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THEMA:

The Role of "Councils" in Research and Technology Policy:

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Preface

Research and technology policy makers take advice. In a lot of countries councils play an important role concerning the strategic orientation of technology policy. But what exactly do councils do? What is their role in advising, in shaping and in evaluating policy? For going deeper into the issue, the PLATTFORM FORSCHUNGS- UND TECHNOLOGIEEVALUIERUNG and the German "DeGEval Working Group Evaluation of Research Technology and Innovation Policy" (DeGEval stands for "Deutsche Gesellschaft für Evaluation") jointly organised a workshop at Tech Gate Vienna. The present volume of the PLATTFORM NEWSLETTER collects the contributions from all the speakers of the workshop.

We discussed about advantages and disadvantages which can occur if councils become dominant players: the robustness or non-robustness of the system against lobbying pressures, new roles and functions for the ministries concerned, asymmetric information, completing or overdeterminating the policy system, etc.. Moreover, councils could have different tasks; the dominant one however is policy advice on which our workshop was concentrated.

The workshop focussed the following questions:

- Which missions / goals / strategic functions do councils have, which should they have?
- Where do the members of the councils come from? Who decides on the composition of the councils?
- Do councils improve the working of the policy system and of the innovation system as a whole?
- How counselling, strategic planning and evaluating match?
- Do councils have a role at improving the evaluation culture?

We learned that not one single model of council exist, in different countries councils have different tasks, different history, different influence and even different compositions. But in all the cases we looked at, councils had the task to balance between powers: between competing ministries, between the worlds of academia, of business and of policy or between state and federal level. And apart from misconceptions, ambivalences and mistakes we were able to identify, one positive influence could be recognized: Councils contribute to a "rationalisation" of the system, policy makers were forced to argument their plans better, to design their programmes and measures more properly and to evaluate their actions systematically …

We had an exciting time – and hopefully the readers of the present PLATTFORM NEWSLETTER will have so too.

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PROGRAMME OF THE WORKSHOP

The role of "councils" in research technology and innovation policy - advising, shaping, evaluating policy

June 20th Tech Gate Vienna

Introduction and Moderation
Dorothea Sturn (Technologie Impulse Gesellschaft)

9.10 - 9.30	**Overview:** International comparison of scientific advisory bodies Susanne Bührer (Fraunhofer ISI, D)
9.30 - 10.10	Case Studies I: **Finland** Esko-Olavi Seppälä (Science and tech nology policy council of Finland) **Austria** Michael Binder (Austrian Council for Research and Technology Development, Generalsekretariat)
10.10 - 10.40	Coffee Break
10.40 - 11.20	Case Studies II: **Germany** Andreas Stucke (Wissenschaftsrat) **Norway** Erik Arnold (Technopolis Brighton, GB)
11.20 - 12.00	Discussion

Andreas Stucke

The Case of the German "Wissenschaftsrat"

WHAT REALLY IS THE SCIENCE COUNCIL OF GERMANY?

To start with some concrete and "indisputable" facts the Science Council of Germany was founded in 1957 by the federal government and the states to draw up nation wide recommendations on the promotion of science. Concerning the year of foundation it is one of the oldest (if not the oldest) advisory council in Europe. According to the constitutional agreement of the federal government and the states the Science Council of Germany is an advisory body not a funding agency. Members come from science (24; proposed by the large science organisations and appointed by the Federal President), public life (6; proposed by the federal government and the states) and government (22; six representatives from the federal government, 16 representatives from the states). The Science Council consists of two commissions: a scientific commission and an administrative commission, which meet in the plenary assembly to take decisions. All decisions (i.e. recommendations and reports) of the council have to reach a two-thirds majority. The Science Council is headed by a chairperson who is a scientist. He is elected for one year and may be re-elected.

But what really is the Science Council? If we just switch from the self-description of its structure to the theoretical analysis of political scientists using the tool box of governance theories science councils are "intermediary agencies" fulfilling the function of balancing contradicting interests between science and politics and of co-ordinating their activities (cf. Braun 1997). In this way science councils play a central role of bargaining in a centreless society where we have interdependent actors and not a political steering agency on the top (cf. Hackmann 2001). Most of us would agree that this is true for science councils in all modern societies so: Do the differences between the several national examples of science councils really matter?

My suggestion is as follows: To understand the functioning of the councils we need neither mere self description nor highly abstract governance theory. Above all we need an understanding of the dynamics of such an institution and its environment, the interaction of actors, the interference of interests, the building and tearing down of structures and the real (but not in every case intended) effects on the science system and their repercussions. Of course this is an ambitious demand and I cannot meet it in twenty minutes. But I will try to throw some flashlights on the real working of the German science council during different periods of post war Germany. Doing this it will be inevitable to consider the specific science policy network which developed in the last fifty years in Germany. In this way we possibly get at last an implicit definition of what a science council is (or could be)

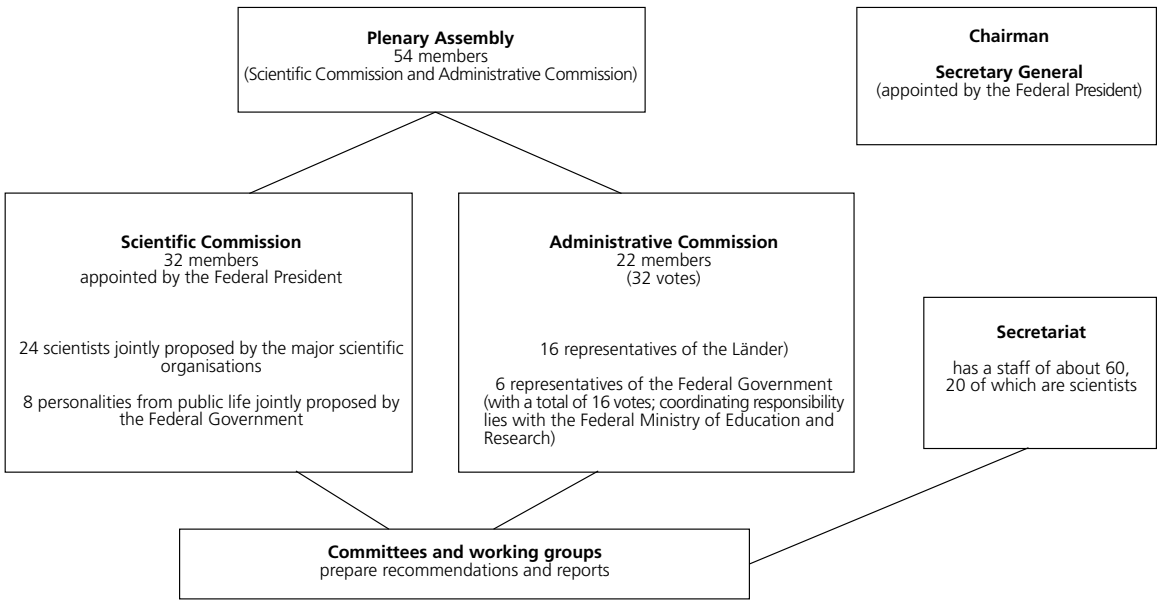

Figure 1: Organisational Chart of the Wissenschaftsrat

THE DEVELOPMENT OF SCIENCE POLICY IN GERMANY AND THE ROLE OF THE SCIENCE COUNCIL

The period of reconstruction (1945-1960)

