

**Evaluation in National Research Funding Agencies: approaches, experiences and case studies**

**A report of the ESF Member Organisation Forum on Ex-Post Evaluation of Funding Schemes and Research Programmes**



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## European Science Foundation

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An ESF Member Organisation Forum is an output-oriented, issue-related venue for the Member Organisations, involving other organisations as appropriate, to exchange information and experiences and develop joint actions in science policy.

Typical subjects areas discussed in the Fora are related to:

- Joint strategy development and strategic cooperation with regard to research issues of a European nature.
- Development of best practices and exchange of practices on science management, to benefit all European organisations and especially newly established research organisations.
- Harmonisation of coordination by MOs of national programmes and policies in a European context.

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# Preface

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In 2007 the German Research Foundation (DFG) proposed to the European Science Foundation to establish a *Member Organisation Forum on Ex-Post Evaluation of Funding Schemes and Research Programmes (MO Forum)* with the stated objectives:

- To facilitate networking of science officers engaged in evaluation;
- To exchange and document experiences with current practices;
- To explore needs and possibilities for collaboration in future evaluation exercises.

The idea to establish the forum stemmed from the observation that, beyond all differences in the way in which Member Organisations of the ESF are funding and organising research, their aims are, after all, convergent. The forum provides a venue to establish a common ground for cross-national agreement on the appropriate methods for the evaluation of the success of a programme.

From October 2007 to April 2009, the ESF Member Organisation Forum convened in four workshops. The kick-off meeting that took place in Berlin, hosted by DFG, was a first collection of ideas on expectations, practices and experiences at the participating organisations. The subsequent meetings focused on topics like quantitative indicators in ex-post evaluation of funding schemes and research programmes (Rome, hosted by the INFN – Italian National Institute for Nuclear Physics), best practices in “quality assurance” (Vienna, hosted by FWF – Austrian Science Fund) and on socio-economic impact assessment (Budapest, hosted by OTKA – Hungarian Scientific Research Fund).

Each workshop contributed to a common understanding of the different evaluative interests and approaches. Mainly, practical examples were presented, along with specific pitfalls, which stimulated a fruitful debate and suggestions for practical work “at home”.

The main motive for this MO Forum was the idea of establishing a network of evaluation practitioners that would ultimately lead to agreed “best practice” in evaluation as well as the initiation of collaborative trans-national evaluation studies. On the way to this end goal, considerable efforts were devoted to sharing experiences and mapping the different evaluation approaches taken to date.

The Forum was instrumental in establishing a network of people involved in evaluation within the national research agencies and a platform to exchange information and experiences on the rapidly changing evaluation practices on a regular basis. It therefore provided the basis on which several partners could look into the possibility of cooperation on common concerns.

We are very thankful to the speakers and the participants of the workshops. The intense commitment and participation in discussion as well as the contributions to this documentation showed that this MO Forum met a need of the ESF Member Organisations.

We wish to thank also the hosts of the four workshops and the commitment of the local staff members who prepared these meetings in a very effective and always friendly manner. On behalf of the ESF the forum was coordinated in a professional and dedicated manner by Alexis-Michel Mugabushaka and subsequently by Laura Marin. Last, but not least, the material presented in this brochure is due to the special engagement of Frank Bingen (Fonds National de la Recherche, Luxembourg), Brendan Curran (Health Research Board of Ireland) and Anke Reinhardt (German Research Foundation, Germany), who together invested a lot of work and fruitful energy.

The work of the ESF MO Forum, which is documented with this brochure, has reached a milestone. Its future perspectives are included in the *EUROHORCs and ESF Vision on a Globally Competitive ERA and their Road Map for Actions* in a dedicated chapter on the development of common approaches to ex-post evaluation of funding schemes and research programmes. We hope and wish that the cooperation will yield even more fruit in the future.

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# 1. Introduction

The evaluation of research funding schemes and research programmes has received more and more attention in recent years. With the growing consensus that research and development create the basis for long-term economic growth, it is increasingly felt that there should be mechanisms to assess the impact that research funding is yielding. For the funding agencies and research organisations, the main rationales for evaluating their funding activities are improving their internal operations and the external accountability. And with the growing acceptance of evaluation as a means of quality assurance in the public sector in general, the analysis and assessment of basic research does not cause irritation anymore. Advances in the field of “evaluation studies” have contributed to the recognition of the potential of evaluation studies to help in designing, tuning and further developing existing funding schemes. However, the field is quite new, and getting the evaluation of funding schemes and research programmes “right”, to judge their excellence and efficiency as well as impact and achievement of both scientific and policy goals, is still work in progress.

Research evaluation is a small, highly specialised field. On a national level, there are only a limited number of actors involved in it. Therefore, the exchange of knowledge and sharing of experiences of evaluation strategies on an international level is especially valuable and a prerequisite for benchmarking purposes. The *ESF Member Organisation Forum on Ex-Post Evaluation of Funding Schemes and Research Programmes* brought together, for the first time, evaluation officers from ESF Member Organisations to exchange experiences and gather best practice.

From October 2007 to April 2009, the ESF MO Forum convened in four workshops. They each had a focused topic:

- *1<sup>st</sup> Workshop* (hosted by DFG – German Research Foundation): Evaluation of Funding Schemes and Research Programmes: Expectations, Practices and Experiences;
- *2<sup>nd</sup> Workshop* (hosted by the INFN – Italian National Institute for Nuclear Physics): Quantitative Indicators in ex-post Evaluation of Funding Schemes and Research Programmes;
- *3<sup>rd</sup> Workshop* (hosted by FWF – Austrian Science Fund): Best Practices in “Quality Assurance”;
- *4<sup>th</sup> Workshop* (hosted by OTKA – Hungarian Scientific Research Fund): Socio-economic Impact Assessment.

The workshops were organised in plenary sessions and parallel sessions in which organisations sharing a common interest in certain aspects of evaluation could meet and discuss potential joint activities.

In the course of the time, two strands were established to better organise the activities of the forum and provide a dedicated space for different organisations to develop more in depth their collaboration in research evaluation.

- The first strand focused on evaluation procedures mainly through a mapping exercise (Strand A);
- The second strand worked on tools that are used to document and support the evaluation process (Strand B).

This report summarises mainly the results of the mapping exercise undertaken by the first Strand (Strand A of the forum). Activities of the other Strand are briefly described in the coming subchapter.

## Levels of evaluation and structure of the report

### Strand A

One important goal of the Forum was to develop a mapping of current evaluation activities within research organisations. Given the differences in the way national funding agencies organise their evaluation activities, the first task consisted of identification of the different types of “evaluation activities” that the organisations are engaged in.

Five types of evaluation were identified as most common in most organisations.

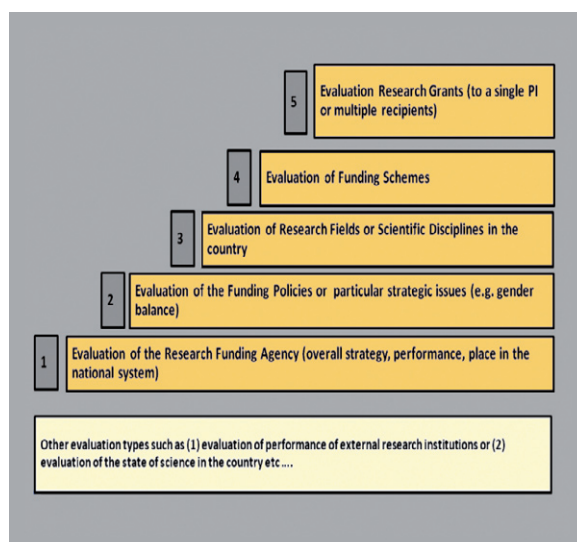


Figure 1. Levels of evaluation in research funding agencies

# 1. Introduction

The different types of evaluation can also be seen as different levels of evaluation undertaken in research funding agencies:

## 1. Evaluation of the funding agency as an organisation

This refers to the review exercises which assess the strategy, activities and perspectives of the research funding agency, often in the context of the activities of other important organisations in the national research systems.

## 2. Evaluation of funding policies (or particular strategic issues)

Some agencies also conduct studies on science policy or funding policy issues (e.g., Impact Studies, studies on Gender Equality, studies on Open Access policies, studies on Internationalisation).

## 3. Evaluation of research fields or scientific disciplines

Some funding organisations assess the state and quality of research disciplines in their country and their international standing.

## 4. Evaluation of funding schemes

In most research funding agencies, multiple grants are awarded under specific *funding schemes*, for which calls for proposals are issued and/or for which eligibility criteria and the objectives of the funding schemes are specified. (Funding schemes are also referred to as *funding programmes* or *funding instruments*).

## 5. Evaluation of research grants (to a single Principal Investigator or a group of recipients)

Almost all research funding agencies have mechanisms to monitor and assess the progress and outcomes of individual grants they provide (ranging from a single project to a large collaborative programme of research, a research network, or centre of excellence).

The kind of evaluation activities that funding agencies and research performing institutes conduct and the way they conduct them depends on their mission and size. While the focus of the ESF MO Forum was clearly on the evaluation of research funding schemes, other levels of evaluation also contribute to better and more focused operations of a funding agency. These practices and experiences help to shape the field of research evaluation.

The structure of this report follows the different evaluation levels highlighted above.

The second chapter focuses on evaluation of the research funding agencies as organisations.



Figure 2. MO Forum members

The third chapter deals with evaluation of strategic issues (exemplified with the topics “socio-economic impact” and “gender issues”).

The fourth chapter describes the approaches of selected agencies in evaluation research fields.

The main chapter – the fifth – is dedicated to the evaluation of research funding schemes and gives a comprehensive overview of funding schemes and the corresponding evaluation studies of ESF Member Organisations.

The sixth chapter explores the use of final reports for evaluative purposes.

The report concludes with a summary and an annex in which selected case studies are described.

## Indicators in research evaluation

### Strand B

During the first workshop in Berlin, the purpose of which was to identify the main topics that are encompassed within the issue of ex-post evaluation, the topic of indicators was strongly noted as a major one and taken over for further development by the Strand B group. This was confirmed in Rome in the second workshop, where the need to go beyond the simple collection of current good practices and to exploit real research work on the issue was also evident. The working group of MOs (CNR, INFN, KNAW, INRA) that aimed to explore this very broad issue more precisely proposed two key areas to be worked out in Vienna in the third workshop:

- Internationalisation;
- Innovation and innovative capacity.



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Conclusions were that a very limited set of indicators are usually produced and used in the latter area, highlighting the need to design new indicators that could better describe the innovative capacities. To achieve such an objective, a dedicated exploratory workshop on that topic was proposed, gathering scientists involved in innovation processes analysis and Member Organisations interested in developing new indicators on innovation and innovative capacities.

As to internationalisation, it was agreed that this is becoming an ever greater concern because of its strict relation with globalisation processes, the increase of competition for good researchers and research funds, the need to improve reputation and visibility at the knowledge frontier (quality indicator). Internationalisation is an intrinsic characteristic of the research effort, affecting all the scientific disciplines at a different rate and pace. Nevertheless, in recent years a trade off between internationalisation as an epistemic value and its effectiveness in terms of activities, performance and positioning is emerging.

Changing meanings of internationalisation is another issue challenging research performing organisations: in the last ten years, research priorities went from internationalisation of researchers and research groups to embedment of institutions and individuals in international networks, capability to attract foreigners (researchers, clients) as well as to fund researchers working abroad, and to localise research activities abroad (researchers and units). In this respect, the role of the European Framework Programmes and the actions toward the setting up of a European Research Area (ERA), and the Lisbon strategy cannot be ignored as factors pushing public research institutions toward internationalisation.

Concerning indicators on internationalisation, the rationale is strictly related to the concept of the ERA as it implies a strong mobilisation of European research actors, be they funding agencies, research performing organisations or learned societies. The concept of ERA and its implementation aims to organise research in Europe in ways leading to strengthening cooperation within Europe to better compete and collaborate at the international level.

It is clear from these goals that the idea of ERA is not Europeanisation as an end in itself – even though it is important and useful to assess European cooperation in progress – but it is a means to achieve a strong and effective European research base in a global perspective. Internationalisation is then a concept that addresses on the one hand the need for growing collaboration between European partners, and on the other the need to further develop strong links with partners worldwide. The concept of internationalisation in the context of ERA is therefore a two-tier “system” to increase the capacity

of European research to compete and collaborate at the international level in fostering complementarities, reducing redundancies and promoting world class research. It is a response to balance cooperation and competition at the scale of Europe and the world simultaneously.

Working on indicators is not a simple task. Indicators are based on a conceptual framework coming from STI studies (i.e., the linear model or the national innovation system model), definitions and normative understanding of the underlying reality. Indicators are used as instruments devoted to supporting policy makers with a synthetic representation of the reality, not a complete and objective description of the reality (in this respect they are proxies of the reality). Good indicators should be:

- designed to answer specific questions (relevance);
- built upon a conceptual model of the reality (thus, they must be based on definitions, state-of-the-art, delimitation of the elements to be measured);
- feasible in terms of data quality and availability (cost and time);
- transparent in terms of capability of users to understand background and limitations affecting indicators.

A possible way forward in order to set up indicators for the evaluation of the internationalisation of research performing organisations is to work on concepts of internationalisation and Europeanisation, by taking into account different perspectives coming from the economic, the sociological and the political approaches, trying to identify a few common characteristics. Then it is possible to further develop identifying and testing indicators suitable to highlighting the real level of internationalisation of research performing organisations.

For this purpose it is useful to distinguish between indicators that can be produced by using international sources, and indicators that can be developed by using national sources. As to the first, co-publication and co-patenting with foreign researchers (by using bibliometric resources, and EPO databases), and an analysis in diachronic perspective of the participation in international programmes can be developed (for instance for EUFP by using Cordis resources).

As to the second, it is necessary to be more cautious, because developing indicators using national sources implies hard work on definitions and methodologies in order to have comparable measures. Thus, this part of the study should be more explorative, and concentrated on a small set of indicators, according to the data availability at institutional level.

Therefore, this group will launch a pilot study which aims to design and to produce a set of indicators that could account for the internationalisation of European research activities and programmes and be useful for

# 1. Introduction

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MOs themselves – be it research performing organisations, funding agencies or learned societies – and in their relationships with the European Commission as well as their governments (benchmarking and policy evaluation).

The project, which is envisaged to be launched at the end of 2009, will comprise:

- A) A review of current documents and instruments regarding the European effort towards internationalisation, which should lead towards an elaboration of the two-tier view on internationalisation. In addition, an overview should be made of existing practices of stimulating and assessing/measuring internationalisation among the participating organisations.
- B) A review of concrete indicators and data used by the organisations to measure the two tiers of internationalisation, or any other facet that might seem relevant in the ERA context: rationale behind the choice of indicators and availability and robustness of the data used.
- C) An operational step:
  - i) a full description of a set of common indicators and guidelines for their production;
  - ii) operational recommendations to implement and maintain these indicators for a larger range of research institutions and for a repeated use that would allow for assessing the internationalisation ambitions of the ERA.
- D) A test phase and benchmarking operation.

The results of the project are intended to contribute to a better understanding and to an effective use of research indicators and will be available to all interested organisations.

## 2. Evaluation of Funding Agencies

Research funding agencies are one of the many actors of national research and innovation systems. Together with the universities, public research organisations, ministries (responsible for research), industry and various other types of organisations (e.g., those acting as middle-layers between the above listed), they form an ecosystem funding and performing research and commercialising results in which roles and interactions are more or less clearly defined. Generally, national innovation systems undergo regular reviews, to assess, for example, their fitness to adapt in quickly changing and competitive global environments<sup>1</sup>.

In addition, research funding agencies are also occasionally evaluated to assess whether they fulfil their role in this ecosystem. Generally, this entails an assessment of their strategies and activities in the context of their respective national research systems.

This chapter presents case studies of evaluation of selected funding agencies, which have been subject to reviews in recent years.

The selection of agencies (see Table 1) is based on case studies presented in the workshops of the ESF MO Forum and on information gathered in the subsequent discussions. The case studies are presented in chronological order (with respect to when the final reports were actually published).

**Table 1.** List of case studies presented in this chapter

Funding agency	Year of publication
German Research Foundation (DFG)	1999
Research Council of Norway (RCN)	2001
Austrian Science Fund (FWF)	2004
Netherlands Organisation for Scientific Research (NWO)	2008
Swedish Research Council (SRC)	2008

### 2.1 The systems evaluation of the German Research Foundation (DFG) and the Max-Planck-Society (MPG) in 1999

The Deutsche Forschungsgemeinschaft (DFG – German Research Foundation) is the central funding organisation responsible for promoting research in Germany. Its activities focus on funding research projects carried out by scientists and academics working at universities or

1. e.g., OECD reviews of national Innovation and Technology Policies

research institutes and on selecting the best projects in a process of fair and transparent competition. The work of the DFG serves all branches of science and the humanities to reflect its role as the self-governing organisation of German science and research. Its legal status is that of an association under private law. DFG membership is made up of German universities, non-university research institutions, scientific associations as well as the Academies of Science and Humanities. The DFG receives its funding from the federal (Bund) and state (Länder) authorities, which are represented on all decision making bodies, while scientists and academics hold the majority. The DFG has existed since 1920 and was reconstituted after the Second World War. After the reunification in Germany, the research institutes of the German Democratic Republic were evaluated by the Research Council (Wissenschaftsrat) to decide how to proceed with them in the newly unified German research landscape. This led to the evaluation of all extra-university research institutes in Germany. During this process, the research system as a whole came under scrutiny. In 1996, the heads of Government of the Bund and Länder decided to set up an International Review Panel to evaluate the DFG and the Max Planck Society (MPG). The recommendations were published on 25 May 1999.

#### Organisational setting

The commission was established by the Bund-Länder Commission for Educational Planning and Research Promotion (BLK) in 1997 and called ten international experts as members of the Review Panel.

The task of the panel was twofold:

- to examine whether the Deutsche Forschungsgemeinschaft and the Max-Planck-Society assume their functions in the German research system in an appropriate manner, and
- to examine the adequacy of cooperation among themselves and with their partners in the research system, particularly with universities and industry.

The Review Panel was chaired by Professor Richard Brock, at the time Chief Executive of the Engineering and Physical Sciences Research Council (EPSRC) in the UK. It was supported by a secretariat hosted by the office of the rapporteur (Dr. Wilhelm Krull, Volkswagen Foundation).

#### Procedures and methods

Both institutions (DFG and MPG) were asked to provide written statements to a number of questions that the Review Panel had identified. Those questions referred to the strengths and weaknesses of the German research system and the position of these institutions within the system. Another set of questions referred to the strategy

## 2. Evaluation of Funding Agencies



and measures of quality assurance. The experts also asked for information on the development of activities in the course of time. After review of these materials, the Review Panel visited the DFG and the MPG, held many interviews with representatives of other research organisations and visited three universities.

The feedback was provided in three internal meetings. The panel furnished detailed statements and recommendations concerning the DFG and the MPG. Both organisations have given their own independent views of these reports. In addition, the commission has commented on general and global aspects of the German research system and on universities and also made recommendations to the Federal Government and the Länder.

### Findings and results

The Review Panel presented an analysis of the work and operation of the Deutsche Forschungsgemeinschaft within the German science system.

- The experts recognised the central role the DFG plays in the German research system. In their view, the statutory obligation of the DFG to serve “all fields of science” is an important prerequisite for its effectiveness. The same applies to the thematic openness

and accessibility of the very core of its funding and promoting activities, the so-called individual grants programme, which gives every scientist free and equal access to project funds and the expansion of which the commission strongly advocates.

- In many regards the recommendations confirmed the significance and quality of the DFG’s work.
- The Review Panel acknowledged the importance of the DFG in the competition for funds as well as for increasing the performance of universities and non-university research institutes alike.

### Recommendations

The Review Panel issued several recommendations and suggestions for improvement. The most important were the following:

- In the future the DFG should take an even more proactive approach to funding and promoting efficient structures in universities, e.g., in supporting the early independence of young scientists.
- The Federal and Länder governments should ensure the DFG’s ability to act by increasing the funds allocated to the organisation, while at the same time granting it more flexibility in using these funds. This would include, for instance, a more flexible public service law as well as a block budget.
- Numerous individual measures for the DFG’s funding activities were suggested, for example:
  - to attempt to encourage more young scientists to act as honorary reviewers
  - to increase the percentage of female scientists
  - and to inform researchers applying for DFG funds as clearly and comprehensively as possible about the arguments presented by reviewers towards the proposal and especially their reservations and objections.
- Finally, the DFG should seek new ways and structures to identify working areas that are to receive preferential funding in order to provide pro-active programme updating and development for part of its funds.

### Follow-up and lessons learned

To develop more strategic forms of funding, the DFG issued several calls for proposals on specific, mostly interdisciplinary topics.

Since October 2000, a new body of the DFG, the Senate Committee on Strategic Planning, consults on strategic issues.

The internal processes and the decision making system of the DFG were changed, e.g., the peer review board system was established.

Monitoring and evaluation of the funding activities have gained importance, e.g., by establishing the DFG-

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funded central research facility, the Institute for Research Information and Quality Assurance (iFQ), and expanding the evaluation activities within the DFG head office.

The budget of the DFG was made more flexible, e.g., the different programmes have one single budget in contrast to their own budget as before.

The DFG developed a new strategy for the promotion of young researchers, including the establishment of new targeted programmes.

The international activities were intensified, e.g., by opening some programmes to foreign applicants, by introducing the programme “International Research Training Groups” and by establishing International Representations, e.g., offices in China, Russia and North America.

The DFG head office was reorganised in the following years. Changes were made in the organisational structure, e.g., by establishing programme groups and a unit for Procedures and Quality Assurance at its central office.

## 2.2 Evaluation of the Research Council of Norway

The Research Council of Norway (RCN) was established in 1993 through a merger of five previous research councils. The Storting (parliament) required that the RCN should be evaluated after a period of time had passed. The evaluation was carried out in 2001, covering the period 1 January 1993 – 31 December 2000. The following is a summary of the evaluation report (Technopolis, 2001).

### Organisational setting

The 1993 merger, which combined all Norway’s research councils into a single one, created a quite unusual organisation. The Council had an Executive Board and, in principle, one administration. Its internal organisation was based on six divisions: Culture and society; Science and technology; Industry and energy; Bioproduction and processing; Environment and development; and Medicine and health, each with their divisional boards.

The evaluation was commissioned by the Ministry of Research and was prepared by an international team of research evaluation specialists, supported by a senior panel of scientists and leaders of research institutions. Surveys, collection and analysis of data were also supported by two Norwegian research groups (NIFU and Step). The mandate to the evaluators was to give an overall evaluation of the Research Council in the light of the principal objectives laid down in the official documents for establishing RCN, and the statutes of the Research Council. The evaluation should analyse the Council’s

framework conditions, organisation and instruments. The assessments should be empirically grounded, and based upon experiences from ministries, research institutions, the commercial sector and the RCN itself. The analysis should include advice to meet future challenges for Norwegian research.

### Procedures and methods

A wide diversity of methods was used to assemble the empirical basis for the evaluation. It consisted of bibliometric analysis, and questionnaires and interviews with a variety of stakeholders as well as people working in the RCN. Each of the RCN research divisions was also reviewed separately by foreign scientists and administrators. Sixteen background reports were produced to document this, with a short version worked into the final evaluation report.

The evaluation report contains a general discussion of the tasks of research councils, an overview of the Norwegian and institutional context for research, as well as a description of the political processes that led to the construction of the RCN. The evaluation of RCN’s performance, and the advice for the future are based on analysis of all these aspects.

### Findings and results

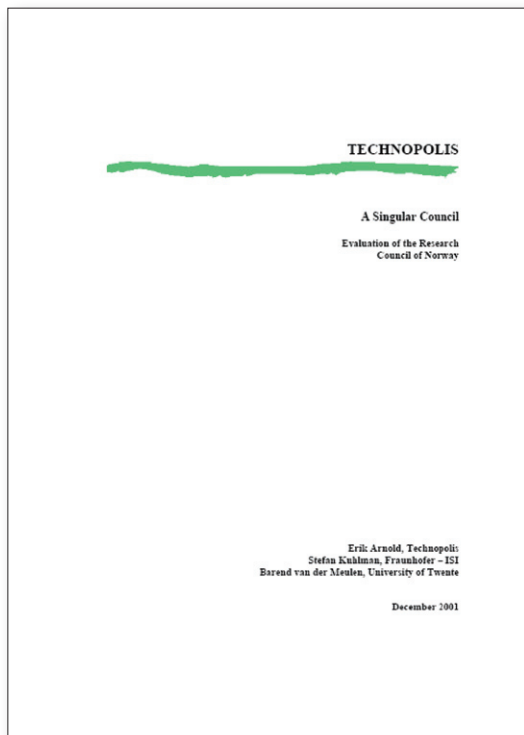
The Norwegian system was found to stand out internationally for several reasons:

- the way so many different tasks were allocated to the RCN – tasks that the state has a need and a responsibility to take care of to obtain effective knowledge production and use;
- the detailed way in which sponsoring ministries managed RCN’s activities;
- the integration of a policy advice role with operational work;
- an unusually wide responsibility for research institutes in RCN’s mandate.

Findings related to goal fulfilments included:

- policy advice has improved over time;
- a wide network of contacts to industry and public service has been established;
- quality procedures are in place, so that funds are spent on high quality research and a significant part of budget is spent on research that is socially relevant;
- there are too limited resources and freedom to exercise the responsibility for the research institute sector;
- bilateral international agreements were established with too little content – they should be backed up with more focus on international dimensions of peer review;
- the administrative costs are not excessive – the RCN may be understaffed, considering the ambitious work-

## 2. Evaluation of Funding Agencies



load – but there is too little focus on organisational learning, and evaluations have too few consequences.

Considering the benefits from the reform itself, the evaluation concluded that although RCN had many achievements to its credit, it fell quite a long way short of realising the challenging ambitions with which it began. Limited progress was not considered the result of poor performance by RCN so much as an inconsistency between the aims and mission given to the council and the means put at its disposal.

### Recommendations

The evaluators saw two options. One was to give up the high goals of achieving an integrated research council, as the incremental changes that had occurred over eight years were quite discouraging. The other option was to do the experiment more properly by interfering with the next stage of development through some specified suggestions to improve the conditions for RCN. As major hindrances were blamed on the existing divisional structure and the strength of the sectoral principle, changes in framework conditions were considered the requirement for continuation of the work. The evaluators recommended:

- Delivery by government of the larger resources planned for research in the build-up plan towards the OECD R&D average. Management of these resources needs to be devolved to the council, with a requirement that it reports on their use. Micro-management would be counter-productive.
- Higher quality research management in the ministries, more clearly distinguishing short- and long-term needs and more actively engaging in debates about establishing themes in RCN.
- The sectoral principle should be articulated, so that it is clear that ministries are responsible not only for obtaining short-term knowledge for policy implementation but also to ensure the availability of relevant research capabilities. General funds for research should be ring-fenced in a greater number of ministries and passed to RCN without earmarking.
- Increased freedom for RCN to manage the institute sector, for example to reallocate funding based on evaluation results.
- Multi-annual commitment of research budgets.
- A strong and permanent research policy champion, such as an extended government's research committee (RFU) at the highest level of government, able to support RCN and the Ministry of Research in their efforts.
- A specific and significant budget needs to be attached to the "innovation agency" function.

### Follow-up and lessons learned

The RCN was reorganised in 2003. Changes were made in the organisational structure, in the decision making system, and some specific development areas were set up for RCN to improve its functioning. An Executive Board is still the Research Council's highest authority, but has the Chairs of the Research Boards as members.

The research activities of the Council are organised into three divisions with responsibility for the following areas, respectively:

- development within research fields and disciplines (Division for Science);
- innovation and user-initiated research (Division for Innovation);
- strategic research (Division for Strategic Priorities).

In addition, a systematic follow-up has taken place both within the RCN as well as in the Ministry of Research (and other ministries). This is documented through annual reports, and a self-evaluation carried out by RCN in 2006, and in a research white paper in 2005 as well as the annual budget proposals from the government.

The evaluation was comprehensive, it had consequences, and the report has had wide-ranging use.

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Whether the new RCN is the ideal research council is an open question.

## 2.3 Evaluation of the Austrian Science Fund (FWF)

The Austrian Science Fund (FWF) is Austria's central body for the promotion of basic research. It is equally committed to all branches of science and the humanities and in all its activities is guided solely by the standards of the international scientific community. In 2004, the FWF was evaluated for the first time on an institutional level since its foundation 40 years ago. This is a short summary<sup>2</sup> of the main results of this evaluation exercise.

The evaluation team, an international group consisting of 20 evaluators working with Technopolis, Joanneum Research, WIFO, ETH Zurich (KOF) as well as University of Twente, was headed by Erik Arnold. The team met the challenge to judge the role of the fund in the Austrian innovation system, its standing in the international comparison, and the processes within the institutions. The evaluation team's task was to check the level of efficiency and impacts as well as to summarise the results in conclusions, options and recommendations. To fulfil this mission a wide range of qualitative and quantitative methods were used.

