

NIFU, STEP and Technopolis

**Evaluation of Norway's participation in the EU's 5th
Framework Programme**



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Preface

This report presents the evaluation of Norway's participation in the European Union's 5th Framework Programme (5FP) for Research and Technology Development (RTD), which was implemented in the period of 1998 to 2002. The evaluation was undertaken by a consortium consisting of personnel from NIFU and STEP in Oslo and Technopolis, UK, according to a contract with the Norwegian Ministry of Trade and Industry. Chapter 2 of this report describes how the evaluation was done; however, the main focus in the evaluation was the following three topics:

- a description and analysis of the Norwegian participation,
- the national system for providing guidance and information services in connection with the framework programme
- 5FP as a tool in Norwegian research and innovation policy, including the synergy and interaction with national research programmes.

The evaluation began in August 2003 and the final draft of the evaluation report was finished on 1st March 2004. As work with the evaluation progressed, results and various drafts of the evaluation were presented to an advisory group established by the Ministry of Trade and Industry. Initially, Ms. Kristin Hauge of the Ministry of Trade and Industry chaired this group, but from 1st January 2004, Ms. Sidsel Aarnæs Arbo succeeded her, as Ms. Hauge transferred to the Ministry of Education and Research from this date. The other members of this group were:

- Dr. Wiktor Sørensen, Managing director of the NORUT-Group, Tromsø
- Ms. Sissel Hertzberg, Senior Advisor, NTNU – Norwegian University of Science and Technology,
- Ms. Elisabeth Authen, Advisor, Ministry of Education and Research,
- Mr. Tore Li, Senior Advisor, NHO - Confederation of Norwegian Business and Industry
- Dr. Kari Kveseth, Managing Director, Research Council of Norway

The evaluation was organized as a project under the leadership of Mr. Karl Erik Brofoss of NIFU, who has also been responsible for the quality assurance of the project and overall coordination in the consortium. As usual in teamwork, the end result is based on contributions from many people; however, the following should be set on record:

- Mr. Aris Kaloudis of STEP, who had a significant role in data collection (survey and interviews) and analyses, has written chapters 2, 6 and parts of chapter 4,
- Mr. Svend Otto Remøe of STEP has written chapter 3,
- Dr. Hege Nordli of NIFU has written parts of chapter 4 based on data that she systematized and analyzed,
- Dr. Helge Godø of NIFU has collected and analyzed the data on the Norwegian support system and written chapters 1, 5 and 7; in addition, he edited this report.

- Technopolis, under the leadership of Dr. Eric Arnold, has done the benchmark exercise presented in chapter 5 and Appendix 1,
- Mr. Nils Henrik Solum of STEP implemented the web-questionnaire used in the survey, and Dr. Frode Berglund and Ms. Inger Henaug, both at NIFU, provided valuable help for the survey in the evaluation,
- Dr. Trond Einar Pedersen of STEP contributed with the analyses of “non-participants” in chapter 6 and Appendix 3
- Mr. Tore Sandven of STEP did the statistical analyses of the survey data.

Needless to say, an evaluation of this type is not possible without considerable contributions of facts, opinions and data from a large number of sources. Whenever possible and appropriate, this report will give credit to these sources in the text. In particular, we would like to point out that the EU Office in the Research Council of Norway has been very helpful in providing the evaluation with data; for this, we would like to express our gratitude to Mr. Simen Ensby, Ms. Lena C. Endresen, Ms. Gudrun Langthaler and Mr. Paul Sørensen. In addition, we would like to express our gratitude to all those who used their valuable time to provide the evaluation with data and information.

Petter Aasen
Director

Contents

1	Summary, main conclusions and recommendations	1
1.1	Summary.....	1
1.1.1	The Norwegian participation in the EU's 5FP: Size, scope and characteristics.....	1
1.1.2	The Norwegian support system for participation in the EU's 5FP.....	3
1.1.3	Significant issues for Norwegian R&D and innovation policy and strategies	4
1.2	Main conclusion	6
1.3	Recommendations	6
1.3.1	R&D and innovation strategy: Finding a balance between adaptive and pro-active	6
1.3.2	National support system	7
1.4	Sammendrag, hovedkonklusjon og anbefalinger.....	8
1.4.1	Sammendrag.....	8
1.4.2	Omfang og profil på norsk deltakelse i EUs 5RP.....	9
1.4.3	Veilednings- og informasjonsapparatet i forbindelse med 5RP	10
1.4.4	EUs 5RP som forsknings- og innovasjonspolitisk virkemiddel og samspill med nasjonale satsninger.....	11
1.4.5	Anbefalinger.....	12
2	Terms of reference and how the evaluation was undertaken	15
2.1	Terms of reference and relevant key concepts.....	15
2.1.1	Background for the evaluation of Norwegian participation in the 5FP framework programme.....	15
2.1.2	About the 5FP.....	15
2.1.3	Key concepts in this evaluation.....	18
2.2	The evaluation	19
2.2.1	The terms of reference.....	19
2.2.2	The evaluation team – NIFU consortium	19
2.3	Analytical approach and main sources of information	20
2.3.1	Analytical approach.....	20
2.3.2	Data sources	21
2.3.3	The survey	24
3	EU's Framework Programme for RTD in context.....	27
3.1	EU's aim: The European dimension and EVA – European Added Value.....	27
3.2	Salient characteristics of EU's 5FP compared to other FPs	29
3.3	Major perspectives in EU's framework programmes in relation to Norwegian RTD-policy	32
4	The Norwegian participation: Size, scope and characteristics.....	37
4.1	Norwegian economic return	38
4.2	Norway's rate of success	39
4.3	Number of participants, participation in projects and networks.....	39
4.3.1	Norwegian participations	39
4.3.2	Norwegian projects.....	41

4.3.3	The EU-contribution to Norwegian participations	41
4.3.4	Types of projects and Norwegian participation	43
4.4	Geographical distribution of participants in Norway	44
4.5	The most active participants.....	44
4.6	Number of projects with Norwegian coordinators	45
4.7	EU Research Infrastructures in Norway	46
4.8	Fellowships	49
4.9	Gender of Norwegian participants and project leaders	49
4.10	Number of Norwegian national experts in the European Commission.....	51
4.11	Nationality of Norwegian co-participants	52
4.12	Changed institutional patterns of participation for universities, research institutes and SMEs, compared with EU's 4FP	52
5	The Norwegian system for information and counselling (support system)	55
5.1	Defining criteria of success	55
5.2	Description of the Norwegian support system	55
5.3	Comparison of national structures for Framework Programmes - Austria, Finland, Germany, Israel, Netherlands and Sweden	57
5.3.1	Supporting/funding agencies	58
5.3.2	Representation in Brussels.....	59
5.3.3	Representation of stakeholder issues/views.....	59
5.3.4	Operational aspects	60
5.3.5	Co-ordination with other (regional) parties	62
5.3.6	Tools and implementation of support	62
5.3.7	Target groups	65
5.3.8	Funding for participants.....	65
5.3.9	Evaluation.....	66
5.3.10	New roles for FP liaison bodies	66
5.3.11	Lessons from the country cases	66
5.3.12	Strategic perspectives on 6FP	67
5.3.13	National organization.....	68
5.3.14	Tools for support.....	69
5.4	Assessment of the Norwegian national support system	69
5.5	Recommendations based on analysis of strengths and weaknesses	73
6	Significant issues for Norwegian R&D and innovation policy and strategies	77
6.1	The competitiveness of Norwegian participants	78
6.1.1	The overall Norwegian participation performance was as expected	78
6.1.2	Explaining the Norwegian participation profile	81
6.2	Synergy between EU's 5 RP and national research programmes in terms of topics and funding	88
6.2.1	Synergy with national funding schemes	89
6.2.2	Thematic synergy.....	91
6.2.3	Synergy of R&D instruments – characteristics of the EU-projects compared with the Norwegian R&D project portfolio	93
6.3	Incentives and barriers to Norwegian participation	95
6.3.1	Incentives to participate	95
6.3.2	Barriers	95