The foundation of the German science council in 1957 met a specific historical situation of reconstruction of the German science system after World War II. This situation was characterised by the re-animation of the universities by the "Länder" according to the Humboldtian tradition and an increasing importance of extra university research, mainly Max-Planck-Society and "Big Science". After 1955,when the Federal Republic of Germany got its sovereignty in most policy fields, nuclear research and space research for peaceful purposes was allowed. As an organizational consequence the federal government immediately established a ministry for atomic energy (1955), the later science ministry (today: Ministry for Education and Research).

In this period the following actor constellation developed: According to the German constitution the states ("Länder") had a predominant role in promoting science but they lack the financial resources to fulfil the increasing demands of the science organisations. The "Länder" tried to keep their formal competencies but at last had to accept that additional money was given by the federal government. The science organisations were very interested in a stronger role of the federal government in funding science and research. Especially the Max-Planck-Society and the German Research Society pushed the Chancellor and the government to take an active part. And finally the federal government saw the chance to expand to get more influence in the field of science and research. In this situation there was a need for an organisation which could function as a bargaining arena between the federal government (with the interest of getting more influence), the science organisations (with the interest of getting more funding) and the "Länder" (with the interest of keeping their constitutional rights). This was the birth of the Science Council of Germany with the strategic function of "interest pooling" (Thompson) or balancing between three main actor groups: government, states and science . In principal this triangle constellation has been the core and the "raison d'etre" for the science council up to the present. Reflecting about the future of the council means to reason about the stability of this triangle constellation and the strategic function behind it.

The period of expansion (1960-1975)

With the establishment of the Science Council a period of expansion of the German Science system started. In this period according to the formal agreement on the council it was the explicit goal of this advisory body to develop a master-plan for the promotion of science, to coordinate the plans of the federal government and states and to announce an annual urgency plan concerning scientific infrastructure. In fact neither the urgency plan nor the nation wide coordinating of promotion activities were fulfilled. What the council really did was to give sectoral and regional recommendations, delivering arguments for the financial flows to different research sectors – universities and research institutes – and states. For example "Recommendations on the enlargement of scientific institutions" (1960-1964) or "Recommendations on the reform of studying at universities until 1970" (1966) were

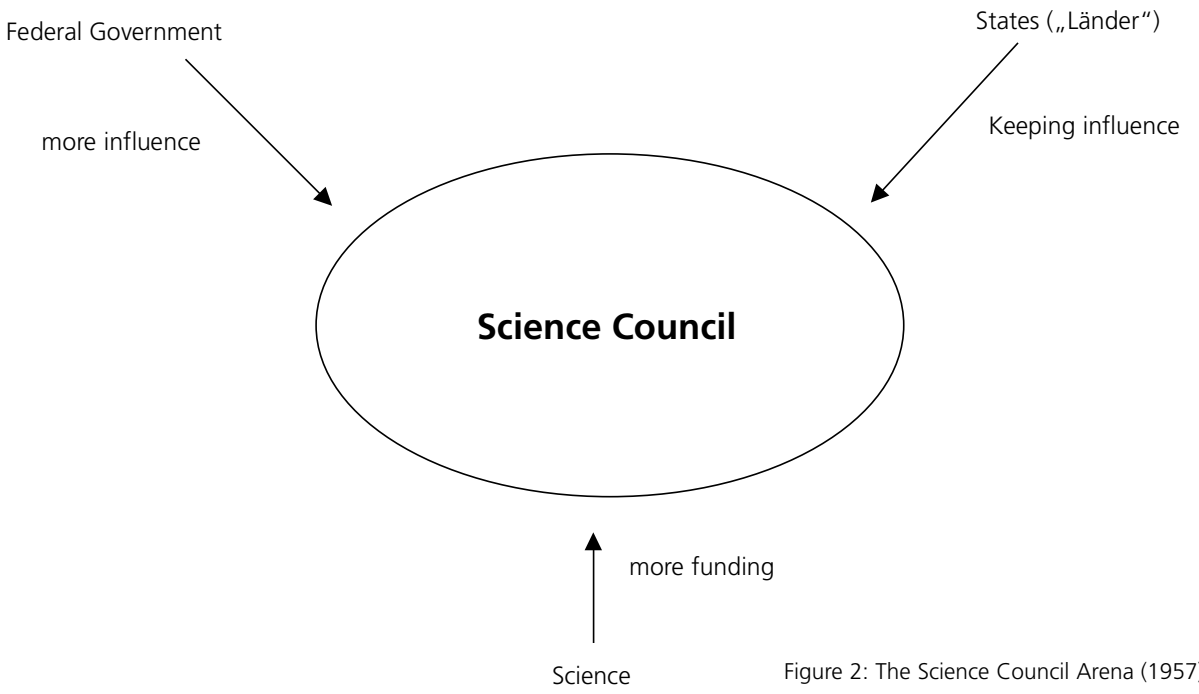

Figure 2: The Science Council Arena (1957)

drawn. Therefore the science council supported and "accompanies" the distribution of resources within the German science system. This task was not very conflictual because there was a broad political consensus in Germany at this time that there should be massive investment in education and science ("technology gap"/"education catastrophe") This was based on the fiscal situation of a "non-zero-sum" game in which the financial resources were available to fulfil most of the expectations. Thus the Science Council could play the role of a recognised and successful notary of expansion of the German science system. Finally some figures to illustrate this expansion: Between 1960 and 1975 the number of universities and comparable institutions increased from 75 to 130; 136 new polytechnics were founded. The number of extra-university research institutes (e.g. Max-Planck Society (MPG), Fraunhofer Society (FHG), large-scale research centres) increased from 114 to 157. Concerning the number of students there was an increase from about 200,000 to 800,000; regarding the positions for professors (without polytechnics) there was an increase from 3,000 to about 8,000.