### Organisational setting

The context and the framework conditions for the challenge of the Austrian RTI (Research Technology and Innovation) politics are widely known and have been continually researched (e.g., in the annual Research and Technology Reports commissioned by the Austrian Government). The Austrian subsidy landscape is fragmented, the industrial structure shows a relatively small proportion of R&D intensive sectors, a high proportion of state R&D subsidy flows as a fixed budget into the scientific sector (General University Funds – GUF). There are also unclear and non-transparent responsibilities found in strategy planning. The government has set itself an ambitious goal to reach a research rate of 2.5% in 2006 and 3% in 2010.

The Austrian Science Fund (FWF) plays an important role in meeting the challenges of the RTI politics. At the time of its foundation the fund was regarded as modern and was a milestone in the Austrian RTI politics. Its autonomous status, however, caused a lack of adapta-

tion to the challenges in the financing of research as well as insufficient consideration of new mechanisms in the innovation and research process. The synthesis report of the evaluation<sup>3</sup> states: "What [FWF] do is to strengthen 'business as usual' within the research and innovation system. What they do not do is to offer mechanisms for increasing the rate of change beyond that which is already experienced."

### Findings and results

The team of evaluators rated the performance of the FWF very highly. Concurrently they pointed out that if FWF's role was to be enlarged it would have to increase its strategic analytical capacity and thus its administrative costs.

They also stated that the FWF was highly efficient and effective, but had insufficient capacities to manage the subsidiary landscape, although the governance structure of the FWF was characterised as oversized. The evaluation team came to the conclusion that the component of the research funding granted according to quality criteria via grants should be increased proportionally to the fixed budget (General University Fund). Furthermore, the general recommendation was made to increase the budget of the FWF, if its responsibility level was to be widened in order to position the FWF as an important driving factor to increase the necessary basic research on a pan-European level. For a stronger proactive role within the reform of the Austrian scientific system (towards thematic and application orientated research) it is necessary to build up and to apply existing analytical competence. Moreover the evaluation team recommended including the overhead costs in the subsidies to be and, most of all, remain an attractive partner for universities.

### Impact analysis – FWF

The FWF is the most important promoter of basic research in Austria, and thus of special relevance for Austrian universities. A background study<sup>4</sup> performed within the scope of the evaluation produced quite positive results. Fully 85% of project applications came from coordinators of Austrian universities. With this, FWF financing provides about a third of the total third-party funding, although this needs to be seen against the background of the high share of the General University Funds (GUFs) and the resultant minor role of direct research promotion in the science sector. When accounting for the projects and research networks (SFB, FSB), which

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2. This is a slightly edited version of a chapter in the book: "Evaluation of Austrian Research and Technology Policies, A Summary of Austrian Evaluation Studies from 2003 to 2007" published by the Platform Research and Technology Policy Evaluation and Austrian Council for Research and Technology Development in 2007.

3. Arnold, E. et al. (2004) Evaluation of the Austrian Industrial Research Promotion Fund (FFF) and the Austrian Science Fund (FWF). Synthesis Report.

4. Streicher, G., Schibany, A., Dinges, M., and Gretzmacher, N. (2004) Evaluation of the Austrian Science Fund (FWF)

## 2. Evaluation of Funding Agencies

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together make up some 90% of the regular FWF budget, the average acceptance rate for projects was 51% (41% of funds applied for) in 1998-2003.

Applications focused chiefly on the natural sciences, followed by human medicine and the humanities.

Quantitative analyses showed that funds were awarded with no bias between male and female applicants: in other words, the FWF is guided in its decisions solely by the quality of project applications.

Funding by the FWF impacts positively on outputs, and in particular publications of all kinds and shapes (Streicher et al., 2004): an average FWF project achieves 4.6 citations in peer-reviewed journals and 1.2 in non-peer-reviewed journals. Obviously, such figures will vary considerably between scientific disciplines.

The evaluators established that participation in FWF projects has a positive effect on the career of participating scientists: “The perception of the impact of FWF funded projects on the scientific career of project coordinators and team members is quite positive and helps to strengthen their position in the scientific community and are used to establish important contacts” (Streicher et al., 2004).

A surprising finding is that some 40% of the scientists polled perceived their research results to be relevant for business but did not feel any need (or had no opportunity) to get into contact with companies.

### Follow-up and lessons learned

In 2003 and 2004, the FWF was subject to a number of evaluations and assessments, not only on the institution level, but also on the programme level; among others also the Court of Auditors scrutinised the fund. All these endeavours had an impact on how FWF is organised and governed. The most important milestone of all the changes was a new law, the Research Promotion Act in 2004. To be more precise, the fund set measures to enhance its transparency and performance, its support to researchers, to enable more flexibility, and to enhance its strategic orientation (see also Rudolf Novak, The Evaluation of the Austrian Science Fund FWF, in: Platform fteval Newsletter 25: How to evaluate funding systems).

For a detailed, but at the same time compact overview of the results of the evaluation, see Platform fteval Newsletter 25: How to evaluate funding systems [http://www.fteval.at/files/newsletter/newsletter\\_25.pdf](http://www.fteval.at/files/newsletter/newsletter_25.pdf)

### 2.4 Evaluation of The Netherlands Organisation for Scientific Research (NWO), 2008

The Netherlands Organisation for Scientific Research (NWO) was founded by law in 1989; its predecessor was called the Organisation for Pure Scientific Research, ZWO (1950-1988). NWO is the main funding body for academic research in the Netherlands.

On 1 November 2007, the Dutch Minister of Education, Culture and Science commissioned an evaluation of NWO over the period from 1996 onward, the year in which the previous evaluation took place.

#### Organisational setting

The Minister of Education, Culture and Science decided to consider the evaluation of NWO in a broader framework and to design it not only in retrospect but also prospectively. The exact assignment of the evaluation committee was as follows:

“It is the task of the evaluation committee to evaluate the Netherlands Organisation for Scientific Research on outlines on the tasks it performs in and for the Dutch scientific establishment. This evaluation should take into account the formation of European scientific establishment within which Dutch science will have to present itself. Against this background it is not expedient to limit the evaluation of NWO to how the institution itself performs.

The guiding question for the cabinet’s response to the evaluation is which role NWO should play in the Dutch scientific establishment in the coming ten to twenty years given the scientific, social and international demands that are put to Dutch science.”

The evaluation committee consisted of three Dutch university professors, supported by an external office.

#### Procedures and methods

The evaluation committee interviewed a large number of persons ranging from young researchers to policy makers. Already during the evaluation process, the committee noticed how much public support NWO has in the Netherlands, and how much the way in which NWO carries out its core tasks is appreciated. Support through NWO is considered prestigious; it encourages improvement in quality and plays an essential role in both junior and senior researchers’ careers.

In April 2008 the evaluation report appeared. In it the strengths and weaknesses of NWO were indicated, the developments of the last 12 years were evaluated, and (eleven) recommendations were given to further expand NWO’s central position in the field of science, both in the Netherlands and abroad.





The evaluation report was presented to the Minister and the Dutch Government (Cabinet), and NWO. The report was studied carefully and commented upon internally by NWO and publicly by the (Cabinet and the) Dutch Minister of Education, Culture and Science.

### Findings and results

The recommendations from the evaluation committee were the following:

- Expand NWO's international role.
- Ensure that NWO is better embedded in national policy while retaining its autonomy.
- Ensure better relations with other players in the scientific establishment (universities, the Royal Netherlands Academy of Arts and Sciences – KNAW).
- Involve NWO more closely in funding fundamental application-oriented research (close collaboration with other intermediary organisations such as Senter-Novem).
- Develop a transparent procedure for choosing thematic programmes.
- Alter the organisation structure of NWO (upper management structure, perhaps clustering the NWO fields in five divisions).
- Place different accents in the NWO array of funding instruments, while holding on to all that is good (to

spend its money in larger sums, further expand its talent line, put stronger emphasis on past performance, offer long-term support for strong avenues of research and pay more attention to the diversity of research in its assessment).

- Guarantee the budget for free independent research and increase the structural budget for small and large research facilities, new developments and focus points, thematic or otherwise. NWO's budget should be increased to approximately 25% of direct government funding for investments in (large-scale) research infrastructure, new developments and focus points.
- Explore the possibility of introducing a full economic cost-model.
- Maintain the place of the institutes under the NWO umbrella for the time being, but explore the possibilities of closer cooperation with the Royal Netherlands Academy of Arts and Sciences (KNAW) institutes (perhaps even transfer or merger of institutes).
- Evaluate NWO every 5 years.

### Follow-up and lessons learned

As mentioned above, the recommendations of the evaluation committee were studied carefully. After the public Cabinet's response, NWO started an internal process in order to define topics and ways for a proper follow-up of the evaluation. All NWO Divisions were involved in the follow-up process.

By January 2009 NWO summarised the outcome of the external evaluation as follows.

With the evaluation report and the Cabinet's reaction in hand NWO feels to have been evaluated by the external evaluation committee and the Cabinet's response with good results. NWO has been qualified as being an efficient organisation doing its core tasks in a proper and effective way.

The position of NWO as the national granting organisation and guard of the quality of Dutch research is undisputed and acknowledged widely.

NWO has a rather good and well visible international position, but could strengthen this position even more.

The main topics of the NWO Strategy 2007-2010 have been evaluated as being strong and appealing. At the same time, for many people outside scientific research the position and role of NWO within society-oriented research and in the field of innovation is unclear.

In the process of developing its policies NWO is encouraged to intensify communication with various partner organisations.

Finally, the conclusion is that the NWO budget, particularly for free competition research, is insufficient with regard to the national task and its possibilities. Related

## 2. Evaluation of Funding Agencies

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to this point is the fact that in the Netherlands much research budget is being allocated without an independent assessment of quality in competition, especially the (large) budget aimed at knowledge infrastructure. [Note: in 2009 NWO has gained an important role in the assessment procedure of research proposals on knowledge infrastructure.]

No doubt some results of the follow-up process will be incorporated into the next NWO strategy document, to be ready in 2010.

### 2.5 An assessment of the Swedish agency structure on research funding

In 2001 the Swedish government created a new organisation of scientific funding bodies. The previous nine bodies became four: The Swedish Research Council supporting basic research in all scientific disciplines; two area-oriented research councils, The Swedish Research Council for Environment, Agricultural Sciences and Spatial and Planning (Formas) and the Swedish Council for Working Life and Social Research (FAS); and The Swedish Governmental Agency for Innovation Systems (Vinnova) that funds needs-driven research required by the industrial sector.

#### Organisational setting

In 2008 this new structure was assessed by a government-initiated inquiry entitled “Research funding – quality and relevance”. An inquiry is similar to a green paper used in Commonwealth jurisdictions. In other words, it is a tentative government report that makes proposals without any commitment to action. The main objective was to assess the structure of the Swedish research funding system, and evaluate the current agency structure. Its terms of reference were to judge whether the present division of tasks between the bodies should be changed.

#### Findings and results

One general conclusion was that the new structure had not fully been able to realise the intentions and ambitions, not in its individual parts or concerning the full range of measures taken. One major concern was the support for basic research, which was considered too fragmented and small-scale. The agencies have, according to the inquiry, been too occupied to proceed with applications for funding, and extensive strategic analyses have been overshadowed. Furthermore, there were few initiatives to allow for different funders to play complementary roles.

The Swedish Research Council had, according to the inquiry, not been able to deal with research areas that transcend the traditional boundaries. The research council had, furthermore, been weak in its analytical capacity in general, and in particular in its ability to provide material to make it possible to act in a strategic matter.

The inquiry stated that the present system could be more efficient if the strategic planning of all funding bodies was strengthened. However, there were few signs of cooperation and coordination between the agencies making it possible to bridge basic research with application within different sectors. Therefore, the inquiry proposed the establishment of a new coordinated research funding agency, the Research and Innovation Agency, that should accommodate four subject-oriented councils: Nature, engineering and innovation; Medicine and health; Climate, environment and agricultural sciences; and Society and culture. According to the proposal this new agency should support basic research and also provide funding to promote innovation. This, according to the inquiry, should increase the possibilities of linking up strong basic research environments with groups and researchers working on needs-driven issues. Furthermore, the present system could be made more efficient and better suited to its purpose by making a new body responsible for certain tasks and by every agency reinforcing its strategic planning and being more active in the selection of funding instruments.

#### Follow-up and lessons learned

The inquiry was published in March 2008 and was circulated for comments, and they were in general negative towards the proposed changes in the agency structure. The recently passed research bill meant some adjustments of the government research funding system, but the more far-reaching changes proposed did not materialise. And there is no indication that this will take place within the foreseeable future.

### 2.6 Concluding remarks

Evaluation studies of funding agencies, as described in the case studies presented above, aim to assess the strategies and activities of the agency in the context of the respective national research system. In almost all the cases, the evaluation study was understood to be a static snapshot of the situation at a given time, to be repeated by follow-up evaluations at a future point.

With regard to the approaches taken in the case studies described in this section, certain observations can be made:

- While most agencies were evaluated by panels of eminent researchers established by the tutoring min-

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istries, in some cases the evaluation was led by a consortium of science policy or evaluation experts selected after a call for tenders.

- In most cases the agencies were evaluated “stand alone” or evaluated together with other main components of the research system. This involves also the assessment of labour division between different types of research organisations in the respective national research system.
- While most of the studies made reference to the international situation and reflected on practices in other countries, nonetheless they were not purposely designed to be undertaken in a comparative perspective. This is likely due to the complexities involved in comparing research agencies within diverse international research systems.
- Many of the evaluations recommend an improved or continued monitoring of the activities of the funding agency, an increased focus on quality assurance mechanisms, and more consideration of strategies to assess and control the agency’s impact.

## 2.7 References

International Review Panel for the system evaluation of the DFG and the Max Planck Society (2000)

*Forschungsförderung in Deutschland*. Bericht der internationalen Kommission zur Systemevaluation der Deutschen Forschungsgemeinschaft und der Max-Planck-Gesellschaft.

Technopolis (2001) *A Singular Council. Evaluation of the Research Council of Norway*. By Erik Arnold et al.

Dutch Ministry of Education, Culture and Science (2008) NWO report of the NWO evaluation commission.

Swedish Research Councils, *Research Funding – quality and relevance*, report regarding the Swedish funding and agency system.

“Evaluation of Austrian Research and Technology Policies, A Summary of Austrian Evaluation Studies from 2003 to 2007” published by the Platform Research and Technology Policy Evaluation and Austrian Council for Research and Technology Development in 2007.

## 3. Evaluation of Strategic Issues and Impact Assessment Studies

The previous section described approaches to whole agency evaluation studies and alluded to a common recommendation from such studies that agencies should develop mechanisms to assess the impact of the research that they fund. Evaluating the impacts and returns of investments in research is an increasing strategic area of interest for all funding agencies for reasons including:

- accountability and validation;
- strategic planning;
- policy and advocacy.

Furthermore, funding agencies across Europe are also concerned with progress of strategic issues and policies pertinent to the funding environment and national research system, including, for example:

- gender issues in science;
- research internationalisation;
- open access policies.

In this chapter, case studies relating to the evaluation of gender issues and policies by member organisations, as well as some approaches to the assessment of socio-economic impact by both member organisations and external agencies, are described.

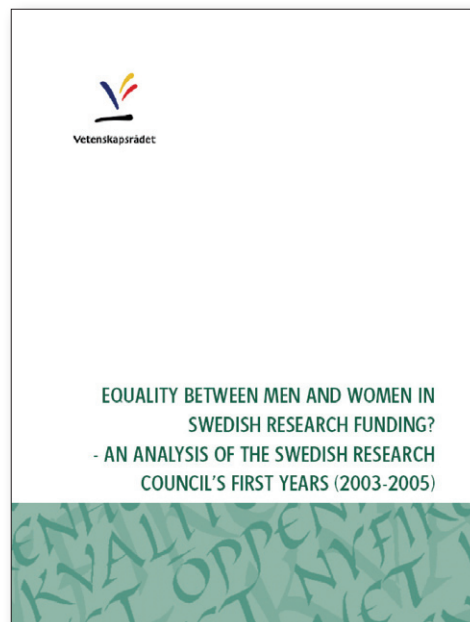
### 3.1 Evaluation of gender issues

One of the important policies of funding organisations concerns their activities on gender equality. Evaluative studies help to analyse the current situation regarding the representation and success of female researchers in funding schemes and to assess the impact of special policies geared towards women. The following section presents three studies that have been conducted on this topic. They are only a snapshot of the wide range of studies on the topic of “Third-party-funding organisations and equal opportunities” that have been commissioned and carried out in the past years.

#### Equality between Men and Women in Swedish Research Funding? – Swedish Research Council

##### Main questions

The Swedish Research Council (Vetenskapsrådet), which was created in 2001, is an independent Government Agency under the Ministry of Education and Research. It is the largest funding body for basic research in Sweden. The main task of the Research Council is to fund research characterised by high quality and innovation, including “potential for renewal”. A precondition for carrying out this task is that it is free from bias. Furthermore, according to its mandate, issued by the Government, the



Council shall perform its functions in a way that promotes gender equality, i.e., equal opportunities for men and women to receive funding if their research is of the same quality. There should also be equal representation of men and women in the review panels and in the bodies that take the funding decisions, such as the scientific councils. The main question of the report, “Equality between men and women in Swedish research funding?” was to find out to what extent the goal of gender equality was reached during the period 2003-2005.

##### Methodology

For this purpose, the data on all applications (more than 17 000) that the Research Council received during the period 2003-2005 was analysed. Bibliometric analysis gave additional insights.

##### Results

In most of the decision making bodies in the Swedish Research Council, i.e., the Board and the scientific councils for the different research areas, the proportions of men and women were equal. With regard to the peer review panels of the scientific councils, the proportions were within 40-60% with only the Council for Natural and Engineering Sciences with 72% men and 28% women in its peer review panels.

During 2003-2005, 70% of the applications for research funding received by the Swedish Research Council came from men and 30% from women which is

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almost exactly the proportion of men and women among potential applicants in Swedish higher education institutions. The increasing number of young women pursuing academic careers is reflected in the growing number of applications for postdoctoral fellowships and assistant professorships. In 2005, 45% of the applications for these positions came from women.

In the Council for Humanities and Social Sciences as well as in the Committee for Educational Science, men had a slightly lower success rate than women. In the Council for Natural and Engineering Sciences, men had a slightly higher success rate than women and in the Council for Medicine, men had a higher success rate than women.

Women who applied for project grants had a lower career age than men, i.e., a shorter time had passed since they achieved their PhDs. This reflects the fact that among teachers/researchers at Swedish higher education institutions, women have on average a lower career age than men within all areas of research.

Even though success rates are not equal, the main factor contributing to this result is the career age of the researchers. Gender equality was thus achieved with regard to project grants in the Swedish Research Council as a whole, even though there were variations in the extent to which the scientific councils reached the goal.

Male researchers at the beginning of their career have had higher success rates than women. Of the 867 applications for fellowships for a postdoctoral research period abroad that the Swedish Research Council received during the period 2003-2005, 333 were from women. A bibliometric investigation of the scientific output revealed no noteworthy difference in scientific output between men and women, leaving the difference in success rates unexplained.

The Linnaeus grants, introduced in 2006, are intended to support prominent research environments that are highly ranked by international standards. Only universities/university colleges may apply for these grants, not individual researchers or research groups.

The Swedish Research Council and the Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas) received applications for support for 106 research environments, with 21% women among the persons specified in the applications. Even though the grant decisions concerned environments and not individual researchers, one can calculate men's and women's success rates by taking the number of women (or men) in the 20 applications that received funding and dividing it by the number of women (or men) in the total number of applications received (106). Men had a higher success rate than women (20.6% compared to 14.9%).

## Use and follow-up

The study showed that there were certain discrepancies in success rates between men and women who applied for grants during the period 2003-2005. The Swedish Research Council has noted these discrepancies and in 2006 it decided to create new routines to monitor gender equality. It carried out a sequel to the analysis above in the following years.

## Female Scientists in the DFG – German Research Foundation

### Main questions

While Gender Equality has been a statutory goal of the DFG since 2002, the information base about gender-specific application behaviour and success was not very good. In 2005 the DFG decided to commission a study in order to collect detailed information about female researchers based on a broad dataset on various aspects of the way in which women receive research funding by the DFG. The study was conducted by Professor Thomas Hinz, Ina Findeisen and Katrin Auspurg from the Department of Empirical Social Studies at the University of Konstanz.

The key questions addressed by the study were:

- Is the participation by women in submission of research funding proposals to the DFG proportionate to their representation at universities? Do women have the same opportunities as men when it comes to obtaining research funding?
- To what extent do young women take advantage of the DFG's programmes for young researchers?
- Are differences apparent between men and women in their own evaluation of the science system and their chances of pursuing a scientific career?
- How are male and female scientists involved in the decision making processes concerning research funding proposals, and what is the situation when it comes to their representation in the DFG's decision making bodies?

### Methodology

The DFG provided the data on which the study was based. The main focus was on data generated in the process of processing funding proposals for a period of 14 years (1991-2004). In addition to this, the evaluation team analysed findings of surveys of people who submitted funding proposals to the DFG (1997 and 2002), material from a study about former DFG fellows and their subsequent career development (Enders and Mugabushaka, 2004), annual surveys of Research Training Group coordinators (1997-2004) and the DFG's

### 3. Evaluation of Strategic Issues and Impact Assessment Studies



databases containing data on Review Committee elections and Review Board elections. To compare the participation of female scientists in the DFG with the potential “pool” of applicants, the team conducting the study used also data that provided information on the proportion of women amongst research staff at German universities from the Federal Statistical Office.

#### Results

The study found that between 1991 and 2004 the DFG approved almost 79000 new proposals for funding under the Individual Grants Programme. Almost 10% of these new proposals were submitted by women. A steady increase in the proportion of women submitting proposals can be observed over this period, from 6% in 1991 to almost 14% in 2004. The overall increase in the proportion of funding proposals received for the Individual Grants Programme from female researchers (only from universities) is in line with the increase in the total percentage of female professors. From 2000 onwards it is generally slightly higher.

Women participating in the DFG’s funding schemes were younger than their male counterparts. The age of female applicants was, on average, 42.8 years old when they submitted proposals, while the average age of male applicants was 48.5.

In the 14 years under consideration, the proposal success rate was lower for women than for men, with the exception of two years (1991 and 1995). The difference is generally minor, however. In nine of the 14 years the difference was of a statistically barely significant magnitude of between 0.1 and 2 percentage points. However, there were also years when the difference exceeded three percentage points (with the greatest difference being 4.8 percentage points in 1999). Overall, there is a small, but consistently, lower success rate of proposals submitted by women than by men.

The study devotes particular attention to the topic of young researchers. There is a relatively high proportion of women amongst those receiving doctoral funding (overall more than 40% in 2004, differences depending on the disciplines). Asked for their opinions about their views on a research career, women give a higher priority to certain aspects of further scientific qualification than men but feel they do not necessarily have the chance of doing so. Women are also generally less optimistic about the functioning of the peer review system, in particular when it comes to the question of whether women and men are treated equally by the peer reviewers.

In the DFG’s own bodies, there is quite a high representation of women. However, there is still an underrepresentation of women asked for reviews. The proportion of women amongst DFG peer reviewers had reached 9% by 2004 but there were 13.6% female professors in Germany at that time. Judged on this basis, women are underrepresented amongst DFG peer reviewers.

#### Use and follow-up

This study represented an important milestone for the DFG. Until then there had been little or no information on the participation of women in the DFG’s research funding activities. With the study, one of the key requirements, that of ensuring transparency and openness “at a glance”, had been fulfilled. The study offered background information for the statutory bodies of the DFG that enables them to take targeted action, e.g., for a Commission on equal opportunities called into being by the DFG Senate in mid-2006. An initial outlook of the perspectives is offered by a statement by the DFG on this study (Brennecke-Schröder and Koch, 2007). The study also offered important suggestions for establishing an equal opportunities monitoring system which has been implemented in the following years. There is a need for further, more thorough studies about gender equality, in particular in areas where the findings are now known, but their causes are as yet unclear.

## Gender and Research Funding (GEFO) – Swiss National Science Foundation

### Main questions

The study “Gender and Research Funding” was commissioned by the Swiss National Science Foundation and conducted by Regula Julia Leemann and Heidi Stutz. The main questions addressed by the study related to the phenomenon of the “leaky pipeline”:

- How big is the drop-out rate of female researchers in the Swiss higher education system in quantitative terms?
- What are reasons within and outside the research system that cause women to leave academia in disproportionate numbers?
- What is the role of the SNSF and other funding institutions in the (dis-)integration of younger female researchers?
- How big is the number of female applicants and what are their success rates? What effect does the research funding have on their careers?

### Methodology

The questions raised above were answered on the basis of various data sets and methodological approaches. The Swiss University Information System (SHIS) provided data to analyse the career course of individuals, with a special focus on the transition to the doctorate and habilitation. Career paths were also analysed on the basis of a panel survey of University Graduates by the Federal Statistical Office. In addition, the study relied on data produced in the processing of applications for funding received by the Swiss National Science Foundation (2002-2006) as well as on interviews with doctoral graduates.

### Results

The study’s findings confirm the phenomenon of the leaky pipeline: as students advance from one degree level to the next, disproportionately large numbers of women fall out of the academic system in comparison to men. The authors conclude that without the intake of women from foreign academic systems, the potential of younger female researchers would be even lower. There are differences in the shape of the leaky pipeline between disciplines. Furthermore, the beginning, not the end, of a doctorate seems to be the crucial tipping point at which women leave academia.

Another finding of the study: women are less integrated into the academic community and receive less support and mentoring by senior researchers. The authors come to the conclusion that there is a subtle process of disintegration in place that hampers women to build up necessary academic “capital”.



The work-life balance and the combination of family and a career are difficult to manage, not only, but especially, for women. Women in academia have children less frequently than their male counterparts, and are confronted more acutely with the decision between “research or family”. In the case that they do have children, they often compromise in favour of traditional role patterns. They work part-time more often than their male colleagues and organise the family life.

At first sight the mobility and international integration of women and men does not differ a lot: just as many women as men go abroad for research periods. What does, however, influence outgoing mobility is the social commitment to partnership or family. In this situation, the balance between their career choices and their partnerships and family is more difficult for women than for men, and induces some women to dispense with academic mobility.

Five years after the PhD, female researchers have a significantly lower publication output than their male counterparts (only about two-thirds of the number of publications). It seems that the reason for this is the worse integration of women in the academic network and the lower level of support available from mentors. No demonstrable effect could be established between

## 3. Evaluation of Strategic Issues and Impact Assessment Studies

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SNSF research funding and the publication output of younger academic researchers.

In relation to applications for funding, the study finds that up until five years after the PhD women and men apply to the SNSF in equal numbers. In 2002 to 2006, female researchers applied for the same number of projects, asked for the same amount of money and had equal success rates. The research funding by the SNSF has a positive impact on the career of women and men. Because success in securing third-party funding is positively correlated to staying in academia, the SNSF reasons that it has a considerable capacity to improve the career opportunities of women in academic research.

### Use and follow-up

The SNSF has some programmes specifically targeting women and, in light of the results of the study, it considers them successful. It draws on the results of the study to develop new policies to further women in research and to exert its role as a research policy player with increased sensitivity and consideration. It will further monitor its granting procedures. Additionally, the SNSF sees a need for further studies to follow up on the findings of this study.

### Conclusion

As funding agencies themselves are increasingly the focus of political attention, so their funding policies and impact on the research system are tested and put under scrutiny.

Gender equality in science is a strategic topic that is high on the political agenda. The studies presented above show exemplarily that evaluation can contribute to political decision-making and the transparency of the funding when it comes to gender issues.

The studies provide good examples of how cross-section topics can be analysed to gain deeper insights into the mechanisms of research funding. Also, they often have a direct impact on the funding policies and funding schemes of an organisation.

## 3.2 Impact Assessment

An issue of increasing interest to research funding agencies, particularly in challenging economic times, concerns the extent to which society and the national economy benefit from the research activities that they fund. Put another way, the question of “What socio-economic impacts and benefits result from publicly-funded research?” is one which most funding agencies are beginning to place high on their strategic agenda. The drive to answer this question may originate externally for accountability purposes, but the internal motivation to allocate resources in a way that maximises impact and fulfils the mission and strategic objectives of a funding agency must also be considered a major driving force. In this section, case studies are presented which describe the attempts undertaken by various agencies to assess the socio-economic impact of funded research.