6.4	Why non-participation – The point of view of experienced businesses	98
6.5	Additionality	99
6.5.1	Additional R&D funding covered by the participants.....	99
6.5.2	Would R&D projects funded by the EU have been undertaken irrespective of this funding?.....	100
6.5.3	Risk-taking trade-offs.....	100
6.6	Quality of research, networking and internationalization of Norwegian participants	101
6.6.1	Quality of the EU-projects	102
6.6.2	Types of competence.....	103
6.6.3	Types of networking and internationalization.....	104
6.7	The degree to which Norwegian actors have been active participants	105
6.7.1	Experienced participants	106
6.7.2	Norwegian participants did have an active role in the EU-projects	106
6.7.3	The issue of being co-ordinator – a blessing or a curse?.....	107
6.8	Has participation in the 5FP improved industry's innovation capability?.....	108
6.8.1	Direct effects on the industry's innovation capability.....	108
6.8.2	Indirect effects on the innovation capability of Norwegian businesses	112
7	Conclusions and recommendations.....	115
7.1	Summary of main findings	115
7.1.1	The Norwegian participation in the EU's 5FP: Size, scope and characteristics..	115
7.1.2	The Norwegian support system for participation in the EU's 5FP.....	116
7.1.3	Significant issues for Norwegian R&D and innovation policy and strategies	118
7.1.4	Implications of findings.....	120
7.2	Recommendations: Norwegian R&D and innovation strategy & policy.....	121
7.2.1	R&D and innovation strategy: Finding a balance between adaptive and pro-active	121
7.2.2	Other areas for consideration	122
7.3	Recommendations: National support system.....	123
7.3.1	Becoming more targeted	123
7.3.2	Other areas for consideration	123
	Literature.....	125
	Appendix 1: National Benchmark Country Reports	127
	Appendix 2: Interview questions national benchmarking.....	177
	Appendix 3: Brief description of non-participating companies analyzed in chapter 6.....	179
	Appendix 4: Interview guide used for interviews of Norwegian key personel	183
	Appendix 5: Questionnaire sent to Norwegian participants in EU's 5FP	185
	Appendix 6: List of informants interviewed in the evaluation.....	213
	Appendix 7: Brief note on rates of success	215
	Appendix 8: Estimate of the Norwegian contribution to the 5FP	217
	Appendix 9: Glossary of terms and acronyms.....	219

Tables and figures

Table 2.1:	Budget of the 5FP: Maximum Amounts and Breakdown (1998-2002).....	17
Table 2.2:	Response rate by type of organization and specific program.	25
Table 2.3:	Response rate by type of organization and project type.	25
Table 2.4:	Response rate by type of organization and type of participation.	26
Table 4.1:	Norway's participation by institutions.....	40
Table 4.2:	Norway's participation by specific program.....	40
Table 4.3:	Number of contracts with at least one Norwegian participation, by program	41
Table 4.4:	The EU contribution to Norwegian participants by type of organisation in 5FP... ..	42
Table 4.5:	Norwegian participation by type of project and institution. Per cent.	43
Table 4.6:	EU Contribution to Norwegian participants by project type. Per cent.	44
Table 4.7:	Geographical distribution in participations by region.....	44
Table 4.8:	Norwegian institutions with at least 10 participations	45
Table 4.9:	Number of Norwegian co-ordinators by specific program and by type of organisation.....	46
Table 4.10:	The six most active co-ordinating institutions (cut-off = 10 projects).....	46
Table 4.11:	Number of Marie Curie Fellowships, by program.....	49
Table 4.12:	Respondents' gender by type of institution	50
Table 4.13:	Respondents' gender by specific programme	50
Table 4.14:	Researchers involved in the EU-project by type of institution and by gender.....	51
Table 4.15:	Researchers involved by specific programme and by gender	51
Table 4.16:	Number of partnerships with other countries in Norwegian projects. Top ten countries.....	52
Table 4.17:	Comparison of institutional patterns of participation between 4FP and 5FP.....	53
Table 4.18:	Thematic correspondence between 5FP and 4FP.	54
Table 5.1:	Overview of National Framework Dissemination Bodies / NCPs /IRCs	61
Table 5.2:	Dissemination tools of the various national FP systems.....	64
Table 5.3:	Usefulness of information sources used by Norwegian participant in the EU's 5FP	73
Table 6.1:	Indicators of Norwegian participation performance by specific program	79
Table 6.2:	Indicators of Norwegian participation performance by type of institution.....	83
Table 6.3:	The participation profile of the Norwegian research institutes. Number of participations.....	84
Table 6.4:	Participation profile of the Norwegian higher education organisations. Number of participations.	84
Table 6.5:	EU-contribution to most active businesses. MNOK.....	85
Table 6.6:	Business participations in 5FP, by industry sector (NACE Rev 1). Number of participations.....	86
Figure 2.1:	The analytical approach of the evaluation	20
Figure 4.1:	Shares of Norwegian participation by type of organisation and by specific program.....	41
Figure 4.2:	Shares of the EU contribution to Norwegian participants by type of organisation and specific program.....	42

Figure 4.3:	EU-contribution to Norwegian participants in First activity of the 5FP compared to total EU-contribution to this activity by specific program. Per cent.	43
Figure 6.1:	Shares of participations by industry sectors as opposed to shares of internal R&D funding, shares of employees with higher education in Natural science or technology fields, and shares of all employees. NACE-section codes.	86
Figure 6.2:	Is the current EU-project a continuation of another R&D project? Per cent of respondents. Results from question 0401 in the survey (N=793).	92
Figure 6.3:	Has the EU 5FP Framework Program had a thematic profile which fits the knowledge requirements of your institution? Per cent of respondents. Results from question 11.06 in the survey (N=722).	93
Figure 6.4:	Compare the nature of the EU-project to other R&D-projects in your research unit /firm. Per cent of the respondents. Results from question 0407 in the survey (Nmax=769 Nmin=765).	94
Figure 6.5:	Motives to participate in the 5FP. Per cent of respondents. Results from question 0503 in the survey (Nmax = 750, Nmin = 734).	95
Figure 6.6:	Hindrances during the proposal phase. Per cent of respondents. Results from question 0504 in the survey (Nmax =723 , Nmin =717).	97
Figure 6.7:	Needs for improvement in support for participation in the EU's Framework Programs. Per cent of respondents. Results from question 11.05 in the survey (Nmax = 710, Nmin = 699).	97
Figure 6.8:	Hindrances in the carrying out of the EU-project. Per cent of respondents. Results from question 0505 in the survey (Nmax = 744, Nmin = 733).	98
Figure 6.9:	Aspects of narrow additionality. Per cent of respondents. Results from question 10.03 in the survey (Nmax=753 , Nmin=701).	100
Figure 6.10:	Evaluation of different aspects of the EU-participation. Per cent or respondents. Results from question 10.02 in the survey (Nmax=755, Nmin = 752).	102
Figure 6.11:	Achieved or expected results from the participation. Per cent of respondents. Results from question 06.01 in the survey (Nmax=760, Nmin=670).	103
Figure 6.12:	Effects on competence building. Per cent of respondents. Results from question 0801 in the survey (Nmax = 745, Nmin= 724).	103
Figure 6.13:	Types of achieved new long term collaboration contacts. Per cent of respondents. Results from question 0802 in the survey (Nmax = 748, Nmin = 729).	104
Figure 6.14:	Network patterns between organisations in the IST specific program having at least 9 common projects.	105
Figure 6.15:	Role in the EU-project. Per cent of respondents. Results from question 0404 in the survey. (Nmax = 790, Nmin =780).	106
Figure 6.16:	Respondents' role in the selection of consortium. Results from question 0405 in the survey Nmax= 756, Nmin = 736.	107
Figure 6.17:	Achieved or expected results from the participation. Only participants from businesses. Per cent of respondents. Results from question 06.01 in the survey (Nmax=206, Nmin=188).	109
Figure 6.18:	Effects of the project on the market position of the firm. Only participants from businesses. Per cent of respondents. Results from question 06.02 a-f in the survey (Nmax=203, Nmin=198).	111
Figure 6.19:	The strategic importance of the EU-project for the participating organisations. Per cent of respondents. Results from question 10.04 in the survey (Nmax=753, Nmin=729).	112
Figure 6.20:	Potential spillovers of the Norwegian participation to the Norwegian industry. Per cent of 'yes'. Results from question 0902 in the survey (Nmax=746, Nmin=746).	113

1 Summary, main conclusions and recommendations

1.1 Summary

This report presents the evaluation of Norway's participation in the European Union's 5th Framework Programme (5FP) for Research and Technology Development (RTD)¹, which was implemented in the period of 1998 to 2002.

The main focus in the evaluation was the following three topics:

- a description and analysis of the Norwegian participation (cf. section 1.1.1 below for a summary),
- the national system for providing guidance and information services in connection with the framework programme (cf. section 1.1.2 below for a summary),
- 5FP as a tool in Norwegian research and innovation policy, including the synergy and interaction with national research programmes (cf. section 1.1.3 below for a summary).

The general picture is that Norway's participation performance in the EU's 5FP has been reasonably successful. In spite of these findings, the evaluation identified numerous issues having a potential for improvement. Most important of these: In order to leverage the opportunities inherent in EU's FPs, Norway should make efforts to better couple or integrate its national R&D and innovation programs with the EU's FP in order to:

- Increase thematic synergies when this is appropriate
- Improve synergies of national and FP funding schemes
- Increase and improve Norwegian 'absorption capacity' related to RTD values created in the EU-projects

Ideally, a national R&D and innovation strategy should be made so that national interests are optimized by participation in international R&D and innovation efforts. In the period of 5FP, this link was generally weak or coincidental. Thus, the structural and organizational challenge is how to amplify and maximize the potentials that participation in the EU's FPs represent for Norway, i.e. Norwegian interests. The next sub-sections will present a summary of the main findings related to the three topics of the evaluation. This will be followed by a presentation of the main conclusions and recommendations.

