cases at all levels of governance. Even though only some countries, regions and municipalities and a few sectors have been studied, generalisation can be made. These generalisations must be cautious, however, and take into account possible biases, e.g. this study’s focus on North-Western European countries.

This report is largely based on the following country studies:

- The Danish country study: **Anne Jensen and Anders Branth Pedersen 2009**. Climate Policy Integration and Coherence in Danish Public Governance and in the Transport Policy Sector. Roskilde: National Environmental Research Institute.
- The Dutch country study: **Séverine van Bommel and Wiebren Kuindersma 2008**. Policy integration, coherence and governance in Dutch climate policy. A multi-level analysis of mitigation and adaptation policy. Alterra-rapport 1799. Wageningen: Alterra.
- The Finnish country study: **Paula Kivimaa and Per Mickwitz 2009**. Making the Climate Count – Climate Policy Integration and Coherence in Finland. Finnish Environment N:o 3/2009, Helsinki: Finnish Environment Institute.
- The German country study: **Silke Beck, Christian Kuhlicke and Christoph Görg 2009**. Climate Policy Integration, Coherence, and Governance Germany. UFZ-Bericht 1/2009 Leipzig: Helmholtz Centre for Environmental Research – UFZ.
- The Spanish country study: **María Máñez, Francisco Aix and Nils Ferrand 2009**. Spanish Country Report and Actors’ based Assessment. Montpellier: Cemagref.
- The UK country study: **Hugo Reinert and David Carss 2009**. PEER 2: Policy Integration, Coherence and Governance – The UK Country Study. Edinburgh: The Centre for Ecology & Hydrology.

Unless otherwise stated, the empirical examples, evidence and conclusions come from and are based on the above-mentioned country studies. In addition to the above- mentioned country studies, research has also been undertaken in Bulgaria, France and Portugal. These studies have also informed the understanding of the issues in this report, but since it is unclear when and how they will be published no direct references to these experiences are made in this report.

The countries studied are both diverse and similar. From a global viewpoint, they have common characteristics: they are all Western European democracies; they are all members of the European Union; and they are among the richest in the world, with relatively well-developed climate policies. However, they are also quite diverse: they differ in their natural conditions, resources and assets; they are differently affected by impacts of climate change; they have different economic and socio-cultural structure; and they have their own histories, which are reflected in the current political and administrative cultures. For example, administrative structures vary significantly. The larger countries tend to have more administrative tiers, which complicates efforts to achieve climate policy integration at all levels. In all countries, however, processes or structures are required to improve co-ordination between levels. Despite the country-specific differences, commonalities can be found, and it is possible to learn from the experiences of other countries, although differences should be kept in mind.

Box 1. Two examples of the specific characteristics of national policy culture and administrative systems

Consultation, consensus and compromise are key words in the decision-making culture of the Netherlands. In policy-making, the national government not only consults decentralised governments, but interest groups are also incorporated informally into the policy-making process. From the viewpoint of the formal institutional structure, it is not surprising that there is a lot of informal cooperation between organisations. Responsibilities and power are spread over many organisations, overlapping and cutting across each other. This consensus-centred democracy, combined with decentralization, typically reinforces policy integration at the regional and local level. At the higher levels of organization, governments avoid making clear-cut "yes" or "no" decisions. These decisions are left to the regional and local level.

Spain in particular has a highly decentralised administrative system. The 17 Autonomous Communities (AACC) and, to a lesser extent, the local entities have a large degree of authority in important matters like education or health as well as in questions relevant to climate change such as transport or industry. The variety of issues on which political responsibility is shared is so vast that a new administrative body was created: the Environmental Sectoral Conference, which embodies the cooperation between central government and the AACC.

Before proceeding to an assessment of climate policy integration, it is worth noting that many developments have taken place since the Second World War

which have increased co-ordination problems in the public sector. Peters (1998) has stressed that the role of government has expanded, new agencies have been formed, decisions have been transferred from the ministries to the lower levels, the participation of clients as well as employers has increased, and many policy issues have become broader and more complex. The general co-ordination challenges and the attempts to address them are essential aspects of the context of climate policy integration. Enhancing climate policy integration and coherence may also be informed by and have synergies with policy efforts to address the general co-ordination challenges.