Finally the strategic "triangle" constellation was consolidated further in this period by a reform of the constitution of Germany giving now the promotion of science the legal status of a "joint task of government and states" (1969: introduction of two new articles into the Constitution of Germany).

The period of institutional stagnation (1975-1989)

The decade between the end of the 1970s and the end of the 1980s could be primarily characterised by a scarcity of resources and the end of growth of the science system. At the same time several - not very successful - attempts were made to increase the effectiveness and efficiency of science funding and research institutes. Therefore the Science Council focuses on recommendations concerning for example the "Allocation of resources in the universities" (1979), the "Status and position of the polytechnics" (1981) or "Competition within the German System of Higher Education" (1985).

Besides the Science Council was asked for the first time to exercise evaluations of jointly financed research institutes. Between 1979 and 1985 46 institutes of the so called "Blue List" (today: the Leibniz-Society) were evaluated. But these evaluations had a more "therapeutic" character, only in a very few cases sanctions like the reduction and redistribution of funding resulted. To explain this relatively little influence of the council in this period we have to come back to the underlying actor constellation supporting the balance of interests between science, government and states and demanding in fact to a consensus between all actors to pass a decision. What may be seen as an advantage to buffer the science system from immediate political interventions changed now to a real disadvantage: i.e. the unability to redistribute resources within the science system according to quality assessment. Political scientists call this actor constellation a "joint decision trap" and perceive it as an example of "negative coordination" (Scharpf). So the council at this time could not reach anything more than to "administer the status quo".

The period of evaluation and restructuring (1989-now)

The political influence of the German science council increased significantly during the time of German unification. As you know the treaty of unification between the Federal Republic and the German Democratic Republic said that East Germany should accede to the Federal Republic on the basis of the West German law. In the area of science and research the East German science institutions had to join the established West German system of science promotion. To implement the transition of the East German science system it was the science Council who was commissioned to evaluate all extra-university institutes in East Germany in order to draw recommendations on their integration in a unified Germany. Almost all recommendations of the council were implemented by the government and the states what was mainly due to a single historical situation in which we had a scarcity of time, the coercion to decide and no real alternative to do it this way.

The evaluation of the East German institutes could be regarded as the "take off" for the following evaluation in the 90ies. Especially it provides the political legitimation to undertake severe and sanction oriented external evaluations of the research institutes in West Germany. Between 1995 and 2000 the Science Council evaluates all 82 institutes of the "Blue List" (jointly financed institutes with a volume of about 0.75 Billion €. p.a.) In nine cases the Council recommended to cancel the joint funding by government and states because of too little scientific quality.

Furthermore a new type of evaluation was created: the so called "system evaluations" which means that all science organisations in Germany were examined according to their internal efficiency, scientific performance in general and cooperation to other sectors of the system. This activity was initiated by the chancellor and the prime minister of all states to increase international competitiveness and systemic integration. The Science Council itself prepared system evaluations of the "Blue List" and the "Helmholtz Society" which is the associa-tion of the large science centres in Germany with a budget of about 2 Billion € p.a. For example the council recommended that 80% of the funding of the Helmholtz Society in the future should be given on the basis of applications for certain research programs and after a review process. The implementation of these recommendations are now under way and there might be doubts if the restructuring process will be suc-

cessful. In every case you have to consider that the large science organisations are not merely "objects of steering" but partly powerful corporate actors with own strategies and the capacity to implement reforms in their way...

Finally it can only be mentioned here that the Science Council also passed recommendations on the system of higher education, for example on the introduction of Bachelor and Master Degrees or the "junior-professorship". These reforms are initiated to keep up with international system of higher education and are implemented by government and states.

Therefore we can conclude that in the last decade the Science Council played the role of a "moderator of institutional innovation" relatively successful.

CONCLUSIONS

One of the remarkable (if not the remarkable) characteristic of the German Science council, compared with other countries, is the joint decision making between government, states and science based on an "equal footing". This has one significant advantage: As representatives from government and states are directly involved in drawing recommendations for the future development of the science system, they are somehow "bound" to implement their own recommendations. This "integrated model" of science policy advise, where politicians and scientists work on joint recommendations, guarantees to a certain extent the impact of this policy advice. On the other hand there is one significant disadvantage of this model: As all recommendations of the council have to reach a 2/3 majority of the plenary assembly, all recommendations bear the sign of compromise, or to put it in another way: You cannot use the arena of the Science Council to announce an institutional revolution. This is the reason why some scientists in Germany wish to establish a new advisory board for all future questions of society (not only science policy) which comprises members mainly from science.

At last: What is the future of the council? I think the "triangle actor constellation" (government, states, science) could possibly come under pressure from two different sides. The one side is the relationship between government and states where we are facing once and again a discussion about the pay off of "cooperative federalism" with the suggestion to give up the joint financing of science and research in Germany. The other side concerns the always precarious relation between science and politics which will remain stable only if every actor group will accept the specific rationalities and interests of the opposite side. In this respect we had some "stress" in the past, for example concerning the implementation of evaluations, but finally we always reached a consensus. In general the Science Council has served one very important function in the last 45 years: and that is to build up trust between science and politics. Trust is an indispensable precondition to do science successfully as well as to develop a successful science policy.

References:

Braun, Dietmar, *Die Politische Steuerung der Wissenschaft. Ein Beitrag zum „kooperativen Staat."* Campus:Frankfurt/Newyork 1997

Hackmann, Heide, Governance, *Theories and the Practice of Science Policymaking*, in : The Danish Institute for Studies in Research and Research Policy 2001/8, p.18-30

Scharpf, Fritz W. (ed.) *Games in Hierarchies and Networks. Analytical and Imperical Approaches to the Study of Governance Institutions*. Campus/Westview Press: Frankfurt am main Boulder Colorado 1993

Thompson, James D., *Organisations in Action*. McGraw Hill: New York 1976

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Erik Arnold

The Research Council of Norway (RCN) as Advisor on Research and Innovation Policy

INTRODUCTION

Norway has for the last nine years been almost unique in the world in combining the functions of research council, innovation funding agency and strategic advice-giving on research policy into a single organisation. Following an evaluation of the Council, the government in the last few weeks announced that it would continue this bold experiment, in a modified form. This short paper looks for lessons about the advice-giving function from the Norwegian experience of council structures.