1.1.1 The Norwegian participation in the EU's 5FP: Size, scope and characteristics

As will be elaborated in chapter 4, Norway had 1,571 participations, a share of 2 per cent of all participations in the EU's 5FP; Norway participated in 1,086 projects, a share of 7

¹ EURATOM is not included in this evaluation.

per cent of all projects in the EU's 5FP. Research institutes had the highest share of Norwegian participations, followed by businesses and universities (Higher Education). The total budgets of the R&D-projects that Norwegians participated in were € 2.4 billion (NOK 19 billion).

The EU-contribution to Norwegian participants in the 5FP was € 248.6 million, while the total Norwegian contribution to the 5FP is estimated to be about € 274 million (2,192 million NOK). Dividing these two figures, the economic return is estimated to be 0.9, i.e. that Norway incurred a "deficit" of approximately 10%. However, on the level of the individual programmes, administration cost of the 5FP is estimated to be about 10 per cent of the overall budget of the 5FP (€ 1,370 million). In addition, the EU's Joint Research Centres get about 5 per cent of the 5FP budget. Hence, about 15 per cent of the 5FP budget was out of competition for Norwegian or other countries' researchers. Taking these aspects into consideration, the Norwegian economic return of 0.9 is an indication of a satisfactory participation performance, in budgetary terms.

However, this estimate does not include the considerable costs that preparing project proposals to the 5FP incurred to the Norwegian organizations, nor the costs related to management of the Norwegian participation at the policy (Ministries, Research Council of Norway), institutional (Research institutes, Higher Education, etc.) and project level.

In the evaluation, the following details related to the participation in the EU's 5FP emerged:

- EU's funding of Norwegian participants:
 - Research institutes in Norway received 42 per cent of the Norwegian 5FP contributions.
 - EU's funding of projects with Norwegian participation was more than expected in EESD (Energy, Environment and Sustainable Development) particularly in the Environment part, but below the expected in IST (Userfriendly Information Society).
 - Norwegian participation in terms of project type was highest in research project, which represented 56 per cent of all participations and 71 per cent of all the EU-contributions to Norway.
- The rate of success of Norwegian proposals to the 5FP seemed to be on 5FP's average.
- Almost half of the Norwegian participations in 5FP involved institutions in the Oslo region; Bergen and Trondheim had a substantial share of the rest.
- In spite of this, the Trondheim-based SINTEF was the Norwegian institution with the highest number of participations, followed by University of Oslo and University of Bergen. SINTEF often has close collaboration with NTNU, this possibly explaining NTNU's ranking as no. 4.

- Norwegian institutions were coordinators of 211 projects. Of these, the University of Bergen, having 40 prime contractors, had the highest number, followed by 30 prime contractors at the University of Oslo and 25 prime contractors at NTNU.
- The Marie Curie Fellowships scheme funded 48 non-Norwegians to stay and work in Norwegian R&D organisations in 5FP. Only 16 Norwegian researchers (0.6 per cent of all Marie Curie Fellowships) received funds to stay and work in R&D organisations outside Norway.
- In the 5FP, eight Norwegian research infrastructures were funded by the EU.
- More than 50 per cent of Norway's collaborations in the projects are with participants from United Kingdom, Germany, France, Italy and the Netherlands.
- An analysis of respondents to the questionnaire survey in the evaluation indicates that 17 per cent of project leaders and 28 per cent of the researchers in the Norwegian participation in 5FP were female. This is fairly similar to the pattern of gender differences in Norwegian R&D community.

1.1.2 The Norwegian support system for participation in the EU's 5FP

As will be elaborated in chapter 5, during the EU's 5FP, the Norwegian support system consisted of the following elements:

- The *Norwegian EU R&D Information Centre* (EU R&D IC – now renamed as EU RTD Department) of the Research Council of Norway, based in Oslo,
- The *Norwegian Innovation Relay Center Network* (IRC Norway), which is hosted by SINTEF Industrial Management, in Trondheim, and
- Delegates to the programme committees and NCPs.

The national support system may broadly be characterized as serving two purposes:

- Promote and stimulate Norwegian participation in the EU's FPs,
- Promote Norwegian interests and strategies in the EU-system.

Being described as service-minded and efficient, these purposes seem to be served fairly adequately by the national support system during 5 FP. Still, the evaluation identified two areas that need more attention:

- First, because the barriers for firms to participate in the EU's FPs are high, particularly for SMEs, the support system should adopt a more active role in creating interest and supporting firms and organizations that have a potential as participants. The "broadcast"-mode that was used during the 5FP is not adequate for these groups.
- Second; apart from a few cases, the strategic overlap or convergence between national R&D and innovation priorities and Norwegian participation in 5FP seems to be weak, or coincidental.

The Research Council of Norway has a key role in achieving synergy and coordination between national R&D programs and 5FP. To appoint staff with good knowledge on the national R&D programs as delegates in relevant Program Committees (both in the 4FP and 5FP) seems to be a good strategy to achieve synergies. This was also the opinion of the evaluators of the Norwegian participation in the 4FP.

Although the people undertaking these tasks seem to do a good job, one could question whether the Research Council of Norway used optimally the resources available (time used and personnel by specific program). Firstly, one would expect that R&D and innovation issues related to vital national economic or societal interest (e.g. energy, environment, marine resource management, etc.) should have been given high priority and more resources in order to induce higher participation in the 5FP. Secondly, one would expect that the greater the size of the specific programs, the greater should be the allocation of resources to these areas in the Research Council of Norway. Thirdly, one would expect a systematic exchange of experiences between delegates at Programme Committees in the 5FP and the Norwegian EU R&D Information Centre.

1.1.3 Significant issues for Norwegian R&D and innovation policy and strategies

Four significant issues were addressed in the evaluation:

- the *competitiveness* of Norwegian researchers in 5FP,
- *barriers* for participation,
- the *additionality*, or extra benefit gained from the participation, and,
- the *impact* of 5FP on the innovation capability of Norwegian industry.

Chapter 6 of this report elaborates these topics; below a summary of these topics will be presented.

Competitiveness

Since the Norwegian contribution corresponds to 2 per cent of 5FP's budget, the following criterion of assessing the Norwegian participation is adopted: If Norwegian shares of financial contribution to the EU-projects in 5FP-projects or Norwegian shares of total number of participations in the 5FP are equal to or exceed 2 per cent, then Norwegian participation is considered as satisfactory. Conversely, shares below 2 per cent are considered as indication of weak participation.

Based on this criterion, Norway's participation in 5FP has been uneven: Thematic areas showing high Norwegian participation have a strong position and focus in the Norwegian R&D and innovation system. In contrast, some areas had a weak participation, such as in IST. Participation in this area decreased from 4FP to 5FP. Although considered strategic in national R&D priorities, Norway has a weak industrial base in the ICT-sector, which to some extent may provide a structural explanation for this. Still, because of the high

priority given to this area in the national R&D strategy, one would assume increasing the participation should become an important strategic aim in the future.

Barriers

High costs of preparing proposals constituted the highest barrier for participation in 5FP. Probing further, for non-participating industry, the following barriers seem most important:

- Time-consuming reporting and administration for project participants, but in particular for project co-ordinators, is emphasised as the single-most important barrier to participate.
- Spending resources in the the EU-projects needs to be justified by tangible commercial aims. If technology and market monitoring network building are the only aims, these may be obtained more inexpensively by other means.

Additionality

Additionality is essential for justifying Norway's participation in the EU's FPs, i.e. it characterizes to what extent Norway benefits from its participation in projects worth € 2.4 billion. Although this is an elusive concept, it may be defined in two ways: In a narrow sense and in a broad sense. The narrow understanding of additionality defines this as whether or not the EU-projects would have been undertaken irrespective of this funding. Survey results obtained in the evaluation leave no doubt: Almost 95 per cent answered that the EU-funding was important for getting the project started. Furthermore, more than 80 per cent of respondents consider international collaboration in the project as important for the carrying through of the project.

In the broader understanding of the concept of additionality, i.e. the impact of the participation on the overall quality of the participants' R&D activities, the survey undertaken in the evaluation found that the respondents' overall judgment of their participation is positive. About 77 per cent answered that their participation was an overall success, only 3 per cent answered that their participation was basically a failure.

The EU-funding seems to stimulate businesses to get involve in more risky research than otherwise. This may widen their technological horizons and opportunities. However, risk may also explain why respondents in general are uncertain about the impact of their participation on their organisations' economic profitability or market potential. The average respondent, including respondents from businesses, answered that the effect of their participation on these aspects is uncertain. Respondents from research institutes and from businesses were slightly - but enough to be significant - more positive in their answers than respondents from Higher Education and other organizations (Others).

