

# Are policy niches better than co-ordinated strategies? A comparison of horizontal policy making in Austrian transport, sustainability and innovation policy

Katy Whitelegg<sup>1</sup>, Brigitte Ömer-Rieder<sup>2</sup>

<sup>1</sup> Department of Technology Policy, ARC systems research GmbH, A-2444 Seibersdorf, Austria

<sup>2</sup> Department of Regional Studies, ARC systems research GmbH, A-2444 Seibersdorf, Austria

## Abstract

Co-ordinated and coherent policy making is growing in importance as policy makers become aware of the limitations of single goal policy making. As a result, the number and variety of co-ordination mechanisms has grown considerably over the last decade. Coordination and coherence within innovation policy has been the focus of many of these initiatives. This is due to the fact that innovation policy is a horizontal policy area with a large number of interfaces with different policy areas. In 2000, the OECD decided to organise a working group to look at the way in which different countries deal with co-ordination in and between innovation policy making and to analyse the successes and failures in moving towards greater coherence.

This paper analyses and assesses the conclusions from the Austrian case studies on transport and sustainability undertaken with the framework of the working group. These two case studies look in detail at the ways in which the policy areas of transport and sustainability interact with innovation policy.

The case studies follow the same methodology and start by describing the policy making structures and the main actors involved in the policy areas. They also take a look at the main interests and topics that are driving policy making within the policy area as a backdrop to understanding how the interactions between different policy areas occur. The case studies then take an in depth look at the formal coordination mechanisms that exist between the two policy areas. These can be anything from interdepartmental working groups to R&D programmes where the cooperation of different policy areas is a necessity in defining their goals. The case studies then look at the informal interactions and how these support the aim of coherent policy making. The conclusions focus on the main barriers and success stories to coherent policy making in Austria.

Austrian policy making system is comprised of many separate, but highly competent, policy niches. The main argument of this paper is that coherent policy making should involve increasing their interaction, not developing top-down strategies, as is often suggested.

# Introduction

Over the last decade policy makers in many European countries have reached the conclusion that the current segregated approach to policy making is no longer adequate to address the complexity of the issues they are faced with. Segregated policy areas, with relatively little contact to one another, cause a number of problems for policy making. Not only does segregation cause policies from neighbouring policy areas to overlap with one another, but can even lead uncoordinated policies to pursue contradictory aims. Another feature caused by segregated policy making occurs when cross-cutting areas, not traditionally belonging to a single policy area, are not adequately addressed by any ministry and no responsibility is taken for the issues.

This paper looks at two sectoral policy areas in Austria and asks how they are integrated with innovation policy. It analyses case studies that are on this interface between the policy areas and examines the types of mechanisms used to integrate policy areas. The aim of this paper is to better understand what horizontal innovation policy means through analysing policy processes and mechanisms in and between different policy fields. This includes understanding how traditional innovation policy (science, technology and industrial policies) can be opened up to include other frameworks, but also how innovation is understood and used in sectoral policies. It focuses on analysing tools that aim to facilitate a coherent approach to innovation policy and that are able to co-ordinate policies across institutional boundaries.

Looking at transport and sustainability policy, the paper investigates how these policy areas are interlinked with innovation policy and where good practice integration examples can be found. However, not only success stories are of interest. The barriers are also relevant since they provide a good insight into the current situation and give an idea of what needs to be changed. Furthermore, a key focus of this paper is to analyse the situation in respect to top down and bottom up initiatives, to formal or informal cooperations and to look at the different possibilities of how cooperation is organised. It is important to stress that the paper focuses on governance aspects, not on technological details.

This paper summarizes the results of two Austrian studies within the OECD Monitoring and Implementing Horizontal Innovation Policy (MONIT) project. The idea of this OECD project is “to provide a better understanding of national capabilities in innovation governance and policy coordination” (OECD 2002) and to understand how the various national systems organise their interfaces between innovation policy and other policy agendas and how they overcome barriers to policy integration. Although the multi-goal nature of innovation is no longer disputed and innovation policy is not any more confined to the role of enhancing competitiveness and economic growth, little is known about what a multi-goal innovation policy looks like and how policy areas interact and how policy areas are co-ordinated into a coherent horizontal innovation policy.

## Innovation governance, policy integration and why it is important

The trend towards increasing coherence and coordination in the policy making process has been most pronounced in those areas of policy making that are inherently of a cross-cutting nature. In areas of policy making such as sustainable development or science and technology policy the pressure to develop more appropriate coordination measures has been higher. A number of recent studies and workshops have supported the search for better coherence in the area of innovation policy (Edler et al. 2003, Boekholt et al. 2002, Arnold and Boekholt 2003, Smits and Kuhlmann 2002). Although there is no such thing as a model of optimal policy coherence, the authors agree that there are ways of conceptualising policy making for innovation policy that can increase the overall functioning of the system.

The problems inherent in politico-administrative systems in general and innovation in particular in most OECD countries is characterised by Edler et al. (2003) as:

- A high degree of departmentalisation, sectoralisation of the political administration, and low inter-departmental exchange and co-operation
- Heterogeneous, un-linked arenas: often corporatist negotiation deadlocks
- Failing attempts at restructuring responsibilities in government because of institutional inertia
- Dominance of “linear model” of innovation policy approaches (and of related economists as consultants)
- “Innovation policy” run in a very specific, narrow field focusing on introduction of new technologies in SMEs, IPR or VC issues etc.
- Emerging multi-level governance in the context of the European integration makes the launching of “bridging/systemic” policy approaches even more difficult.