SOME HISTORY

In Norway, research and innovation funding by the state became separated from university funding only after the Second World War, when a national council for technology and natural sciences (NTNF) was established in 1949. Councils for science, social sciences and the humanities (NAVF) and agriculture (NLVF) followed in 1949, fisheries (NFFR) in 1972 and applied social sciences (NORAS) in 1987. All have had a double role of distributing research money and advising government on research policy – though the degree to which they have been effective in the second role is highly variable. Between 1949 and 1965, their joint committee – Forskningsrådenes Fellesutvalg – functioned as an advisor to government, but it was disbanded in 1965, following a dispute about how to distribute the profits from the state-owned football pools among the different councils. (These were an important source of funding for research in Norway in the post-war decades.)

The government then installed an independent committee – Hovedkomiteen for Norsk Forskning – whose advice on research and innovation policy it largely ignored. From the early 1980s, when a conservative government was elected, the existing labour-party-appointed committee came increasingly into conflict with the government, which eventually replaced it with a new committee: Forskningspolitisk Råd. The close relations between the chair of Forskningspolitisk Råd and the minister for education meant that the committee's work was very influential, underpinning a research bill. But, when labour was re-elected and the committee's members failed to follow normal procedure and offer their resignations so that the new government would have an opportunity to appoint members, the government simply abolished Forskningspolitisk Råd. Its place was to some degree taken by a new, unofficial joint committee of the research councils (Forskningsrådenes Samarbeidsutvalg), which had been formed in 1971. However, the government stressed in its research bill of 1998 that "it is the job of the research councils to advise the government about research questions."

The inability of the fragmented Norwegian research council system in the late 1980s to act collectively and implement the government's nine so-called 'main target areas' (hovedinnsatsområder) eventually triggered reform. These initiatives in cross-cutting research themes like biotechnology, health, environment and the quality of life, which touched many councils' responsibilities, are typical of challenges being faced in many research funding systems, though Norway is unusual in adopting a single funding council in response.

STATE FUNDING ROLES IN THE NATIONAL RESEARCH AND INNOVATION SYSTEM

Current research and theory on how research and innovation work within the economy emphasise the 'bounded rationality' of institutions (especially companies), learning and path dependency. Actors and institutions are seen as highly interdependent. If we take seriously the main arguments of the 'National Innovation Systems' school, we can identify a small number of key roles for the state in supporting both innovation and research. Some of these roles involve making sure 'business as usual' is funded in the research and innovation system. Other activities combat the lock-ins that result from path dependency.

- Bottleneck analysis is a crucial function of the state. This provides the overall 'intelligence' to decide where and how to intervene. It is unlikely that the bottleneck analysis function can be centralised to a single place. Rather, multiple sources of intelligence will be needed to inform policy makers about needs at different points of the innovation system, so bottleneck analysis needs to involve arenas where new ideas and analyses can be considered.
- Developing absorptive capacity. This involves creating and embedding the capabilities companies need in order to develop and make good use of technology.
- Promoting technological development. There are several types of systemic failure which impede the development of technology, and its productive use within particular national innovation systems.
- Being a change agent, funding opportunities that tend to be crowded out by the interests of the research establishment, in 'basic' and in use-oriented research, as well as in innovation.
- Funding basic research. The market failures associated with basic research still persist, justifying the sta-

te's investment.
- Funding oriented basic or strategic research. Equally, it is necessary to make choices about where to build up capabilities.

A further role – not implied by the National Innovation Systems approach, because it does not generally consider government or governance – is research conducted to meet policy needs, sometimes referred to as sectoral research. RCN represents an attempt to put all of these functions into a single organisation.

THE STRUCTURE OF THE NATIONAL SYSTEM TODAY

The main institutions in the Norwegian research and innovation funding system are sketched in Exhibit 1. The central intermediary institutions, which fund research, innovation and business development were reformed in 1993 and subsequently, simplifying a rather complex structure with about 15 agencies and research councils into two major organisations. These are SND, which plays the role of development bank and business support agency; and the Research Council of Norway (RCN), which combines the functions of basic research council and industrial R&D and innovation support agency. About half the state's research and innovation spending goes directly from the Education Ministry to the universities, as part of the university block grant (General University Fund, in OECD terminology). A further quarter is spent through RCN.
The government now formally has three sources of advice on research and innovation policy. The highest organ is the Government Research Committee (RFU), made up of ministers with an interest in research and innovation questions and chaired by the education minister. The laws to set up SND and RCN also specify that these agencies are to provide advice to government in relation to their respective missions. There is no independent advisory council.

With funding from 15 different ministries to distribute, RCN has a major task in maintaining interfaces with its sponsors. It is organised in three 'steering levels.' The Executive Board (hovedstyre) is effectively appointed by the government, has overall responsibility for RCN strategy and for policy advice to government. The role of the Executive Board is to steer and manage RCN on behalf of society. It delegates responsibility for different disciplines and operative responsibility for research to the six divisions. Each division has a divisional board (områdestyre), appointed by the Executive Board, which is supposed to maintain close contact both with researchers and with the ministries, which finance the work. The 'third steering level' in RCN comprises programme boards (programstyrer) with delegated power to allocate funds to projects, and advisory committees for academic disciplines and matter, which advise the division board on project priorities but do not themselves make decisions. The RCN administration acts as secretariat to all three 'steering levels.'