Impact on the innovation capability of the Norwegian industry

"Innovation capability" means the extent, the quality, the organisation and the effectiveness of innovations in the Norwegian industry. The survey undertaken in the evaluation indicates that the most important direct effect from the EU-participation on the

Norwegian businesses is the development of key competence and knowledge networks in the EU-projects. As regards the indirect effects, the survey provides indications that knowledge spill-overs, that is, the transfer of useful knowledge to non-participating Norwegian industry may be considerable. The crucial question is whether and how these potential knowledge spill-overs are realised. However, the data gathered in this evaluation are not suitable for an assessment of this kind. Needless to say, this depends on how the national system of innovation *absorbs* and *transfers* useful international knowledge flows.

1.2 Main conclusion

As stated earlier, the general picture that emerged from the evaluation is that Norway's participation performance in the EU's 5FP has been reasonably successful. In spite of these findings, the evaluation identified numerous issues having a potential for improvement. Most important of these: In order to leverage the opportunities inherent in the EU's FPs, Norway should make efforts to better couple or integrate its national R&D and innovation programs with the EU's FP in order to:

- Increase thematic synergies when this is appropriate
- Improve synergies of national and FP funding schemes
- Increase and improve Norwegian 'absorption capacity' related to RTD values created in the EU-projects

Ideally, a national R&D and innovation strategy should be made so that national interests are optimized by participation in international R&D and innovation efforts. In the period of 5FP, this link was generally weak or coincidental, which may be categorized as a structural and organizational challenge for how to amplify and maximize the potentials that participation in the EU's FPs represent for Norway.

Based on the findings and interpretations made in the evaluation, it seems reasonable to make some recommendations, which will be presented below, in the next section.

1.3 Recommendations

1.3.1 R&D and innovation strategy: Finding a balance between adaptive and pro-active

Being an associated participant in the EU's RTD activities and a small nation, Norway does not have a "sound voice" in the EU-system. In the evaluation, it became clear that the challenge for Norway is to find the right balance between being adaptive to the main structures imposed by the EU-system, by being pro-active in making the most out of opportunities that arise in synergy with the EU-system – to the extent that these serve Norwegian interests. Finding this "right" mix of adaptive and pro-active demands a strategy.

The picture that emerged in the evaluation was that the ‘right mix’ issue was of secondary importance in the national R&D and innovation strategy and priority setting in the period 1998-2002. This applies to all levels of the research policy actors in Norway, but it is most visible in the Research Council of Norway, which has a central role in Norway’s participation in the EU’s FPs. More specifically, the evaluation showed that there is a need for making a coherent national R&D and innovation strategy with a special focus on international (that is, not only the EU’s FPs) R&D and innovation activities. This claim is based on the following key observations:

- Apart from a few cases, the strategic overlap or convergence between national R&D and innovation programs and Norwegian participation in 5FP has been weak, or coincidental. The main reason for this is that strategy, agenda and priority setting – and implementation of these at the national level are done within a national context; in these, participation in the EU’s FPs is practically not an issue. This point is also important for understanding how the national support system functioned in 5FP.
- With some notable exceptions, what may be observed on a national level is also reflected on institutional level. Although this weakness of strategy may provide room for a high degree of bottom-up initiatives and entrepreneurship (of which there are many notable examples of successes), the link to an institutional strategy is weak in the majority of the participating organizations, chiefly because institutional strategies and portfolio management are not strongly developed. This is especially a challenge for the research institutes, but also for universities and state colleges.

Chapter 7.2 of this report presents more detailed recommendations related to the two main issues above.

1.3.2 National support system

Although Norway’s support system for participation in the EU’s 5FP seemed to work well considering the boundary conditions, there is a potential for improvement which may be leveraged by coupling and making a more coherent national R&D and innovation strategy. Until now, the domain of participation in the EU’s FPs was considered as a different arena than the national R&D and innovation programs. The aim should be to integrate these two spheres to the extent that these may serve Norwegian interests. Specifically, the national programs should be empowered to make decisions and allocations for R&D funding for Norwegian institutions participating in the EU’s FPs. Furthermore, the administration and other people working to support the national R&D and innovation community should become integral parts of this. The present system of having one person serving as NCP or specific program delegate, needs to be revised, allowing for resource allocation and management attention, so that thematic areas of high national interest are given greater resources than more peripheral areas. Needless to say, this demands a more precise overall national strategy, as pointed out above.

In addition to the recommendation made above, there are a number of related recommendations that are elaborated in chapter 7.3.

1.4 Sammendrag, hovedkonklusjon og anbefalinger

1.4.1 Sammendrag

Denne rapporten legger frem evalueringen av Norges deltakelse i EUs 5. rammeprogram (5RP) for forskning og teknologisk utvikling (RTD). Evalueringen ble utført som et oppdrag for Nærings- og handelsdepartementet, av et konsortium sammensatt av medarbeidere fra NIFU, STEP og Teknopolis i UK.

I oppdragets mandat ble det angitt at evalueringen skulle sette søkelyset på tre hovedspørsmål:

1. En kartlegging av den norske deltakelsens omfang og profil,
2. Den nasjonale organisering av veilednings- og informasjonsapparatet i forbindelse med rammeprogrammet,
3. Utdypende og supplerende problemstillinger med vekt på rammeprogrammets rolle som forsknings- og innovasjonspolitisk virkemiddel og samspill med nasjonale satsninger.

Det generelle bildet som fremkom i evalueringen er at Norges deltakelse i EUs 5RP har vært rimelig vellykket. Tiltross for dette positive bildet ble det avdekket områder som har et forbedringspotensial. Det viktigste her er: For å forbedre utnyttelsen de mulighetene som deltakelsen i EUs RP gir bør Norge i større grad sørge for en sammenkobling, eller integrasjon av nasjonale FoU- og innovasjonsprogrammer med deltakelsen i EUs RP.

Dette for:

- økt tematisk samspill ut fra nasjonale, strategiske vurderinger og prioriteringer,
- økt samspill i finansieringen av norsk FoU og EUs finansiering av norske prosjekter,
- forbedre Norges evne til å utnytte forskningsresultater som skapes i de programmene der Norge deltar.

Ideelt sett bør en FoU- og innovasjonsstrategi for et lite land som Norge utformes slik at nasjonale interesser og prioriteringer blir understøttet av deltakelsen i internasjonalt forskningssamarbeid. In den norske deltakelsen i EUs 5RP var denne sammenkoblingen, med noen unntak, heller svak og noe preget av tilfeldigheter. Utfordringen blir dermed å organisere og planlegge hvordan man best skal utnytte mulighetene som deltakelsen i EUs RP tilbyr Norge.

Avsnittene nedenfor gir et sammendrag av de tre hovedspørsmålene som evalueringen har forholdt seg til. Deretter vil vi presentere anbefalingene som det er naturlig å gi, ut fra evalueringens analyser og vurderinger.

1.4.2 Omfang og profil på norsk deltakelse i EUs 5RP

Norge hadde 1571 deltakelser i EUs 5RP. Dette tilsvarer 2 % av alle deltakelsene i EUs RP. Gjennom disse deltakelsene var Norge med i 1086 prosjekter, tilsvarende 7 % av alle prosjektene i EUs 5RP. Instituttsektoren hadde høyeste antall deltakelser, etterfulgt av næringslivet og universitets- og høyskolesektoren. Totalbudsjettet for de prosjektene som Norge deltok i var € 2,4 milliarder, tilsvarende omtrent 19 milliarder kroner.

EU bidro med € 248,6 millioner som tilskudd til norske deltakere, mens den norske kontingenten er beregnet til omtrent € 274 millioner. Deling av disse to tallene gir 0,9, dvs. at Norge får igjen ca 10 % mindre enn kontingentbeløpet. Imidlertid påløper det administrasjonskostnader på ca 10 % på programmene og ca 5 % av 5RPs budsjett er tilgodesett EUs Joint Research Centers. Ut dette ligger ca 15 % av EUs budsjett til 5RP utenfor hva norske forskere – i likhet med alle andre forskere – kan konkurrere om. Dette gir grunnlag for å hevde at Norges retur på 0,9 er et rimelig godt resultat i et budsjettmessig, økonomisk perspektiv. Imidlertid tar ikke disse beregningene med seg de betydelige kostnadene som norske forskere har hatt i forbindelse med søknadene (hvor det var en stor andel avslag), ei heller de norske administrative oppfølgingskostnadene, slik som i Norges forskningsråd, departementene, i de forskningsutførende organisasjonene og – ikke minst – i prosjektene.