Policy fields create their own individual arenas where there is little space for input from sources other than those which are close to the central logic. Integration is therefore made more difficult by the narrowness of the policy areas themselves. This phenomenon has also been observed in innovation policies, especially if they are designed and implemented by different ministries and/or agencies. Innovation policies should be more focused around knowledge and less around the narrowly focused priorities of individual ministries.

Based on this assessment of the problems, there have been attempts to design better processes or better governance. The basis is a model founded on a systemic perspective of innovation attempts to increase the coherence of the system through developing horizontal, vertical and temporal coherence. Although vertical and temporal coherence are perceived as being important, more attention is paid to horizontal coherence as the more urgent.

There are three ways of looking at it horizontal co-ordination (Arnold and Boekholt 2003):

- The co-ordination and attuning of different societal and economic goals of research and innovation.
- The integration of knowledge creation (mostly basic research) and the use of knowledge for innovation. In policy terms this means the integration of science, research and innovation policy.
- The combination of knowledge from different science disciplines to tackle interdisciplinary research needs (e.g. bio-technology) and overarching societal problems that need such an interdisciplinary approach (e.g. climate change).

Coherence and co-ordination are not goals in themselves, but should be seen as tools. Depending on the policy field and actor constellation there are then different mechanisms that can be implemented to increase the ability of the system to think in terms of the whole. These are based on the increased need to manage interfaces, to embed innovation policies in broader socio-economic context and for increasing learning and experimenting. The role of the state changes to that of moderator and enabler allowing different parts of the system to communicate more effectively with

each other. This in turn supports collective decision making and implementation of policies and encourages learning within the system (Smits and Kuhlmann 2002).

Specifically designed mechanisms in horizontal areas of policy making are only one small part of the complex network of interactions that exists on a bilateral basis between individual policy areas. Recently, attention has turned to the way individual policy areas interact with each other. Special focus has been given to innovation policy, not just as a horizontal policy area in itself, but as an individual policy area that has specific and individual relationships with other policy areas. As is the case within innovation policy as a horizontal policy area, there is no one best-practise model defining what co-ordination and coherence between policy areas should look like. Countries and policy areas differ and require co-ordination mechanisms tailored to suit their own specific needs.

## Case studies

The case studies analysed in this paper focus on the horizontal integration of policy areas. In particular, the focus of the paper is on the links between innovation policy and two other policy areas. The two selected areas are transport policy and sustainability policy. These two areas were initially chosen, along with regional and ICT policy, by delegates to the OECD working group as areas where the lack of integration in most countries is causing problems for policy making. The focus here on transport and sustainability policy is a result of ARC systems research carrying out these two case studies<sup>1</sup>.

The approach taken in this case study is based on the NIS MONIT conceptual papers and aims to assess the way in which innovation policy interacts with transport and sustainability policy in Austria. The case studies are based on an initial desk research phase which concentrated on the analysis of policy, strategy and evaluation documents in order to gain an overview of each policy area. The desk research uses policy documents from both innovation and transport or sustainability policy fields, research policy strategies, RTD programme documents and evaluations of research activities in the policy fields, recommendations from the Council for Science and Technology and other relevant material that helps to understand the organisation, strategies and aims of all three policy fields. From this analysis individual co-ordination initiatives on the interface between the different policy areas were chosen for an in depth analysis of the links between the policy areas. The specific initiatives were chosen as they represent key mechanisms through which the policy areas communicate with innovation policy. The analysis of the initiatives was carried out through a series of semi-structured interviews with actors from both policies areas (either transport and innovation or sustainability and innovation) involved in the co-ordination initiatives themselves as well as policy makers and independent experts, agencies and consultants involved in activities on the interface between innovation and transport or sustainability policy. The analysis of the information is based on reconstructing the case studies. It involves an assessment of the different stages of the policy cycle: agenda setting, implementation, policy learning and evaluation.

## Case study on transport and innovation policy

### Transport policy area and actors

Transport policy is the main responsibility of the Federal Ministry of Transport, Innovation and Technology (BMVIT) in Austria. The ministry's remit covers all individual modes of transport as well as the overall coherence of transport policy. Within the ministry two separate departments deal the transport agenda; the department for infrastructure and the department for co-ordination. The

<sup>1</sup> For further information on the Austrian ICT case study undertaken within the NIS-MONIT working group see Ohler (2004)

department for infrastructure covers the individual modes of transport and is made up of four groups which address the individual modes: roads, railways, air and waterways and the transport inspectorate. Each group is further divided into individual units that focus on legal, technical or sectoral issues of the four modes respectively. The co-ordination department has the responsibility of the co-ordination and integration of transport policy across the different modes of transport. It is made up of three divisions: co-ordination of infrastructure policy, international networks and the general transport plan and combined transport. The current structure of transport policy in Austria is a relatively new one. Up until the formation of the new government, the coalition between the Peoples Party and the Freedom Party in 2000, transport policy was spread across different ministries. Following the reorganisation, the agendas for road and rail were under brought under the same roof for the first time.

Transport policy is also influenced by the agendas of other ministries especially those covering land use and environmental policies and by the regional level administrations. However, as there is no policy document outlining how these different agendas fit together it is difficult to determine how one policy area influences another.