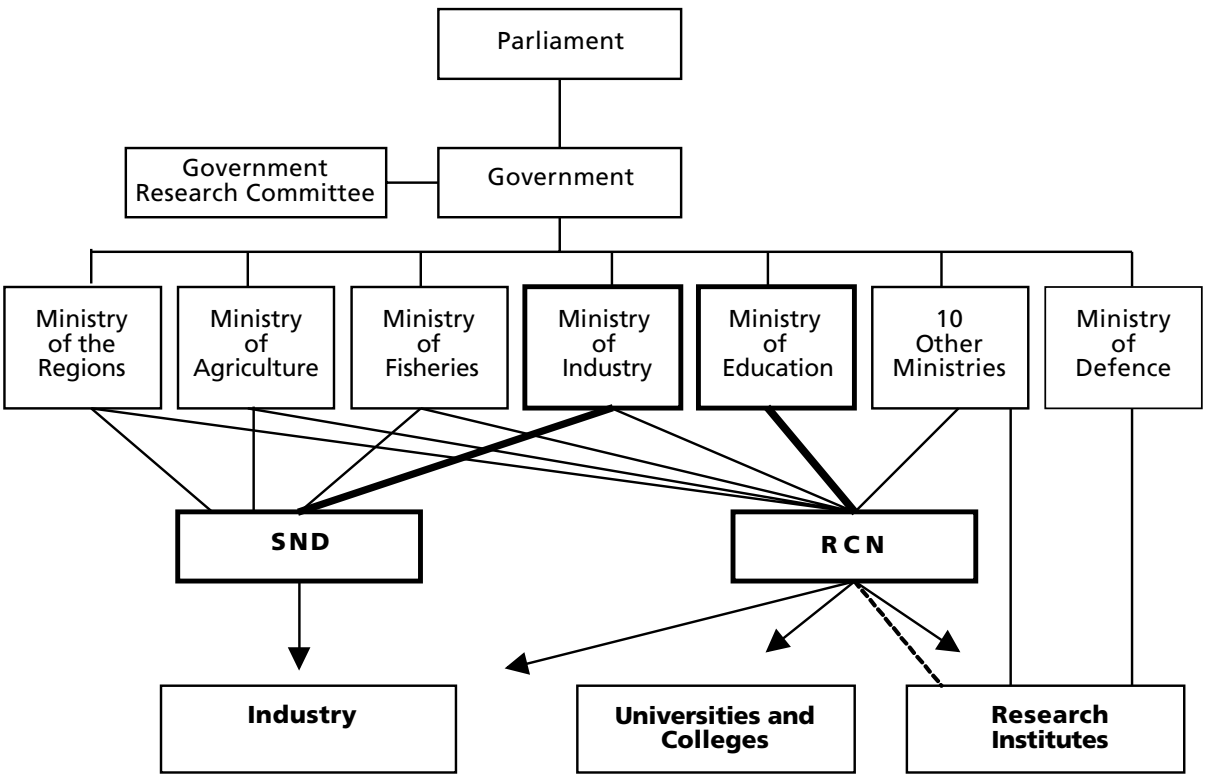

Figure 1: Structure of the Norwegian Research and Innovation Funding System, 2001

Consequences of this design include organisational rigidities and weak vertical links (with no individuals appearing at more than one steering level). The Executive Board and top administrators speak to government, while the third steering level has operational contact with the ministries. Many of these ministries micro-manage the way RCN spends 'their' money, reducing flexibility. Largely flat budgets through the 1990s meant there has been little 'slack' available, to dedicate to the type of horizontal problems posed by the 'main target areas' of the 1980s.

Our evaluation of RCN found that, while it was operationally competent and effective, its ability to act as a strategic advisor to government had been limited, but was improving. Many of the Council's performance limitations were due to 'governance failures.' A key change event was a close co-operation between the council and the Government Research Committee in the period leading up to the 1999 Research Bill. While the Council had been suggesting strategic priorities and increased R&D funding since its inception, the key ingredient appears to have been a receptive minister with good links to RCN. As a result, the Bill set priorities similar to those proposed by the Council, and made more money available for research and innovation measures. The advisory function of RCN has, however, been carried out mostly by its central strategy function and the Executive Board. The second and third steering levels – where clients of the council (researchers, industry) are strongly represented – has provided little effective input.

Increased funding since the start of the new century has given the Council more freedom to set its own agendas. In particular, a new Research and Innovation fund placed at the disposal of the Executive Board from the year 2000 has created a new dynamic, with RCN able to take new initiatives, such as setting up centres of research excellence. Without its 'own' resources, RCN has not been very effective as a change agent within the research and innovation system. With such resources, coupled to an Executive Board, which is independent both of the funding ministries and stakeholder interests, the Council has at least the opportunity to take on this crucial role in maintaining the national research and innovation system.

CONCLUSIONS

Conclusions based on a single example are necessarily limited. However, it seems from the RCN case that

- Irrespective of whether an advisory council is independent or tied into the funding system, a necessary condition for its advice to be effective is that those being advised are actually willing to listen.
- Advice giving is therefore highly personal, culturally bound and path-dependent.
- Close contact with client communities is no doubt a great advantage in understanding and analysing problems. However, the strategic function in an 'umbrella' organisation like RCN, which contains a number of funding divisions, each with its own clients, needs to have some independence from the operational side, otherwise it is hard to recommend change. This does not mean that useful advice can only come from independent organisations.
- The ability for a single organisation to act as effective state manager of a national research and innova-

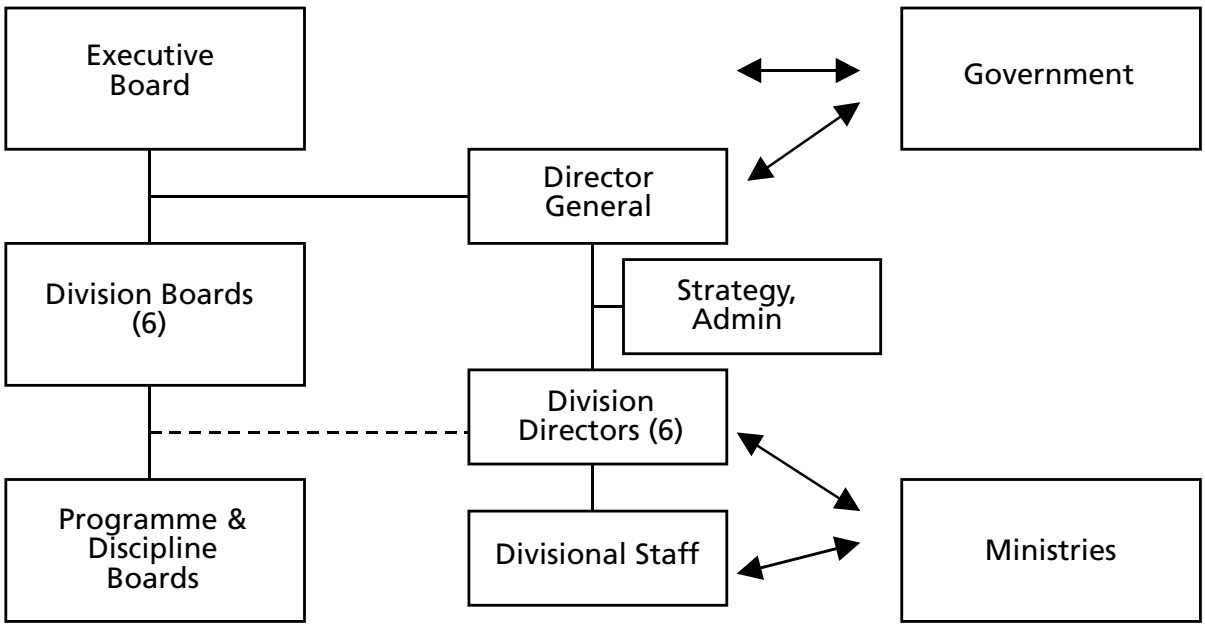

Figure 2: Organisation of RCN

tion system similarly depends upon it having the power not only to mediate among conflicting stakeholder interests but to take decisions that run counter to some of these.