Evalueringskartlegging av den norske deltakelsen er nærmere utdypet i rapportens kapittel 4, men i korte trekk fremkom følgende detaljer i evalueringen:

- EUs finansiering av norske deltakere:
 - Forskningsinstitutter i Norge mottok 42 % av EUs bidrag til Norge i 5RP,
 - EUs finansiering av prosjekter med norsk deltakelse var større enn forventet i EESD, særlig innen Environment, men lavere enn forventet i IST,
 - M.h.t. prosjekttypen, så var norsk deltakelse størst i forskningsprosjekter; her finner vi 56 % av deltakelsene og 71 % av EUs finansiering.
- Norsk suksessrate mht gjennomslag for prosjektforslag ligger sannsynligvis omtrent på gjennomsnittet for EUs 5RP, men dette er av flere grunner vanskelig å beregne.
- Om lag halvparten av norsk deltakelse var norske institusjoner fra Oslo-regionen; Bergen og Trondheim hadde brorparten av resten.
- Dette tiltross, så hadde SINTEF med hovedkvarter i Trondheim flest deltakelser av de norske i 5RP. Universitetet i Oslo og Universitetet i Bergen kom på de etterfølgende plassene, med NTNU på fjerdeplass. Gitt det tette forholdet mellom SINTEF og NTNU, så fremstår disse to institusjonene som en sterk enhet.
- Norske institusjoner var koordinatører i 211 prosjekter. Av disse hadde Universitetet i Bergen, med sine 40 ”prime contractors”, flest, etterfulgt av Universitetet i Oslo og NTNU med henholdsvis 30 og 25 ”prime contractors”.

- Ordningen med Marie Curie stipender støttet 48 utlendingers opphold og forskning ved norske FoU-organisasjoner i 5RP. Men bare 16 norske forskere (0,6 % av alle Marie Curie stipendene) mottok stipend for opphold og forskning ved FoU-organisasjoner utenfor Norge.
- I 5RP var det åtte forskningsinstallasjoner (research infrastructures) som mottok finansiering fra EU.
- Mer enn 50 % av de norske deltakelsene foregikk i prosjekter med deltakere fra UK, Frankrike, Tyskland, Nederland og Italia.
- Ut fra en analyse av fornavnene til respondentene som deltok i spørreskjemaundersøkelsen i evalueringen kan det anslås at 17 % av prosjektlederne og 28 % av forskerne i den norske deltakelsen i 5RP var kvinner. Dette samsvarer med kjønnsandelen i det norske forskersamfunnet.

1.4.3 Veilednings- og informasjonsapparatet i forbindelse med 5RP

Dette spørsmålet i evalueringen er utdypet i rapportens kapittel 4, hvor det også presenteres en sammenligning med hvordan veilednings- og informasjonsapparatet er organisert og virker i et utvalg andre land som har deltatt i EUs RP. Under EUs 5RP besto det norske veilednings- og informasjonsapparatet av følgende hovedelementer:

- EU Forskningsinfo i Norges forskningsråd, i Oslo
- IRC Norge - Innovation Relay Center, lokalisert hos SINTEF Teknologiledelse i Trondheim,
- Norske delegater til programkomiteene og de nasjonale kontaktpunktene, NCP'ene, disse oftest ansatte i Norges forskningsråds fagadministrasjon.

Det nasjonale veilednings- og informasjonsapparatet har to grunnleggende oppgaver:

- Fremme norsk deltakelse i EUs rammeprogrammer,
- Fremme norske interesser og strategiske mål i EU-systemet.

I evaluering fremkom det at det norske veilednings- og informasjonsapparatet vurderes som serviceorientert og effektivt. Dette tross, så fant evalueringen to områder som trenger større oppmerksomhet og tiltak i fremtiden:

- Fordi terskelen for å delta i EUs RP er høy, særlig for SMBene, så bør det norske veilednings- og informasjonsapparatet innta en mer aktiv og støttende rolle vis a vis organisasjoner og bedrifter som har forutsetninger for å delta i EUs RP. "Massemedia"-strategien som ble vektlagt under 5RP er ikke tilstrekkelig for disse gruppene, særlig ikke for de som befinner seg utenfor Oslo-regionen.
- Med unntak av noen få tilfeller var sammenkobling mellom norsk FoU- og innovasjonsstrategi og den norske deltakelsen i EUs 5RP heller løselig.

Norges forskningsråd har en nøkkelrolle i å skape samspill og samordning mellom norske FoU-programmer og 5RP. Det er riktig å benytte folk med god kunnskap om de nasjonale FoU-programmene som delegater i de aktuelle programkomiteene i EU. I evalueringen av

4RP ble de samme synspunktene fremhevet. Selv om alt tyder på at de norske delegatene og NCP'ene utfører sine oppgaver godt kan det reises spørsmål om Forskningsrådet forvalter disse ressursene optimalt. Man bør forvente at FoU- og innovasjonsområder som det knytter seg viktige økonomiske og samfunnsmessige interesser til (for eksempel energi, miljø, marin ressursforvaltning, etc.) er områder som bør gis høy prioritet av Forskningsrådet mht deltakelsen i EUs RP. Dernest bør man forvente at jo større et program i EU er, jo større vil Forskningsrådets oppmerksomhet og prioritering av disse være mht til folk og ressurser. Likeledes bør man forvente en mer systematisk utveksling av erfaringer og informasjon mellom delegatene til EUs programkomiteer og EU Forskningsinfo.

1.4.4 EUs 5RP som forsknings- og innovasjonspolitisk virkemiddel og samspill med nasjonale satsninger

I evaluering av dette spørsmålet, som er nærmere utdypet i kapittel 6, ble fire tema vektlagt:

- *Konkurranssevnen* til norske forskere i 5RP,
- *Terskler* for deltakelse i 5RP,
- *Addisjonalitet*, eller den særegne tilleggsfordelen, som oppnås ved deltakelsen i 5RP,
- *Virkingen* av 5RP på norske bedrifters *innovasjonsevne*.

Konkurranssevnen

Fordi den norske kontingenten til EUs 5RP tilsvarer omtrent 2 % av 5RP-budsjettet kan dette benyttes som kriterium for vurdering av konkurranssevnen: Dersom norske forskere oppnår finansiering eller deltakelse lik eller mer enn 2 % kan man si at den norske deltakelsen er vellykket. Dersom den er mindre enn 2 %, så er den ikke vellykket. Ut fra dette, så har norsk deltakelse vært ujevn: Områder hvor Norge har høy deltakelse i EUs 5RP sammenfaller med områder der det norske FoU-systemet er sterkt. Andre områder, slik som IST, hadde svak norsk deltakelse. Den norske deltakelsen i IST sank fra 4RP til 5RP, noe som reiser spørsmål om hvorfor dette skjedde. Tiltross for at IKT-området er prioritert i den nasjonale FoU-strategien, så har ikke Norge noen nevneverdig sterk IKT-industri, dvs. at vi mangler en sterk industriell base og tilhørende teknologimiljøer som er viktig for høy deltakelse. Dette kan delvis forklare denne utviklingen, men man skulle anta at nettopp fordi dette området er høyt prioritert i den nasjonale FoU-strategien så ville høy deltakelse være en målsetning.

Terskler

Høye kostnader forbundet med søknader fremstår som den vanskeligste terskelen for å delta i EUs 5RP. For å finne mer ut av dette foretok evalueringen en undersøkelse blant bedrifter som kunne ha deltatt, men ikke gjorde det. Det viktigste som fremkom her var:

- Viktigste hindring for å delta er forventninger om tidkrevende rapporterings- og administrative rutiner, særlig for prosjektkoordinatorer.

- Det er vanskelig å rettferdiggjøre bruk av bedriftens folk og ressurser til EU-prosjekter uten at det kan rettferdiggjøres med håndfaste forretningsmessige målsetninger. Teknologi- og markedsovervåking er ikke tilstrekkelige grunn til å delta; slike oppgaver kan vanligvis utføres mer effektivt og billig med andre midler.

Addisjonalitet

Addisjonalitet står sentralt i begrunnelsen for at Norge skal delta i EUs 5RP, dette begrepet skal fange opp i hvilken grad Norge greier å utnytte mulighetene som ligger i å være deltaker i prosjekter med budsjetter på € 2,4 milliarder. Addisjonalitet er et vagt begrep, men det har en avgrenset og en utvidet betydning. I avgrenset forstand gjelder addisjonalitet spørsmålet om norske forskere ville ha utført et prosjekt uansett finansiering fra EU. I spørreskjemaundersøkelsen gjennomført i evalueringen svarte nesten 95 % at EU-finansieringen var avgjørende for å starte prosjektet. Videre sa mer enn 80 % at det internasjonale samarbeidet var viktig for gjennomføringen av prosjektet.

Den utvidede betydningen av addisjonalitet knytter seg til virkninger på deltakernes innovasjonsevne. Om lag 77 % av respondentene i spørreskjemaundersøkelsen sa at de vurderte deltakelsen som vellykket. Den mest positive virkningen var på deltakernes kompetanse og forskernettverk.

Det kan virke som EU-finansieringen bidrar til at bedrifter deltar i prosjekter med høyere risiki enn ellers. Dette bidrar til at deres teknologiske horisont utvides og nye muligheter åpner seg. Risikobetraktninger kan også forklare hvorfor de som svarte på spørreskjemaundersøkelsen var usikre m.h.t. virkningen av deres deltakelse for bedriftens lønnsomhet eller markedsmuligheter. De fleste svarte med at det knytter seg usikkerhet med å forutsi slike forhold. Respondenter fra instituttsektoren og næringslivet var imidlertid noe mer positive mht forventninger enn de øvrige.