As far as transport strategies are concerned, there are several documents that provide the current framework for transport policy in Austria. There is, however, no single or up-to-date mobility or transport strategy. Austrian transport policy is based on a series of more narrowly thematically focused or older documents. The two main strategic documents in transport policy are the General Transport Plan (1991) and the Austrian Federal Transport Infrastructure Plan (2002). The first, the General Transport Plan is already 13 years old and was written long before Austria joined the European Union. It was finalised in 1991 and sets out the basic features of transport policy in Austria. It aims to provide an infrastructure that meet the country's transport needs and that makes it possible to switch to more environmentally friendly modes of transport. The plan details a set of overarching guidelines for Austrian transport policy including sections on transport legislation, Eastern enlargement and reduction of transit traffic impact. Although this document provides a useful and integrative framework for Austrian transport policy it was never actually implemented and remains more of a reference point than an implementable strategy. Despite this fact, it is often referred to and used as a basis for designing initiatives.

The second strategic document, the Federal Transport Infrastructure Plan, focuses on one specific area of transport policy, on infrastructure provision. The Infrastructure Plan aims to develop a strategy to plan how the road and railway network should evolve by the year 2015. Its main focus is on the structure of the network. As well as planning the road infrastructure, the plan also includes a strategy for the development of other modes of transport including rail and waterway transport on the Danube. This document specifically focuses on resource allocation for infrastructure projects. It mentions no specific links to other policy fields and specifically states that there are no references to innovation policy.

### **Links between innovation policy and transport policy**

Innovation policy in Austria is comprised of a large number of actors both on the strategic and the implementation level whose responsibilities are not clearly defined and often overlapping (Arnold at al 2004). The number of actors and the level of fragmentation make it difficult to build up a picture of the integration and interaction between the two policy areas. In addition to the structural complexity, innovation policy has also been subjected to a high turn over of ministers in recent years. The current Minister is the fifth minister within the BMVIT to take office during the current coalition between the Austrian Freedom Party and the Austrian Peoples Party which began early 2000.

A mapping of actors and responsibilities that are directly involved in the design and implementation of innovation policy can be divided into ministries, research funds and programme management organisations. Four separate ministries are involved in innovation policy issues: the Ministry for Economic Affairs and Employment (BMWA), the Ministry for Transport Innovation and Technology

(BMVIT), the Ministry for Education, Research and Culture (BMBWK) and the Ministry of Finance (BMF). There are two main research funding agencies in Austria, the FFF and the FWF with the FFF concentrating on the private sector and the FWF on basic research. The funds concentrate on supporting “bottom-up” or unprogrammed research activities. In addition to the agencies with their own budgets there are a further series of organisations that manage and administrate the thematic programmes on behalf of the ministries. To a certain extent the fragmentation has been counteracted by the establishment of the Austrian Research Promotion Agency which has integrated the FFF and some of the programme management organisations under one roof.

The most important new addition to the innovation policy scene has been the Council for Science and Technology Development. The Council was established in August 2000 to advise the government, ministries and federal states on all matters concerning Austrian technology policy. The Council consists of eight members, four chosen by the BMVIT and four by the BMBWK. As well as advising on ad hoc issues, the Council has been charged with the task of developing long term strategic plans for Austrian technology policy. Most recently the Council was responsible for reviewing the special funds worth a total of 508 million euros.

Reviewing the funds had a profound effect on the ministries’ programmes and the way in which programmes are defined and co-ordinated. For example, the Council tried to make sure that the programmes that were submitted for ratification by individual ministries were co-ordinated. For the Transport Technology Programme, which was submitted by the Innovation Division in the BMVIT, the Council wanted to see a more direct link to concrete transport policy goals and initiatives. It was concerned that the suggested initiatives were not innovative enough and should have been financed by the Transport Division. Although attempts were undertaken, cooperation with the Transport Division on the content and funding of the programmes proved to be more difficult in the short space of time available. The Council agreed to fund the initiatives.

The Innovation Division is, along with the Transport Division, located in the BMVIT which means that both the transport and the innovation agendas are under one roof. Although this should theoretically make communication between the policy areas easier, this is not the case. Despite the proximity, there are considerable differences in policy styles which lead to misunderstandings about how the policy areas work. The two policy areas build on different competencies, disciplines and time frames and have different ideas about the role and the pace of innovation. They tend to regard the way in which the other policy field operates with a certain amount of distrust.

## **Integration mechanisms**

Two integration activities are looked at here in more detail. Both are located on the interface where the concrete interaction between transport policy and innovation policy can be observed. These activities have been selected for two different reasons. Firstly, they represent two of the most important interfaces between these two policy areas and secondly, they are both activities where there is a concrete need for interaction. The first, RTD activities in the area of transport technologies, is an area where there is a long, but not entirely friction-free, tradition of interaction between the two policy areas. The second activity, the Telematics Framework Programme, is a more recent initiative which was initiated to overcome some of the shortcomings in the interaction between different policy areas.

## **Transport Technology RTD Programmes**

Examining the design and development of these research programmes offers the opportunity to observe at first hand an attempt to integrate innovation policy goals with transport policy goals. In this case, transport issues are addressed in the form of research programmes. Although the programmes are developed by the division responsible for innovation, they require close contact to actors in the field of transport in order to be able to define the aims of the programmes. The contact between the

two policy areas regarding the development of the programmes has not always been easy. The unclear demarcation between the responsibilities of the Transport Division to design and implement transport policy and the Innovation Division to design transport technology programmes causes a certain amount of friction.