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The Evaluation of the Research Council of Norway can be downloaded from: http://www.technopolis-group.com/reports/RCN/RCN_Synthesis.pdf

Michael Binder

Advising, Shaping and Evaluating RTD Policy in Austria

THE AUSTRIAN COUNCIL

The Austrian Council for Research and Technology Development was founded by law in July 2000 and institutionalised on September 6, 2000. Since January 2001 the Council has an office for administrating daily business.

At this point of time it seems to me too early to give a complete qualified judgment on the positive and negative effects arising from the change within the national innovation system resulting from the installation of the Council. However, it's the right moment and the right time for a discussion about the first experiences with this new governance structure.

THE LEGAL BASIS

The legal basis of the Council is the law for promoting research and technology (Forschungs- und Technologieförderungsgesetz - FTFG).

In this law the following points paraphrase the tasks of the Council:

• Advising the Federal Government (but also individual Federal Minister, provincial governments) in all questions concerning research, technology and innovation.

- Developing a long-term Austrian RTD Strategy (The Council presented the Austrian Research Strategy called "2,5% + plus – Prosperty through Research & Innovation" in Mai 2001)
- Forming focused guidelines for RTD programs
- Recommendations regarding an improvement of the Austrian integration in international research initiatives
- Recommendations regarding the improvement of technology transfer
- Suggestions on the evaluation and monitoring of research, innovation and technology-oriented organisations and programs

Advising, strategy-developing, suggestions for programs, national and international initiatives, evaluation and monitoring are the main tasks of the Council.

Proceeding from this legal basis the Council focuses on two major points in its activities (Mission Statement of the Council):

- systematic and independent advice activity
- central node (hub) of the governance network for the national innovation system

A special need for the latter function exists in Austria as a result of the fragmentation of the governance network of the national innovation system – also at the federal level. The more fragmentation the more there is a need of well-working network structures.

MEMBERS

The Austrian Council for Research and Technology Development consists of 8 voting members as well as the Federal Minister for Traffic, Innovation and Technology and the Federal Minister for Education, Science and Culture as consulting members. The 8 members eligible to vote are nominated half and half by the two Federal Ministers and appointed for a period of 5 years. The members are national and international experts in their fields and half of them represent science and research, while the other half represents the world of economy.

The Council is allocated to the Ministry for Transport, Innovation and Technology, the office is a part of the ministry. The Council does not yet have a legal entity of its own, but a plan for such a legal entity has been developed.

CAN THE NATIONAL INNOVATION SYSTEM BE IMPROVED BY INSTALLATION OF SUCH COUNCILS?

As I mentioned before: At this point in time it seems to me too early to pass qualified long term judgment on the positive and negative effects in Austria. However, it seems that the organisational setting, the structure of the innovation system is getting better through the installation of the Council. Most of the countries of the European Union have installed independent institutions for advice in issues related to research, development and innovation. Only such advisory boards can ensure the independence of expertise and strategic incentives to the system.

In the different member countries the Councils have rather different organisational settings. Some Councils act as platform for all the actors of the innovation system. Other Councils – like in Austria - act as a small independent group focussing mainly on advisory activities. They can act faster and more flexible compared with the first type, which have a kind of consensus decision making process. Last not least, some Councils, also the Austrian one, exer-

cise a special network-building function of the governance network; they act as network hub.
For the type of advisory councils there is a main question, in which way their recommendations are followed by the government. In Austria the government does not have to react on the recommendations. So it is only a question of the institutional authority of the Council or the personal authority of the members. A practice like in the Netherlands, where the Government has to give a statement on the recommendations within a defined period of time seems to be a good practice.

To put it in a nutshell: The main task of Councils designed as advisory boards is to give recommendations, not take decisions. The recommendations need not to be followed by the government every time, but there has to be a procedere for a discussion of the recommendations within the government.

DO COUNCILS CONTRIBUTE TO AN IMPROVEMENT IN THE EVALUATION CULTURE?

I am convinced that this is the case. Let me clarify my arguments by referring to the Austrian example. Austria still doesn't have a distinctive evaluation culture. Evaluations are carried out on a case by case decision. However, there is a growing trend towards more evaluation, which will be strengthened by the Council.

For example the Council does not give recommendations to programmes without an evaluation plan.

The Council intends to work out minimum criteria for evaluations and to publish these as a recommendation to all federal and provincial institutions. We will publish this document by the end of the year. These interventions represent a major contribution to increasing evaluation culture. Councils are essential for such a task.

CONCLUSION

To conclude, I will highlight the main points of my speech

1) Councils normally play a strategic role in the improvement of national innovation systems
2) The main focus of their work is providing advice on strategic planning and monitoring and evaluation of the innovation system.
3) Councils may coordinate the governance networks; they are an important part of a positive governance culture. The need for coordination increases with the fragmentation of the innovation system
4) A main task of Councils is to improve the conditions for research and technology policy. A Culture of objectification, evaluation and monitoring is a must in a complex world, but also a promise for the future.

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Esko-Olavi Seppälä

The Case of Finland

The framework of Finnish RTI policy is a broadly defined National System of Innovation (NSI) (Fig. 1). It was introduced by an advisory body, the Science and Technology Policy Council of Finland (STPC), as early as in 1990. The system includes all the producers and users of new knowledge and know-how, and the diverse interaction mechanisms between them. Education, R&D, and knowledge-intensive business activities are essential sub-systems of the NSI, with international co-operation going through the system. The systemic approach enables studying the quality of both the NSI as a whole, its sub-systems and the interaction within the system.