Virkningen av 5RP på norske bedrifters innovasjonsevne

Innovasjonsevne gjelder spørsmålet om norske bedrifters omfang, kvalitet, organisering og effektivitet i å skape innovasjoner. Svarene fra spørreskjemaundersøkelsen tyder på at utvikling av nøkkelkompetanse og kunnskapsnettverk vurderes som den viktigste virkningen av bedriftenes deltakelse i EU-prosjektene. Når det gjelder kunnskapsoverføring til norsk næringsliv gir spørreskjemaundersøkelsen indikasjoner på at dette vurderes som betydelig. Imidlertid gir ikke denne undersøkelsen noe grunnlag for å vurdere realitetene i dette, som i stor grad avhenger av i hvilken grad bedrifter evner å ta imot ny kunnskap som blir overført gjennom internasjonale kunnskapsnettverk.

1.4.5 Anbefalinger

FoU og innovasjonsstrategi: Balansepunktet mellom tilpasning og pro-aktiv planlegging

Som en liten nasjon og assosiert deltaker i EUs RTD har Norge formelt sett ikke nevneverdig tyngde i EU-systemet. I evalueringen ble det tydelig at utfordringen ligger i å

finne en balanse mellom tilpasning til de store linjer og strukturer som EU trekker opp og det å være aktivt for å oppnå størst mulig utbytte av deltakelsen i EU-programmer, ut fra norske interesser. Dette, å finne den "riktige" sammensetningen forutsetter en strategi for norsk deltakelse i EUs RP. Øyensynlig har ikke dette har noen fremtredende plass i norsk FoU og innovasjonsstrategi og –prioriteringer i perioden 1998-2002. Dette gjelder de fleste institusjoner i det norske forskningssystemet, men synes tydeligst i Norges forskningsråd, som er tillagt en sentral rolle i Norges deltakelse i EUs RP. Evaluering fant at det er et behov for en enhetlig norsk FoU og innovasjonsstrategi mht deltakelse i internasjonalt FoU og innovasjonsaktiviteter, ikke bare EUs RP. Dette bygger på følgende observasjoner:

- Med unntak av noen få tilfeller er den strategiske sammenkoblingen mellom nasjonal FoU og innovasjonsprogrammer og norsk deltakelse i EUs 5RP svak. Hovedgrunnen til dette synes å være at nasjonal strategiutforming, forskningsagenda og –prioriteringer ikke aktivt vurderer mulighetene som finnes i EUs forskningsprogrammer; deltakelse i EUs RP synes å ha liten plass i dette. Dette synes også å ha påvirket hvordan det nasjonale veilednings- og informasjonsapparatet har virket.
- Det samme gjelder på institusjonelt nivå, dvs. i de forskningsutførende organisasjonene og noen bedrifter. Selv om dette gir rom for individuell kreativitet og initiativ (som har oppnådd gode resultater i mange tilfeller), så er sammenkoblingen til institusjonell strategi ikke sterk. Dette kan muligens forklares ut fra svakt utviklet strategi og porteføljestyling i institusjonene. For instituttsektoren, men også for universitetene og høyskolene fremstår dette som en utfordring.

I kapittel 7.2 er det angitt flere og mer detaljerte anbefalinger knyttet til de to punktene ovenfor.

Det nasjonale veilednings- og informasjonsapparatet

Ut fra forutsetningene synes det norske veilednings- og informasjonsapparatet å ha virket godt under 5RP. Imidlertid er det et forbedringspotensial som bør utvikles ved å utforme en sterkere nasjonal FoU og innovasjonsstrategi mht deltakelsen i EUs RP. Hittil har deltakelsen i EUs RP ikke berørt utforming av de nasjonale FoU og innovasjonsprogrammene. Målsetningen bør være å sammenkoble disse to sfærene ut fra norske interesser. Det bør vurderes om ikke de nasjonale FoU-programmene i større grad skal få fullmakt (og instrueres) til å beslutte og støtte finansiering av norske institusjoners deltakelse i EUs RP. Videre bør fagadministrasjonen og medarbeidere i veilednings- og informasjonsapparatet i større grad trekkes inn i dette arbeidet. Dagens ordning med at en person har funksjonen som NCP eller delegat til spesifikke programmer bør omvurderes ut fra at ressurstilgang og ledelsesoppmerksomhet står i forhold til prioriteringer, dvs. at områder der det er store nasjonale interesser inne i bildet blir prioritert høyt. Dette forutsetter, som påpekt ovenfor, en mer bevisst og målrettet nasjonal strategi.

Summary, main conclusions and recommendations

Sammendrag, hovedkonklusjon og anbefalinger

I kapittel 7.3 er det angitt flere og mer detaljert anbefalinger om det nasjonale veilednings- og informasjonsapparatet.

2 Terms of reference and how the evaluation was undertaken

2.1 Terms of reference and relevant key concepts

2.1.1 Background for the evaluation of Norwegian participation in the 5FP framework programme.

the EU's programme for research, technological development and demonstration activities (1998-2002), here after called the 5FP, is the largest international research collaboration that Norway participates in. Participation in the EU's Framework Programmes represents an important strategy for the internationalization of Norwegian research and industry.

The Ministry of Education and Research had the responsibility for co-ordinating Norwegian participation in the first period of 5FP (1998-2000). This responsibility has been transferred to The Ministry of Trade and Industry in 2000-2003. In 2004, the overall responsibility for the Norwegian participation in the EU's RTD programs has been transferred back to the Ministry of Education and Research. The evaluation was initiated by the Ministry of Trade and Industry in collaboration with the Ministry of Education and Research and The Research Council of Norway.

An evaluation of Norwegian participation in the 5FP should contribute to strengthening knowledge about Norwegian research and innovation policies in general and about Norwegian participation in the EU's FPs in particular. The evaluation may also give a basis for initiating measures to strengthen Norwegian involvement in the 6FP.

2.1.2 About the 5FP

Several central areas from the 4FP have been developed further within the 5FP. These areas include information and communication technology (ICT), environment, energy, medical research and marine research. In contrast to its predecessors, the 5FP is more oriented towards society, giving more emphasis on research related to the quality of life, health, food safety and socio-economic issues. Furthermore, special emphasis was placed on the needs of small and medium-sized enterprises (SMEs) so as to promote their effective participation. In addition, ethical aspects and equal opportunities and environmental aspects are emphasised.

The 5FP consists of 7 specific programmes, four of which correspond to the following four themes

- i) Quality of life and management of living resources
- ii) User-friendly information society
- iii) Competitive and sustainable growth
- iv) Energy, environment and sustainable development.

In addition, there are three horizontal themes:

- Confirming the international role of Community research
- Promotion of innovation and encouragement of SME participation
- Improving human research potential and the socio-economic knowledge base

Having a smaller financial size, these three areas are mainly related to supporting activities with regard to the specific programmes.

Total budget for the 5FP is approx. € 13.7 billion (excl. Euratom). The selected projects in the framework programmes have to meet specific requirements with regard to:

- quality and relevance of the research,
- that researchers from several European countries co-operate, and
- that the projects have an European added value beyond what could have been achieved by national projects.

In the 5FP - as in the 4FP – Norwegian research communities have had the same formal possibilities for participation as researchers from EU countries.

The selected projects in the 5FP had to meet specific requirements with regard to quality and relevance of the research, that researchers from several European countries co-operate, and that the projects have a European added value beyond what could have been achieved by national projects. In the 5FP - as in the 4FP - Norwegian research communities have had the same formal possibilities for participation as researchers from EU member countries.

Table 2.1: *Budget of the 5FP: Maximum Amounts and Breakdown (1998-2002)*

INDIRECT ACTIONS	Million euro (Current Prices)
First Activity Research, technological development and demonstration activities Indicative breakdown by theme (Million euro): <ol style="list-style-type: none"> 1. Quality of life and management of living resources (2 413) 2. User-friendly information society (3 600) 3. Competitive and sustainable growth (2 705) 4. Energy, environment and sustainable development - Environment and sustainable development (1 083) - Energy (1 042) 	10 843 (*)
Second Activity Confirming the international role of Community Research	475
Third Activity Promotion of innovation and encouragement of SME participation	363
Fourth Activity Improving human research potential and the socio-economic knowledge base	1 280
DIRECT ACTIONS	
Joint Research Centre (JRC)	739
Maximum Overall Amount	13 700

(*) Of which 10% on average is for SME's.

Instruments – types of projects funded by the 5FP

We can distinguish between 5 types of instruments or types of projects in the 5FP. These are:

1) Shared-cost action consisted of:

- *Research and technological development projects:* projects obtaining new knowledge intended to develop or improve products, processes or services and/or to meet the needs of Community policies (financial participation: 50 % of total eligible costs. Universities up to 100% of their eligible costs)
- *Demonstration projects:* projects improving the viability of new technologies offering potential economic advantage but which cannot be commercialised directly (financial participation: 35 % of total eligible costs)
- *Combined R&D and demonstration projects:* projects combining the above elements (financial participation: 35 to 50 % of total eligible costs)
- *Support for access to research infrastructures -* actions enhancing access to research infrastructures for Community researchers. Support will cover a maximum of 100 % of additional eligible costs.