The targeted funding of research and development activities in the area of transport can be traced back to the early nineties and the establishment of the *Transport Technologies Programme* (1992-1997). Prior to this programme individual projects existed in the area of transport, but there was no focused RTD programme. The subsequent development of the transport technology programmes can be divided into two periods: the Transport Technologies Programme Move - Mobility and Transport Technologies (1999-2003) and the IV2S - Intelligent transport systems and services programme (start date 2003). The Move programme was established in order to support “the strategic goals of Austrian transport policy on the one hand and the innovation potential of the Austrian economy on the other hand” (Grassegger et al. 1998). The main motivation for the programme was to support innovation in the transport sector which would lead to a more efficient, environmentally-friendly and intermodal transport system. The programme that followed was the IV2S - Intelligent transport systems and services programme which started in 2003 and focuses on supporting innovative activities in three key areas: automotive suppliers, rail technologies and transport telematics.

The design process for the programmes is characterised by policy level definition of a need followed by the translation into concrete programmes through a participation process on the bottom-level. The involvement of actors from industry and the research sector was high during the development of all the programmes as the individual programme lines were developed with their help. However, it is sometimes unclear as to how these levels are connected to each other and whether the process is underpinned by a strategic planning process. The involvement of policy makers from other policy areas has been more complicated. During the development of the recent IV2S programme attempts were made to include the transport divisions of the BMVIT in the design process. However, the integration was not entirely successful. The willingness of the Transport Division to participate in workshops on the design of the programme was low (with certain individual exceptions). This has several reasons which are based on both structural inconsistencies and on perceptions the divisions have of each other. There is not clear remit for the Innovation Division to pursue research that is useful for the Transport Division. The Transport Division sees the programmes as addressing innovation policy and wants to keep them there. They feel their responsibilities would start to become infringed upon if the Innovation Division moved into the area of transport policy.

The transport technology programmes are perceived as belonging to the innovation division within the ministry and not to the transport division. This has several implications for the direction and the focus of the programmes. Although the aim of the programmes are broad and address environmental issues as well as the increase in multi-modal transport, the main focus on the programmes is on the promotion, the use and the barriers to innovation to reach these aims.

### **Transport Telematics Framework Programme**

It is very difficult to stay on an abstract systems innovation level and talk about making sure various policy levels are co-ordinated without defining the levels, the actors the issues and going into considerable detail on a single issue. One example that illustrates this point is the Austrian Telematics Framework Programme. Telematics is a horizontal policy issue that affects, amongst other policy areas, both transport and innovation. The development and trial of new technologies is the responsibility of the innovation policy agenda whereas their interaction with real world situations and implementation belongs to the transport agenda. This is however, not a linear process and the costs and benefits of technological developments need to be communicated with the expectations from the transport side. The Telematics Framework Plan provides such a platform for a variety of actors to jointly define what the future and framework conditions for the development and implementation of telematics applications should look like. The telematics Plan provides a common

framework where actors from specialised areas of policy making are able to express their requirements, interests and questions from their own point of view without having to understand the entire concept. The process is managed and synthesised by an external organisation.

The Telematics Framework Programme is a highly structured process that aims to include many of the different actors involved in the formulation and the implementation of transport telematics. In order to structure their involvement, the process has been divided into five clear stages: Guiding framework, assessment and evaluation, functions and interfaces, technology portfolio and general telematics plan. The framework programme is an attempt to design a comprehensive strategy across all modes of transport and areas of implementation. The process should not just produce a strategy on paper, but should include the commitment of all stakeholders from both the public and private sectors who will then be responsible for putting the strategy into practise. For this reason the process involves a wide range of actors from senior policy makers through to field specialists.

High-level commitment for the process is attained through the TTS-A Advisory Board which has 16 members including the heads of the transport and innovation divisions in the BMVIT and representatives from the transport operators (Asfinag, SCHIG, ÖBB). The advisory board ensures that there is high-level commitment for the work that goes on in defining the framework programme. Without the commitment of this level the plan would remain a theoretical exercise. On the next level, working groups involving representatives from the departments involved and from the operators, work on the different stages of the programme. The working groups concentrated on different modes of transport and the implementation of telematics in the individual areas. The process also benefits from the involvement of external expertise through the inclusion of European experts and civil servants from countries who have expertise in the area of designing and implementing telematics framework programmes.

One of the most important aspects of this initiatives has been the external management. The responsibility of organising and co-ordinating the process of designing the framework programme lies with the via donau. This is an agency that belongs to the BMVIT and that manages several of the RTD programmes. It is respected by both the Innovation Division and by the Transport Division and its role in bringing the different parts of the ministry together should not be underestimated.

The Transport Telematics Framework Programme, is an initiative that requires the close involvement of innovation and transport agendas. It was established to ensure that the implementation of transport telematics in Austria is a coherent one and is in line with European standards in terms of the definition of interfaces, user demands and the implementation of new technologies. The process of designing the programme is organised by an agency external to the ministry, but with close contact to the different divisions who needs to be involved.

## **Conclusions on policy area**

The two initiatives outlined above describe two very different initiatives on the border between transport policy and innovation policy in Austria. The RTD transport technology programme has a long tradition within technology policy in Austria, however, its ability integrating its transport technology goals with broader transport policy goals has been less successful. The Transport Telematics Plan on the other hand, is a newer initiative that appears to be initially having more success at integrating the different policy areas.