An overall picture of the national R&D system of Finland is given in Fig. 2. Key operators in the public sector are the Academy of Finland, the National Technology Agency (Tekes), and the Sitra Fund. They are the main expert and funding organisations: the Academy primarily in the area of basic research and researcher education, Tekes in the field of applied technical research and development, and Sitra in venture capital investment. The Academy and Tekes get their resources from the state budget while Sitra's operations are based on its own basic capital. The Academy and Tekes are the main sources of competitive R&D funding in Finland.

The STPC was founded in 1986, when its predecessor, the Science Policy Council (founded in 1963) was reorganised and its field of activities extended to cover all technology related policy issues, not only technical R&D. The council has been chaired by the Prime Minister from the very beginning. The council has two vice-chairs: the Minister of Education and the Minister of Trade and Industry. The fourth permanent member is the Minister of Finance. In addition to them, even four other ministers can be members of the council. They are appointed by the Government, and so are the ten 'expert' members of the council. Six of them are to represent important organisations: the Academy of Finland, Tekes, industry, employers' and employees' organisations, and universities. The other members come from academic communities and government research institutes.

Thus, there are several in-built partnerships in the membership of the Finnish council:

- decision-makers <-> experts in science and technology
- public sector <-> private sector representatives
- producers <-> users of knowledge and know-how
- science <-> technology
- basic research <-> applied research <-> development
- the social partners.

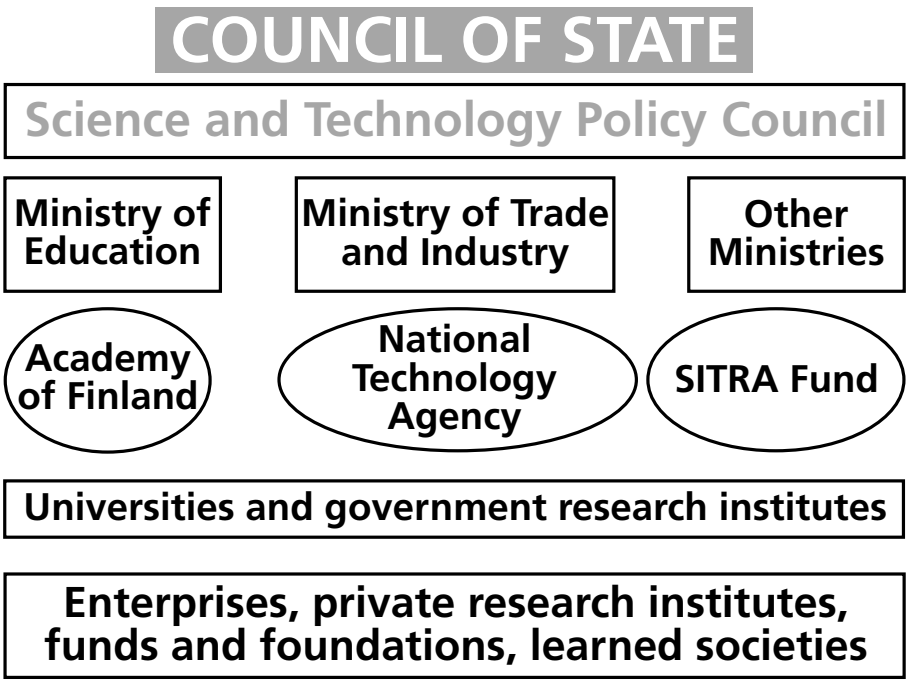

Figure 1: The National System of Innovation

If, and when, this kind of mixture of various interests works as one body, topical issues can and will be discussed from various angles. The discussions result in council decisions, which normally take the form of a statement or a recommendation. The decisions of the council are public.

The council approves of its annual work plan. The work plan includes both permanent and other issues. Typical permanent issues refer to the development of R&D financing, its impact and effectiveness, the development of sectoral research and cluster co-operation, and international STI co-operation, its development and utilisation. The council follows closely the annual state budget preparations, studies the ministries' R&D budget proposals, the Ministry of Finance included, and gives advice as to further preparatory work.

As an example of other issues taken up by the council, in the 2002 work plan there are discussions concerning assessment, foresight and research of S&T, the social and economic impact of STI policy actions, industry-science relations, and the 'university of tomorrow'. All of these topics also relate to the preparatory work of the coming triennial STI policy review of the council, due to be adopted by the end of the year. The council has published reviews since 1987 the next one being the sixth in order. It will contain the analysis of recent developments as well as conclusions and recommendations for the coming years. These also include concrete R&D funding recommendations.

The organisation of the practical work of the STPC is described in Fig.3. The council has (only) two secretaries (chief planning officers, CPOs), indicating that much of the preparatory work is done in other expert organisations. On the other hand, the council can also be given preparatory tasks by the government. The best example has been the government decision of increasing the public R&D funding by one fourth, i.e. € 250 million, from 1996 to 1999. The task of preparing the allocation plan of these new resources was given to the council. As the result, the allocation plan was fully implemented, which i.a. raised the share of competitive government R&D funding from 25 % to 40 % - due to the priority given to the Academy and Tekes in the plan.

In its latest triennial Science Technology and Innovation policy review (Review 2000: The Challenge of Knowledge and Know-how. Helsinki 2000) the council identified five main challenges for the public sector. It ought to be able to implement the necessary development measures simultaneously in all important directions in the conditions of international competition and co-operation:

- promotion of knowledge-intensive industries
- promotion of social, economic and cultural development
- identification of new growth areas and the promotion of business
- dissemination and extensive utilisation of knowledge and know-how
- strengthening overall the knowledge and know-how base.

The challenges illustrate the fact that the interaction of the NSI with other policy sectors in the society (economy,