### Making an Impact – Irish Health Research Board

#### Background

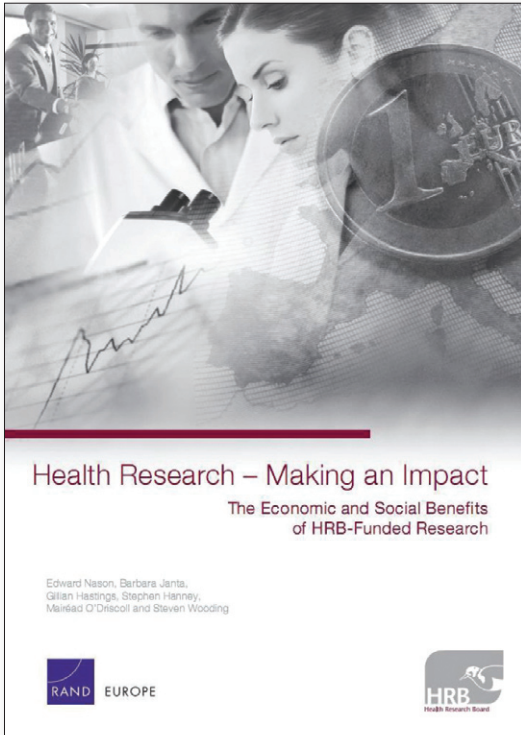
The Health Research Board (HRB) has been a key funder of health research in Ireland over the past 21 years. In 2008, the HRB commissioned RAND Europe and the Health Economics Research Group (HERG), Brunel University, UK to undertake an impact assessment study of a selection of research funded by the HRB. The objective was to show how HRB-funded research can lead to economic, social and health benefits for Ireland and to understand the factors that underlie these benefits. A secondary aim of the study was to inform the HRB’s thinking in developing a systematic framework for assessing the impacts of its funding on an ongoing basis.

#### Methodology

The study employed the “payback framework” developed by Martin Buxton and Stephen Hanney at HERG that represented the first systematic approach to assessing the benefits of health research. The framework is predicated on the view that any assessment of the scientific impact of health research should be part of the broader assessment of its societal and economic impact. The framework comprises two elements: a logic model of the research process and a multidimensional categorisation of the benefits of research, specifically:

- Knowledge production
- Capacity building
- Policy and product development
- Health and health sector benefits
- Wider economic benefits.





The framework was applied to eight case studies representing individual grants funded by the HRB in the 1990s. The grants covered the broad spectrum of health research funded by the HRB – biomedical and clinical sciences, population health and health services research – to illustrate the diversity and extent of impacts stemming from such research.

### Results and follow-up

The study identified impacts across all five categories including a wide range of health areas, e.g., improved dosage regimens for pain relief drugs, withdrawal of harmful arthritis drugs from the market, treatment of cardiac disease, early interventional treatment for psychosis. Several drug treatments associated with the research were in the development pipeline including compounds about to enter phase I trials and two compounds entering phase II and III trials respectively. Some wider economic impacts included a contribution to the development of pharma R&D in Ireland, the attraction and retention of high-quality research personnel in Ireland, and leveraged funding from international sources.

As a follow-up to the study, the HRB has developed the payback framework into an indicator-based HRB Impact Assessment Framework. The framework cat-

egories guide the collation of output and outcome data from end of grant reports, output surveys, scheme evaluations and so on, to enable the HRB to assess the impacts accruing from its investment in health research. Furthermore, development of a bank of case studies across the portfolio of HRB-funded research will allow for strategic comparisons across funding modes and research areas.

## Medical Research: What's it Worth? – UK Evaluation Forum

### Background

This study, published in 2009, was commissioned by member agencies of the UK Evaluation Forum – the Wellcome Trust, Medical Research Council and the Academy of Medical Sciences. The work was carried out by a consortium involving the Health Economics Research Group (HERG) at Brunel University, RAND Europe and the Office of Health Economics in the UK. The objective of the study was to estimate the economic return to UK public/charitable medical research and to gain understanding of the nature, extent and processes involved in the return on investment.

### Methodology

The group's approach was to undertake detailed analysis of the important research-based changes that have taken place in two specific disease areas: cardiovascular disease (CVD) and mental health.

The study describes two additive elements of economic returns to medical research:

- health gains, in terms of quality-adjusted life years (QALYS), net of the health care costs of delivering them;
- GDP gains, i.e., UK national income that results directly and indirectly from UK medical research.

Given the expected time lags between medical research and its impacts, the analysis focused on research funded in the two areas from 1975-1992. The researchers then examined patient gains – in the form of patient indication/treatment combinations – in both disease areas and analysed the relevant UK clinical guidelines.

### Results and follow-up

Based on the methodologies summarised above, the researchers cautiously estimated a total economic return to UK public/charitable CVD and mental health research of 39% and 37% respectively (i.e., a £1 investment in CVD research would yield benefits equivalent to earning £0.39 per year in perpetuity).

### 3. Evaluation of Strategic Issues and Impact Assessment Studies



The report was presented to the UK Evaluation Society at its meeting in November 2008. It was welcomed as an important and novel contribution to the literature on assessing economic returns of medical research, building on previous studies in the US and Australia. It was agreed that more research was needed to better understand the factors that influence economic gain – e.g., the time lag between research expenditure and health gain, “spillover” effects of research expenditure on the national economy, international flows of knowledge and influence, and the absorptive capacity of local research users.

#### Economic Impact Analysis – UK Arts and Humanities Research Council (AHRC)

##### Background

Case studies exploring the impact of AHRC investment are undertaken to demonstrate the benefits of arts and humanities research to the UK economy.

One economic impact case study was conducted on the Polynesian Visual Arts project, based at the Sainsbury Research Unit for the Arts of Africa, Oceania and the Americas at the University of East Anglia, which received

an AHRC Research Grant of £220897 for a three-year period from 2003 to 2006. This project brought together objects and documents from the 1760s to the mid nineteenth century. The project, which amassed a growing register of over 1300 artefacts, involved significant archival and documentary analysis as well as extensive fieldwork throughout Polynesia. This work was disseminated through a series of workshops, symposia and conferences, journal articles and a book, as well as two major exhibitions. AHRC set out to assess the economic impacts arising from the outputs from this project.

##### Methodology

Economic consultants Price Waterhouse Coopers were commissioned to conduct the economic analysis. It calculated gross visitor expenditure by examining how far visitors travelled to visit the exhibitions and their motivations for travelling. The UK Tourism Survey was used to estimate average daily and overnight visitor spending. Deadweight and displacement factors were included, for example:

- extent to which a different exhibition would generate similar visitor effects;
- extent to which visitors travelled to the region for reasons other than attending the exhibition.

As a result, a net economic impact was calculated. A multiplier was added to ensure that secondary impacts on the local economy were included in the overall calculation.

##### Results and follow-up

The economic gains arising from the exhibitions (i.e., resulting from the Polynesian Visual Arts project) were calculated as follows:

- £8.1 million for the UK economy; including
- £3.9 million for the London economy; and
- £270 000 for the Norwich regional economy.

AHRC continues to conduct case studies to demonstrate economic and social impact of its funding, while acknowledging certain limitations with the case study approach, e.g.:

- resource intensiveness;
- data requirements;
- reliance upon informed assumptions;
- wider benefits not captured.

AHRC therefore recognises the importance of using the case study approach as a complementary tool to other impact assessment methodologies.

AHRC also produces annual Economic Impact Reporting Frameworks that were implemented across all the UK Research Councils in 2005 and form part of the new Economic Impact Framework managed by the UK Department for Innovation, Universities and Skills.



## Evaluating Research in Context – Royal Netherlands Academy of Arts and Sciences

### Background

The context to this project lay in the growing dissatisfaction in the Netherlands with the traditional ways of evaluating research associated with social science, humanities, medicine and health, etc., which were felt to be too much geared towards the norms and values of the natural sciences, i.e., focused on publication output and impact.

It coincided also with the national “valorisation” debate that had its background in the European policy goal to close the “knowledge gap”, which raised issues concerning the need to get research more focused towards the needs of society and how to evaluate societal quality or impact of research.

The Evaluating Research in Context (ERiC) project – ongoing since 2005 – was therefore directed towards the goals of:

- development and use/implementation of methods to evaluate research in its scientific and societal context;
- advancement of both sharing knowledge and rais-

ing consciousness in the Dutch academic world of societal impact indicators;

- stimulation of international knowledge exchange and methodological development in this field.

### Methodology

The approach taken by the ERiC context group included the following elements:

- Quick scan of the field of international evaluation methods for the societal quality of research.
- Practical guide or handbook on evaluation of societal quality and relevance of research.
- Workshops for institutions (researchers and policy makers) that wanted to consider societal criteria in their evaluation procedures.
- International expert seminar (9 November 2007) on the evaluation of scientific research in societal context.
- Study into the need for a support office for evaluations of the societal quality of research to provide support to institutions that want to evaluate their research in a broader manner.
- Second edition of the book *Evaluating Research in Context* with a new introduction.

### Results and follow-up

The outcomes and learning from the ERiC project have contributed to an updated national evaluation framework called the Standard Evaluation Protocol (SEP). In existence since 2003, the SEP was reviewed and developed by a joint working group comprising representatives from the Universities, the Royal Academy, and the Dutch Research Council. It has just been published in June 2009 as the new Standard Evaluation Protocol 2009-2015.

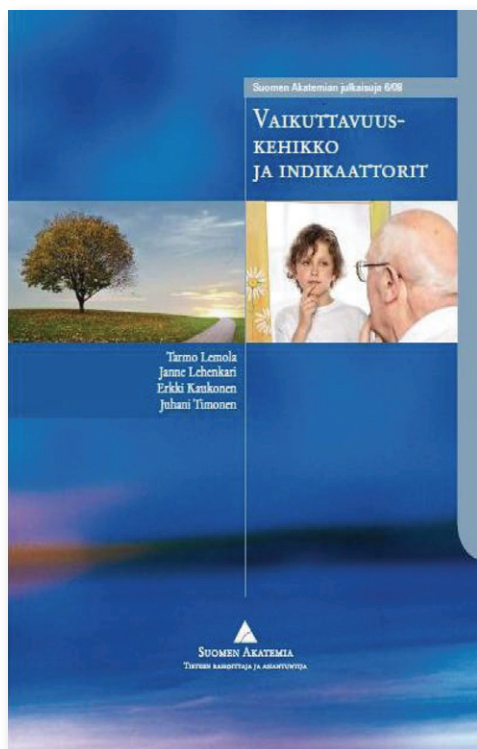
For more information on the ERiC project, please visit [www.eric-project.nl](http://www.eric-project.nl).

## Impact Framework and Indicators for Science – Academy of Finland, Tekes & Advansis Ltd

### Background

In 2007, the Science and Technology Policy Council of Finland made a statement on the assessment and forecasting of the effectiveness of science, technology and innovation in Finland. As a response to the statement, Tekes and the Academy of Finland initiated a project entitled the “Impact Framework and Indicators for Science, Technology and Innovation (VINDI)” in early 2008. The first goal of the project was to create an impact framework to assess the effectiveness of Finnish science, technology and innovation. The second goal was to

### 3. Evaluation of Strategic Issues and Impact Assessment Studies



determine the most important indicators of effectiveness, as well as their sources of data.

#### Methodology

The basic structure of the impact framework that was developed complies with the conventional input-activity-output model, with the exception that the model is operated in reverse order. Instead of analysing singular inputs and corresponding social and economic outputs achieved by them, the operation of the impact framework starts with the question of what kind of overall impacts of STI are to be expected and anticipated. The basic idea behind the impact framework is that the analysis and assessment of the impacts of STI should primarily focus on the key areas of society and economy. The analysis and assessment should also support monitoring of the fulfilment of objectives important in the social and economic policy. This reverse, impact-bound approach enables examination of the impacts of STI on a normative basis, as well as part of strategic development of STI policy.

#### Results and follow-up

Within the impact framework, the impacts of science, technology and innovations were examined in relation to

four key areas of society and economy, which will form the focus of further development work:

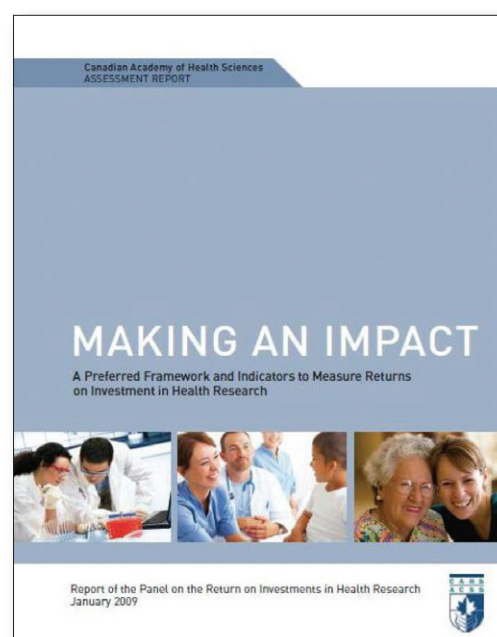
- the economy and renewal;
- learning and skills;
- the well-being of the Finnish people;
- the environment.

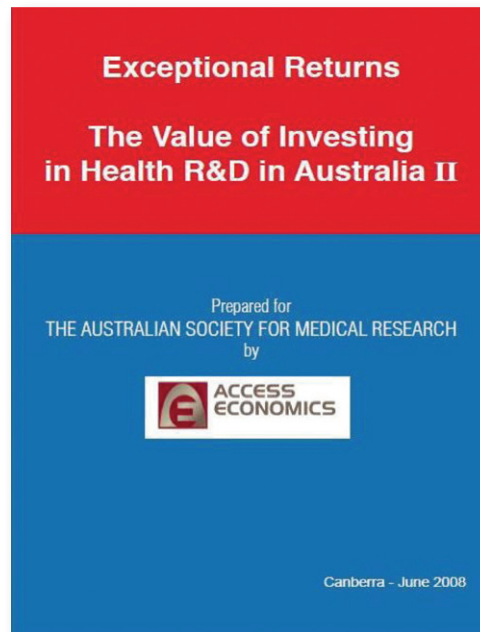
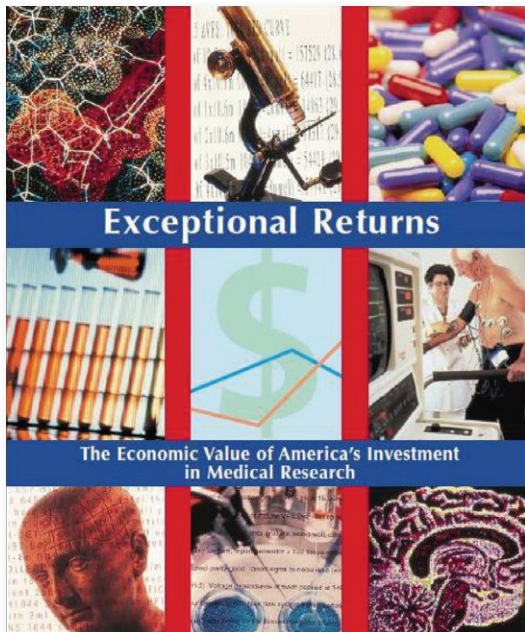
The work on this project revealed that there is a wide variety of indicators available to address inputs, outputs and activities of science, technology and innovation, but a lack of satisfactory indicator data about the social and economic impacts. A future objective is therefore to create a publication that describes the changes in knowledge and expertise in Finland and tracks the impacts of these changes by means of indicators. This work phase is to be accomplished in a separate project, which has just commenced.

#### Impact Assessment Studies in Other Countries

##### Making an Impact – Canadian Academy of Health Sciences (CAHS)

This project, completed in early 2009, was an ambitious undertaking that set out to develop a “best way” to evaluate the impacts of health research in Canada at a national systemic level, and to further identify “best metrics” that could be used to assess those impacts. Following a detailed study involving a variety of inputs from national





and international stakeholders and experts, the report recently published set out a new impact assessment framework with a preferred set of indicators and metrics to be used for evaluating the returns on investment in health research across the Canadian research system.

The CAHS impact framework builds on the “payback framework” described earlier in this section, revising it into a “systems approach” to capture impacts. The framework demonstrates how research activity informs decision making, eventually resulting in changes in health and economic and social prosperity. It is designed to be used as a roadmap to track health-research impacts in the five main impact categories (i.e., advancing knowledge, building capacity, informing decision making, health impacts, broad socio-economic impacts). Each of the main categories in turn consists of subcategories and by choosing appropriate sets of indicators from a broad menu of indicators, the CAHS impact framework can be used to track impacts within any of Canada’s four “pillars of health research” (basic biomedical, applied clinical, health services and systems, or population health) or within domains that cut across these pillars. It can also be used to describe impacts at various levels — individual, institutional, provincial, national or international — and to define funders’ “returns” by quantifying the value(s) of impacts to end-users as a function of dollars invested.

### “Exceptional Returns” – United States and Australia

In the US, the 2000 summary report “Exceptional Returns – The Economic Value of America’s Investment in Medical Research” published by the US advocacy group “Funding First”, based on commissioned research from a leading group of academic economists, was one of the first attempts to quantify the value of medical research in terms of its impact on the length or quality of life – and the subsequent monetary returns brought about by reductions in mortality and morbidity.

The findings of the economists in terms of huge economic gains from medical research are interesting and ground-breaking, although some concerns were associated with the key assumptions underlying the study. Some of these limitations were addressed in a study produced in Australia for the Australian Society of Medical Research that built on the US analyses and produced estimates of the annual rates of return to Australian investment in health R&D (Access Economics, 2003). This study also concluded that the returns from medical research were exceptional. However, a flaw with this analysis was that it compared investment in research to the value of the health gain in the same year. Therefore, an updated report in 2008 used an updated methodology to address this issue, comparing past health R&D expenditure with projected future health benefits.

### 3. Evaluation of Strategic Issues and Impact Assessment Studies

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#### Conclusions

As one of the primary purposes of evaluation is to exercise control over an agency's research investment by gaining a deeper understanding of how the impacts of research materialise, then it is incumbent that impact assessment studies are systematically carried out. The number of studies addressing approaches to the impact of research on societies and economies is growing internationally. The studies described above comprised a mix of impact assessment methodologies according to the objectives of the study – some employing a structured, qualitative narrative-based approach to describe impacts on society and economy, while others adopt more quantitative econometric or metric-based approaches.

While demonstrating the wider economic and social impacts of funded research is a fundamental requirement in accounting for and justifying the rationale for public investment in research, gaining a better understanding of how and why desired impacts materialise over time is equally important in the context of shaping funding policy. Thus, impact assessment studies can provide valuable insight for research funders and policy makers into the mechanisms and structures that influence the production and transfer of knowledge into socio-economic "goods", thereby helping to establish an evidence-based research system. The studies described above show that it is clearly important to evaluate research in the context of the wider innovation and policy environment as contextual factors heavily influence the uptake of research and therefore the likelihood of socio-economic impacts taking place.

In conclusion, the development by funding agencies of robust impact assessment strategies to complement metric-based evaluation frameworks will enable them to not only disseminate the benefits of research to key stakeholders such as budget holders, decision makers and the public at large, but will also provide crucial insight into the mechanisms that influence the production of knowledge and its transfer into desired outputs, outcomes and impacts.

#### References

- Access Economics (2008) *Exceptional Returns – The Value of Investing in Health R&D in Australia II*. Report for the Australian Society for Medical Research, Canberra.
- Brennecke-Schröder, D. and Koch, S. (2007) *Die Förderung der Gleichstellung von Männern und Frauen durch die DFG – Stellungnahme zur Studie „Wissenschaftlerinnen in der DFG – Antragsaktivitäten, Förderchancen und Funktionen“*, Bonn.
- Enders, J. and Mugabushaka, A.-M. (2004) *Wissenschaft und Karriere – Erfahrungen und Werdegänge ehemaliger Stipendiaten der Deutschen Forschungsgemeinschaft*, Bonn.
- Funding First (2000) *Exceptional Returns – The Economic Value of America's Investment in Medical Research*. New York.
- Health Economics Research Group, Office of Health Economics, RAND Europe (2008) *Medical Research: What's it worth? Estimating the economic benefits from medical research in the UK*. Report for the UK Evaluation Forum, London.
- Hinz, T., Findeisen, I. and Auspurg, K. (2008) *Wissenschaftlerinnen in der DFG. Förderprogramme, Förderchancen und Funktionen (1991-2004)*.
- Leeman, R.J. and Stutz, H. (2008) *Geschlecht und Forschungsförderung*. Swiss National Science Foundation.
- Lemola et al. (2008) *Vaikuttavuuskehikko ja indikaattorit* (The Impact Framework and Indicators for Science, Technology and Innovation). Academy of Finland, Helsinki.
- Nason et al. (2008) *Health Research – Making an Impact: The Economic and Social Benefits of HRB-funded Research*. Health Research Board, Dublin.
- Panel on Return on Investment in Health Research (2009) *Making an Impact: A Preferred Framework and Indicators to Measure Returns on Investment in Health Research*. Canadian Academy of Health Sciences Ottawa, ON, Canada.
- Spaapen, J., Dijkstra, H. and Wamelink, F. (2007) *Evaluating Research in Context*. Consultative Committee of Sector Councils for Research and Development, the Netherlands.
- Swedish Research Council (2006) *Equality between men and women in Swedish Research funding?*

## 4. Evaluation of Research Fields and Disciplines

In some countries, research funding agencies are mandated to evaluate research fields or disciplines. Such systematic reviews of research fields typically use a variety of methods and data sources to record the “state” of the fields in the country in an international comparative perspective.

Information gathered during the activities of the ESF MO Forum indicated that at least the following research councils undertake regularly or on an ad hoc basis evaluation of research fields in their respective countries:

- Research Council of Norway;
- Academy of Finland;
- Swedish Council for Working Life and Social Research;
- Swedish Research Council;
- Engineering and Physical Sciences Research Council, UK.

The approaches used in the Research Council of Norway, the Academy of Finland and the Engineering and Physical Sciences Research Council in the UK are discussed in more detail below.

### Overall goals of evaluation of research fields

Typically, the evaluation of the research fields is done to record, at a given time point, the quality of research in the field, the research environment as well as its relative strengths and weaknesses. The reviews are undertaken in comparative perspective: between institutions in the countries, and in international comparison.

The reviews are conducted to learn how research fields perform and how to better support them in order to raise their international standing. The terms of reference are generally formulated to cover all those aspects.

For example, the terms of reference for the review of chemistry in Norway (*Basic Chemistry Research in Norway*) initiated by the Research Council of Norway request:

- a “critical review of the strengths and weaknesses of chemistry research in Norway”;
- evaluation of the scientific quality of the basic research in chemistry;
- identification of research groups that have achieved a high international level in their research or have the potential to reach such a level;

#### Box 1: Evaluation of research fields and disciplines carried out by other research organisations: examples of the USA and Germany

While in some research systems national research funding agencies are tasked to evaluate systematically the state-of-art of selected research disciplines, in some systems this role is filled by other research organisations.

##### USA

The National Academies, and in particular the National Academy of Sciences (NAS), regularly conduct studies to benchmark selected research fields in an international context.

For example, in 2007, the NAS published a study “Benchmarking US Chemical Engineering Research Competitiveness” at the request of the National Science Foundation, to answer the following questions:

- What is the position of US research in chemical engineering relative to that of other regions or countries?
- What key factors influence US performance in chemical engineering research?
- On the basis of current trends in the US and abroad, what will be the relative future US position in chemical engineering research?

The NAS has been conducting benchmarking exercises since 1997 and in 2000 it published a report “*Experiments in International Benchmarking of US Research Fields*” which summarises the experiences in international benchmarking for three research fields (mathematics, immunology, and materials science and engineering) and establishes a methodological process which can be used in various fields.

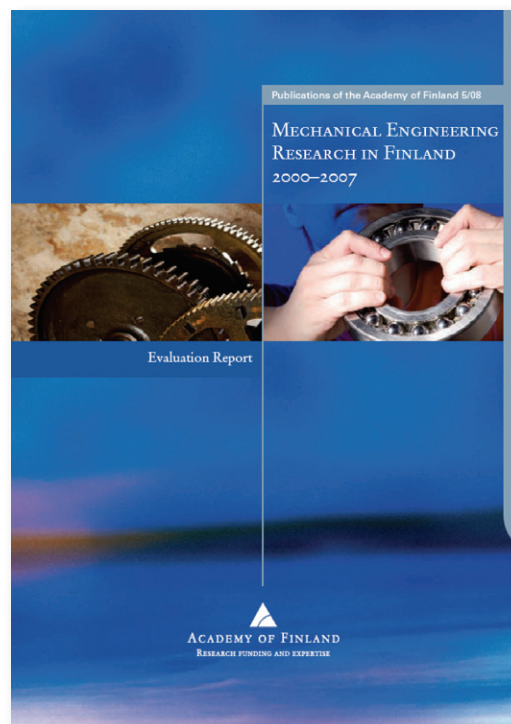
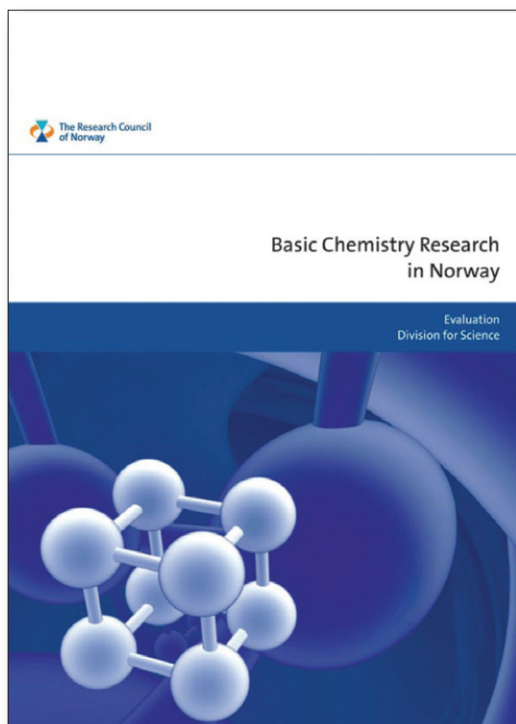
##### Germany

The German Council of Science and Humanities (Wissenschaftsrat) is – among other things – tasked to carry out assessments of research fields.

Recent evaluation studies include:

- A rating of the fields of chemistry and sociology (2008);
- Assessment of agricultural research (2008), areas studies (2006);
- Assessment of Humanities (2006).

## 4. Evaluation of Research Fields and Disciplines



- identification of areas of research that should be strengthened in order to ensure that Norway will possess the necessary competence in areas of importance to the nation in the future.

For the evaluation of Mechanical Engineering in Finland, the terms of reference given to the review panel asked:

- to evaluate mechanical engineering research in Finland from three different levels: the field as a whole, the different subfields and at unit level;
- to present a critical assessment of the quality and relevance of research in mechanical engineering science in Finland;
- to compare the quality, innovativeness and efficiency of the research with international standards;
- to provide recommendations for the future development of the field.

In the UK, the Engineering and Physical Sciences Research Council (EPSRC) regularly conducts reviews of research fields in its remit to benchmark the strength of UK research activities against international competitors and identify any gaps or missed opportunities. The reviews are conducted by outstanding researchers from abroad.

- Recent reviews initiated by the EPSRC include:
- Review of Materials Research in UK (2008);
  - Evaluation of the UK research base in Information and Communications Technologies (2008);
  - International Review of UK Research in Physics and Astronomy (2005); and
  - Evaluation of Engineering Research in the UK (2004).

### Approaches/Methods

In the Research Council of Norway and the Academy of Finland, the reviews of the fields are conducted by international panels appointed and supported by the agencies.

The reviews combine, generally, quantitative and qualitative approaches. The quantitative data in the form of bibliometric studies and descriptive reports of basic facts are collected and compiled by the agencies. They include also “self-assessment reports” of the institutions concerned by the evaluation. In addition, the review panels also schedule meetings with representatives of research groups and relevant organisations to gather further information.



Based on this information, the panels then draw up a report which summarises their findings on the “state of the field” and lists recommendations for future actions.

In the UK, the approaches and methodologies in conducting the reviews by the EPSRC were evaluated by Technopolis Ltd. Its report “Reviews Reviewed: Lessons from the First Six International Panel Reviews, 1999 – 2004” compares them also with other international review practices.

## Utilisation of the results

The results of reviews are used by a variety of stakeholders.

- The institutions concerned obtain an independent assessment on their relative strengths and weaknesses in the field and can adjust their strategies accordingly. In Norway, there have been cases in which evaluation of fields triggered the reorganisation of research institutions.
- Research ministries and research councils also use that evaluation in their funding policies. In Norway, for example, strategic discussions following a number

of evaluations has led to the development of a new funding scheme, “the Norwegian centre of excellence scheme”, which aims to strengthen the focus and critical mass of research institutions in selected fields.