The individual policy areas are strong and have considerably contact with the stakeholders in their policy fields. Policy formation takes place on this level in quite self-contained niches. The integration between the policy fields takes place mostly on the personal level and there are few formal integration mechanisms. Attempts have been made to link policy areas, but these are either in technical and less important areas or on specific instruments. On a higher level it works less well.



High-level policy integration or common overarching concepts across policy fields is not an Austrian phenomenon. Policy areas are highly autonomous and competition between the ministries over responsibilities for the same issues is high. There are no high level policy documents in the transport areas and therefore also no strategy which outlines the role of innovation policy in contributing to overall transport policy aims. This does not mean to say that the individual policy areas are not informed about each other. Informal links are very strong in Austria and most of the information exchange takes place on the informal level.

In terms of co-ordination during the formulation of individual initiatives, there are more attempts to link the policy areas than on the highest policy level. Initiatives have been set up in the area of telematics to formulate a framework for future initiatives from for all players. The fact that this process seems to be working is due to both its technical nature which means that no ministry or department is losing responsibility of a policy area and to the external project organisation. The external management means that no one inside the ministry has control of the process and it is perceived as neutral by other parts. On the policy implementation level there is considerable informal contact between different policy areas. Some of the RTD Transport Technology Programmes are run in collaboration between different individuals in the transport and innovation divisions. However, formal mechanisms for implementing policies are not common. The individual initiatives mainly run in isolation to each other.

The question on whether the policy process is learning to create more integrative policies and processes when designing or implementing policies is important for the success of the individual policies. To a certain extent there are initiatives in Austria that are helping to overcome the differences between the two policy areas. The telematics plan is a clear case whereby the policy system has learnt to overcome inherent problems and to establish co-operation structures that work. However, there are limits to the extent to which this project could be upscaled and it might only work on this relatively specialised level. Forming highly level strategies or frameworks has long been the goal of those working towards greater coherence. However, looking at the shape of integration in the transport and innovation policy fields suggests that this is not the way forward. There needs to be better co-ordination and communication between the individual policy areas.

## Case study on sustainable development and innovation policy

### **Sustainability policy area and main actors**

The most important actor in Austrian sustainable development policy field is the Federal Ministry of Agriculture, Forestry, Environment and Water Management (BMLFUW). Among other things, it was responsible for the preparation of the National Sustainability Strategy for Austria and – since the resolution passed at the Council of Ministers in 2002 – it has been coordinating the implementation process of the strategy. This task includes the annual publication of a working programme which specifies the upcoming key aspects of activity as well as a progress report which documents the status quo of implementation. Apart from the National Sustainability Strategy, there are some other important initiatives at the national level. The framework strategy 2004 plus “Research for Sustainable Development” (FORNE) conduces to strengthen the sustainability research fields of three ministries, these are the above mentioned BMLFUW, the Ministry of Education, Science and Culture and the Ministry of Transport, Innovation and Technology. Another activity in the economic field is the Corporate Social Responsibility Initiative Austria which was implemented by the Ministry of Economics and Labour, the Federation of Austrian Industry and the Austrian Federal Economic Chamber. It serves enterprises as information and coordination platform and presents awards to the best practice examples.

It is a characteristic of the Austrian sustainability policy making structure that the federal level plays an even more active role than the national level. Some of the nine provinces strongly support a sustainable development by assignment corresponding institutions within their administration

structure or by establishing and financial support of sustainability consulting organisations outside the administration body. These organisations and institutions have been initiating activities in the field of sustainable economy (e.g. Economy Initiative in Styria or the EcoBusinessPlan in Vienna), in the field of sustainable social development (e.g. Social Capital in Vorarlberg) or in supporting and facilitating Local Agenda 21 processes in their municipalities. The federal commitment to sustainability also becomes evident by the fact that three provinces – Upper Austria, Lower Austria and Styria – are preparing or have already published their Federal Sustainability Strategies. The main actors in the provinces are well connected through the sustainability coordinators conference which is a special institution to support an exchange of experience between the provinces.

The actual situation of the sustainability policy field in Austria derives from the fact that it arose from the environmental policy field and is still strongly connected to it. Sustainability issues are currently coordinated under responsibility of the environmental policy makers at national as well at federal level. Austrian sustainability policy is a small niche policy within environmental policy which strives to integrate environmental aspects into social and economical issues. It is mainly driven by bottom up activities of the provinces and municipal authorities whereas national policy debates hardly cover sustainability issues. The obvious fact that the Austrian sustainability policy more takes place in the administration than in the political debate and therefore is bureaucratically dominated can be estimated as a deciding structural weakness. It provides also an explanation for the strongly limited effectiveness of these politics. Nevertheless, if one refrains from examining progress in content and takes the working processes into consideration, then this is evaluated as transparent and clearly structured by the involved persons. Especially the implementation process of the National Sustainability Strategy is highly useful effort that brings together different actors. In addition, in comparison with the sustainability policy situation in other European countries Austria is performing relatively well in opinion of the responsible delegates.