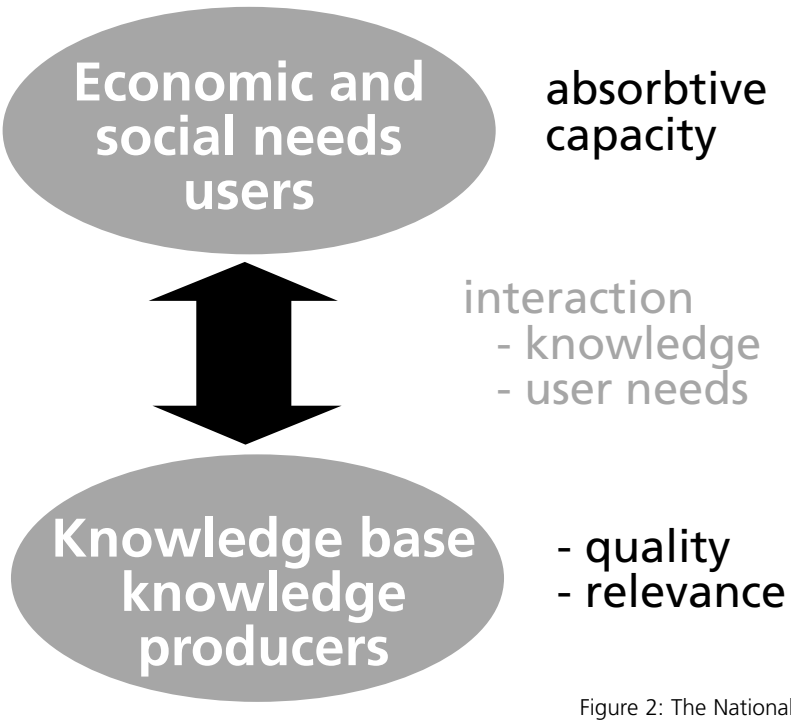

Figure 2: The National R&D System of Finland

employment, environment, regional development etc.) has become more and more important. At the same time, this means that the area to be covered by the traditional STI policy advice is extending to include the social, cultural and economic development as a whole, all this in an international, even global framework.

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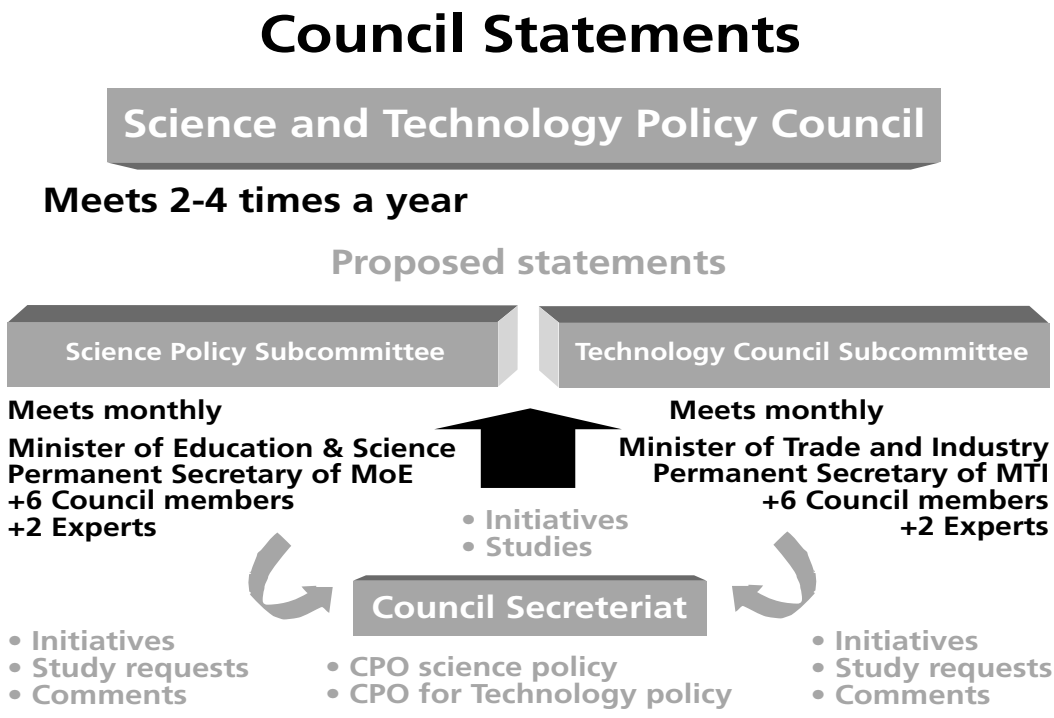

Figure 3: Organisation of the STPC

Susanne Bührer

Typifying Scientific Advisory Structures and Scientific Advice Production Methodologies

On behalf of the European Commission, GD Research, a consortium of 6 research institutions investigates the scientific structures in advising policy in the European countries. The involved institutions are: Policy Research in Engineering, Science and Technology (PREST), University of Manchester – UK as main partner; Atlantis Consulting – Greece; Austrian Research Centers Seibersdorf, Systems Research Division (ARCS) – Austria; Fraunhofer Institute for Systems and Innovation Research (ISI) – Germany; Foundazione Rosselli – Italy; and Swedish Institute for studies of Education and Research (SISTER) – Sweden as partners.

The policy areas to be examined are Agriculture & Fisheries, Energy, Transport, Environment, Research and Health and the Consumer.

THE FOLLOWING THREE GOALS ARE PURSUED:

(1) Identifying and typifying the structures (e.g. acade mies, research councils etc.) involved in the production of scientific advice requested by public European, national and if relevant regional authorities in support of decision-making. This analysis will be made for EU countries and countries associated with the RTD Framework Programme and trans-national institutions (e.g. European Science Advisory Council, European Science Foundation etc.)

(2) Analysis of pros and cons of different features and typifying the methodologies used by the relevant bodies. Particular attention will be paid to the comparison between the processes used by trans-national and European institutions/organisations. A comparison with the main features of similar scientific advisory structures in US, Canada and Japan will be provided.

(3) Based on (1) and (2), a set of good practices is suggested that could be useful in increasing the efficiency of producing scientific advice. The intention is to learn from failures and experiences as regards scientific advisory structures and working methodologies.

MAIN ISSUES TO BE INVESTIGATED ARE:

Structure of the advisory boards

- Whom does the body advise: head of government, parliament, ministry
- Status of the body: statutory, permanent non-statutory, fixed-term / ad hoc
- Role: technical advice, advice on policy options, risk scanning function, standard-setting
- Selection process for members: peer nomination / election, appointment from existing list, open advertisement
- composition of the body: scientific experts, non-scientific experts, legislators, lay members
- Resources of the body: budget, size

Generation of Advice

- Extent of the body's autonomy and freedom of operation: proactive / reactive
- Transparency of the advisory process: closed or open sessions, publication of reports / minutes
- Working practices / methodologies applied: review existing research findings; fixed term, continuous, open-ended or cyclical process; debate between experts in the group; use of formal risk assessment methodologies; able to commission new research; public consultation
- How is advice formulated? agreement on common position of advisory body, communication of a range of different opinions, dialogue process with policy makers and / or public
- Communication between advisory bodies both within the country and within the EU: inter-governmental, EU mediated
- Evaluation of advice to assess its impact: formal evaluation, ad-hoc initiatives
- Are experts remunerated? no remuneration, expenses, salary

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