- "*SME Co-operative*" *research projects*: projects enabling at least three mutually independent SMEs from at least two Member States to jointly commission research carried out by a third party (financial participation: 50 % of total eligible costs)
- "*SME Exploratory*" *awards* - support of 75 % of total eligible costs for an up-to-12 months exploratory phase of a project (e.g. feasibility studies, validation, partner search)

2) Training fellowships: *Marie Curie fellowships* are either fellowships, where individual researchers apply directly to the Commission, or host fellowships, where institutions apply to host a number of researchers (financial participation: maximum of 100 % of additional eligible costs)

3) Research training networks: Actions for promoting training (*research training networks*) - of researchers at pre-doctoral and at post doctoral level - and *thematic networks* - networks bringing together e.g. manufacturers, users, universities, research centres around a given S&T objective. Support will cover maximum 100 % of additional eligible costs for setting up and maintaining such networks

4) Concerted actions: Actions co-ordinating RTD projects already receiving funding, for example to exchange experiences, to reach a critical mass, to disseminate results etc. (financial participation: a maximum of 100 % of additional eligible costs)

5) Accompanying measures: Actions contributing to the implementation of a specific program or the preparation of future activities (financial participation: maximum of 100 % of total eligible costs).

2.1.3 Key concepts in this evaluation

We use the following key concepts in this evaluation:

- *Norwegian project*: Project funded by the 5FP with at least one participation from a Norwegian organisation.
- *Norwegian participation*: Participation from a Norwegian organisation in a Norwegian project. Several Norwegian participations in one Norwegian project occur often.
- *Cooperation link*: A cooperation link is considered to have been established between two organisations if they are participating in the same project. This cooperation link is counted once if the two organisations are from the same country and twice if the organisations are from different countries – once as a link from country A to country B and once as a link from country B to country A.
- *Partnerships*: The number of cooperation links of one country with another, or of one type of organisation with another.
- *Project eligible costs*: Total R&D costs of the entire project receiving funding from the 5FP.

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- *Eligible cost of the Norwegian participation:* Total R&D costs of the Norwegian participation, that is, R&D costs covered by the Norwegian participating organisation and costs covered by the 5FP.
 - *EU-contribution to Norwegian project:* The amount of funding to the entire Norwegian project, that is, 5FP's funding to all participants in the project.
 - *EU-contribution to Norwegian participation:* The amount of EU-funding to the particular Norwegian participation in a Norwegian project.
 - *Euro:* For all purposes of calculation in this report an average exchange rate of 8 NOK has been used.

Appendix 9 of this report is a glossary and has a more comprehensive list of acronyms.

2.2 The evaluation

2.2.1 The terms of reference

The Ministry of Trade and Industry specified that the evaluation should be related to the aims of the 5FP and the Norwegian participation, focusing on the following three elements:

- produce a survey of the Norwegian participation
- evaluate the national system for providing guidance and information services in connection with the framework programme
- assess the importance of the framework programme as a tool in Norwegian research and innovation policy, including the synergy and interaction with national research programmes.

In doing the evaluation, the Ministry of Trade and Industry required a comparison of the Norwegian participation with that of other countries participating in the 5FP. In addition, it asked for comparisons with the Norwegian evaluation of participation in the 4FP (1994-1998) in order to analyze trends where these are relevant. The design and implementation of the evaluation was undertaken according to these requirements.

2.2.2 The evaluation team – NIFU consortium

The Ministry of Trade and Industry gave the evaluation assignment to NIFU (Norwegian Institute for studies on Research and Higher Education), STEP (Center for Innovation Studies) and Technopolis. NIFU is the responsible contracting institution for this evaluation, STEP collaborated with NIFU in the design and the carrying out of all parts of the project, while Technopolis contributed mostly to the international comparison of the Norwegian system for information and counselling.

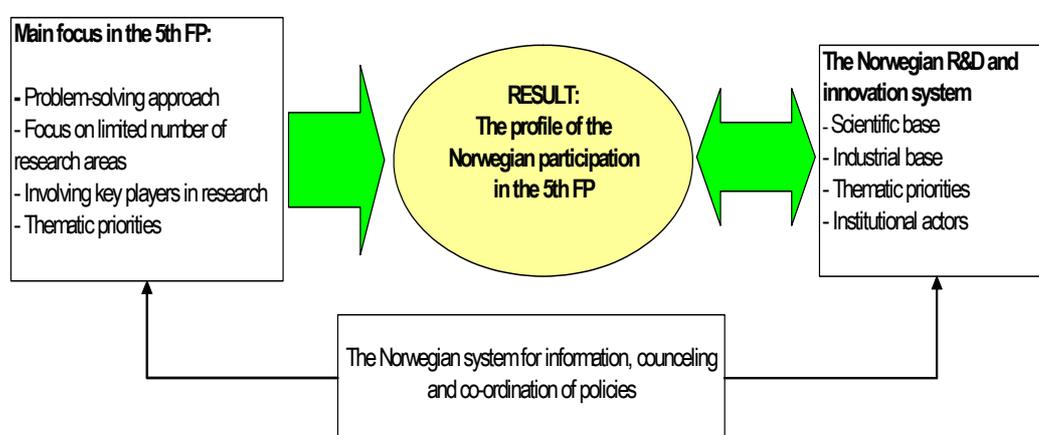
In the following, we shall present and discuss the data sources used, and the methods and analytical approach chosen for this evaluation.

2.3 Analytical approach and main sources of information

2.3.1 Analytical approach

Figure 2.1 presents the analytical conceptualization of this evaluation. The idea is that the profile of the Norwegian participation in the 5FP is a result of three main shaping factors: The first shaping factor is the focus and priorities of the 5FP (the demand of R&D activities). The second is the industrial and scientific base of the national R&D and innovation system which generates the Norwegian participation (the Norwegian supply of R&D activities in the 5FP). The balancing of these two factors takes place in the collaboration and competition arenas of the 5FP.

Figure 2.1: The analytical approach of the evaluation



The third shaping factor is the Norwegian system for information, counseling and co-ordination of the Norwegian participation (national support system) which has two functions: The first one is to influence the thematic and policy priorities of the FPs in order to secure a European scheme of RTD activities which also includes Norwegian research policy priorities and interests. The second is to stimulate, target and co-ordinate participation in the 5FP (the supply of Norwegian R&D activities).

The analysis of these three shaping factors relied on a variety of data sources and on two basic methodological tools:

1. Interviews of key actors in the Norwegian and other countries' system for information, counseling and co-ordination of policies, of key participants and of a small sample of non participants. Appendix 6 lists the names of the persons interviewed and their roles in the 5FP. Appendix 7 presents the interview guides used.
2. A survey sent to all Norwegian participations with questions on the nature of their EU-project, questions on barriers and motives to participate and questions about the effects of participation on their innovation potential. Appendices 5a and 5b present the

questions asked in the survey. We provide more information on the data from web-survey in section 2.3.3.

There are general methodological problems related to both the analysis of data from interviews and surveys. Therefore, it is usually recommended to use interviews and surveys in order to gather qualitatively different information. In this evaluation we used the survey in order to identify general tendencies and experiences from participation, while we used interviews in order to identify policy and strategic choices and dilemmas.

Information from the respondents to the web-survey designed for this evaluation and a series of 45 interviews constitute the backbone of our conclusions and recommendations.

2.3.2 Data sources

The following sources of information have been used in this evaluation:

1. Data on Norwegian participations in the 5FP from the European Commission, DG Research (EU-data)
2. Data on Norwegian participations in the 4FP from the European Commission, DG Research and DG Enterprise
3. General information on the 5FP
4. Information in the evaluation reports of the Norwegian participation in the 4FP
5. Information from the respondents to the web-survey, designed for this evaluation
6. Interviews

These sources of data will be explained further below.

Data on Norwegian participations in the 5FP (EU-data)

On the request of the Norwegian Ministry of Trade and Industry, the DG Research produced a complete list of all Norwegian participations in the 5FP. This list was delivered to the evaluation team at the end of October 2003. It included information about contract numbers, the EU contribution to the Norwegian participants and to the consortium as a whole, role in the consortium, the name and street address of participant institution and other useful information. However, the list did not include neither the names of the researchers responsible for the participation of their organization nor their e-mail addresses.

The list of Norwegian participation from DG Research was, however, not complete. There are indications that about 5 per cent of Norwegian participations are missing. For instance, we know that NTNU had 85 participations while in our list we only found 80. We also know from the Research Council of Norway that Norwegian participations in IST specific program received about 48 million euro and not 46 million euro according to the list from DG Research. Thus, all indicators of Norwegian participation should be considered as lower limit measures of the Norwegian participation and their probable value seems to be about 5 per cent above the reported. On the other hand, we did not have the resources to investigate in greater detail the reason of this underreporting of participations in the data from DG Research.