### **Links between innovation policy and sustainable development policy**

To investigate the links between these two policy fields, it has to be first found out which different understandings of the term innovation exist, especially among sustainability actors who are not mainly concerned with innovation issues. The results of the interviews show that two different perceptions of innovation exist. The first one perceives innovation in a narrower sense and associates it strongly with technical and economical matters. Accordingly, innovation is understood as a new or modified product or service which is provided on the market. The second one interpretes innovation in a wider sense and defines it generally as the ability to create and implement new ideas. In this sense, innovation is understood as a horizontal policy area over all disciplines, systems (enterprises, municipality, etc.) and policy fields. Innovation in this sense is more related to human behaviour than to products for the market. It means the *ability* of mankind for innovation which is the origin of all innovation. Another result from the interviews is that sustainability actors strongly reflect the cause of innovation activities and would like to bring it under the objectives of sustainability. So the connection between innovation and sustainability is obvious for many interviewed persons. They state that innovation should not occur because of innovation itself but must purposive support a sustainable development.

Asking for links between innovation policy and sustainable development policy referring to the narrow comprehension of innovation, the interviewed persons consistently name one example of success in Austria: the Research Programm on Technologies for Sustainable Development<sup>2</sup> which is an initiative of the Ministry of Transport, Innovation and Technology. The aim of this reseach program is to support trend setting research and development projects and to implement exemplary pilot projects. It contains three subprograms. The first one is called “Building of Tomorrow” and refers to residential and office buildings that feature improvements in energy efficiency, an increased use of renewable raw material and renewable sources of energy but do not cause more costs than conventional building design. The second subprogram “Factory of Tomorrow” addresses the trade

<sup>2</sup> see [http://www.nachhaltigwirtschaften.at/pdf/program\\_e.pdf](http://www.nachhaltigwirtschaften.at/pdf/program_e.pdf)

and industry as well as service enterprises aiming also at improved energy efficiency and increased renewable material and energy use and at developing new partnerships and cooperations. The recently started subprogram “Energy systems of Tomorrow” supports the development of concepts and technologies that are based on renewable sources of energy and meet energy needs efficiently and over longterm. A strength of the whole program is that research organisations work tightly together with enterprises so that the results are capable for practical application as far as possible.

Considering links between innovation policy and sustainable development policy referring to the above described wider sense of innovation, there exist lots of examples and projects in Austria, maybe all projects and activities of people and institutions engaged in sustainable development can be subsumed. A good overview has been worked out during the implementation process of the National Sustainability Strategy when all activities and measures have been compiled and listed in the working programs 2003 and 2004 (BMLFUW 2003, BMLFUW 2004). These measures have been defined by the Austrian ministries and cover aspects from “enforcing sustainable technologies and services for renewable sources of energy and energy efficiency” to “greening the public procurement” and “safeguarding the social and financial sustainability of the pension system”. About a quarter of the 200 listed measures were defined separately from the strategy context, even before the National Sustainability Strategy was published. As they are now considered in regard to the sustainability concept, the strategy implementation process can be evaluated as a learning and awareness building process.

Both examples above – the research program on technologies for sustainable development on the one hand and the implementation process of the sustainability strategy on the other hand – show that there may be different perceptions about the meanings of innovation according whether the term innovation is defined narrowly in a technological and economical context or widely as the human ability to create something new. The same reflections need to be made for the term sustainability as it is a horizontal subject as well. For many persons, sustainable development means a long-lasting improvement of the environmental situation and therewith is exclusively reduced to the environmental dimension. Only those interviewed persons who are engaged in sustainability issues for some time, point out the integration of the environmental, societal and economical dimension as it is described in the concepts since the Brundtland report (WCED 1987).

In this case study, we use a broad understanding of innovation as well of sustainability in order to widen the search field for links between both policy fields as far as possible instead of constrain it from the first. Sustainable innovation policy is a new challenging policy field which does not explicit exist now in Austria as the interviewed persons state. Nevertheless, efforts to link different policy fields exist, especially in the context of the implementation process of the National Sustainability Strategy. Although the effectiveness and achievements in content are partly estimated insufficient in the interviews, the process itself is highly appreciated by the persons involved. How coordination attempts are structured and how the different policy fields are tried to link within this process is reflected in the next chapter.

### **Policy integration by the example of the National Sustainability Strategy**

The National Sustainability Strategy is an initiative of the federal government and was adopted by the Council of Ministers in April 2002. The strategy consists of four fields of action which are

- Quality of Life in Austria,
- Austria as a dynamic business location,
- Living spaces in Austria,
- Austria's responsibility.

Each of these contains five key objectives which are prerequisites to foster a sustainable development direction. They include a description of the current problem background, a list of concrete targets and approaches for achieving them. A number of indicators are assigned to each of

the four fields of action to measure progress. All in all, the target definitions in the strategy are more declarations of intent than clear quantified goals with a precise time horizon for implementation. For this reason, the strategy is criticised to be ambitious in content (e.g. ecological tax reform) on the one hand but not binding on the other hand. The European Commission, which analysed the different National Sustainability Strategies in Europe, categorised the Austrian one as a framing strategy and not as an action program (Commission staff working document 2004).

On the basis of a governmental resolution, the coordination of the strategy is the responsibility of the BMLFUW. This fact is assessed differently by persons who are involved in the strategy implementation process. Some of them, especially those from environmental related working fields, favour this assignment and argue that the success in implementation progress depends more on the personal dedication of the responsible minister or individuals in the ministries than on formal jurisdiction. The others say that the assignment inhibits an equitable dialogue between the three dimensions of sustainability because the environmental dimension is overstressed. Another consequence from this assignment is that the Ministry of Environment remains in its role as that institution which adds environmental aspects only retrospectively to concepts and proposals instead of supporting a change in attitude according to which environmental affairs are integrated equally in priority from the beginning on.