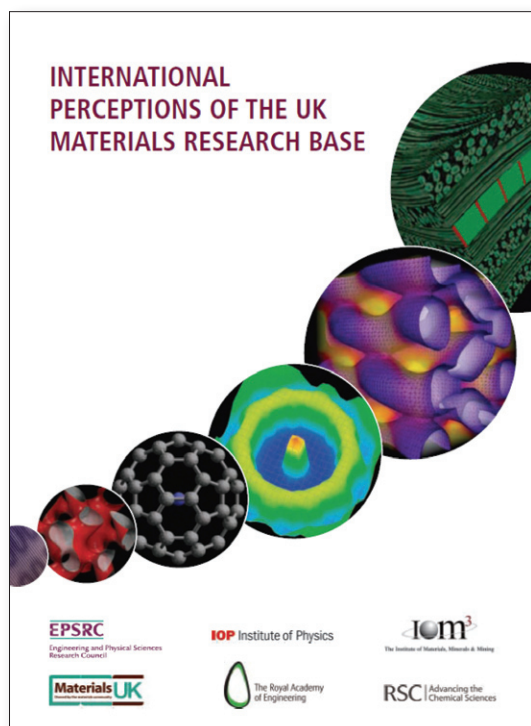
- Other potential users of the evaluation results are the media, which report on the scientific issues, or younger researchers who may use the results in their selection of which institutions to join.

## Concluding remarks

As mentioned above, only a few research funding agencies count the evaluation of research fields in their countries among their core activities. In some countries this task is entrusted to other research organisations (see Box 1).

The case studies described above show a certain convergence in different organisations both in terms of approaches and methods used and the intended goals of these evaluations.

Most case studies use a combination of a qualitative assessment of the state-of-art (by an international review panel) and quantitative analysis based mainly on bibliometric data as well as basic statistics on research



## 4. Evaluation of Research Fields and Disciplines

personnel and research activities of key research organisations (universities, research centres, etc.).

The evaluation of research fields is intended not only to inform the development of funding strategies or adjustments in existing funding policies but also to inform other actors such as universities or research ministries who can use the results in their discussions on policy priorities. The evaluations make an implicit reference to international standards and the use of international experts in the review panels shows an interest in assessing a particular country's position against the situation in other countries. Yet, it is only recently that efforts to undertake joint evaluation exercises by different agencies have started. In 2008, the Academy of Finland and the Swedish Research Council jointly initiated an evaluation of clinical research in Sweden and Finland with the stated goals (among others) to identify differences in clinical research in the two countries and assess their future prospects.

Such joint undertakings seem currently rather the exception than the rule, but this first report shows their feasibility and their potential to add value compared with an evaluation confined to only one country.

**Table 2:** Selected field reviews by the Research Council of Norway and the Academy of Finland

Research Council of Norway	
1	Chemistry (1997)
2	Earth sciences (1998)
3	Biology, basic including biomedicine (2000)
4	Physics (2000)
5	Mathematics (2002)
6	ICT (2002)
7	Linguistics (2002)
8	Political Science (2002)
9	Medical and Health (2004)
10	Pedagogic (2004)
11	Technology and engineering sciences (2004)
12	Nordic languages and literature (2005)
13	Pharmaceutical Research (2006)
14	Development Research (2007)
15	Economic Research (2007)
16	Historical Research (2008)
17	Basic Chemistry Research (2009)
Academy of Finland	
1	Research in Art and Design in Finnish Universities: Evaluation Report (2009)
2	Clinical Research in Finland and Sweden: Evaluation Report (2009)
3	Mechanical Engineering Research in Finland 2000-2007: Evaluation Report (2008)
4	Computer Science Research in Finland 2000-2006: International Evaluation (2007)
5	Dental Research in Finland 2001-2005: International Evaluation (2007)
6	Food Sciences and Related Research in Finland 2000-2004: International Evaluation (2006)
7	Energy Research in Finland 1999-2005: International Evaluation (2006)
8	Research in Business Disciplines in Finland: Evaluation Report (2005)
9	Nursing and Caring Sciences: Evaluation Report (2003)
10	Finnish Geosciences: Evaluation Report (2003)
11	Finnish Research on Foreign and Security Policy: Evaluation Report (2002)
12	Women's Studies and Gender Research in Finland: Evaluation Report (2002)
13	Biotechnology in Finland. Impact of Public Research Funding and Strategies for the Future: Evaluation Report (2002)
14	Evaluation of Finnish Astronomy: Report of an evaluation panel established by the Academy of Finland (2000)
15	Evaluation of Finnish Mathematics: Report of the evaluation panel (2002)
16	Evaluation of education and research in Slavonic and Baltic studies (2000)
17	Evaluation of electronics research in Finland (1997)

## 5. Evaluation of Funding Schemes

Most research funding agencies organise their funding activities in distinctive and goal-oriented “funding schemes”. Also referred to as “funding instruments” or “funding programmes”, funding schemes are often the means through which calls for proposals are solicited, generally with defined eligibility criteria and more or less clear objectives of what the schemes aim to achieve.

The evaluation of funding schemes is the core activity in the overall evaluation activities of a funding agency. Therefore, the ESF MO Forum attempted not merely to present in-depth case studies but to provide a thorough overview of the activities of the Member Organisations in this field.

Initially, information relating to how Member Organisations evaluate funding schemes was collected through a two-step survey. In the first step, funding agencies were asked to provide information on their funding schemes in general, and in the second step, they were asked to provide detailed information on evaluations of their funding schemes within the last five years. The questionnaire addressed the objectives of the evaluation, the methods and indicators employed and how the results were used.

In total, 20 organisations were approached. This chapter summarises the information collected from 17 which took part in the survey (see table 3). In its first part, the funding schemes of the participating organisations are briefly summarised. The second part describes the evaluation of organisations’ funding schemes and it is followed by concluding remarks. Annex 1 shows the detailed responses of selected questions from the questionnaires.

**Table 3.** Participation in the survey

Information on funding schemes	Additional information on evaluation
Austria – FWF	•
Belgium – FWO	•
Czech Republic – GAČR	
Germany – DFG	•
Hungary – OTKA	
Ireland – SFI	
Ireland – HRB	•
Luxembourg – FNR	•
Netherlands – NWO	•
Norway – RCN	•
Poland – FNP	•
Sweden – SRC	•
Sweden – FAS	•
Switzerland – SNSF	•
Turkey – TÜBITAK	
UK – BBSRC	•
UK – ESRC	•

Four out of the 17 organisations have not done any evaluation of a funding scheme so far, even though they are doing other kinds of evaluations within their organisation.

### Funding schemes of selected organisations

When gathering information on funding schemes of the targeted organisations, a classificatory template was used to capture the variety of funding schemes. This was developed following an initial desk-search on the websites of five organisations (FWF, DFG, BBSRC, TÜBITAK and FNR) and was refined in the process of data collection, following the initial responses of several other organisations.

This template classifies the funding schemes within the organisations into seven categories (seven funding modes):

- Responsive mode** (Projects and programmes) which are funding schemes where researchers can apply at regular intervals, in any area and for variable amounts and variable length of funding.
- Career development** instruments, which are funding schemes designed to attract, develop and retain talented researchers. They are often targeted at specific areas of research or specific career stages.
- Centres of excellence** schemes normally imply heavy long-term investments, and therefore careful ex-ante selection processes. They may constitute inter-institutional research networks, with researchers working together on jointly agreed work programmes.
- Thematic programmes** are funding schemes which define research programmes in a well-defined thematic area.
- Knowledge transfer/Cooperation with industry** schemes fund collaboration with industry through knowledge and technology transfer.
- Infrastructure/Instrumentation** regroups schemes designated to fund big research equipment and infrastructures.
- Others** designates any other funding mode under which specific schemes were running and which were not covered by the above-mentioned categories.

Information collected shows the funding portfolios of targeted organisations to share significant commonalities.

- They have a wide range of funding schemes (more than 13 on average).
- All of them operate career development schemes.
- All organisations have several schemes to support career development targeting different career stages.

## 5. Evaluation of Funding Schemes

**Table 4.** MO funding schemes by funding modes

Schemes within 7 funding modes	AT – FWF	BE – FWO	CZ – GAČR	FI – AKA	DE – DFG	HU – OTKA	IE – SFI	IE – HRB	LU – FNR
Responsive mode	1			1				1	
Career development	1	1		1	2			1	
Centres of excellence	1			1	1				
Thematic programmes				1					1
Knowledge transfer; cooperation with Industry									
Infrastructures									
Others				2					
Scheme evaluations	3	1	no evaluation of schemes	6	3	no evaluation of schemes	no evaluation of schemes	2	1

- Almost all of them operate responsive mode funding schemes as well as thematic programmes.
- Centres of excellence is a funding mode which is not so commonly used.
- A majority of organisations also have schemes to foster the exploitation of research results.

Table 4 with the overview of the funding schemes shows in the form of a matrix for each participating organisation the funding schemes under each of the seven funding modes.

### Evaluation of funding schemes: approaches by funding mode

In a second step, a template was developed for agencies to provide important information regarding scheme evaluations within each of the funding modes identified above. The agencies were asked to provide information on their most recent evaluation studies (max. 3). The following chapter is based on 26 case studies provided in the survey. The questions contained in the template (see Annex 2) aimed to elicit key information from participating funding agencies in relation to their approaches to scheme evaluations across the different modes – for example, in relation to:

#### 1. Evaluation questions

Which were the main questions asked for the evaluation? What was the objective of the evaluation?

#### 2. Organisational set-up/Particularities of the evaluation

Was the evaluation commissioned to an external team of consultants/peers outside the implementing organisation or was it carried out internally? What was the timing (ex-post, interim)? What other elements were particular to the evaluation?

#### 3. Evaluation methodologies employed

What empirical methods were used to collect evidence for the evaluation, e.g., surveys, desk research, scientometrics, peer review, structured peer review, etc.?

#### 4. Main findings and recommendations

What were the main conclusions of the evaluation? What suggestions were made by the evaluation team based on these conclusions?

#### 5. Indicators

What quantitative or qualitative factors or variables were used in order to provide a simple and reliable means to measure achievement and help to assess performance? This also refers to the different dimensions of indicators such as input, output, outcome and impact. Examples would include PhDs, publications, patents, etc.

#### 6. Benchmarking of findings

Were the findings of the evaluation compared against national/international data?

#### 7. Utilisation and follow-up of evaluation

Were the findings of the evaluation used by the organisation? How were the findings used and how were they followed up?

Other questions included aspects such as frequency of evaluation per mode, experiences and learning processes during the project, costs, the duration and the resources employed.

Most responses (24/26) collected relate to the evaluation of the funding schemes in the first four funding modes (Responsive mode, Career development, Centres of excellence, Thematic programmes).

It is important to bear in mind that this is a photograph of the situation in early 2009; some funding agencies do not perform scheme evaluations currently but plan to do so in the future.

NL – NWO	NO – RCN	PL – FPS	SE – SRC	SE – FAS	CH – SNSF	TR – TÜBITAK	UK – BBSRC	UK – ESRC	Total
					1		1	1	6
2		1	1	1	2			1	14
	1		1	1					6
	1		1	1	1				6
									0
			1						1
	1								3
2	3	1	4	3	4	no evaluation of schemes	1	2	36

**Table 5.** Evaluation of “responsive mode” funding schemes

<b>1. Methodologies</b>	The typical methodologies used included desk research, statistical analysis of application data and grant holders’ data, document analysis, (online) questionnaires to stakeholders (past and present grant holders, committee members, potential applicants, other funders), bibliometrics Further methods included an analysis of the processes and procedures within the organisation
<b>2. Evaluation question</b>	The responsive mode is mainly about scientific quality. Therefore, the most pertinent/common questions that were asked in the different evaluation studies were the following: <ul style="list-style-type: none"> <li>• Did we reach the expected scientific quality?</li> <li>• Did the programme reach the objectives (outputs, outcomes, impacts)?</li> <li>• Is the programme aim still valid?</li> <li>• How can we improve the quality of processes and project evaluations?</li> </ul> Further questions related to the industrial relevance, the interrelation between ex-ante and ex-post evaluation
<b>3. Findings</b>	The findings of the evaluative studies refer to the evaluation questions. Examples would include that the number of papers produced by funded applicants outnumbers papers produced by the average researchers in the (FWF) Further examples can be found in the annex Positive answers to the respective evaluation questions Concrete recommendations (procedures, quality, outputs, impact)
<b>4. Follow-up</b>	Used for future design (basis for discussion or implementation of recommendations)
<b>5. Cost and duration</b>	Cost: not indicated/± 15 000-30 000 € Duration: 5 months – 1 year (depending of definition)
<b>6. Indicators</b>	Quantitative and qualitative <ul style="list-style-type: none"> <li>• Output, outcome and impact (papers, PhDs, international collaborations, patents, media events, effects beyond the scientific field/in areas of public good</li> <li>• Level of satisfaction (procedures, funding), self-rating</li> </ul>
<b>7. Benchmarks</b>	Variable (yes/no/international perspective but no real benchmarking)
<b>8. Positive points</b>	<ul style="list-style-type: none"> <li>• Analysis of procedures and processes</li> <li>• Comparison of ex-ante and ex-post evaluation results</li> <li>• Peer review meetings</li> <li>• Interviews with key representatives of the specific fields of research</li> <li>• Findings and follow-up</li> </ul>
<b>9. Negative points</b>	<ul style="list-style-type: none"> <li>• Include scientometrics</li> <li>• Too narrow a focus on publication output, didn’t look at wider socio-economic impacts of funding</li> <li>• Terms of reference could have been clearer</li> </ul>
<b>10. Regularity</b>	Variable (occasionally/1-2 every year/every 5-7 years)

## 5. Evaluation of Funding Schemes

**Table 6.** Evaluation of “research careers” funding schemes

<b>1. Methodologies</b>	Desk research; document, application and award analysis; output analysis, (online) questionnaires to grant holder, interviews, focus groups
<b>2. Evaluation question</b>	<ul style="list-style-type: none"> <li>• Did the programme reach the objectives (outputs, outcomes, impacts)?</li> <li>• Are the objectives of the scheme still valid?</li> <li>• Rationale for funding</li> <li>• Useful to continue?</li> <li>• Recommendations for improvements</li> </ul>
<b>3. Findings</b>	Mostly positive answers to the respective evaluation questions Objectives not clearly formulated and difficult to evaluate Concrete recommendations (duration, flexibility, transparency, efficiency, networking)
<b>4. Follow-up</b>	Address the study’s key findings (“lessons learnt”), implement recommendations (in two cases not yet clear)
<b>5. Cost and duration</b>	Cost: not indicated/± 25 000 € (external) Duration: 4 months (evaluation only) – 2 years (staff time)
<b>6. Indicators</b>	Quantitative and qualitative <ul style="list-style-type: none"> <li>• Scientific/other output and impact, career development, cooperation,</li> <li>• Satisfaction of scheme, job satisfaction</li> </ul>
<b>7. Benchmarks</b>	Variable (yes – national, international/no/international perspective but no real benchmarking)
<b>8. Positive points</b>	<ul style="list-style-type: none"> <li>• Expertise and external perspective of evaluation team</li> <li>• Prove efficiency of instrument</li> <li>• Good responses from surveys</li> <li>• Multidimensional insight through mix of methodologies (and indicators)</li> <li>• Findings and follow-up</li> </ul>
<b>9. Negative points</b>	<ul style="list-style-type: none"> <li>• Include scientometrics</li> <li>• Difficult to track former applicants (à institutionalise network)</li> <li>• International benchmarks would have been helpful</li> <li>• Include all stakeholders in survey</li> <li>• Difficult to evaluate isolated scheme</li> </ul>
<b>10. Regularity</b>	Variable (occasionally/1-2 every year/every 4-7 years)

**Table 7.** Evaluation of “Centres of excellence” funding schemes

<b>1. Methodologies</b>	ALL CoE evaluations involve external experts! Self-evaluation and international expert committee Literature survey as basis for evaluation, statistical analyses, stakeholder interviews, network analysis, bibliometric analysis, international comparisons
<b>2. Evaluation question</b>	Did the programme reach the objectives (e.g., Are Transregional Collaborative Research Centres of higher quality)? Useful to continue? Recommendations for future programmes?
<b>3. Findings</b>	Positive answers to the respective evaluation questions Concrete recommendations
<b>4. Follow-up</b>	Concrete implications of the evaluations for improvements and funding decisions Broad presentation and publication of evaluation report (FWF)
<b>5. Cost and duration</b>	Cost: not indicated/0.06% of granted funding volume Duration: 6-10 months
<b>6. Indicators</b>	Quantitative and qualitative <ul style="list-style-type: none"> <li>• Publication output and impact, bibliometrics, track record, output of projects, budgets, etc.</li> <li>• Collaboration structure, management/leadership issues, opinion of stakeholders</li> </ul>
<b>7. Benchmarks</b>	National (DFG)/International (FWF) Depending on the evaluation question
<b>8. Positive points</b>	<ul style="list-style-type: none"> <li>• Comprehensive report, employs different methodologies</li> <li>• International team of evaluators</li> <li>• Comprehensive analysis of the programmes and processes in the local and international context</li> <li>• Proof of the success of the programmes (bibliometric analysis)</li> <li>• Recommendations for improvements</li> </ul>
<b>9. Negative points</b>	Not enough indicators for structural effects and interdisciplinarity Counterfactual is hard to answer (what would happen if the programme did not exist?) Tight time schedule
<b>10. Regularity</b>	Variable (no pre-set schedule/every 5-7 years)

**Table 8.** Evaluation of “thematic programmes” funding schemes

<b>1. Methodologies</b>	Interviews, statistics, document analysis (internal interim evaluation) Evaluation specialist with thematic experts (external ex-post evaluation)
<b>2. Evaluation question</b>	Experiences from the programme? Did the programme reach the objectives? Perception of the programme by the scientific community? Useful to continue?
<b>3. Findings</b>	Continuation of programme Analysis of success rates according to groups
<b>4. Follow-up</b>	Used for future design
<b>5. Cost and duration</b>	Cost: not known for internal HR; external: 0.4% of programme Duration: 6 months -1 year (from elaboration)
<b>6. Indicators</b>	Quantitative and qualitative • Output and impact applicants (M/F), projects, budgets, etc. • Comparison with foreign research councils
<b>7. Benchmarks</b>	Variable; if yes, comparison with similar programmes in other countries
<b>8. Positive points</b>	Good understanding of situation Clear recommendations (e.g., clear report providing a lot of argumentation to continue the programme)
<b>9. Negative points</b>	Timing (programme quite new and only running for a short time, therefore maybe a bit too early to conduct evaluation)
<b>10. Regularity</b>	Variable (e.g., first time such an evaluation took place, some thematic programmes are evaluated, some are not. In general two a year)

It is worthwhile mentioning that some agencies do carry out many evaluations of schemes under a specific mode, but they just submitted the most recent example of an evaluation or provided information on the agency’s general approach to evaluation.

Table 5 is a synthesis of the answers referring to the responsive mode funding schemes for FWF in Austria, HRB in Ireland, the Swedish Research Council (SRC) and BBSRC in the UK.

Table 6 refers to the following career development schemes:

- the FWF mobility programmes Erwin Schrödinger (outgoing) and Lise Meitner (incoming) Fellowships,
- the FWO Odysseus Brain Gain Programme,
- the DFG Emmy Noether Programme,
- the HRB Clinical Research Training Fellowship Scheme,
- the NWO Innovational Research Incentives and Aspasia schemes,
- the FPS HOMING Programme,
- the SRC Medicine Junior research positions,
- the MHV (Re-start women in science),
- the SNSF-Professorship programmes of the Swiss National Science Foundation
- and the ESRC/NERC Interdisciplinary Research Studentship Scheme.

Table 7 provides a synthesis of the answers referring to the Centres of Excellence Research Network Programmes of FWF, the DFG Transregional Collaborative Research Centres, the SFF Centres of Excellence scheme by the Research Council of Norway, the Linnaeus grant

of the Swedish Research Council and the FAS centres of excellence of the Swedish Council for Working Life and Social Research.

Table 8 covers the thematic programmes EAU of the National Research Fund Luxembourg, Large-scale Programmes of the Research Council of Norway, the funding programme in care science of the Swedish Research Council and National Research Programmes (NRPs) of the Swiss National Science Foundation.

## Evaluation of funding schemes: general observations and concluding remarks

Even though this mapping exercise gives a good overview of the activities of the Member Organisations, it is difficult to draw general conclusions from the feedback obtained, as the 26 cases drawn on cannot be assumed to be representative of all scheme evaluation studies conducted by the Member Organisations. Therefore the following observations should be qualified as interesting findings rather than general conclusions.

### General observations on the mapping exercise:

1. Having an evaluation strategy is becoming more and more common among agencies (nine Member Organisations have a documented strategy or are in the process of establishing one (VR, RCN, SFI, GAČR, OTKA).

## 5. Evaluation of Funding Schemes

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2. More feedback was given regarding ex-post evaluation (14) than interim evaluations (12). However, the definition depends on duration and definition of scheme (e.g., responsive mode is either ongoing with no ending date of the scheme in which case the evaluations are interim evaluations or there are multi-annual budgets at the end of which an ex-post evaluation is done).
3. The main rationale for doing evaluation (interim and ex-post evaluations) is to understand and improve, rather than to check. All examples provided were formative evaluations as opposed to summative evaluations which only focus on accountability issues.
4. Most evaluations were done by external evaluation experts (19 external evaluations vs. seven internal evaluations). These experts often provided an international perspective, even if no explicit benchmarking exercise per se was performed. It is interesting to note that all Centres of Excellence evaluations were performed by external experts. This is probably linked to the amount of money involved and the nature of the evaluation study: understand, improve as well as input for decision making (continue or close the CoE). The internal evaluations were essentially done with the purpose to understand and improve.
5. It seems that most evaluation recommendations were implemented during follow-up activities.
6. All evaluations – except one – showed a mixture of qualitative and quantitative indicators.
7. International benchmarking is not a standard procedure even though an international perspective is considered very valuable (often in the form of input by external panel members or consultants).
8. The regularity of evaluations varies from agency to agency and from scheme to scheme. It seems to be correlated positively to the existence of an evaluation strategy.
9. Most feedback (12/26) was received for career support schemes. All agencies have evaluated career support schemes, but not all of them have evaluated schemes under the other modes. It also appears that the success of career support schemes seems relatively easy to assess which makes them easy to evaluate.
10. Agencies seem to have received positive answers to their respective evaluation questions (all schemes seem to work well) combined with concrete recommendations for improvement. It is difficult to assess if this is due to the choice of examples by the MOs or if this just reflects the way an evaluation report is generally structured.

### Concluding remarks on the mapping exercise:

The tentative conclusions from the pilot mapping exercise tested among five Member Organisations have been confirmed by this larger mapping exercise covering 17 organisations:

1. Funding schemes are comparable.  
Not all schemes are present in all countries, but schemes are comparable. This implies that there would be potential for jointly conducted/synchronised ex-post evaluations.
2. Different terminology among agencies.  
However, one has to pay attention to the definitions of schemes and instruments which tend to vary considerably from country to country and could potentially be misleading when synchronising ex-post evaluation.
3. Evaluation is used in all the agencies.  
There are differences in types, regularity and objectives of evaluations, but it became clear that evaluation is used in all agencies, besides the standard peer review in order to allocate funding for research grants.
4. No Member Organisation considered that it was conducting too much evaluation.  
The added value of evaluation is strongly perceived among all Member Organisations.
5. Difference in size, age and structure of an organisation has an impact on evaluation practices.  
Some Member Organisations have their own in-house evaluation department whereas other agencies solely use external experts. The maturity as well as the size of a research environment has an impact on evaluation practices.
6. Sometimes schemes have been developed without giving careful consideration beforehand of how to measure success.  
In this case thought has not been given to how ex-post evaluation will be done and no clear indicators to measure success have been defined upfront.
7. Different objectives (between schemes/agencies).  
Different agencies have different objectives. This is reflected in the schemes they have developed as well as in the evaluation questions asked and methodologies used (e.g., purely science focused compared to economic or societal impact).
8. Different objectives imply different intervention logics and evaluation practices.<sup>5</sup>  
This intervention logic may not always be explicit, but it is the underlying intervention logic of a scheme in order to reach the objective which implies the evaluation practices. Evaluation questions and methodologies used to answer these questions directly depend on the objective of a



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scheme and the intervention logic to reach that objective.

9. Showing impact is becoming more and more important.

As described in Chapter 3, agencies are becoming increasingly focused on the development of impact assessment frameworks in order to systematically monitor the impact of their various funding schemes.

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5. *“Intervention logic can be defined as a set of hypothetical cause and effect linkages that describe how an intervention is expected to attain its global objectives. The Commission’s guidelines for evaluation state that intervention logic provides “the conceptual link from an intervention’s inputs to the production of its outputs and, subsequently, to its impacts on society in terms of results and outcomes”. Logic models showing how inputs in the different activities lead to expected results are the most appropriate way of illustrating intervention logic. These models are capable of explaining in a clear manner the assumptions underlying the way in which a programme is designed and how overall objectives are broken down into operational objectives.”* (European Court of Auditors, 2007: p.17).

## 6. Ex-post Evaluation of Research Grants – the use of final reports for evaluative purposes

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While the ex-ante evaluation of research grants is a wide field usually involving the expertise of peers in a peer-review procedure<sup>6</sup>, there are different practices among the ESF Member Organisations in evaluating the course and the outcome of funded projects.

This chapter focuses on the use of final reports (end of grant reports) for evaluative purposes<sup>7</sup>.

Final reports are collected by almost all funding agencies. They are an integral part of the funding process and the “judicial” end of the funded project. However, final reports also gain importance for the evaluation of research output. Therefore, final reports are also used as a source of information on the results of publicly-funded research beyond the single project.

The following chapter is based on presentations given at the third workshop of the ESF Member Organisation Forum on Research Evaluation, 31 March-1 April 2008 in Rome. It is complemented by information gathered in a survey undertaken by the Health Research Board, Ireland in late 2007.

### Reasons for collection and use of final reports

If most projects are evaluated ex-ante, i.e., experts assess the proposals that researchers submit, why are final reports collected at all?

One reason for the collection of final reports is the demand on the funding agencies as well as on the grant recipient to be **transparent** on their use and the outcome of public funds. This provides **accountability** for the taxpayer’s money. Furthermore, final reports are often used for **marketing and outreach activities** of funding agencies to the wider public, researchers, policy makers and other stakeholders. Some agencies (e.g., ESRC, FWF) publish the final reports; most of them publish at least the abstract provided by the principal investigator. They might post them on the agency website (e.g., ESRC) or use them to contribute to the agency’s annual report of performance or activities. For example, at the HRB, Ireland, the lay summary of the completed research may be used for the annual “Picture of Health” report to disseminate the findings of a selection of HRB grants to key stakeholders including the public.

The most widespread and intuitive use of final reports is for **programme management** purposes. They allow

the programme manager to assess whether the project has been conducted effectively and whether the project has met its objectives.

At some agencies, final reports feed into the review of new grant applications by the same researcher (e.g., NSF, ESRC, FWF). For example, the ESRC creates track records to support funding decisions. At the NSF, a principal investigator cannot receive a new NSF award if he or she has not turned in a final report for a previous award.

At some agencies (e.g., NSF), the final report is merely handled by the programme manager. He or she checks for format and content, which has been specified in advance by the funding agency (see below). Some agencies (e.g., DFG, ESRC, FWF) send the final reports to reviewers who evaluate the project outcome. For example, at the ESRC the rapporteurs are asked to comment on scientific contribution and academic impact of the project and also to assign a grade (four grades, from unacceptable to outstanding). At the FWF, too, final reports of funded projects receive a rating by the reviewers (rating scale 0-100) on different categories.

Final reports are usually collected about three months after completion of the project (e.g., at the NSF, FWF, DFG, ESRC, HRB: four months). While at many agencies they come in as a paper version, there are other systems for submission, too.

The DFG scans the paper-based reports into an electronic format and archives them electronically within a DFG-internal document-management-system. At the FWF an in-house unit enters data of the project into a database. At the ESRC, outputs are recorded on an on-going basis by the principal investigators onto the ESRC database. In the United States, the submission is electronic through NSF’s FastLane System. Any electronic form of data entry enhances the potential use enormously. It allows for the publication and analysis of the reports. Final reports are an information source that already exists. If processed electronically, it is possible to collate research outputs for evaluative purposes, and establish an evidence base to support other evaluation activity. In this way, final reports become a means to trace new ideas and scientific developments.

This allows for another use of final reports, the use for **evaluative purposes**. Final reports have always been used to learn from the past and improve the funding and follow-up processes. They are an important source to assess the quality and impact of the research within the given project. On an aggregated level, however, they are also a suitable means to assess the effects of research policies and programmes. For the ex-post evaluation of funding schemes, this is a very interesting potential which can yet be explored even further.

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6. See the activities of the ESF and its Member Organisations in this field, e.g., within the ESF Member Organisation Forum on Peer Review.