The actors in the implementation process are structured in three main institutions, the steering group, the committee Sustainable Austria and the forum sustainable Austria. The steering group, formed by four delegates of the ministry, already coordinated the preparation of the strategy document and now leads the implementation process. The committee and the forum were established in 2002. The committee consists of representatives from all ministries, the federal chancellery and social partners and strives for a horizontal integration and coordination of all policy areas. It prepares annually or biannually working programs which concretise and implement the goals of the strategy and develop further contents. The forum is formed by about 45 experts from the scientific community and non-governmental organisations. It supports the committee and comments on the working programs and progress reports which are produced by the committee.

Regarding links between innovation and sustainability policy, the committee is the most interesting institution. The committee meetings are the only place where formal coordination between all ministries occurs. The members of the committee have been sent by their organisations, so the constitution is derived from individuals who are mainly there to represent their ministries, not only their own expertise. The main working task of the committee is to compose the working programs and the progress reports to refer them to the Council of Ministers. They discuss and decide whether certain contents are included or not included in the documents. Sometimes these coordination processes take a long time due to the fact that most of the committee members are not accorded with authority from their ministry but can only bring in their personal opinions. This leads to the procedure that single decisions have to be postponed while the members collect the official opinion from their ministry and bring it into the next meeting. Another difficulty results from the contentwise complexity of the sustainability concept. Some topics, which need to be agreed on, are completely new for some committee members and also in their ministries. In the committee therefore some contents are at the same time debated and decided about.

The way of work in the committee has changed over the time since it has been established. In the first period, a general overview of all sustainability-oriented activities in the ministries was worked out. The result were about 200 current, planned or wished projects, initiatives and ideas enlisted into an electronical data base which was the groundwork for the working programs 2003 and 2004. In doing so, a common understanding of all these activities in the context of sustainability was created, particularly when some of them have been launched in order to achieve a goal independently of the sustainability idea. In the second period, in cooperation between committee and forum ten working groups have been established to go in depth in content and to work on special issues. The aim of each working group was to develop two or three new initiatives whose implementation has a trans-sectoral character and is under the responsibility of at least two institutions. The results were 20 to 30 ideas and project suggestions which partly passed a resolution at the committee will be or have

already been implemented. Apart from the contentwise results, the working groups also provided the possibility to extend the person group of the committee or to reach persons from the different ministries who have no committee membership.

The work in the committee is assessed differently by the interviewed persons. Criticism is related to an unbalanced handling of the different topics and slow progress in content because discussion and decision processes take long time. Some argue that the committee could be a good institution if it would not be dominated by the particular interests. The lack of formal authority of the committee members leads to long-lasting feedback loops with their organisations where the individual opinions have to be corrected or to put into perspective. These experiences made some committee members more cautious by the time. But, in other arguments from the interviewed persons, the implementation process is highly praised as well-structured and democratic. It is an opportunity for ministries, which have no main working focus on sustainability, to get familiar with it or to reflect own past activities from the view of this concept. So the value of the committee working process lies especially in awareness building for sustainability what did not occur in such a structured formal way before in Austria.

### **Conclusions on policy area**

The major difficulty discovered during this case study on links between innovation and sustainability policy is a lack of commitment to sustainability by politicians and individuals in the ministries. This is not only due to individual conviction, but also to the political system in general and the way it works. Whereas a successful policy in defining goals and measures and implementing these goals within the election period (4 years in Austria) exists, sustainability goals are based on long term considerations. Therefore a politician has no incentives to work on visions and measures beyond this time horizon because he would not achieve any success for himself during his working period. Some interviewed persons argue that the political system itself needs innovations so that sustainability can be dealt with at all.

Another general difficulty emerging from this case study is that the objective of a sustainable innovation policy is not yet clearly defined. No common understanding of what sustainable innovation is or should be exists. But, in Austrian sustainability circles, the opinion is widespread that sustainability does not only need technological innovations and changes of the economical system but also and especially institutional, social and systems innovations. In the opinion of the interviewed persons, sustainability requires the ability of the whole societal system to realise new chances in view of the actual and forthcoming challenges and to act accordingly. These activities may include every decision implementation, independently of where it takes place, e.g. in an enterprise, in a political institution or in a household. To limit the scope of this broad approach would also mean to limit the scope of the search for sustainable solutions.

A consequence arising from the conceptual ambiguity is the difficulty, or even impossibility, of defining clear and quantitative political targets for sustainable innovation. But target definition, the development of appropriate measures and the committing achievement of these targets are rules in policy making. Whereas target definition was easy for end-of-pipe environmental technologies and could be expressed in reduction amounts of harmful substances per time scale, such a proceeding is no longer accordant to sustainable innovation policy. For example, no best available technology exists in the case of sustainable innovation which could provide an orientation. Since the goals and objectives of a sustainable innovation policy are open, the ways to achieve these goals need also to be open. So the main problem is that every sustainable innovation can only be a single solution in its specific context. Policy in the sense of something that is generally valid, is therefore difficult to make in this area. Policy formulation for sustainable innovation therefore strongly depends on the special context and framework.

Policy formulation in the scope of the Austrian Sustainability Strategy and its implementation process requires activities from the involved persons to a large extent on their own initiative since the strategy

goals are not binding. One interviewed person states that the strategy is a good basis and reference for everyone to engage in sustainability issues but the success of the strategy depends on the voluntariness or willingness of the actors to use this basis and to become active. Furthermore, it needs not only the engagement by the ministries, but also from all other institutions and societal groups. Within the committee, the institutional background of the members is a deciding factor. Some committee members have a larger scope to bring strategy contents into their organisations whereas others have little. The overall aim is therefore to develop initiatives on the upper end of what is politically feasible.

The fact that sustainable innovations are single solutions within their special context and framework leads to a special challenge in policy implementation, that is to say the need of the extensive participation of societal groups. The approximation to what sustainable innovation could be requires a search process which includes persons from all different societal systems. The role of the policy in this process is more the role of a moderator and facilitator for the search process than the role of an expert who provides knowledge content. So, as an interviewed person states, policy should mainly undertake the task of enabling a participatory search process for sustainable innovations and establishing and providing the necessary preconditions. In this way, a sustainable innovation policy means the organisation of the public framework so that renewal processes become possible.

Another challenge in sustainable innovation policy implementation from the example of the Austrian Sustainability Strategy is the different quality of the knowledge transfer and distribution from the committee work back to the single ministries. This information process is organised in different ways. In some cases the committee members keep the minutes and provide them to different departments and persons in their own organisation, in some other cases the information is only informally distributed. In all ministries, the horizontal coordination in the scope of the strategy implementation process ends with the autonomy of the single ministries. This means, the coordination process of the committee allows the inclusion of all ideas, but of course the minister's responsibility and autonomy remains and the final decisions whether and how to implement sustainable innovation policies are up to him.

An independently external evaluation of the Sustainability Strategy implementation process is planned in 2006 to investigate the achieved effects. The point of time of this evaluation is criticised by some sustainability actors as too early because they think in the case of sustainability it takes much more time than three years for to be able to observe real implementation effects. Nevertheless, the evaluation of the strategy is announced in the strategy document itself and reflects its conception as a "learning strategy" which means that it will be continually enhanced through experiences from the implementation process and through new findings.

## Comparison of transport and sustainability policy areas including barriers and success stories

The individual policy areas in Austria act quite independently of each other. They have considerable contact with the stakeholders in these fields and produce solid and confident individual policies. However, the links between the policy areas are weak. There is little discussion both between experts or on the political level about what the interfaces should look like. For example there are few ideas about what sustainable innovation policy is or what sustainable mobility policy should look like. Therefore, the first step for any form of integration between the policy areas would be a common strategy. For instance, a sustainable innovation policy would benefit from sustainable innovation being recognized as a necessity and a chance for the future economic and societal development. It would need to become part of agenda setting across the policy fields, which is not the case at the moment.

Part of the reasons for the lack of integrated agenda setting between the policy fields (both sustainability and innovation and transport and innovation) are barriers caused by the bureaucratic structure of the policy fields. As one of the interviewed persons explained, the administration structure can be compared with many little "boxes" which work relatively autonomously on their individual tasks. This structure, which has developed over decades, allows an efficient daily routine, but is not suitable for strategic renewals. This level of bureaucracy is contradictory to linking different working fields or policies and is a structural problem when dealing with horizontal subjects. Moreover, from the view of delegates in ministries, cooperation does not only incorporate chances, but can also involve the danger of losing responsibility in a particular knowledge field and of therefore becoming redundant. To achieve links would therefore need high level commitment as well as the will to implementation.

Current links between departments of different ministries were in most cases established on the initiative of individuals in the ministries and are of an informal character. Especially in the field of research for sustainable development, good mutual information exchanges exist, e.g. between the BMLFUW and the BMVIT. One example of formal co-operation in sustainable development policy stands out: the committee sustainable Austria, an institution that supports the implementation of the National Sustainability Strategy. This institution is valuable in distributing the idea of sustainability and reflecting the different activities of the ministries from the view of sustainability the first time. But, the quality of cooperation among the committee members differs, dependently on the level of knowledge about sustainability issues they bring with them and the ability to create or use scope within the organisations. Current links in transport are similar in that the informal level is very important and more formal mechanisms tend to be avoided. One exception is the telematics programme where there is considerable co-operation between innovation and transport policy. However, this is an area which is quite technical and where there is little danger of loss of responsibilities. Cooperation works better on lower levels or smaller organisational units.

Most sustainability activities occur in the provinces. The provincial governments are smaller units which stimulate and implement activities relatively autonomously and in a self organised way. Some provinces are especially engaged in implementing sustainable innovations, for example Styria and Vorarlberg, but the initiative comes mostly also from the administration, not from political level. Also the local level attracts is interesting as about 200 Local Agenda 21 processes are taking place. In Austria, it seems that the lower government and administration levels are more successful in implementing sustainable development than the higher ones.

## Conclusions

The question remains how links between the different policy areas can be encouraged. In transport policy, the conclusions reached suggested that one common strategy would be difficult to reach and that integrating the individual policy niches would be too difficult. However, there is a strong need for more communication between the individual areas. One idea would be to form a better picture of where the general policy area is heading without making it binding for each policy niche. This is then something which each area can use as an orientation, without having the feeling that their responsibilities are being etched into. In this way the bottom-up and well-connected strengths of the policy areas would be recognised and used. In the area of sustainability and innovation policy, the same structural barriers need to be overcome. All interview partners were of the opinion that establishing new boards or panels is not the right means to make policy cooperation happen. They argue it would be more important to discuss the question what sustainable innovation is, why it is important and what it needs. Not until these discussions happen, the question about possibilities how to organise cooperation is really important.

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