7. Other reporting types, such as mid-term or annual reports, are not the subject of this chapter.

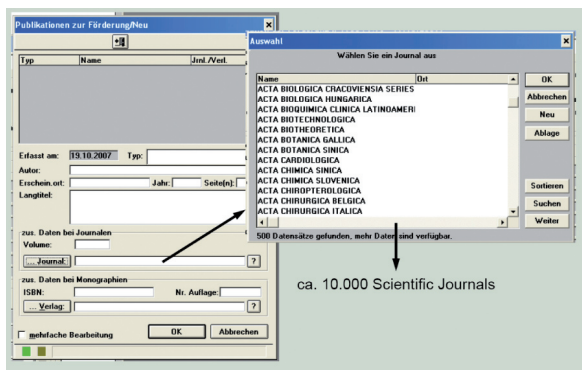


Figure 3. Capture of publication list from end-of-projects at the FWF

In some agencies, the use of final reports for evaluative purposes is already common practice. For example, at the NSF final reports may also be used by the Committee of Visitors, which is an external panel that reviews an NSF programme or cluster of programmes. The HRB elicits information concerning the outputs and likely outcomes arising from the grant relating to the indicators in the HRB's impact assessment framework. This information is collated from all grants completed in a given year, which is then tabulated and synthesised into an annual report.

The evaluative value of final reports has been demonstrated when they have been analysed quantitatively. For example, the FWF commissioned a study on the performance of FWF-funded research projects to a research institute (Joanneum Research). About 1400 reports were evaluated. The study has given interesting insights into the performance and productivity of Austrian research.

## Contents

Generally speaking, the author of the final report is the applicant who has received funding for a research project (principal investigator). It might be a single researcher or the leader of a bigger project, possibly including several project partners and staff.

Most funding agencies ask the project leader to structure their final report in a specified way and to provide information on the following categories:

- Abstract (non-technical version);
- Detailed report on the scientific work;
- Staff (in different degrees of detail; some ask for information on non-scientific co-workers, diploma students, PhD students, post-doctoral co-workers, co-workers with habilitation, professors) funded by the grant/not funded by the grant. Some agencies

- require information on the staff's nationality, age;
- Publication list (journal publications, books and other one-time publications, web or internet sites, other specific products). This might be restricted to a specified number;
- PhD/Master's thesis;
- Other outputs: e.g. participation in international conferences, patents;
- Collaboration with national and international partners (by country).

Depending on the use of the final report, the funding organisations might ask for additional information. For example, the FWF also uses the summary for PR work and therefore asks for it to be provided in German and English. Some would like to receive feedback about the work with the funding agency (e.g., FWF).

Recently, more importance is being attached to the social and economic impact of research. This can be seen in the information that is being asked for. Some agencies ask for information on personnel development, e.g., the importance of the project for the scientific careers of those involved, or on effects of the project outside the scientific field. The NSF asks for information on educational activities, training and outreach activities as well as for indications on a change in objective or scope of the project, and – if applicable – animal, human subjects, biohazards. TÜBITAK asks for public and media interest, and also the number of citations received and classification of publications (journal's impact factor).

## New developments and open questions

As mentioned before, the most important step for the use of final reports for evaluative purposes is the electronic availability of the information. This makes it possible to efficiently process the data, publish it on the internet and aggregate it to use it for statistical and evaluative purposes of programmes.

Other new developments include the discussion within the NSF to put the information from final reports on its public website and to provide links to the abstract of the journal citation provided by the investigator. TÜBITAK is currently developing cohesive post-evaluation criteria to assess and improve the effectiveness and impact of funded projects.

A reinforced use of the reports also has repercussions on the process of collecting final reports as such. Agencies which check whether they receive their reports complete and in a timely manner find that this is not always the case (e.g., NSF) or that there are quality

## 6. Ex-post Evaluation of Research Grants – the use of final reports for evaluative purposes

issues (e.g., DFG: Compliance with DFG-rules, containing abstract, containing names of scientific staff members) (Heise and Hornbostel, 2008). In Germany, a survey among DFG peer review board members found that up to one-third of the applicants would not accept the publication of their final report on the internet (Hornbostel and Olbrecht, 2007). This holds especially true of scientists in the field of chemistry, biology.

Also in the agencies themselves, there is some resistance to the idea of publishing final reports (reported by NSF, DFG). One reason is that information on problems within the project or the satisfaction with the services of the funding agency is sometimes confidential. If this kind of information is not asked for in the future, an important source of information will be missing. One approach to solving this problem is to publish only parts of the report. The acceptance of this practice within the scientific community remains to be seen.

In the United States, it is suggested that there is a government-wide form for annual progress reports with five proposed categories: accomplishments (mandatory), products/outcomes (optional), changes/problems/special reporting (optional), participants (optional), impact (optional). The America COMPETES Act requires NSF to make available all final project reports and citations of published research documents. This will put pressure on the funding agencies to change their policies regarding the collection of final reports and also to provide the organisational and technical requirements. However, it will most likely lead to a more comprehensive and coherent overview on what has been funded and achieved in the projects.

At the ESRC, too, the final reporting process is currently under review. The changes will reflect a greater emphasis on the importance of research outputs and impacts. It is proposed that there will be a two-step process of having a shorter report at three months after completion of the award and on-going reporting of outputs and impacts up to 12 months post award. The rapporteur's evaluation would take place 12 months post award and be based on all output and impact data received.

The framework for recording impacts is likely to include type of impact, mechanism by which it took place and individuals/organisations impacted upon. The rapporteurs will then analyse impact and output data, evaluate the scientific contribution and impact (academic and non-academic) of the project and will then assign a grade which reflects their assessment.

Further open questions for the use of final reports as a data source for evaluative purposes include:

- the relationship between ex-ante evaluation and ex-post evaluation;

- the challenge to keep the burden on researchers as low as possible (especially because the publication of the results of a project is done in other forms);
- the resistance of researchers to any obligation to publish results already three months after the completion of a project because of patent and publication activities;
- the timing and description of a “project” may differ by the funding sources. Can research results really be attributed to a single project and a single source of funding?

### Conclusion

There are many questions to be solved, but the use of final reports as a data source for evaluation studies will most likely increase. This is because their value for this purpose is extremely high and also because the output and outcome of research is gaining importance.



Figure 4. Participants in an ESF MO Forum workshop

## 7. General Conclusions

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During the course of its work, the ESF MO Forum on Research Evaluation brought together the expertise and experience of many participants. This report provides an overview of the current evaluation activities in European funding agencies, highlighting differences and commonalities among evaluation practices.

While it is clear that there exists a wide variety of practices, terminology and understanding among European and international organisations in relation to the scope of evaluation, a very useful output from the Forum has been a mapping and categorisation of Member Organisation evaluation approaches into five broad levels:

### 1. Evaluation at agency level

Evaluation at the level of the funding agency aims to assess the strategies and activities of the agency, usually in the context of the respective national research system. With regards to the approaches taken by Member Organisations, the case studies examined in this report revealed some interesting observations.

- Evaluation studies at this level are mainly directed by “external” personnel – for instance, by panels of eminent researchers established by the tutoring ministries, or in other cases by a consortium of science policy or professional evaluation consultants.
- Agencies may be evaluated “stand alone” or as part of a system evaluation incorporating other key components of the national research system.
- Direct cross-country comparison with similar funding agencies is difficult to do given the diversity in international research systems and differences in research policy and culture.
- Improved monitoring and ongoing assessment of activities, an increased focus on quality assurance mechanisms, and more consideration of strategies to assess and control the agency’s impact are common recommendations from such studies.

### 2. Evaluation of strategic issues and impact

As funding agencies increasingly become the focus of political attention, so their funding policies and impact on the research system are examined and put under scrutiny. For instance, gender equality in science is a strategic topic that is high on the political agenda. The case studies presented in this report show exemplarily that evaluation can contribute to decision making and the transparency of funding in terms of politically sensitive issues such as gender equality and policy.

Furthermore, systematic impact assessment studies that can complement metric-based evaluation frameworks will enable funding agencies to not only disseminate the benefits of research to key stakeholders, but will also enable crucial insight and learning into

the mechanisms that influence the production of knowledge and its transfer into desired outputs, outcomes and impacts.

The case studies presented in the report demonstrated the use of a variety of impact assessment methodologies, according to the objectives of the study and strategic focus of the agency – while some employed a structured, qualitative, narrative-based approach to describe impacts on society and economy, others adopted a quantitative, econometric or indicator-based approach. Notwithstanding the different approaches, the studies demonstrate the key importance of evaluating research in the context of the wider innovation and policy environment as contextual factors heavily influence the uptake of research and therefore the possibility that socio-economic benefits will be realised.

### 3. Evaluation of research fields

Assessing the state and quality of research fields or disciplines in a country in the context of its international standing is an increasing focus of evaluation within funding agencies. The case studies analysed show a certain convergence among different organisations both in terms of approaches and methods used and the intended goals of those evaluations. Most case studies use a combination of a qualitative assessment of the state-of-the-art (by an international review panel) and quantitative analysis based mainly on bibliometric data as well as basic statistics on research personnel and activities of key research performing institutions.

The studies also show that field evaluations are intended not only to inform the development of the agency’s own funding strategy or adjustments in its existing funding instruments, but also to inform other actors within the national research system on their discussions on policy priorities. Typically, field evaluations make an implicit reference to international standards and the common use of international experts in the evaluation panels shows an interest in assessing a country’s own position against the situation in other countries.

### 4. Evaluation of research funding schemes

Most research funding agencies organise their funding activities into distinctive and goal-oriented “funding schemes” (or “funding programmes”). Typically, evaluation at the level of such funding schemes is the core activity in the overall evaluation strategy of a funding agency. Thus, a significant attempt was made by the Forum through a two-step survey of participating agencies to provide a thorough overview of the activities of the Member Organisations in this field.

The survey revealed a diversity of funding scheme type and evaluation approaches among funding agen-

## 7. General Conclusions

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cies. Nevertheless some useful observations were made from the rich dataset obtained from the survey.

- Different terminology relating to funding activities and evaluation exists among agencies which hampers comparison and understanding.
- Notwithstanding the different terminology, funding schemes are generally comparable across funding modes.
- Most scheme evaluations employ a mix of quantitative and qualitative methodologies and are typically conducted by dedicated evaluation practitioners.
- Differences in the size, age and structure of organisations have an impact on the evaluation practices employed.
- It was not uncommon for agencies to develop schemes without giving careful consideration as to how success and impact of the scheme would be measured in the future.

### 5. Evaluation of individual grants

Ex-post evaluation of individual research grants through the use of final grant reports is a common strategy in research funding agencies. Analysis of practices by the Forum's participating organisations showed that final reports are collected by almost all funding agencies and are considered an integral part of the funding process, marking the "judicial" end of the funded grant. While a diversity of uses of final reports was evident, such as public/media dissemination of research findings, it is clear that final reports are also gaining importance for the evaluation of research output at an aggregated level. Therefore, final reports are also increasingly used as a source of information concerning the results of funded research beyond the single project, to the level of funding schemes and funding strategies. In that context, agencies are putting increased emphasis on the processes and procedures around final reports to ensure maximum utilisation of these valuable sources of information.

To conclude, many authors (e.g., Scriven, 1991; Chen, 1996; Majone, 1989; Barré, 1999; Luukkonen, 2002; Frederiksen, Hansson and Wenneberg, 2003; Arnold, 2004) have discussed the functions of research evaluation and the following are among the most widely accepted rationale for conducting evaluation:

- accountability and transparency in the use of public money;
- legitimisation of the funded activities;
- improvement of the quality, the efficiency and effectiveness of activities;
- organisational learning;
- a forum for policy debates.

This report, based on the work to date of the ESF Member Organisation Forum on Research Evaluation has

presented an overview of evaluation practices among research agencies throughout Europe and beyond. It has broadly categorised the wide variety of approaches into distinct levels of evaluation and provided information relating to Member Organisations' experiences of these approaches. It has identified key trends in the field of research evaluation in Europe, showing that it is becoming increasingly professionalised, employing more elaborate methodologies and data collection techniques. It has also shown the need for greater harmonisation of evaluation strategies, terminology, indicators and practices to enable cross-country comparisons and joint studies. The Forum now aims to build on this important first step to work towards agreeing "best practice" in research evaluation and to establish collaborative trans-national evaluation studies. Such work will contribute to the drive for a knowledge-based Europe and will inform policy makers who strive to implement the Lisbon agenda.

## 8. Literature

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- Arnold, E. (2004) Evaluating research and innovation policy: a systems world needs systems evaluations. *Research Evaluation*, vol. 13 (1), pp. 3-17.
- Balzer, G. and Nagel, U. (2003) *Logframe Based Impact Monitoring within the CGIAR System*. CGIAR, France.
- Barré, R. (1999) Public research programmes: Socio-economic impact assessment and user needs. IPTS Report Special Issue: *Evaluation and Research Activities*, 20, 5-9.
- Chen, H.T. (2005) *Practical Program Evaluation*. Sage Publications, Thousand Oaks, CA.
- Donovan, C. (2007) The qualitative future of research evaluation. *Science and Public Policy*, 34(8)
- European Commission, Europe Aid Co-operation Office (2002) *Project Cycle Management Handbook*. Brussels, Belgium.
- European Commission, Europe Aid Co-operation Office (2004) *Aid Delivery Methods, Volume 1, Project Cycle Management Guidelines*. Brussels, Belgium
- European Court of Auditors (2007) *Evaluating the EU Research and Technological Development (RTD) framework programmes – could the Commission's approach be improved?* Special Report No 9/2007, Luxembourg.
- Frederiksen, L.F., Hansson, F. and Wenneberg, S.B. (2003) The Agora and the Role of Research Evaluation. *Evaluation*, Volume 9, Number 2, pp.: 149 – 172.
- Kuhlmann, S., et al. (1999) *Improving Distributed Intelligence in Complex Innovation Systems*. Final Report of the Advanced Science & Technology Policy Planning Network (ASTPP).
- Kuhlmann, S. (2003a) Evaluation as a source of 'strategic intelligence. In: P. Shapira & S. Kuhlmann (Eds.), *Factors affecting technology transfer in industry-US federal laboratory partnerships* (pp. 352-375). Cheltenham, UK: Edward Elgar.
- Laredo, Ph. and Mustar, Ph. (2000) Laboratory Activity Profiles: an Exploratory Approach. *Scientometrics*, 47, 3, pp. 515-539.
- Luukkonen, T. (1997) *The increasing professionalisation of the evaluation of mission oriented Research in Finland: implications for the evaluation Process* for the OECD Conference on Policy Evaluation in Innovation and Technology (26-27 June 1997): Part IV, Chapter 18,
- Luukkonen, T. (2002) Research evaluation in Europe: State of the art. *Research Evaluation*, 11(2), 81-84.
- Majone, G. (1989) *Evaluation and Accountability, Evidence, Argument, & Persuasion in the Policy Process*. New Haven and London, Yale University Press, pp. 167-183.
- Martin, B., Salter, A., et al. (1996) *The Relationship between Publicly Funded Basic Research and Economic Performance, report to HM Treasury*. Science Policy Research Unit: Brighton.
- Molas-Gallart, J. and Davies, A. (2006) Toward theory-led evaluation: The experience of European science, technology, and innovation policies. *American Journal of Evaluation*, Vol. XX No. X, 1-18.
- Molas-Gallart, J., Tang, P. and Morrow, S. (2000) Assessing the non-academic impact of grant-funded socio-economic research: results from a pilot study. *Research Evaluation*, Vol. 9, No. 3, pp. 171-182.
- Power, M. (1996) *The Audit Explosion*. Demos, Paper No. 7, London, UK.
- Rip, A. (2003) Societal Challenges for R&D evaluation. In: P. Shapira & S. Kuhlmann (Eds.), *Factors affecting technology transfer in industry-US federal laboratory partnerships* (pp. 32-53). Cheltenham, UK: Edward Elgar.
- Rossi, P.H., Freeman, H.E. and Lipsey, M.W. (2004) *Evaluation: A systematic approach*. 7<sup>th</sup> ed., Thousand Oaks, CA: Sage.
- Scriven, M. (1967) The methodology of evaluation. In: R. Tyler, R. Gagne, & M. Scriven (Eds.), *Perspectives of curriculum evaluation* (pp. 39-83). Chicago, IL: Rand-McNally.
- Spaapen, J., Dijkstra, H. and Wamelink, F. (2007) *Evaluating Research in Context – A method for comprehensive assessment*, The Hague.
- Stirrat, R.L. (2003) *Methodological Issues in Identifying the Impact of Research Projects: A Review of the Literature*, University of Sussex, Brighton.
- STRATA-ETAN Expert Working Group. (2002) *Benchmarking national research policies: The Impact of RTD on Competitiveness and Employment (IRCE)*. Brussels, Belgium: European Commission Directorate General Research.
- Stufflebeam, D.L. (1994) Empowerment evaluation, Objectivist evaluation, and evaluation standards: Where the future of evaluation should not go and where it needs to go. *Evaluation Practice*, Z5(3), 321-338.
- Van Raan, A.F.J. (2003) The use of bibliometric analysis in research performance assessment and monitoring of interdisciplinary scientific developments. *Technikfolgenabschätzung*, Nr. 1, 12. Jahrgang – März 2003, 20-29.





## Annexes

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## Annex 1. Details of the Seven Funding Modes

<b>INSTRUMENTS</b>	<b>AT – FWF</b>	<b>BE – FWO</b>
<b>Responsive mode</b>	Individual Projects	Research Project Research Grant
<b>Career development</b>	Erwin-Schrödinger Lise-Meitner Elise-Richter Programme Hertha-Firnberg Programm Doktoratskollegs	PhD & Post-Doc Fellowships Special PhD Fellowships for people in full employment Clinical PhD Fellowships Senior Clinical Investigator Mobility Allowance Odysseus (Brain gain programme) Visiting postdoctoral fellowships
<b>Centres of excellence</b>	Special Research Programmes National Research Networks	Scientific Research Network
<b>Thematic programmes</b>		
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	Translational-Research Programme	Scientific awards
<b>Infrastructures/ Instrumentations</b>		Big Science (support for research at international research facilities) Scientific Instrumentation (as part of the standard research project applications)
<b>Others</b>		Travel grants Bilateral exchange programmes ESF Research Networking programmes EUROCORES International coordination action Scientific meetings in Belgium International conferences and seminars

<b>INSTRUMENTS</b>	<b>CH – SNSF</b>	<b>CZ – GAČR</b>
<b>Responsive mode</b>	<p>Project funding in investigator-driven (basic) research, including interdisciplinary projects</p> <p>Sinergia (collaborative projects in independent research)</p> <p>DORE (DO Research, Funding instrument for application-oriented research at universities of applied sciences and universities of teacher education)</p> <p>Special Programme University Medicine – Building clinical research capacities for the future (SPUM projects are implemented by young medical doctors and intended primarily for their career development in the area of translational clinical research)</p>	Research projects
<b>Career development</b>	<p>Fellowships for prospective and advanced researchers</p> <p>Marie Heim-Vögtlin Programme (Re-start women in science)</p> <p>Ambizione (junior researchers on advanced post-doctoral level)</p> <p>PROSPER (Programme for Social Medicine, Preventive and Epidemiological Research)</p> <p>SCORE (Swiss Clinicians Opting for Research)</p> <p>SNF Professorships</p> <p>ProDoc (Doctoral Programmes)</p> <p>Grants to doctoral students for research training courses in the Humanities and the Social Sciences</p> <p>DORE (DO REsearch) young scientists</p> <p>MD-PhD programme (Dr. med. and Dr. phil. programmes)</p> <p>Individual short research visits</p> <p>Exchange programmes</p>	<p>Post-doctoral projects</p> <p>Doctoral projects</p>
<b>Centres of excellence</b>	National Centres of Competence in Research (NCCR)	
<b>Thematic programmes</b>	National Research Programmes	EUROCORES
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	<p>National Research Programmes</p> <p>National Centres of Competence in Research (NCCR)</p>	
<b>Infrastructures/ Instrumentations</b>	<p>SNSF provides direct funding on a discretionary basis for research infrastructure when it is indispensable for research projects.</p> <p>R'Equip</p> <p>FORCE (Fund for Research at Cern)</p> <p>FINES (Fund for Developing Astronomical Instruments ESO) for equipment for terrestrial astronomy</p> <p>Clinical Trial Units</p> <p>Cohort Studies</p>	
<b>Others</b>	<p>Scientific meetings in Switzerland</p> <p>International conferences and seminars</p> <p>National Latsis Prize</p> <p>SCOPES Eastern Europe</p> <p>Research Partnerships with Developing Countries</p> <p>Publication grants</p>	Bilateral projects

## Annex 1. Details of the Seven Funding Modes

INSTRUMENTS	DE – DFG	FI – AKA	HU – OTKA
<b>Responsive mode</b>	Individual grants Reinhart Koselleck Projects	General research grants	Research grants
<b>Career development</b>	Research Fellowship Temporary position for PI Emmy Noether Programme Heisenberg Programme NIH-DFG Research Career Transition Awards Program Scientific Networks Research Training Groups	Graduate Schools Researcher training and research abroad Doctoral studies of employed persons Postdoctoral Researchers' Projects Researcher mobility and other contractual bilateral cooperation Researcher mobility in working life Promotion of clinical research careers Academy Research Fellowships Senior Scientists' Grants Academy Professorships Finland Distinguished Professor Programme	Postdoctoral fellowships Norwegian Financial Mechanism – Furtherance of Internationally Acknowledged Young Researchers' Careers
<b>Centres of excellence</b>	Collaborative Research Centres Research Units DFG Research Centres Excellence Initiative – Graduate Schools Excellence Initiative – Clusters of Excellence Excellence Initiative – Institutional strategies for advancing top-level university research	Centres of Excellence	
<b>Thematic programmes</b>	Priority programmes EUROCORES	Research programmes	Norwegian Financial Mechanism – Furtherance of Internationally Acknowledged Young Researchers' Careers
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	Trans-Regio		Joint calls with the National Office for Research and Technology Calls for proposals for international cooperation
<b>Infrastructures/ Instrumentations</b>	Scientific instrumentation and information technology Central research facilities Scientific library services and information systems		
<b>Others</b>	Short courses and summer courses Roundtable discussions and colloquia Mercator programme (Visiting professorships) Prizes (Gottfried Wilhelm Leibniz Programme; Heinz Maier-Leibnitz Prize and several others)	Preparation of international cooperation projects Development research Antarctic research	Publications of research results Sabbatical grants Mobility grants

<b>INSTRUMENTS</b>	<b>IE – SFI</b>	<b>IE – HRB</b>	<b>LU – FNR</b>
<b>Responsive mode</b>	Research Frontiers Principal Investigator	Project Grants Programme Grants	
<b>Career development</b>	Starting Investigator Research Grant President of Ireland Young Researcher Award Walton Fellowships Short term travel fellowships Young Women in Engineering	Structured PhD Programmes Health Professionals Research Fellowships Post-Doctoral Fellowships (inc Mobility Grant) Clinician Scientist Awards	PhD & Post-Doc Fellowships ATTRACT Excellence Programme for post-doc students Mobility Grant financed via accompanying measures
<b>Centres of excellence</b>	Centres for Science, Engineering and Technology Strategic Research Clusters	Health Research Centres	
<b>Thematic programmes</b>		Autism Genome Programme; Global Health Research Awards	CORE Research programme (Framework programme with subdomains based on Foresight results)
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	Industry Supplement Conferences and Workshops	Translational Research Programmes Partnership Awards	Platforms financed via accompanying measures
<b>Infrastructures/ Instrumentations</b>		Clinical Research Facilities Medical Imaging Equipment Awards Clinical Trials Network	National Facilities (as part of the standard grant applications)
<b>Others</b>	Stokes Lecturers/Professors Research Professor Recruitment US-Ireland North-South Supplement	GeneLibrary Ireland Medical Research Charities Awards Irish Platform for Patient Organisations, Science and Industry	

## Annex 1. Details of the Seven Funding Modes

INSTRUMENTS	NL – NWO	NO – RCN
<b>Responsive mode</b>	Open competition	Independent researcher projects (incl PhD-fellowships)
<b>Career development</b>	<p>Innovational Research Incentives Scheme (VENI, VIDI, VICI: for researchers in different stages of their scientific careers)</p> <p>Aspasia (to increase the number of women senior lecturers)</p> <p>Clinical Fellows (for future candidates to be academic staff members or professors)</p> <p>Cooperation Germany-Von Humboldt Stiftung (for senior researchers)</p> <p>Cooperation DFG (training of PhD students in Germany and the Netherlands)</p> <p>AGIKO (for medical doctors to perform academic research along with their training)</p> <p>MEERVOUD (for women postdocs in the natural sciences to become university lecturers)</p> <p>Mozaic (for excellent ethnic minority graduates; promotion of diversity in the Dutch academic world)</p> <p>Spinoza Price (huge prize for senior academics; a financial stimulus for extending their research)</p> <p>Replacement subsidies (humanities: for people to finish their doctoral thesis working outside university)</p> <p>Rubicon (for talented young PhD's to gain research experience outside the Netherlands for a maximum of two years)</p> <p>Teacher in science (for mathematics teachers to do research at a university during some months)</p>	<p>Postdoc fellowship</p> <p>“Researcher schools”</p>
<b>Centres of excellence</b>		<p>Centre of Excellence (SFF)</p> <p>Centre of Research driven Innovation (SFI)</p> <p>Research Centre for (Thematic) area (FME – environmental design of renewable energy)</p>
<b>Thematic programmes</b>	<p>All NWO Divisions have their own research programmes (too many to list here)</p> <p>NWO Themes</p>	<p>Large-Scale programmes/ Basic research programmes/ Action-oriented programmes</p>
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>		<p>User driven innovation projects/knowledge-building project with user involvement/ User-driven research-based innovasjon/SkatteFUNN (tax deduction scheme)</p>
<b>Infrastructures/ Instrumentations</b>	<p>Investments (acquisition of apparatus and investments of infrastructure)</p> <p>Large-scale facilities (measuring equipment, super computers, research vessels, et cetera; the facilities may also be abroad)</p>	<p>National facilities (instruments/databases/ collections/registers)</p>
<b>Others</b>	<p>Cooperation and exchange (travel grants; congresses and seminars; cooperation projects and networks)</p>	

<b>INSTRUMENTS</b>	<b>PL – FNP</b>	<b>SE – SRC</b>
<b>Responsive mode</b>		Individual project grants
<b>Career development</b>	International PhD studies Programme Start Programme (stipends for young researchers) Conference grants Grants for archive search abroad KOLUMB Programme (Postdoc out-going fellowships) HOMING Programme (reintegration grants for polish scientists) TEAM Programme (funding research projects by the best teams engaging young researchers) WELCOME Programme (support in establishing research teams in poland by foreign researchers who intend to work in poland or polish scientists returning from the scientific stay abroad) IDEAS for Poland (for winners of the “ERC starting grants”) MISTRZ Programme (academic grants for professors) – 3-year grants for distinguished scholars. FNP Prize – individual prize for eminent researchers	Post-doc fellowships Young researcher position Senior researcher position
<b>Centres of excellence</b>		Linneaus Grants
<b>Thematic programmes</b>	FOCUS Programme (establishing new Research Groups)	Different Priority and Thematic Programmes
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	INNOVATOR Programme VENTURES Programme – supporting innovative projects realized by young researchers	
<b>Infrastructures/ Instrumentations</b>		High-cost (scientific) equipment Support for establishing and using infrastructure for Swedish research
<b>Others</b>	MONOGRAPHS Programme TRANSLATIONS Programme PUBLICATIONS Programme NOVUM Programme	

## Annex 1. Details of the Seven Funding Modes

<b>INSTRUMENTS</b>	<b>SE – FAS</b>	<b>TR – TÜBİTAK</b>	<b>UK – BBSRC</b>
<b>Responsive mode</b>	Individual/project grants	Individual research project grants Individual short-term project grants	Project grants Programme grants
<b>Career development</b>	Post-doc fellowships, both national and international Research positions for new researchers Travel grants EU-planning grants	PhD and post-doc fellowships, both national and international Scientific Exchange Programme Distinguished scientist awards Alliance of Civilizations Research Scholarships	New investigators Fellowships
<b>Centres of excellence</b>	FAS Centre	TÜBİTAK Research Centers National High Performance Research Institutes	
<b>Thematic programmes</b>	Thematic programmes within FAS areas of responsibility: work & health; work organisation; labour market issues; public health; welfare & social policy; social services & social relations		Managed mode
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	Networks Conferences/symposia Publications grants	Patent Application Grants Technological Innovation Funding Grants The Support Programme for the Initiative to Build Scientific and Technological Cooperation Networks and Platforms TÜBİTAK Technopolis Conferences and Workshops Grants	LINK Industrial Partnership Awards Follow on Fund
<b>Infrastructures/ Instrumentations</b>	(Social Science) databases and surveys on both national and European level	National Research Infrastructure Information System (TARABIS) National Researchers Information System (ARBIS)	National Facilities/(as part of the standard grant applications)
<b>Others</b>	Grants for journalists to document research funded by FAS	Public Research project grants National Technology Awards	



<b>INSTRUMENTS</b>	<b>UK – ESRC</b>
<b>Responsive mode</b>	Project grants Fellowships Professorial Fellowships (annual competition) Research Seminars Group (annual competition)
<b>Career development</b>	Studentships Postdoctoral fellowships First Grants Scheme Capacity building clusters Mid-career development fellowship scheme
<b>Centres of excellence</b>	
<b>Thematic programmes</b>	Directive mode funding (Centres, Groups, Networks, Programmes, Schemes)
<b>Knowledge transfer; cooperation with Industry; commercialisation of research results</b>	LINK Collaborative Studentships (CASE, ESRC/MRC, ESRC, NERC, DCLG) Knowledge transfer partnerships Parliamentary Office of Science and Technology (POST) Secondment Business Plan Competition CMI Enterprisers Public Policy Seminars Getting Research into Practice (GRIP) Workshops LARCI Follow-on Fund SME Innovation voucher scheme Young Entrepreneur Scheme (YES)
<b>Infrastructures/ Instrumentations</b>	Centre for Longitudinal Studies (Millennium Cohort Study; National Child Development Study; 1970 British Cohort Study) ESRC Census Programme Economic and Social Data Service International Bibliography of the Social Sciences
<b>Others</b>	

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Austria

**Organisation:** Austrian Science Fund (FWF)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Responsive mode
<b>Title/Objective of scheme</b>	Individual (stand alone) projects
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	The Austrian Science Fund: Ex Post Evaluation and Performance of FWF Funded Research Projects (Dinges, 2005) <a href="http://www.fwf.ac.at/de/downloads/pdf/InTeReg%20RR%20Nr%2042.pdf">http://www.fwf.ac.at/de/downloads/pdf/InTeReg%20RR%20Nr%2042.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Appraise the performance of FWF funded projects within the grant scheme of stand-alone projects</li> <li>• Identify the interrelation between ex-ante and ex-post evaluation, identify critical factors that influence the results of the ex post evaluation</li> <li>• Improve the quality of its processes and project evaluations</li> <li>• Deepen the knowledge on the effects of FWF's research funding</li> <li>• Advice for future modifications that improve monitoring system and funding processes</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim evaluation, commissioned to Joanneum Research (Austria) <a href="http://www.joanneum.at/en/fb5/rtg.html">http://www.joanneum.at/en/fb5/rtg.html</a> No Evaluation/Steering/Advisory Committee
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Analysis of processes and procedures</li> <li>• Descriptive, quantitative analysis of the FWF project database</li> <li>• Multiple linear regression analysis to identify crucial factors influencing the performance of projects</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<ul style="list-style-type: none"> <li>• FWF-evaluation processes and procedures are adequate</li> <li>• Output of FWF funded projects in terms of publications is fair (average 5.25 papers in peer reviewed journals)</li> <li>• Ex ante-evaluation is a good indicator for ex-post evaluation results</li> <li>• Age of PI plays some role, project size, composition of the team and institutional affiliation do not seem to</li> <li>• Ex-post evaluation provides useful information, but has to be complemented with quantitative analyses (scientometrics) in order to assess the impact of FWF-funding</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	<ul style="list-style-type: none"> <li>• Evaluation process of project reports and development of the database is continued</li> <li>• Bibliometric analysis was commissioned to PREST (Univ.Manchester; summary published in the FWF-Info Leaflet 61/7, 2007, p.9 (in German) <a href="http://www.fwf.ac.at/de/public_relations/printprodukte/info/info61-07-02.pdf">http://www.fwf.ac.at/de/public_relations/printprodukte/info/info61-07-02.pdf</a></li> <li>• Questions and rating system for project reports will be modified (same scale as ex-ante ratings)</li> </ul>
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<ul style="list-style-type: none"> <li>• Project parameters (scientific discipline, size and qualification of team, financial volume, institutional affiliation, etc.)</li> <li>• Peer-review ratings</li> <li>• Project output data (publications, HR-development, effects beyond the scientific field, future research perspectives)</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Yes

## Austria (FWF)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support
<b>Title/Objective of scheme</b>	FWF mobility programmes Erwin Schrödinger (outgoing) and Lise Meitner (incoming) Fellowships
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation of the FWF mobility programs Erwin Schrödinger and Lise Meitner K.Warta (Technopolis, 2006) <a href="http://www.fwf.ac.at/de/downloads/pdf/fwf_mobility_report.pdf">http://www.fwf.ac.at/de/downloads/pdf/fwf_mobility_report.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	The purpose of the evaluation was <ul style="list-style-type: none"> <li>• to inform research policy makers, stakeholders and interested third parties of the rationale and justification for two programmes in the funding category “International Mobility Programmes” of the FWF (i.e., Erwin Schrödinger and Lise Meitner Grants), the manner in which they operate and their effects</li> <li>• to provide the FWF with the information necessary for it to decide whether and in what form the programmes under discussion should/could be continued, improved or restructured</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim Evaluation, commissioned to Technopolis Austria <a href="http://www.technopolis-group.com/site/contact/index.htm">http://www.technopolis-group.com/site/contact/index.htm</a>
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Interviews with FWF programme management and Stakeholders of the Austrian Science System</li> <li>• Analysis of the FWF database (programme parameters) and a Provision Report on the Marie-Curie Fellowship</li> <li>• Three online-surveys addressing Schrödinger grant holders, Meitner grant holders and Meitner co-applicants (Austrian hosts)</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main findings:</b></p> <ul style="list-style-type: none"> <li>• Both programmes are globally well performing: <ul style="list-style-type: none"> <li>– The Schrödinger programme (providing grants for young PostDocs for a 10-24 months stay abroad) is on the forefront of support programmes</li> <li>– The Meitner programme (1-2 years employment of a young scientist from abroad at an Austrian research institution) was modified several times and is now meeting its main goal, i.e., attracting high level researchers from abroad and thus creating added value for the Austrian Science system</li> </ul> </li> <li>• Both programmes are well positioned in the Austrian funding portfolio, some overlaps with other programmes are insignificant. 40-50% of fellows from both programmes receive further funding from other FWF funding schemes after their fellowship</li> <li>• Efficiency of both programmes is high: <ul style="list-style-type: none"> <li>– Satisfaction of grant holders and co-applicants is high (weak points: transparency and duration of the selection process)</li> <li>– More than 50% of Schrödinger grant holders become full professors within 15 years after the grant</li> <li>– Publication output is fair (4.2-4.6 publications per grant in peer reviewed journals)</li> <li>– Networking: 90% of Schrödinger grant holders maintain contacts with their host abroad, about 30% continue their work abroad. For about 90% of Austrian hosts of Meitner grant holders the presence of the guest scientist has opened at least in part new research areas</li> </ul> </li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Increase flexibility of duration of grants according to subject dependent needs</li> <li>• Increase support for Schrödinger fellows immediately after their grant</li> <li>• Support sustainable contacts also for Meitner grant holders (e.g., an Alumni Club and/or via an Internet Portal similar to the Schrödinger programme)</li> <li>• Ensure a more flexible budget attribution for both programmes within the FWF budget according to demand</li> </ul>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Austria (FWF)

<b>Follow-up/utilisation/ implementation of results</b>	<ul style="list-style-type: none"> <li>• Transparency of the selection process was increased (full content of reviews is available for applicants)</li> <li>• Support for Schrödinger fellows was increased</li> <li>• An internet platform for Schrödinger grant holders was installed</li> <li>• Flexibility of programmes was increased (duration, age limits)</li> <li>• To facilitate the critical return phase the Schrödinger Programme has been improved with the possibility to apply also for a reintegration-phase (up to 12 months!)</li> </ul>
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<ul style="list-style-type: none"> <li>• Profile of applicants (age, gender, career status, etc.)</li> <li>• Project parameters (scientific field, guest/home country, institution)</li> <li>• Opinion of fellows and stakeholders</li> <li>• Publication output</li> <li>• Career development</li> <li>• Development of cooperations</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Yes
<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Centres of excellence
<b>Title/Objective of scheme</b>	Research networks
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Research Network Programmes – Evaluation Report for the Austrian Science Fund J. Edler (ISI, G) & J. Rigby (PREST, Univ.Manchester, UK), 2004 <a href="http://www.fwf.ac.at/de/downloads/pdf/networks_evaluation.pdf">http://www.fwf.ac.at/de/downloads/pdf/networks_evaluation.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<p><b>Overall aims:</b></p> <ul style="list-style-type: none"> <li>• Review and analysis of the FWF research network programmes (special research programmes and national research networks)</li> <li>• Recommendations for further development and improvements of the programmes</li> </ul> <p><b>Detailed aims:</b></p> <ul style="list-style-type: none"> <li>• What is the role of the programmes within the overall Austrian research system?</li> <li>• What is the relevance of the programme goals within the current context?</li> <li>• Are the stated goals met, i.e., <ul style="list-style-type: none"> <li>– what are the structural characteristics of the funded networks?</li> <li>– what are the outputs and impacts from activities funded and how do they match the goals?</li> </ul> </li> <li>• What are the current challenges for the FWF-network programmes and how could they be tackled?</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim evaluation, commissioned to ISI (Karlsruhe, DE) and PREST (Univ.Manchester, UK) Project team: 8 evaluators from PREST/ISI 4 FWF staff members
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Document review: all applications and reports (interim and end of project reports), all minutes of project evaluations (ex-ante, interim and ex-post)</li> <li>• In-depth interviews with speakers of research networks and important stakeholders of the Austrian Science System</li> <li>• Bibliometric analysis of project output data (performed by Evidence Ltd., UK)</li> <li>• International comparison of the programmes</li> <li>• Use of the database from the FWF evaluation performed in 2003</li> <li>• Triangulation and cross referencing</li> <li>• Comprehensive literature survey as basis for this evaluation</li> </ul>

## Austria (FWF)

<p><b>Main findings &amp; recommendations of evaluation</b></p>	<p><b>Main findings:</b></p> <ul style="list-style-type: none"> <li>• Both programmes are cornerstones of funding of basic research in Austria</li> <li>• Both programmes meet their overall goals (i.e., funding of excellent science, promotion of cooperations and interdisciplinarity, creation of added value)</li> <li>• Strong influence of networks on new combinations, synergies, complementary research work and exchange of results, training of cooperations and research management</li> <li>• Excellent performance of the FWF's international peer review system and programme management</li> <li>• Potential for training of young scientists underestimated</li> <li>• Flexibility of programme design appropriate</li> <li>• No difference in quality between the two programmes in terms of research performed</li> <li>• Quality of research performed significantly higher than the Austrian average</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Programmes and programme design (bottom-up principle) should be maintained</li> <li>• Budget should be increased (for each network as well as the overall share of network programmes of the FWF's budget)</li> <li>• Peer review should be kept, but feedback-loops should be improved</li> <li>• More emphasis (monitoring) on (of) development of cooperations</li> <li>• More emphasis on training of young scientists</li> <li>• Improvement of international opening of res.networks</li> <li>• Stronger commitment of the participating universities</li> <li>• Increase of the visibility of research networks at universities and in the funding landscape</li> </ul>
<p><b>Follow-up/utilisation/ implementation of results</b></p>	<ul style="list-style-type: none"> <li>• Broad presentation and publication of the evaluation report</li> <li>• Better differentiation between the two programmes</li> <li>• Increase of funding volume for research networks</li> <li>• Emphasis on education: introduction of doctoral programmes ("Doktoratskollegs")</li> <li>• International opening: increased use of ERA-net scheme and D-A-CH agreement (between Austria, Germany and Switzerland, partially extended to UK recently)</li> <li>• Commitment of universities improved (contracts)</li> </ul>
<p><b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b></p>	<ul style="list-style-type: none"> <li>• Project parameters (scientific discipline, size and qualification of team, financial volume, institutional affiliation, etc.)</li> <li>• Peer-review results</li> <li>• Opinion of participating scientists and stakeholders</li> <li>• Project output data (publications, HR-development, effects beyond the scientific field, future research perspectives, etc.)</li> <li>• Project performance parameters (development of cooperations, project management, science communication, etc.)</li> <li>• Bibliometrics</li> </ul>
<p><b>Were findings or outputs benchmarked against national/international data?</b></p>	<p>Yes</p>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Belgium

**Organisation:** Research Foundation Flanders (FWO)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Projects/programmes
<b>Title/Objective of scheme</b>	Odysseus – Programme – Brain Gain programme
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation Odysseus, 9/2008 – hard copy Publication: Idea Consult, Brussels, 5/9/2008 www.ideaconsult.be
<b>Main evaluation questions (objective of the evaluation)</b>	How is this programme perceived by the scientific community in Flanders? Is this programme able to attract foreign researchers to Flanders? Is it useful to continue this programme? <b>Specific aims:</b> <ul style="list-style-type: none"> <li>• The attractiveness of the programme</li> <li>• Is the management of the programme efficient?</li> <li>• What is the added value of this programme for the research policy in Flanders?</li> <li>• Is the mechanism for recruiting foreign researchers efficient?</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim evaluation – evaluation study conducted by and paid for by the Flemish Science Department (EWI) No international Evaluation Steering/Advisory Committee <b>Emphasis on:</b> <ul style="list-style-type: none"> <li>• Relevance: are the main goals of the programme in correspondence with the scientific challenges Flanders has to face during the next decade?</li> <li>• Efficiency: Are the provided means in correspondence with the desired output?</li> <li>• Effectiveness: How successful are FWO and the universities in attracting foreign researchers?</li> </ul>
<b>Evaluation methodologies employed</b>	Desk research: Document, application and award analysis Structured interviews with key informants International benchmarking
<b>Main findings &amp; recommendations of evaluation</b>	<b>Main finding:</b> It is useful to continue this programme. <b>Recommendations:</b> <ul style="list-style-type: none"> <li>• By lowering the allocated budget to the researchers, more researchers could participate in this programme</li> <li>• To increase the added value of the programme, it would be better to limit the scope of the programme to researchers who have returned less than one year to Flanders</li> <li>• Better promotion for the programme outside Belgium</li> <li>• Personal interview of the applicants</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	This evaluation was only finished recently, the recommendations will be discussed by the board of FWO and the department. A new protocol was signed by the department and FWO in which most of the recommendations were adopted.
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<b>Quantitative</b> <ul style="list-style-type: none"> <li>• numbers of applicants</li> <li>• budget allocated to the projects</li> </ul> <b>Qualitative</b> <ul style="list-style-type: none"> <li>• comparison with foreign research councils</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Yes, the evaluators made a comparison with similar programmes in other countries: <ul style="list-style-type: none"> <li>• SFI fellows (Ireland)</li> <li>• Marie-Curie International Reintegration Grants (EU)</li> <li>• ERC Starting and Advanced Grants (EU)</li> <li>• Ramon Y Cajal (Spain)</li> <li>• Canada Research Chair Programme (Canada)</li> <li>• Veni Vidi Vici (The Netherlands)</li> </ul>

## Belgium (FWO)

<b>Does your organisation have a documented evaluation strategy?</b>	No
<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Research Council
<b>Title/Objective of scheme</b>	Research Foundation Flanders – FWO
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation of FWO – 12/2007 – Hard copy – management summary online <a href="http://www.fwo.be">www.fwo.be</a>
<b>Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Evaluation of FWO before renewing the agreement with the Flemish government concerning the management of FWO for the next five years – evaluation study conducted by and paid for by the Flemish Science Department (EWI)  No international Evaluation Steering/Advisory Committee, small national steering committee with members of the department and the ministry and Belgian experts in the field of bibliometrics
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Document, application and award analysis</li> <li>• Bibliometrics of the researchers funded by FWO. A large bibliometric survey was set up to evaluate the (inter)national expert members of the FWO evaluation panels</li> <li>• Large online “customer” survey concerning the experiences of researchers funded or rejected by FWO</li> <li>• Detailed International benchmarking</li> <li>• Structured interviews with key informants</li> </ul>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Focus on the scientific functioning of FWO, are the researchers satisfied with the FWO-policy?</li> <li>• What is the funding policy of FWO?</li> <li>• How does FWO conduct its peer review?</li> <li>• Does FWO support the most excellent researchers in Flanders?</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding:</b> FWO is an important player when it comes to the financing of basic research in Flanders. The past years FWO went through a large reorganisation, but this reorganisation did not have a negative impact on the continuity of the organisation. The “Customers” are satisfied with the functioning of FWO</p> <p>The perception of an old, archaic institution still lives (erroneously) among certain policy makers. FWO took important steps in providing more transparency and feed back to applicants, but this is also a point of attention for the future</p> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• The continuation of an international approach is important</li> <li>• Communication to all the stake holders is an important issue</li> <li>• To reform the procedure for searching external referees</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	The recommendations are discussed by the Board of FWO and the Department. They will be used in the development of a new management agreement with the Department and the Flemish government
<b>Duration of evaluation and costs</b>	1 year
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p><b>Quantitative:</b></p> <ul style="list-style-type: none"> <li>• bibliometrics</li> <li>• international bench marking</li> <li>• numbers of applicants</li> <li>• budget allocated to projects/fellowships/...</li> </ul> <p><b>Qualitative:</b></p> <ul style="list-style-type: none"> <li>• comparison with foreign research councils</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Yes, the evaluators made a comparison with research councils in neighbouring countries and with top European players (NWO, CNRS, Science Foundation Ireland, Swiss National Science Foundation, Swedish Research Council)

## Annex 2. Level 4 – Evaluation of Funding Schemes

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### Belgium (FWO)

<b>Which elements of the evaluation were you most satisfied with?</b>	FWO received a very interesting and clear report providing a lot of argumentation to further develop our funding policy and external communication
<b>What didn't quite work/what would you do differently?</b>	
<b>How often do you conduct evaluations of this type of funding scheme?</b>	This was the second time such an evaluation took place. Five years ago the emphasis was more on a strictly bibliometric approach. Following the planning of the department, every five years an evaluation as the last one will take place



## Germany

**Organisation:** German Research Foundation (DFG)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support/development
<b>Title/Objective of scheme</b>	Emmy Noether Programme: Independent Junior Research Group
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	“Postdocs in Deutschland: Evaluation des Emmy Noether-Programmes” by Susan Boehmer, Stefan Hornbostel and Michael Meuser, iFQ-Working Paper No. 3, Bonn, 2008 Available by hardcopy or on DFG-website at following link: <a href="http://www.dfg.de/dfg_im_profil/zahlen_und_fakten/statistisches_berichtswesen/emmy_noether/index.html">http://www.dfg.de/dfg_im_profil/zahlen_und_fakten/statistisches_berichtswesen/emmy_noether/index.html</a> An Info-Brief (short version) is also available in English
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Does the programme reach the target group of the most promising young scientists?</li> <li>• Has the programme improved the grant recipients' working condition?</li> <li>• Do Emmy Noether alumni have better career opportunities (esp. professorships)?</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Ex-post</li> <li>• Evaluation conducted by independent institute in close cooperation with DFG</li> </ul>
<b>Evaluation methodologies employed</b>	Online survey of funded and rejected applicants; interviews; analysis of proposal reviews; bibliometric analysis of applicant's publications
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding 1:</b> The grantees are highly excellent young researchers. However, the group of applicants as a whole is highly qualified (self-selection)</p> <p><b>Main finding 2:</b> Working as junior research group leader, grantees benefit from good working conditions and experience a high degree of autonomy, even though status insecurity goes along with it (because it is a new and alternative path to professorship)</p> <p><b>Main finding 3:</b> During or immediately following their funding period, almost half of the grantees (48.1%) were offered tenured positions, compared to only 9.8% of rejected applicants. The great similarity of the two groups suggests that the success of grantees is at least in part a result of ENP funding</p>
<b>Follow-up/utilisation/ implementation of results</b>	<p>The study has been presented in various statutory bodies of the DFG</p> <p>The DFG Head Office will issue a statement to address the study's key findings</p> <p>The iFQ (Institute for Research Information and Quality Assurance) will publish 2 more working papers on the topic during 2009</p>
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p>Among others:</p> <p><b>Quantitative:</b></p> <ul style="list-style-type: none"> <li>• grades and time to completion of studies and PhD</li> <li>• publication output and impact</li> </ul> <p><b>Qualitative:</b></p> <ul style="list-style-type: none"> <li>• comparison with groups of similar status concerning working conditions, autonomy, status, resources</li> <li>• self-rating of competencies following funding</li> <li>• management of time and family matters during funding</li> <li>• current activity</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	<ul style="list-style-type: none"> <li>• Benchmarking of grades and time to completion of studies and PhD against national statistical data</li> <li>• References to relevant international literature</li> <li>• Next Working paper will make comparisons against other Junior Research Group programmes in Germany</li> </ul>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Germany (DFG)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support/development
<b>Title/Objective of scheme</b>	Experiences and Professional Development of former DFG Fellowship Recipients
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	“Wissenschaft und Karriere – Erfahrungen und Werdegänge ehemaliger Stipendiaten der DFG” by Juergen Enders and Alexis-Michel Mugabushaka, Bonn 2003 Available by hardcopy or on DFG-website at following link: <a href="http://www.dfg.de/dfg_im_profil/zahlen_und_fakten/statistisches_berichtswesen/stip2004/">http://www.dfg.de/dfg_im_profil/zahlen_und_fakten/statistisches_berichtswesen/stip2004/</a> An Info-Brief (short version) is also available in English (same address)
<b>Main evaluation questions (objective of the evaluation)</b>	Institutional ties during fellowship, international mobility, satisfaction with support by DFG staff, professional and research career, professional and job satisfaction
<b>Organisational Set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Ex-post</li> <li>• Evaluation conducted by independent institute in close cooperation with DFG</li> </ul>
<b>Evaluation methodologies employed</b>	Pencil/Paper survey of funded fellowships with three cohorts (fellowship awarded in 1986/87, 1991/92 or 1996/97)
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding 1:</b> In the context of the so-called “brain-drain”-discussion, an astonishing result was that after 4 years 85% of all fellowships who used the DFG-grant for a longer research stay abroad a.) have returned back to Germany and b.) kept a position within the research system</p> <p><b>Main finding 2:</b> Most applicants were highly satisfied with the support by DFG Head Office. Nevertheless many survey participants offered within the “open remarks” sections important recommendations for further programme development</p> <p><b>Main finding 3:</b> 79% of survey participants express a high level of job satisfaction. Differentiated by those who currently working in research and those involved in other professional activities, the study found clear distinctions in favour of those fellows who have remained in research</p>
<b>Follow-up/utilisation/ implementation of results</b>	The study has been presented in various statutory bodies of the DFG. A commentary that describes the studies “lessons learned” and concrete measures for improved support of fellowship applicants by the DFG’s head office is published in the internet (see address above: “Wegbereiter einer wissenschaftlichen Karriere: DFG-Stipendienförderung für Postdocs – Kommentar zu Enders/Mugabushaka: Wissenschaft und Karriere”)
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p>Among others:</p> <p><b>Quantitative:</b></p> <ul style="list-style-type: none"> <li>• country of first research destination (international mobility)</li> <li>• scaled measures for job satisfaction</li> <li>• scaled measures on publication activity</li> </ul> <p><b>Qualitative:</b></p> <ul style="list-style-type: none"> <li>• answers to several “open questions”, e.g., satisfaction with support by DFG staff</li> <li>• data on familiar situation (e.g. kids at home) and background (educational achievement of parents)</li> <li>• academical support by head of institute/</li> <li>• current activity</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	<ul style="list-style-type: none"> <li>• References to relevant international literature.</li> <li>• References to results of two national studies (a.) on careers of PhD students, b.) Allensbach-Survey on the situation of research at German universities)</li> </ul>

## Germany (DFG)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Collaborative Research Centres
<b>Title/Objective of scheme</b>	Transregional Collaborative Research Centres. Objective: To create core research areas at universities by establishing temporary centres of excellence at up to three universities
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	“Evaluation der Programmvariante SFB/Transregio” by Anton Geyer, Erik Arnold, Leonhard Jörg, Barbara Good, Bonn, 2008 Available by hardcopy or on DFG-website at following link: <a href="http://www.dfg.de/en/dfg_profile/facts_and_figures/statistical_reporting/evaluation_transregios/index.html">http://www.dfg.de/en/dfg_profile/facts_and_figures/statistical_reporting/evaluation_transregios/index.html</a> An Info-Brief (short version) is also available in English
<b>Main evaluation questions (objective of the evaluation)</b>	Are Transregional Collaborative Research Centres of the same (or even higher) quality than conventional Collaborative Research Centres? Does the distributed cooperation between different locations work? Is a local emphasis at each location achievable?
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Ex-post</li> <li>• Evaluation conducted by independent institute (Technopolis Inc.)</li> <li>• Evaluation study was commissioned as a basis upon which the statutory bodies discuss the continuation/discontinuation of the funding scheme</li> </ul>
<b>Evaluation methodologies employed</b>	Statistical analyses, interviews with various people involved in the programme and other stakeholders as well as methods of network analysis and bibliometric analysis
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding 1:</b> The Programme variant has created a surplus to the classical programme. The scientific quality is high and does not suffer from the additional requirement of cooperating among different locations</p> <p><b>Main finding 2:</b> The requirement of a local emphasis at each location can be fulfilled in most projects</p> <p><b>Main finding 3:</b> Contrary to the expectation before the introduction of the programme variant, small universities and small disciplines do not participate in a higher level in the variant than in the classical programme</p>
<b>Follow-up/utilisation/ implementation of results</b>	The study will be presented and discussed in various statutory bodies of the DFG and will be the basis upon which the statutory bodies discuss the continuation/discontinuation of the funding scheme The DFG Head Office will issue a statement to address the study’s key findings
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p><b>Quantitative:</b></p> <ul style="list-style-type: none"> <li>• reviewers’ grades of proposals</li> <li>• publication output and impact</li> <li>• co-publications</li> <li>• amount of funding received</li> <li>• previous funding within DFG schemes</li> <li>• participation of women and young researchers</li> <li>• interdisciplinarity</li> </ul> <p><b>Qualitative:</b></p> <ul style="list-style-type: none"> <li>• working conditions and cooperation structures</li> <li>• programme concept and regulations</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	<ul style="list-style-type: none"> <li>• Benchmarking against the classical DFG-programme Collaborative Research Centres</li> <li>• No international benchmarking</li> </ul>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Ireland

**Organisation:** Health Research Board (HRB)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Projects and Programmes
<b>Title/Objective of scheme</b>	Research Project Grant Scheme (Open-mode, annual call) Grants under the scheme comprise up to 3-yr funding for a high-quality health-related research project
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	An Evaluation of the Research Project Grant Scheme 2004 Available by hard copy or on HRB website at following link <a href="http://www.hrb.ie/research-strategy-funding/publications/rsf-publication/publications//211/">http://www.hrb.ie/research-strategy-funding/publications/rsf-publication/publications//211/</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Is the scheme meeting its original objective of supporting high-quality research relevant to health?</li> <li>• Are the objectives of the scheme still appropriate?</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Ex-post; evaluation study conducted by and paid for by HRB evaluation unit</li> <li>• No international Evaluation Steering/Advisory Committee</li> </ul>
<b>Evaluation methodologies employed</b>	Document, application and award analysis Output analysis: end of grant reports and outputs survey Online questionnaire survey of scheme applicants, grant holders and committee members
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding 1:</b> Most grants were supporting PhD students and that research output was not as high as expected (at 1.9 papers per grant on average) – additionally the 3-yr funding was not long enough to support the average 4-yr PhD</p> <p><b>Recommendation:</b> Establish dedicated funding scheme for support of PhD students and re-orient project grants scheme as a means of supporting [post-doc led] high-quality research</p> <p><b>Main finding 2:</b> Grant applicants found the large number of research committees (13) confusing and there was overlap between some of these committees (panels who evaluate applications)</p> <p><b>Recommendation:</b> Number of committees should be reduced to 5 to reduce fragmentation, improve the consistency of assessment and allow for greater international involvement</p>
<b>Follow-up/utilisation/ implementation of results</b>	As a result committees were rationalised to 5 and a dedicated 4-yr PhD Funding Programme was established to provide high-quality training for PhD students
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p><b>Quantitative:</b></p> <ul style="list-style-type: none"> <li>• publications (peer-reviewed) and citations</li> <li>• international/national conference presentations</li> <li>• higher degrees such as PhD, MD</li> <li>• commercialisation activity, e.g., patents</li> </ul> <p><b>Qualitative:</b></p> <ul style="list-style-type: none"> <li>• level of satisfaction with scheme administrative procedures</li> <li>• level of satisfaction with funding</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Outputs were not benchmarked

## Ireland (HRB)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support/development
<b>Title/Objective of scheme</b>	Clinical Research Training Fellowship Scheme 2-yr fellowships for clinically qualified graduates (pre-PhD) to enable high-quality biomedical research training leading to MD
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	An Evaluation of the Clinical Research Training Fellowship Scheme 2006. Available by hard copy or on HRB website at following link <a href="http://www.hrb.ie/research-strategy-funding/achievements-and-impacts/evaluating-funding-initiatives/crt-fellowship-evaluation/">http://www.hrb.ie/research-strategy-funding/achievements-and-impacts/evaluating-funding-initiatives/crt-fellowship-evaluation/</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Is scheme meeting main objective of providing high-quality research training to clinical graduates?</li> <li>• Are objectives and structure of scheme still valid in the current context?</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Ex-post; evaluation study conducted by and paid for by HRB evaluation unit</li> <li>• No international Evaluation Steering/Advisory Committee</li> </ul>
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Document, application &amp; award analysis</li> <li>• Output analysis</li> <li>• Online survey of scheme participants</li> <li>• Structured interviews with key informants</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding 1:</b> Quality of research training and support environment: not optimal according to survey of participants</p> <p><b>Recommendation:</b> Establish fellowship supervision and mentoring committee to plan training and review progress. Introduce formal training modules in research techniques for fellows</p> <p><b>Main finding 2:</b> Scheme as currently structured (2 yr for MD) not delivering future academic clinicians that Ireland needs as most graduates not embarking on research career path</p> <p><b>Recommendation:</b> Scheme should be re-defined to establish careers of next generation of academic clinician and re-structured to PhD training scheme integrated with clinical training</p>
<b>Follow-up/utilisation/ implementation of results</b>	Expert Working Group comprising key stakeholders was convened to consider results and recommend implementation structures. HRB subsequently implemented recommendations and scheme has been re-structured to a 3-yr PhD training programme for clinicians integrated within higher specialist training programme
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p><b>Quantitative:</b></p> <ul style="list-style-type: none"> <li>• publications (peer-reviewed) and citations</li> <li>• internat/nat. conference presentations</li> <li>• higher degrees such as PhD, MD</li> <li>• commercialisation activity, e.g., patents</li> <li>• other outputs such as media events</li> <li>• impacts on policy/practice</li> </ul> <p><b>Qualitative:</b></p> <ul style="list-style-type: none"> <li>• assessment of training and supervision received</li> <li>• self-rating of research competencies following fellowship</li> <li>• management of time during fellowship</li> <li>• current research activity and funding received</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Outputs were not benchmarked (could not locate data) However clinical research training models in other countries such as the UK and US were examined for comparison to the Irish model and this informed the ultimate recommendations from the study

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Luxembourg

**Organisation:** National Research Fund (FNR)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Thematic Programmes
<b>Title/Objective of scheme</b>	The EAU programme's general objective was to establish a pool of excellence in the field of water in Luxembourg, capable of grasping the complex mechanisms of the natural water cycle, of evaluating the means to protect water resources and water quality, of developing the most appropriate and the least expensive innovative technologies for control and water purification, and of fighting against water wasting. The programme presented five priority areas: <ul style="list-style-type: none"> <li>• quality of surface waters and aquatic ecosystems</li> <li>• hydrological functioning of rivers</li> <li>• protection of ground water</li> <li>• advanced technologies for water management</li> <li>• socio-economic aspects of water resource management, in view of a sustainable development</li> </ul>
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Peer review of the EAU programme – A research support programme of the Luxembourg Fond National de Recherche
<b>Main evaluation questions (objective of the evaluation)</b>	The reviewers addressed the following key issues: <ul style="list-style-type: none"> <li>• <b>Relevance</b> of the programme: were the programme's objectives relevant to the FNR priorities?</li> <li>• <b>Efficiency:</b> how economically have the various inputs been converted into outputs and results?</li> <li>• <b>Effectiveness:</b> how far have the programme's impacts contributed to achieving its specific and general objectives?</li> <li>• <b>Impact:</b> how do the programme's impacts compare with the needs of the beneficiaries and the target population in the framework of the objectives of the programme?</li> <li>• <b>Sustainability:</b> to what extent can the positive changes be expected to last after the programme will be terminated?</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Ex-post; evaluation study conducted by external consultancy firm Technopolis (2 evaluation experts/2 thematic experts)
<b>Evaluation methodologies employed</b>	Structured peer review in conjunction with evaluation experts' own analysis and judgements. This involves a tight definition of the issues to be tackled by peer review and a structured reporting format that asks peers to comment on a number of dimensions using both text and numeric scoring, thereby reducing ambiguity.
<b>Main findings &amp; recommendations of evaluation</b>	The programme of EAU was realised in a very short period, which had some drawbacks (no involvement of stakeholders in programming, limited focus, not fully transparent procedures) but gave momentum to sustainable water management research in Luxembourg. The programme management during the programme was hands-off and seems effective. More attention to activities above project level could have increased community formation in the area even further. The main goal of the programme was to a large extent realised. All participants (except one) contributed very substantially and paved the way for the success of the programme but it is too early to talk about a 'Water Centre of Excellence' (CoE) in Luxembourg. Both research institutes involved (Lippmann and Tudor) can be characterised as "excellent centres" and have increased significantly in size (in the water area) since the start of the programme. The overall result was the strengthening of existing competence/knowledge and the creation of new ones.
<b>Follow-up/utilisation/ implementation of results</b>	<ul style="list-style-type: none"> <li>• Programming for future programmes</li> <li>• Input for strategic discussions</li> </ul>

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## Luxembourg (FNR)

<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<b>Quantitative:</b> <ul style="list-style-type: none"><li>• publications (peer-reviewed) and citations</li><li>• PhDs, and Post-Docs</li><li>• internat/nat. conference presentations</li><li>• commercialisation activity, e.g., patents</li><li>• promotion of scientific culture through media events for example</li><li>• impacts on policy/practice</li></ul> <b>Qualitative:</b> <ul style="list-style-type: none"><li>• self-rating of research competencies</li></ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Evaluation report did not do an explicit benchmarking exercise. However the quality of the output where compared against international quality standards in the water domain

## Annex 2. Level 4 – Evaluation of Funding Schemes

### The Netherlands

**Organisation:** Netherlands Organisation for Scientific Research (NWO)

<p><b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)</p>	<p><b><i>The Innovational Research Incentives Scheme</i></b></p> <p>This funding scheme in itself is career oriented:</p> <ul style="list-style-type: none"> <li>• Veni grants: are for researchers with a recent PhD</li> <li>• Vidi grants: are for experienced researchers who want to develop their own innovative line of research and appoint one or more researchers</li> <li>• Vici grants: are for senior researchers for building their own research group.</li> </ul> <p>The Incentives Scheme may be defined as a mixed or multi-type of funding scheme: it is aimed at career support and projects and centres of excellence as well (depending on the definition used perhaps also for programmes)</p> <p><b><i>Aspasia</i></b></p> <p>Aspasia is a career support funding scheme. In 2005 to the Incentives Scheme NWO added a scheme that previously existed on its own. That scheme is called Aspasia and it is specifically aimed at speeding up careers of women Vidi and Vici laureates with very good or excellent applications from the lower university staff level (university teacher, in Dutch: UD) towards the upper university staff level (university head teacher, in Dutch UHD; senior lecturers) or towards a university professorship. Universities promoting women Veni or Vidi laureates to the level of university head teachers (senior lecturers) or university professor within a year of the grant, receive extra budget (a premium of 100 000 €)</p>
<p><b>Title/Objective of scheme</b></p>	<p><b><i>The Innovational Research Incentives Scheme; Aspasia</i></b> (in Dutch: Vernieuwingsimpuls; Aspasia)</p> <p><b><i>Incentives Scheme</i></b></p> <p>The scheme has been set up by NWO, the Royal Dutch Academy of Sciences and the universities jointly. The aim is to promote innovation in the academic research field. The scheme provides encouragement for individual researchers (Veni), and it offers talented, creative researchers the opportunity to conduct their own research programme independently (Vidi) and to promote that talented researchers enter and remain committed to the scientific profession (Vici)</p> <p>Women are especially urged to apply. At present women are seriously under-represented in the academic world, specifically in senior posts. NWO and the Ministry of Education, Culture and Science have taken action to change this situation and they want all parties to strive at more women submitting applications – the percentage of female applicants should be at least equal to that of women researchers in the target group</p> <p><b><i>Aspasia</i></b></p> <p>Since 2004 the Ministry of Education, Culture and Science has made two million euros a year available to NWO specifically for female candidates in the Innovational Research Incentives Scheme. The aim of this additional grant allocation is to make it possible for more women to reach top positions in the academic world</p> <p>So the Vidi and Vici assessment rounds of the Innovational Research Incentives Scheme have been linked to the Aspasia Scheme</p> <p>Aspasia grants are available to university Executive Boards for the promotion of female Vidi and Vici laureates to senior lecturer (UHD) or professorial level within a year of the award of the Vidi or Vici grant. Female recipients of Vidi and Vici grants qualifying for Aspasia subsidies are notified by NWO following the award of their grants (<a href="http://www.nwo.nl/aspasia">www.nwo.nl/aspasia</a>)</p> <p>The linking of Aspasia to the Incentives Scheme was the outcome of an evaluation of the Aspasia scheme in 2003: in 2000 and 2002 an earlier version of the Aspasia scheme existed</p>
<p><b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)</p>	<p><b><i>Evaluatie Vernieuwingsimpuls 2000-2006</i></b> Authors: F. Bongers and others Publication: Technopolis and Dialogic, Utrecht. 2007 This document is in Dutch on the NWO website: <a href="http://www.nwo.nl/nwohome.nsf/pages/NWOA_74RJ6H">http://www.nwo.nl/nwohome.nsf/pages/NWOA_74RJ6H</a></p> <p><b><i>Evaluatie Aspasia premieregeling NWO 2005-2007</i></b> Authors: A. Visser and B. van Balen Published by University of Maastricht, Center for Gender and Diversity, 2008; ESF/EQUALproject Participatie als Prioriteit The management summary will be published on the NWO website at a later date. The Aspasia website in English is: <a href="http://www.nwo.nl/nwohome.nsf/pages/NWOA_4YYAJV_Eng">http://www.nwo.nl/nwohome.nsf/pages/NWOA_4YYAJV_Eng</a></p>



## The Netherlands (NWO)

<p><b>Main evaluation questions (objective of the evaluation)</b></p>	<p><b>Incentives Scheme</b></p> <ul style="list-style-type: none"> <li>• The research questions related to the process, the impact and context and future of the incentives scheme. The questions were:</li> <li>• The movement of the population into, through and out of the Incentives Scheme</li> <li>• The position of the incentives scheme with regard to comparable national and international funding schemes</li> <li>• The assessment procedure</li> <li>• The position of women</li> <li>• The matching requested from the universities</li> <li>• Mobility of researchers between the worlds of business and academia</li> </ul> <p><b>Aspasia</b></p> <ul style="list-style-type: none"> <li>• The objective of the evaluation was to consider possible points of improvement in order to enlarge the effectiveness of this funding scheme; to learn about the effects of Aspasia on the careers of women, and to learn how the universities allocate the Aspasia budget. The questions were about:</li> <li>• The effects of Aspasia on women's career paths in research</li> <li>• The way the funding scheme was carried out by the universities</li> <li>• The way the universities applied the Aspasia premiums to support women's careers and their research projects</li> <li>• Whether women Veni laureates applied for the next rounds of the Incentives Scheme (Vidi and Vici)</li> <li>• How to support that women send in more proposals in all rounds of the Incentives Scheme (Veni, Vidi, Vici)</li> <li>• Promotions of women who received an Aspasia grant in the early years of this funding scheme (Aspasia old style)</li> </ul>
<p><b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)</p>	<p>Evaluation of the <b>Incentives Scheme</b> and the <b>Aspasia scheme</b>: both are interim evaluations</p>
<p><b>Evaluation methodologies employed</b></p>	<p><b>Incentives Scheme</b></p> <ul style="list-style-type: none"> <li>• desk research on NWO data</li> <li>• interviews with directors of universities and research organisations, researchers and applicants</li> <li>• web enquiry of all applicants</li> <li>• comparison with other funding schemes in the Netherlands and abroad</li> <li>• a walk-in session where fifteen laureates talked about the process and impact of the Incentives scheme</li> </ul> <p><b>Aspasia</b></p> <ul style="list-style-type: none"> <li>• desk research on NWO data</li> <li>• analysis of the final Aspasia research reports</li> <li>• enquiry of Aspasia candidates 2005-2007</li> <li>• enquiry of female Veni and Vidi laureates 2002-2004</li> <li>• interviews with university board members</li> </ul>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### The Netherlands (NWO)

<p><b>Main findings &amp; recommendations of evaluation</b></p>	<p><b>Incentives Scheme</b></p> <p><i>Impact on careers:</i> this funding scheme has been proved to contribute to a successful career. Young and good researchers are being retained for universities; more experienced and successful researchers gain better and/or positions within universities</p> <p><i>Impact on research:</i> innovative and high level scientific research has been proved to be supported by this funding scheme</p> <p><i>Matching:</i> the evaluation of the matching requested from universities has led to a picture of advantages and disadvantages of this system</p> <p><i>Position of women:</i> a small number of universities have a policy for stimulating the careers of women. NWO has complied with the demand to honour proposals from women in equal percentages as the proposals from women sent in over a number of years. However, in the higher career levels (Vidi, Vici) fewer proposals from women are being received and are being granted</p> <p><i>Information given</i> about the Incentives Scheme: NWO provides sufficient general information about this funding scheme, but information in detail about the assessment procedure, reports from referees and the interviews could be improved, and also information (facts) about the outcome of the assessments and about the research started within this scheme</p> <p><i>Mobility:</i> the evaluation offered little information on mobility. Very few (Dutch) researchers were attracted from abroad by this funding scheme. About one-sixth of the laureates changed their working environment in the Netherlands. Through the Incentives Scheme no movement from the world of business to academia could be registered</p> <p><b>Aspasia</b></p> <p><i>Main findings:</i></p> <ul style="list-style-type: none"> <li>• This funding scheme was appreciated positively both by the Aspasia candidates and by universities</li> <li>• The impact of Aspasia new style has narrowed compared to Aspasia old style (because at present only Vidi and Vici laureates can participate; also there are relatively few Vici laureates)</li> <li>• The Aspasia premium usually is not spent on human resources management for female university research staff so the impact of the Aspasia does not stretch over a wider area than the individual Aspasia women</li> </ul> <p><i>Other findings:</i></p> <ul style="list-style-type: none"> <li>• Women who received an Aspasia grant in 1999-2002 had been promoted at some point in time; a third of this group had become university professors (Aspasia old style).</li> <li>• Most of the female Vidi and Vici laureates who in the period of 2005-2007 were approached for participation in the Aspasia scheme accepted the offer and indeed had been promoted (Aspasia new style)</li> <li>• In nearly all universities it is the university faculty that decides about the promotion of a female Veni or Vidi laureate. No university has an overall policy dealing with the procedure and assessment criteria. In practice the assessment criteria relate to research and teaching qualities but also to staff formation and financial possibilities of the university or faculty themselves. By the Veni and Vidi laureates this situation is viewed to be rather unclear and as having perhaps elements of arbitrariness, and they feel decisions depend too much on individual persons (university deans, heads of departments)</li> <li>• (see also above:) Universities – receiving the Aspasia premium new style – appear to allocate the premium to the laureate's research, her promotion, or to a combination of both. The premium is sent to the university faculty and thus it is not fully targeted in the way it is meant to be (including human resources policies for women)</li> </ul> <p>Recommendations were formulated for NWO, the Ministry of Education and for the universities</p>
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## The Netherlands (NWO)

<p><b>Follow-up/utilisation/ implementation of results</b></p>	<p><b>Incentives Scheme</b></p> <p>The evaluation showed positive results. Therefore the Minister of Education allocated to NWO a larger budget for this funding scheme, so all three subsidies (Veni, Vidi, Vici) have been enlarged. Also university professors are now allowed to send in an application for a Vici grant</p> <p>Together with a budget reshuffle by the Minister between the universities and NWO the matching requested from the universities has been abolished</p> <p>The application may now include information on the impact or relevance of the research for society and industry (earlier this kind of information was only allowed for the technical sciences applications)</p> <p>The assessment of multidisciplinary applications will be treated as a separate disciplinary field</p> <p>The assessment procedure will entail a preliminary assessment by the NWO Divisions, and after that an assessment by three different academic disciplinary panels (humanities, sciences, life sciences) – this arrangement is aimed at a better comparison of the quality of the research proposals</p> <p><b>Aspasia</b></p> <p>For the last year of operation (2009, before a new decision by NWO and the Ministry of Education will be made), the follow-up consisted of the following elements</p> <p>Considering that there are three targets of the Aspasia premium (the laureate herself, her research, university policy for the promotion of talented female staff) NWO will support that at least half of the total Aspasia budget will be directed at the promotion of talented female staff by the universities</p> <p>A small part of the Aspasia budget will be used by NWO for encouraging more women to apply for the Incentives scheme</p>
<p><b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b></p>	<p><b>Incentives Scheme</b></p> <p><i>Quantity:</i> NWO data; the matching requested from the universities</p> <p><i>Quality:</i> how information about the funding scheme reaches researchers; how proposals are pre-selected by universities; how universities guarantee embedding of the new research project and career perspectives; how people think about university policies regarding supporting women to apply for the Incentives Scheme; impact on careers (temporary or permanent positions; climb on the career ladder; career effects outside the immediate research environment; other effects of the funding scheme such as more teaching duties or fewer chances for their own research group or fewer chances for additional funding from elsewhere); assessment of the impact on the character of the research (innovation, etc.)</p> <p><b>Aspasia</b></p> <p><i>Quantity:</i> NWO data (numbers of Aspasia candidates); numbers of promotions at universities; numbers relating to the three ways in which the Aspasia premium have been applied by the universities; the effect of Aspasia on the numbers of women applicants in the Incentives Scheme</p> <p><i>Quality:</i> how Aspasia influences the careers of women; human resources management of universities and Aspasia; the pre-selection and/or support by the universities</p>
<p><b>Were findings or outputs benchmarked against national/international data?</b></p>	<p><b>Incentives Scheme</b></p> <p>A comparison was made with funding schemes in the Netherlands and abroad. EURY, EPSRC, Marie Curie and ERC are compared with the Incentives Scheme with regard to: mission, target group, selection (type, period, criteria), number of grants, success rates, ratio males/females; obligations towards the organization, maximum period, the grant itself in euros</p> <p><b>Aspasia</b></p> <p>No comparable funding scheme is known to us to exist elsewhere, so no benchmarking</p>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### The Netherlands (NWO)

<b>Name of Funding Scheme</b>	Mosaic (in Dutch: Mozaïek)
<b>Category</b>	Career development; responsive mode
<b>Start (Exists in its present form since)</b>	2004
<b>Purpose</b>	<p>Ethnic minorities are currently under-represented in Dutch academic research. The Netherlands Organisation for Scientific Research (NWO) and the Ministry of Education, Culture and Science are keen to promote diversity and are concerned about the present loss of talent to the academic world</p> <p>Mosaic aims at attracting more ethnic minority graduates into academic research. NWO and the Ministry hope that successful candidates will continue to work in academic research in the Netherlands and will act as role models</p> <p>For more information: <a href="http://www.nwo.nl/mozaiek">www.nwo.nl/mozaiek</a></p>
<b>Level</b>	Graduates
<b>Eligibility</b>	<p>Applicants must be: graduates from or final-year students at a Dutch university who have received their entire university education in the Netherlands, or – if they have taken only their university Master's degree (and not their Bachelor's) in the Netherlands – have been resident in the Netherlands for at least 5 years</p> <p>In addition, both of the applicant's parents – or the applicant and minimally one parent – must have been born in one of specific countries (see list in the Mosaic brochure)</p>
<b>Age limit</b>	–
<b>Duration</b>	4 years
<b>Number of Awards per year</b>	About 20
<b>Total Grant</b>	<p>The Mosaic scheme: 4M€ per year</p> <p>Mosaic grant: 200 000 € per person</p>
<b>Funding</b>	Subsidies will be awarded in a lump sum for a doctoral research post (personal grant). The NWO grant is a lump sum for staff costs and associated research costs. In addition, the Dutch universities provide support services and supervision/mentoring
<b>Special conditions</b>	–
<b>Selection of grantees</b>	<p>The selection procedure takes about seven months. The steps are:</p> <ul style="list-style-type: none"> <li>• submission of a brief research idea using an (English-language) application form accompanied by a recommendatory letter by a proposed supervisor at one of the 13 Dutch universities</li> <li>• selection of about 40 candidates by a selection committee</li> <li>• three workshop days during which the candidates are given advice on how to work their initial idea up into a full research proposal</li> <li>• presentation of the full research proposals to a selection committee</li> <li>• selection of about 20 research proposals for a Mosaic grant</li> </ul>
<b>Evaluation of the grant</b>	–
<b>Evaluation of the scheme</b>	In 2008 (evaluation study by ITS Nijmegen)

## Norway

**Organisation:** The Research Council of Norway (RCN)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	CoE
<b>Title/Objective of scheme</b>	<b>Centres of Excellence (SFF)</b> The CoE scheme is designed to stimulate Norwegian research groups to set up centres devoted to long-term basic research of a high international calibre. The scheme is intended to raise the quality of Norwegian research.
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Midway Evaluation of the Norwegian Centres of Excellence, 2007 Available by hard copy or on RCN website: <a href="http://www.forskningsradet.no/servlet/Satellite?c=Page&amp;cid=1224067096446&amp;pagename=sff%2FHovedsidemal">http://www.forskningsradet.no/servlet/Satellite?c=Page&amp;cid=1224067096446&amp;pagename=sff%2FHovedsidemal</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Assess the scientific quality and production of the individual centres after 3 ½ years</li> <li>• Support Research Council's decision as to whether the individual centre is to continue for the entire ten-year period or be wound up after five years</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Interim evaluation</li> <li>• Performed by an RCN-appointed international Evaluation Committee</li> </ul>
<b>Evaluation methodologies employed</b>	Self evaluation, peer reviews, hearings/interviews with CoE directors, managers and representatives from host institutions
<b>Main findings &amp; recommendations of evaluation</b>	<ul style="list-style-type: none"> <li>• Generally very positive to scheme, and most centres had established dynamic research programmes</li> <li>• Centres are attractive both on a national level and internationally and have increased funding</li> <li>• Researcher recruitment is generally good, on all levels</li> <li>• Centres have improved visibility of Norwegian research</li> <li>• Centres need to plan for the "post CoE" status and financing</li> <li>• 9 centres got top rating, 4 were advised to adjust certain aspects of their organisation/ management. Committee was asked not to give recommendation on prolongation</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	The Executive Board discussed evaluation, prolonged the 9 centres, and asked the other 4 to prepare a follow-up report according to committee's recommendations. These reports were all found satisfying and all centres were prolonged for a new 5-year term
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	Standardised assessment form with 5 point evaluation score
<b>Were findings or outputs benchmarked against national/international data?</b>	Yes, through the peer review process itself Assessments by three international experts per centre presented to the international evaluation committee

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Norway (RCN)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Thematic programmes
<b>Title/Objective of scheme</b>	<b>Large-scale Programmes</b> – established to deal with national research policy priorities designed to build long-term knowledge aimed at encouraging innovation and enhance value creation, as well as help find solutions to important challenges facing society
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	SATS på forandring (Norwegian only, but English summary), 2009 SATS, which is used in the title of this report, has in this case a double meaning. It is first of all the abbreviation for the Division for Strategic Priorities (= Divisjon for store satsinger). Secondly, it means “(get ready for) take off” (like on spring board). Hence, “SATS på forandring” means approximately “a take-off for change” <a href="http://www.forskningsradet.no/servlet/Satellite?c=Publikasjon&amp;pagename=ForskningsradetNorsk%2FHovedsiden&amp;cid=1236685221449">http://www.forskningsradet.no/servlet/Satellite?c=Publikasjon&amp;pagename=ForskningsradetNorsk%2FHovedsiden&amp;cid=1236685221449</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Assess Large-scale programmes as a strategic instrument for national priorities</li> <li>• Assess whether intentions with instrument is distinct/explicit</li> <li>• Assess how instrument should be developed</li> <li>• Learning and development</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Interim (mid-term) evaluation of seven programmes</li> <li>• Scandinavian Evaluation Committee</li> </ul>
<b>Evaluation methodologies employed</b>	Self-evaluations by each programme, interviews, desk research (documents on scheme and each individual programme)
<b>Main findings &amp; recommendations of evaluation</b>	<p>Added value in terms of more flexibility and freedom due to larger scale and longer time horizon</p> <p>Great variations across the seven programmes, but much has been achieved</p> <p>Full potential has not been achieved due to relatively complex and partly conflicting overall goals, the programmes have different back-grounds and economic conditions, and because only part of the national priorities are covered by the programmes</p> <p>The Norwegian sectorial model (16 ministries provide funding to RCN – and 8 fund Large-scale programmes) is a challenge and RCN is hampered by shortcoming in its organisation</p> <p>Recommend that the Division for Strategic Priorities is given a revised and extended strategic function and responsibility for national priorities to give Large-scale programmes a more distinctive role</p> <p>Guidelines and mandates for the boards should be revised to better reflect differences and need of specific programmes</p> <p>RCN should be given sufficient funds to offset the lack of coordination among the ministries and thereby help ensure a holistic approach to the national priorities, including a proper role for social sciences and humanities</p>
<b>Follow-up/utilisation/ implementation of results</b>	<p>Follow-up is currently on-going</p> <p>Will be discussed in all three Divisions and Main Board</p>
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	
<b>Were findings or outputs benchmarked against national/international data?</b>	

## Norway (RCN)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Others
<b>Title/Objective of scheme</b>	<p><b>SkatteFUNN -Norwegian tax incentive scheme</b>, launched in 2002</p> <ul style="list-style-type: none"> <li>• Stimulate the growth of innovative companies by lowering the effective cost in R&amp;D</li> <li>• Stimulate more systematic R&amp;D work to make the companies more competitive</li> <li>• Enhance the value creation</li> <li>• Stimulate private investment in R&amp;D</li> <li>• Enhance Norway in the R&amp;D competition</li> </ul> <p>Companies may achieve 20% tax deduction from R&amp;D activities for approved project</p>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Additionality: Does SkatteFUNN generate more R&amp;D and changes in R&amp;D behaviours in the enterprises?</li> <li>• Returns: how does SkatteFUNN projects pay off?</li> <li>• Real R&amp;D or reclassification of R&amp;D costs?</li> <li>• Does SkatteFUNN stimulate knowledge from R&amp;D institutions to enterprises?</li> <li>• How does SkatteFUNN work together with other R&amp;D stimulating measures/programmes?</li> <li>• Administrative costs</li> </ul>
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluering av SkatteFUNN (in Norwegian only), January 2008
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Research based evaluation</li> <li>• Commissioned for period 2004-2007</li> <li>• Advisory committee</li> </ul>
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Analyses of data from scheme</li> <li>• Economic analysis</li> <li>• Surveys and interviews</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<ul style="list-style-type: none"> <li>• Very smooth, effective and popular programme for companies</li> <li>• Reached the target for SMEs</li> <li>• Companies perform R&amp;D on their own premises</li> <li>• Difference in firm behaviour towards R&amp;D is seen</li> <li>• Administrative cost is low</li> <li>• Need for improvements in control of project costs and activities</li> <li>• Increase external knowledge on the outcome of R&amp;D, increase support to today's "non-user"</li> <li>• Scheme works according to intentions and should be continued</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	<p>A working group was appointed for implementation of recommendations</p> <p>Scheme is continued</p>
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	Yes, but the details rest with the researchers
<b>Were findings or outputs benchmarked against national/international data?</b>	The scheme was compared to other countries' similar systems in a qualitative manner

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Poland

**Organisation:** The Foundation for Polish Science (FNP)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support
<b>Title/Objective of scheme</b>	HOMING program – reintegration grants for young Polish researchers returning to Poland after a scientific stay abroad
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation of the <i>Homing</i> Programme of the Foundation for Polish Science (FNP) Expert Panel Report • an internal document, not available externally
<b>Main evaluation questions (objective of the evaluation)</b>	Validity of the main objective of the programme? Does the structure of the programme correspond with its purpose?
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim, performed by external experts from other (foreign) research funding agencies
<b>Evaluation methodologies employed</b>	External evaluation based on the documents prepared in the process of internal evaluation: online survey of participants, output analysis, participants' profiles, application procedures and criteria. Plus commissioned report on mobility of young Polish researchers
<b>Main findings &amp; recommendations of evaluation</b>	The objective of the programme is not clear enough. It should be envisioned in more specific (measurable) way The limitations on the eligibility of candidates are too narrow (max. 4 years after PhD completion). Candidates of different career stages should be admitted The number of grantees should be flexible and depend upon their assessment. So far it has been fixed
<b>Follow-up/utilisation/ implementation of results</b>	Not clear yet
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<b>Quantitative:</b> • publications and citations • mobility (different forms) <b>Qualitative:</b> • grants received • projects initiated (led) by grantees • teams led by grantees • international cooperation
<b>Were findings or outputs benchmarked against national/international data?</b>	No (could not locate the data)



## Sweden

**Organisation:** The Swedish Research Council (SRC)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career development
<b>Title/Objective of scheme</b>	What happens with the persons granted junior research positions, and how do they fare compared to those who applied but were rejected?
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Career development and success: a 10-year follow up and evaluation of junior research positions from the Swedish Research Council Medicine (not yet published)
<b>Main evaluation questions (objective of the evaluation)</b>	Does the SRC-M spend its funds optimally by selecting junior researchers and setting aside funds for junior research positions? Does the peer review process at the SRC-M contribute to the skewed distribution of men and women in higher positions at the universities? Does the educational background affect a career in medical science? How does the researchers' willingness to move affect their careers?
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Self-evaluation
<b>Evaluation methodologies employed</b>	Web-based questionnaire
<b>Main findings &amp; recommendations of evaluation</b>	The impact of a junior research position from the SRC-M is high for an academic career in medical science, but the career development has been most favourable for male medical doctors. We find no positive effects from an international post doc
<b>Follow-up/utilisation/ implementation of results</b>	Not discussed
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	Current employment (position), position in research (group leader/part of a research group), level of satisfaction (salary, creative work, relevance of the education for the work, opportunities for advancement, leadership, etc.)
<b>Were findings or outputs benchmarked against national/international data?</b>	Compared to a similar study performed by EMBO

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Sweden (SRC)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Centres of excellence
<b>Title/Objective of scheme</b>	Linnaeus grant
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	The report is not published yet. Each report for each one of the 20 environments is available on request
<b>Main evaluation questions (objective of the evaluation)</b>	In this first evaluation organisation, cooperation and leadership for each Linnaeus grant were evaluated. This ten-year grant will be evaluated three times and this was the first time
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	First step was a self-evaluation where the universities answered questions and wrote a report. After that an international expert committee held hearings with each one of the 20 research environments. The committee wrote a report for each environment This was one of three evaluations for this programme. The programme is for 10 years
<b>Evaluation methodologies employed</b>	
<b>Main findings &amp; recommendations of evaluation</b>	The overall expression from the expert panel was that all environments were very good regarding the organisation and leadership. One environment got criticism
<b>Follow-up/utilisation/ implementation of results</b>	The Board of the Swedish Research Council asked the environment to make the necessary changes due to the criticism. The environment has now reported back satisfactory and the board has decided to continue support for the environment
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<b>Qualitative questions:</b> <ul style="list-style-type: none"> <li>• questions to the head of the higher education institution regarding university management of the environment</li> <li>• organisation and leadership of the environment</li> <li>• collaboration</li> <li>• communication/dissemination</li> </ul> <b>Quantitative questions</b> <ul style="list-style-type: none"> <li>• participating persons (numbers for each category)</li> <li>• budget and financing, costs</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Only by using international panel members

## Sweden (SRC)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Thematic programmes
<b>Title/Objective of scheme</b>	Between 2001 and 2004 The Swedish Research Council had a designated funding programme in care science. This is a first evaluation of this programme, which has continued and will be further strengthened in 2009
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Vårdvetenskap i tiden (only available in Swedish), roughly translatable to Care Science – this is our time
<b>Main evaluation questions (objective of the evaluation)</b>	What were the experiences from the programme? How has the money been distributed?
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim report, self-evaluation
<b>Evaluation methodologies employed</b>	Interviews, statistics
<b>Main findings &amp; recommendations of evaluation</b>	Half of the project research grants within the programme have been distributed to main investigators within areas traditionally seen as care science. Different groups of researchers (characterised by university degree and research area) had very different success rates
<b>Follow-up/utilisation/ implementation of results</b>	Experiences from the evaluation have been used in the continued designated funding programme. A new evaluation is soon to commence
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	Number of projects applied and approved? How were they divided between men and women, research areas, university degree of the main investigator, departmental affiliation and universities
<b>Were findings or outputs benchmarked against national/international data?</b>	No, the study was not benchmarked

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Sweden (SRC)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Infrastructure
<b>Title/Objective of scheme</b>	A national resource for micro/nanofabrication in Sweden
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation of the Myfab support 2006. Available by hard copy and on website: <a href="http://www.cm.se/webbshop_vr/pdf/VR2006_18.pdf">http://www.cm.se/webbshop_vr/pdf/VR2006_18.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	The evaluation assesses to what degree the Myfab network has managed to fulfil the main goals of the network to structure the use of major Swedish micro- and nanofabrication facilities in an effective way. The evaluation will form a basis for the decision of further funding by the funding agencies
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• Evaluated for strategic reasons (interim)</li> <li>• International expert panel</li> </ul>
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Presentations and delivering reports from the laboratories</li> <li>• Studies of background documents</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main finding 1:</b> There should be a continuation of the MYfab support in terms of a fixed funding at the present level for three more years</p> <p><b>Main finding 2:</b> a slow start in the actual networking activities</p> <p><b>Main finding 3:</b> The network has avoided unnecessary duplication of expensive, resource-demanding equipment</p>
<b>Follow-up/utilisation/ implementation of results</b>	The evaluation will be an important input for further discussions of a possible continuation of the support
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p><b>Qualitative</b></p> <ul style="list-style-type: none"> <li>• management structures</li> <li>• cooperation between labs</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Only by using international panel members

## Sweden

**Organisation:** Swedish Council for Working Life and Social Research (FAS)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	CoE
<b>Title/Objective of scheme</b>	FAS Centre
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	FAS centres of excellence – First evaluation. June 2009
<b>Main evaluation questions (objective of the evaluation)</b>	The main purpose of this interim evaluation is to ensure that the centre has been successfully established with ongoing research activities and to determine if any deviations from the original plan have been made. Focus on organisation, leadership, cooperation, and the role of the Centre in the strategic plan of the university
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Interim; self-evaluation in combination with an evaluation initiated and paid for by FAS; conducted by FAS and an international review panel
<b>Evaluation methodologies employed</b>	Questionnaires to both the leader of the different FAS Centres and the rectors of the universities (self-evaluation)  The reviewers had access to the applications and the original assessments of the applications  Site visits and semi-structured interviews with the project leader and a number of other participating researchers
<b>Main findings &amp; recommendations of evaluation</b>	Factors were identified that contributed to an integrated research centre – active leadership; a common and well developed methodological platform; a research school for PhD students. Those Centres which had not succeeded so well in these respects got very specific recommendations on what to improve until the next evaluation. All Centres were recommended continued funding on the already decided level
<b>Follow-up/utilisation/ implementation of results</b>	The report will be presented to FAS board summer 2009. As a result of the evaluation the board can decide to leave the Centres' grant unchanged or increase/decrease it by a maximum of 20%, other conclusions are also possible depending on the results. The recommendations made by the reviewers will be followed up at the next interim evaluation
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<b>Quantitative:</b> <ul style="list-style-type: none"> <li>• financial resources</li> <li>• human resources</li> </ul> <b>Qualitative:</b> <ul style="list-style-type: none"> <li>• plan for leadership</li> <li>• decision making process</li> <li>• research activity, projects started</li> <li>• strategy for recruiting researchers</li> <li>• collaboration</li> <li>• communication/dissemination strategy</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	No

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Switzerland

**Organisation:** Swiss National Science Foundation (SNSF)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Responsive mode
<b>Title/Objective of scheme</b>	DO Research (DORE) (Funding instrument for application-oriented research at universities of applied sciences and universities of teacher education)
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	DORE Tätigkeitsbericht 2004-2006, 2006 <a href="http://www.snf.ch/SiteCollectionDocuments/dore_bericht_04_06_d.pdf">http://www.snf.ch/SiteCollectionDocuments/dore_bericht_04_06_d.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	Document implementation of performance agreement for DORE and investigate progress towards goals
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Ex-post Evaluation conducted by Expert Commission DORE (Expert Commission of National Research Council) and external evaluation office (for survey)
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Analysis of applications and awards, as well as of basis for and procedures of decision-making</li> <li>• Evaluation of role of praxis-partners</li> <li>• Survey among potential applicants</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Main findings:</b></p> <ul style="list-style-type: none"> <li>• A strengthening of application-oriented research in the areas of social work, health, education, art, music and theatre, applied psychology and applied linguistics can be observed</li> <li>• Among target-groups, DORE is well-known as a funding-instrument for application-oriented research</li> <li>• The survey among researchers indicates that DORE not only supports, but encourages application-oriented research at the universities of applied sciences, that DORE projects enjoy a high prestige within these institutions, and that the financing conditions encourage high academic standards</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Increased attention to the strengthening of research capabilities among young scientists.</li> <li>• Strengthening of cooperation with praxis-partners, of cooperation with the innovation promotion agency CTI which finances the subsequent phase of practical implementation of projects, and of international cooperation at the European level</li> <li>• Further encouragement of publication and participation in international conferences</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	Served as a basis for the decision to renew DORE for 2008-2011
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<p>Analysis of applications and awards:</p> <ul style="list-style-type: none"> <li>• applications, awards and profiles of candidates</li> <li>• number of international cooperations</li> <li>• number and type of praxis partners</li> </ul> <p>Survey among target group:</p> <ul style="list-style-type: none"> <li>• Awareness of DORE</li> <li>• Perceptions of the utility and effectiveness of DORE</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Results were not benchmarked against international data

## Switzerland (SNSF)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support
<b>Title/Objective of scheme</b>	MHV-Programme (Re-start women in science)
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Das Marie Heim-Vögtlin-Programm in den Jahren 1991-2002 <a href="http://www.snf.ch/SiteCollectionDocuments/wom_mhv_evaluation_d.pdf">http://www.snf.ch/SiteCollectionDocuments/wom_mhv_evaluation_d.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	<ul style="list-style-type: none"> <li>• Does scheme meet target of providing highly qualified researchers who are able to successfully apply for permanent professorship positions resp. for bringing more women back to science?</li> <li>• Recommendations for improvement of the schemes</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Ex-post commissioned evaluation study mandated and financed by SNSF
<b>Evaluation methodologies employed</b>	Analyses of SNSF database, survey of scheme participants, interviews with various stakeholders, analyses of impact on Swiss research landscape; questionnaire
<b>Main findings &amp; recommendations of evaluation</b>	The MHV-Programme meets its targets, and is very successful: <ul style="list-style-type: none"> <li>• 85% of the supported women stay employed after the termination of the funding. Matching support by the host institution could be improved (long-term success)</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	Recommendations were carefully analysed and where meaningful and possible put into place
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	Situation before, during and after funding; employment status; improvement of career in science; effects on combining a career in research and family obligations (children) for the funded women
<b>Were findings or outputs benchmarked against national/international data?</b>	Outputs were not benchmarked

## Annex 2. Level 4 – Evaluation of Funding Schemes

### Switzerland (SNSF)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support
<b>Title/Objective of scheme</b>	SNSF-Professorship program
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Les transformations du marché académique suisse -Evaluation SNF-du programme boursiers FNS (octobre 2007) <a href="http://www.snf.ch/SiteCollectionDocuments/fp_evaluationsbericht.pdf">http://www.snf.ch/SiteCollectionDocuments/fp_evaluationsbericht.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	Does scheme meet target of providing highly qualified researchers who are able to successfully apply for permanent professorship positions? Recommendations for improvement of scheme
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Ex-post commissioned evaluation study mandated and financed by SNSF
<b>Evaluation methodologies employed</b>	Analyses of SNSF database, survey of scheme participants, interviews with various stakeholders, analyses of impact on Swiss research landscape
<b>Main findings &amp; recommendations of evaluation</b>	Altogether a very successful programme, integration at guest institution could be improved, relation to tenure track assistant professorship position is not always well regulated, guidance of PhD students should be possible at all universities, percentage of women at that level should be increased
<b>Follow-up/utilisation/ implementation of results</b>	Recommendations were carefully analysed and where meaningful and possible put into place
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	Age, sex, nationality, success rate in obtaining a permanent position, criteria for choosing guest institute, numbers of years after PhD, age when obtaining PhD, number of years of research in Switzerland, location (university and country) where permanent position was obtained, brain drain/gain, etc
<b>Were findings or outputs benchmarked against national/international data?</b>	Outputs were not benchmarked



## Switzerland (SNSF)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Thematic programme (also emphasis on knowledge transfer and cooperation with industry)
<b>Title/Objective of scheme</b>	National Research Programmes (NRPs)
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Wirkungsprüfung Nationale Forschungsprogramme, Staatssekretariat für Bildung und Forschung, 2007 (includes a summary in English) Available in hard copy and electronically at: <a href="http://www.sbf.admin.ch/htm/dokumentation/publikationen/forschung/nfp/Wirkungspruefung_SNF.pdf">http://www.sbf.admin.ch/htm/dokumentation/publikationen/forschung/nfp/Wirkungspruefung_SNF.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	Evaluation of the extent to which programmes reach their objectives; description and analysis of the effects of the programmes
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Evaluation study mandated by the State Secretariat for Education and Research and conducted by the Center for Science and Technology Studies (CEST)
<b>Evaluation methodologies employed</b>	Analyses of implementation plans and final reports, of SNF database, as well as interviews with various stakeholders (in particular programme managers and target/user groups)
<b>Main findings &amp; recommendations of evaluation</b>	<p>Generally, the study concluded that the direct effects of the NRPs are clearly underestimated. This is attributed, on the one hand, to a shortage of systematically collected data and electronically stored data that might produce evidence of effect, on the other hand, to the long term nature of effects of the NRPs</p> <p>In particular, the study highlights two types of effects of the NRPs, (a) in the field of science and (b) in the context of practical application. It recommends a distinction between NRPs with effects primarily in the context of science/research and primarily in the context of 'practical application', as the two types of NRPs require different yardsticks for evaluation. Hybrids exist and should be evaluated with particular care</p> <p>The study also highlights:</p> <ul style="list-style-type: none"> <li>• Instrument-specific effects resulting from the possibility to combine subjects, tasks, disciplines and players in unconventional constellations. The effects appear in networking processes and in occurrences of case-specific inherent dynamism, which also comes to bear outside an NRP, especially after its conclusion</li> <li>• Types of effects for which NRPs are unsuitable (e.g., delivering user-ready problem solutions for administrative and political organisations). These limits should be taken into account when selecting NRPs and evaluating the feasibility of submitted proposals</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	Recommendations were analysed carefully and implemented where meaningful and possible
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	<ul style="list-style-type: none"> <li>• Comparison of objectives (implementation plans) with evidence of success (final reports).</li> <li>• Financial volume, number of projects, number financed personnel and person/years, publications, conferences and seminars, patents, spin-offs, media-related activities</li> </ul>
<b>Were findings or outputs benchmarked against national/international data?</b>	Outputs were not benchmarked

## Annex 2. Level 4 – Evaluation of Funding Schemes

### United Kingdom

**Organisation:** Biotechnology and Biological Sciences Research Council (BBSRC)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Projects/programmes
<b>Title/Objective of scheme</b>	Responsive mode grant funding in engineering and biological systems
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation of BBSRC Engineering and Biological Systems committee responsive mode portfolio: <a href="http://www.bbsrc.ac.uk/organisation/policies/reviews/funded_science/0812_engineering_biological_systems_evaluation.pdf">http://www.bbsrc.ac.uk/organisation/policies/reviews/funded_science/0812_engineering_biological_systems_evaluation.pdf</a>
<b>Main evaluation questions (objective of the evaluation)</b>	Objectives were to: <ul style="list-style-type: none"> <li>• assess the quality and international standing of research funded through the EBS Committee</li> <li>• identify the major outputs and, where possible, outcomes of the EBS Committee responsive mode portfolio over the past 10 years</li> <li>• identify strengths, weaknesses and gaps in the EBS Committee remit and the way it is structured</li> <li>• consult with the research community and other relevant funding bodies (government and non-government) to assess whether the EBS Committee is currently funding the most appropriate areas of UK bioscience</li> <li>• assess the economic and social impact of EBS-supported research</li> <li>• identify ways to build on successes, and ways to address identified gaps and issues</li> </ul>
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	Ex-post evaluation of quality of research and monitoring of responsive mode committee procedures
<b>Evaluation methodologies employed</b>	<ul style="list-style-type: none"> <li>• Questionnaires to past and present grant holders, past and present committee members, other funders</li> <li>• Desk research</li> <li>• Final evaluation by peer review panel</li> </ul>
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Research quality</b></p> <ul style="list-style-type: none"> <li>• EBS has supported some highly innovative and successful research in important multi- and inter-disciplinary areas. The quality of the portfolio as a whole was good and improved over time. Some of the research funded was high-risk, hypothesis-driven, and funding for this type of research must be continued</li> <li>• While continuing to ensure value for money from grants, EBS should not unnecessarily cut the amount awarded: evidence from the evaluation indicates that reduced awards underperform.</li> <li>• To build on the outputs achieved, and to maintain its position internationally, the EBS community should be encouraged to consider how research in this area can best be translated into viable outcomes. BBSRC should play a role in facilitating this, particularly in relation to the use of new tools and technologies</li> </ul> <p><b>Research outputs</b></p> <ul style="list-style-type: none"> <li>• The EBS portfolio has produced a good number of research papers and trained staff as well as an impressive number of new tools and technologies. This is despite the tensions which affect published outputs, including the need to protect IPR and the reluctance of some major, multidisciplinary journals to accept engineering papers</li> <li>• Over half the sampled PIs had established new contacts in the UK and/or overseas as a result of the EBS grant. However, only a few of these led to internationally co-authored papers, and there is scope for BBSRC to encourage further contacts, particularly in regions where relevant research is emerging strongly (e.g., India and Singapore)</li> <li>• While recognising the comparatively high number of trained staff resulting from EBS grants, there is still a shortage of skilled researchers to sustain research within academia and industry in this important area. Recruitment of appropriate skills, in particular good numeracy skills, remains difficult</li> <li>• The evidence suggests that some EBS grants have not contributed to the career development of the RAs working on the grants or to the flow of people between disciplines. The level of training provided varies between institutions and BBSRC should consider monitoring the information on funding options and career guidance given by HEIs</li> <li>• BBSRC's move to funding more Doctoral Training Grants, at the expense of targeted Committee studentships, appears to have disproportionately affected the availability of awards in the EBS area. More studentships should be funded in association with EBS research grants</li> </ul>

## United Kingdom (BBSRC)

<p><b>Main findings &amp; recommendations of evaluation</b></p>	<p><b>Balance and coverage of the portfolio</b></p> <ul style="list-style-type: none"> <li>Given the wide remit of EBS, and the quality of the research outputs, it is surprising that this area receives a lower proportion of BBSRC's responsive mode funding than other committee areas. As a result, the coverage lacks depth</li> <li>EBS operates at several crucial research interfaces. The interface with other BBSRC committees needs to be monitored continuously to prevent gaps from developing as research initiatives move into mainstream funding</li> <li>The most prominent interface is that with EPSRC's LSI and, while these linkages are clearly strong, there is uncertainty within the community about which Council to approach for funding. Roadshows should be arranged to address this. It is important that the research councils work together to ensure that no barriers exist which might hamper genuinely interdisciplinary research</li> <li>A shift towards more translational research could be facilitated by increased dialogue in relation to the EBS area between BBSRC and MRC and by helping PIs to understand better the routes they can follow to obtain appropriate funding</li> </ul> <p><b>Economic and social impact</b></p> <ul style="list-style-type: none"> <li>The EBS portfolio has given rise to some notable industrial developments, including 14 spin-out companies. The overall level of interaction with industry is reasonable, particularly given the constraints within which PIs have to work (e.g., needs of the RAE, conflicting demands on their time). However, there is clear scope to increase such interactions, by facilitating a change in culture, particularly among academic researchers</li> <li>BBSRC has a well-run central programme of activities to support PIs' public engagement activities. However, the level and range of activities reported by EBS PIs did not always match expectations. BBSRC should reconsider the current requirement for all PIs to carry out these activities and concentrate on encouraging those who show particular aptitude for them, by providing clearer direct incentives and increasing the rewards</li> <li>The EBS portfolio has generated some important impacts in relevant research skills and training, and in relation to research for the public good – particularly research developments in biomedicine. It will be important to build on these developments by increasing the capacity of the EBS community to carry out translational research, by facilitating the dialogue at the BBSRC/MRC interface, and by raising the community's awareness of the potential impacts of their research</li> </ul>
<p><b>Follow-up/utilisation/ implementation of results</b></p>	<p>Being taken forward alongside the conclusions of evaluations of other areas of responsive mode funding by BBSRC Executive Group and executive committees involved in grant funding and strategic planning</p>
<p><b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b></p>	<p>Many – please see report</p> <p>E.g., publications, citations, patents, exploitation income, spin-outs (numbers and employees), follow-on funding, collaborations, networks created, new linkages, training provided, impact in areas of public good</p>
<p><b>Were findings or outputs benchmarked against national/international data?</b></p>	<p>Where possible – we also had international representative on the panel to provide international comparisons</p>

## Annex 2. Level 4 – Evaluation of Funding Schemes

### United Kingdom

**Organisation:** Economic and Social Research Council (ESRC)

<b>Funding mode of case study scheme</b> (Career Support; Projects/ Programmes; CoE; etc.)	Career support
<b>Title/Objective of scheme</b>	ESRC/NERC Interdisciplinary Research Studentship Scheme
<b>Title of evaluation report</b> (include year of publication and where available – website, hard copy, etc.)	Evaluation of the ESRC/NERC Interdisciplinary Research Studentship Scheme (October 2005) <a href="http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/Support/Evaluation/publications/index.aspx?ComponentId=16591&amp;SourcePageId=19705">http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/Support/Evaluation/publications/index.aspx?ComponentId=16591&amp;SourcePageId=19705</a>
<b>Main evaluation questions (objective of the evaluation)</b>	The evaluation assessed the performance of the ESRC/NERC Interdisciplinary Research Studentship Scheme against its main objectives and advised both the ESRC and NERC on their further support for this initiative
<b>Organisational set-up/ Particulars of evaluation</b> (e.g., Ex-ante/Interim/Ex-post; Commissioned/Self-Evaluation; Steering Committee; etc.)	<ul style="list-style-type: none"> <li>• This was a review of an ongoing scheme commissioned by the ESRC's Research Evaluation Committee (REC). A consultant is appointed to assess the success of the scheme and to advise ESRC and NERC on its future development</li> <li>• The REC evaluates all ESRC's investments, from small research grants to research programmes and centres</li> </ul>
<b>Evaluation methodologies employed</b>	Documentation analysis (applications, papers relating to the establishment and management of the scheme, etc.), interviews with students, supervisors and ESRC staff, questionnaires to students and supervisors, a focus group to discuss the future development of the scheme
<b>Main findings &amp; recommendations of evaluation</b>	<p><b>Findings:</b></p> <ul style="list-style-type: none"> <li>• It is an important scheme that promotes interdisciplinary research and trains the next generation of interdisciplinary researchers</li> <li>• The Scheme: <ul style="list-style-type: none"> <li>– visibly underscores the importance of interdisciplinary research</li> <li>– allows research to be done that could not otherwise be conducted</li> <li>– prepares next generation researchers to conduct good quality interdisciplinary research</li> </ul> </li> <li>• While some students appear to have no sense of belonging to a professional community, most students have some sense of affiliation with an interdisciplinary field or with an evolving niche at the overlap of other disciplines. Even so, this affiliation is often more abstract than operational in terms of opening professional career opportunities</li> <li>• Next steps along a career path are not straightforward for these students, however strong they or their theses might be. Because of the demands of the RAE, the tendency is still to hire individuals who (a) can deliver teaching coverage for a particular discipline and/or (b) can produce the sorts of discipline-based publications in mainstream journals that score highly in the assessment exercise</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• The scheme should be continued but it must go further in building and legitimising an interdisciplinary community</li> <li>• Visibly encourage interdisciplinarity by funding sequential stages of a career path</li> <li>• Annual community-building student conferences</li> <li>• Utilise the expertise of the community of current/former Supervisors of interdisciplinary studentships</li> </ul>
<b>Follow-up/utilisation/ implementation of results</b>	Recommendations put to Council Joint ESRC/NERC studentship workshop to help engagement with the non-academic community
<b>Duration of evaluation and costs</b>	Evaluation was conducted April – October 2005
<b>Indicators utilised for this study (e.g., quality and quantity indicators) – or indicators generally collected for this type of scheme</b>	For a full list of indicators used please refer to the full evaluation report Indicators include: publications, collaborations, Networks, allocation of resources
<b>Were findings or outputs benchmarked against national/international data?</b>	The findings have not been benchmarked against national/international data

## Annex 3. Participating Organisations and Nominated Representatives

### Participating organisations and nominated representatives

Country	Organisation	Contact Person
Austria	Austrian Science Fund (FWF)	Rudolf Novak
Austria	Austrian Academy of Sciences (ÖAW)	Bernhard Plunger, Claudia Heilman
Belgium	National Fund for Scientific Research (FNRS)	Elisabeth Kokkelkoren
Belgium	Fund for Scientific Research – Flanders (FWO)	Hans Willems
Cyprus	Research Promotion Foundation	Leonidas Antoniou
Czech Republic	Czech Science Foundation (GAČR)	Veronika Paleckova
Denmark	Danish National Research Foundation (DG)	Vibeke Schrøder
Estonia	Estonian Science Foundation (ETF)	Rainer Randmeri
Finland	Delegation of the Finnish Academies of Science and Letters	Jussi Nuorteva, Irina Kauhanen
Finland	Academy of Finland (AKA)	Annamaija Lehto
France	National Centre for Scientific Research (CNRS)	Danielle Dowek
France	National Institute for Agronomic Research (INRA)	Michel Dodet, Élisabeth de Turckheim
France	Institut National de la Santé et de la Recherche Médicale (Inserm)	Isabelle Henry
France	National Institute for Development (IRD)	Patrice Cayré
Germany	German Research Foundation (DFG)	Jürgen Güdler, Anke Reinhardt
Germany	Max-Planck-Gesellschaft (MPG)	Helene Schruoff
Hungary	Hungarian Scientific Research Fund (OTKA)	Zsuzsanna Gilyen
Ireland	Irish Research Council for the Humanities and Social Sciences (IRCHSS)	Sorcha Carthy
Ireland	Health Research Board (HRB)	Brendan Curran
Ireland	Science Foundation Ireland (SFI)	Helen O'Connor, Ruth Freeman
Italy	National Research Council (CNR)	Massimiliano Di Bitetto, Sarah S. Chen, Alessandra M. Stilo
Italy	National Institute for Nuclear Physics (INFN)	Valerio Vercesi
Lithuania	Lithuanian State Science and Studies Foundation (FONDAS)	Milda Naujokaitė
Luxembourg	Fonds National de la Recherche (FNR)	Christiane Kaell, Frank Bingen
Netherlands	Netherlands Organisation for Scientific Research (NWO)	Mariken Elsen, Margreet Bouma
Netherlands	Royal Netherlands Academy of Arts and Science (KNAW)	Jack Spaapen
Norway	The Research Council of Norway (RCN)	Gro Helgesen
Poland	Foundation for Polish Science (FNP)	Marta Lazarowicz-Kowalik*
Romania	National University Research Council (CNCSIS)	Ioan Dumitrache, Monica Cruceru
Slovakia	Slovak Academy of Sciences (SAV)	Iveta Hermanovska
Slovakia	Slovak Research and Development Agency (APVV)	Bibiana Remiarova
Sweden	Swedish Council for Working Life and Social Research (FAS)	Kenneth Abrahamsson, Inger Jonsson
Sweden	Swedish Royal Academy of Letters History and Antiquities (KVHAA)	Erik Norberg
Sweden	Swedish Research Council (SRC)	Per Janson
Switzerland	Swiss National Science Foundation (SNSF)	Sandra Scheidegger, Katrin Milzow
Turkey	Scientific and Technological Research Council of Turkey (TÜBİTAK)	Mustafa Ay, Mehmet Arif Adli
UK	Arts and Humanities Research Council (AHRC)	Pik Wong
UK	Biotechnology and Biological Sciences Research Council (BBSRC)	Mari Williams
UK	Medical Research Council (MRC)	Ian Viney
UK	Engineering and Physical Sciences Research Council (EPSRC)	Rebecca Stelarios
UK	Economic and Social Research Council (ESRC)	Margret MacAdam, Anna Billingham, Veronica Littlewood

\* representing the Polish Academy of Sciences

## Annex 3. Participating Organisations and Nominated Representatives

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### Observer organisations

Organisation	Observer
ALLEA	Rüdiger Klein
European Commission (EC)	Peter Fisch
European Research Council (ERC)	Alexis-Michel Mugabushaka
Organisation for Economic Co-operation and Development (OECD)	Dong Hoon Oh
The Wellcome Trust, UK	Briony Rayfield
National Science Foundation (NSF), USA	Jill W. Schamberger

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