In order to standardise the names of organizations and to create adequate categories of types of institutional participation, data in the list from the DG Research was reclassified according to four categories of types of institutional participations:

- *Business*: Norwegian firms, including SME's, i.e. firms with less than 250 employees.
- *Higher Education*: Participants from Norwegian universities and colleges
- *Research institutes*: Research organizations that receive core funding from the Research Council of Norway.
- *Others*: All participants from the public sector, that is, ministries, councils, advisory bodies or international organizations hosted in Norway or industry associations.

It is important to keep in mind that these four categories do not correspond exactly with the categories of Type of organizations used by the DG Research. Especially the category of 'Others' differs substantially.

Also the category 'SME' in our reorganized list of Norwegian participations differs from the Commission's EU category. Accordingly, the 'SME' category includes only organizations from the Norwegian private sector and excludes all research institutes or other semi-public organizations. For this reason, comparisons between our statistics and the statistics of the 5FP on types of organizations are not straightforward.

Due to redundant and not self-evident coding, considerable problems were encountered in our attempts to connect Norwegian participations in the list to the various key actions or activities under the specific programs of the 5FP. Therefore, the analysis of Norwegian participation at the activity level in this report may not be as exact as the analysis at the specific program level.

Furthermore, some difficulties in estimating the exact magnitude of the Norwegian participation in INNO program were encountered. Almost all participations in the "Encouraging SME participation", a key action of INNO, were listed under other specific programs. Because of that, the Norwegian participation in INNO is underestimated in our statistics. Having said that, we do have good information on which participations were defined as "co-operative research" and "Exploratory awards" (see 2.1.2, the various types of shared cost actions) and, thus, we were able to evaluate accurately the size of Norwegian participation in this particular type of research projects.

Similar difficulties we encountered in the analysis of the Norwegian participation in the Marie Curie Fellowships scheme. Only the Fellowships with Norway as host country (in-flow data) were reported in the EU-data. Therefore, our statistics on IHP should be read with caution. However, through interviews and other sources, we were able to estimate the number of in- and out-flows Marie Curie Fellowships related to Norway.

Data on Norwegian participation in the 4th FP from the European Commission, DG Research and DG Enterprise and other sources

In order to compare Norwegian participation in the 5FP to the participation in the 4th FP the Ministry of Trade and Industry asked DG Research and DG Enterprise to provide the evaluation team with a list of Norwegian participation in the 4th FP. We received this list on February 20th 2004.

However, all data on Norwegian participations in 4FP specific programs managed by DGs other than DG Research and DG Enterprise are missing. This means that we have no data on Norwegian participation in JOULE, THERMIE, TRANSPORT, FAIR and INNOVATION, all specific programs in the 4FP. In addition, data from DG Enterprise are not complete regarding Norwegian participation in ACTS specific program. This leaves us with the incomplete information on Norwegian participation in the 4FP provided by:

1. NIFU and NTNU reports
2. The report of The Research Council of Norway (see Hauge (1998)).

The last one provides more updated information than what is the case with NIFU and NTNU reports. Therefore, we used Hauge's report (Hauge 1998) as basis for some comparisons of institutional patterns of participation between the 5FP and 4FP. Apart from that; we conclude that a comparison between the Norwegian participation in the 5FP and 4FP is not possible.

Information in the evaluation reports of the Norwegian participation in the 4FP

The Norwegian participation in the first two years of the 4FP was evaluated by two research groups at NIFU (see Hagen et al. 1997) and NTNU (see Waagø et al. 1997). NTNU assessed the market-oriented programs in the 4FP, that is, ESPRIT4, ACTS, TELEMATICS, STM, BRITE/EURAM3, JOULE/THERMIE, TRANSPORT, INNOVATION. NIFU assessed Norwegian participation in the remaining specific programs of the 4FP. NIFU and NTNU produced two separated evaluation reports.

These reports are our main information source in our study of changes of patterns in the Norwegian participation between the 4th and 5FP. The reader should keep in mind, however, that comparisons between 5FP and 4FP must take into account information from both evaluation reports (NIFU and NTNU) and that these two reports only provide figures for the first two years of the Norwegian participation in the 4FP.

General information on the 5FP

We analyzed data and information available in the Annual reports of the Research and Technological Development of the European Union, 2002, 2001, 2000 (hereafter Annual reports). In particular, we used data on proposals submitted to the 5FP in 2000 and 2001 by country and specific program, data on contracts signed in 2000 and 2001 by country and specific program, on number of collaborations in 2001 by country and other information related to the details of execution of the 5FP.

European Unions database (CORDIS) has been used to validate and confirm information in the EU-data list and to identify names of the survey respondents. All participations listed in the EU-data have been checked for this purpose. Not all the EU-projects in our list were found in CORDIS and in several cases we found no information about Norwegian contact persons. Yet, CORDIS has been a useful and practical source of information in this evaluation.

Other valuable sources of information were:

- General information on the 5FP
- The series of evaluation and monitoring reports related to the 5FP, particularly the report on the 5-year assessment of the European Union Research and Technological development Programs, 1995-1999
- General information and facts about the Norwegian research and innovation system

2.3.3 The survey

Two similar, but separate questionnaires were used in the survey: One addressed to participants from Higher education, Research institutes and 'Others', and one addressed to participants from businesses. Most of the questions in the survey were identical to questions asked in the survey designed for the evaluation of the Norwegian participation in the 4FP. This makes it possible to identify qualitative changes in the Norwegian participation between the 4FP and the 5FP.

In doing the survey, the main challenge was to identify the relevant researchers to respond to the questionnaire, because this information proved to be difficult and costly to obtain. The strategy chosen was twofold: We asked contact persons in the Norwegian organizations with wide participation in the 5FP to provide us with a list of names and E-mail addresses of the researchers who were mainly involved in the EU-projects. Concurrently, we used CORDIS to identify individuals who were listed as contact persons in Norwegian participations. When the information from CORDIS did not match information from the organizations we kept the names suggested by the organizations.

The total number of the Norwegian participations in the EU-data was 1571. This way we ended up with names of individuals responsible for 1423 participations. These are the 'relevant' participations for the survey. The remaining 148 participations were either not known to the organizations or the organization did not exist.

We sent either an e-mail or a letter to all individuals with the information of a unique username and password attached to their participation at the end of November, a first reminder at the end of December and a last reminder 19th of January. The last day possible to answer the survey was 26th January 2004.

Terms of reference and how the evaluation was undertaken

Analytical approach and main sources of information

We received, in total, 839 responses. This gives us a participation response rate of 59%. The vast majority of those, about 760, were complete answers. The rest were answered in a less complete scarcely manner, i.e. not all the questions were answered.

From the 1086 Norwegian projects only 1035 were relevant to the survey for the same reasons as for the ‘relevant’ participations. We received at least one response from participants in 683 Norwegian projects. This gives us a project response rate of 66%.

Some researchers responsible for participations in non shared-cost actions complained that many questions in the survey were not relevant. They either refused to answer the survey or their answers were incomplete. These participations are, of course, to be considered as ‘relevant’ participations for the survey.

Furthermore, we know that CORDIS information on contact persons is not reliable. This means that some of our letters and E-mails were not directed to the right researchers. These should, therefore, be considered as non-relevant participations, but we do not know how many of these are among the non-respondent participations. Because of that, the response rate is, in reality, considerably higher than 59%.

Table 2.2: Response rate by type of organization and specific program.

Type of organisation	ENERGY	ENVIRO	GROWTH	IHP	INCO	INNO	IST	QOL	Total
Higher Education	67%	49%	67%	56%	52%		69%	58%	57%
Research institute	54%	57%	63%	66%	55%	73%	57%	69%	61%
SME	68%	54%	54%	50%		100%	63%	75%	61%
Business (big)	41%	50%	52%				52%	50%	48%
Other	83%	88%	53%	67%	100%		56%	81%	72%
Total	53%	56%	57%	59%	57%	77%	58%	66%	59%

Table 2.3: Response rate by type of organization and project type.

Project Type	University	Research institute	SME	Industry - big	Other	Total
Access to Research Infr.	33%	100%	100%			67%
Classical Accompanying Measu	64%	63%	100%	42%	93%	65%
Combined Projects	33%	69%	50%	33%	14%	45%
Concerted Actions	43%	48%	50%	0%	83%	48%
Cooperative Research	25%	48%	58%	25%	75%	53%
Demonstration Projects	100%	40%	75%	57%	100%	64%
Exploratory Awards			75%			75%
Marie Curie Fellowships	54%	40%	50%			52%
Research Projects	57%	65%	63%	55%	74%	62%
Research Training Network	72%	33%	100%		100%	65%
Thematic Network	61%	54%	33%	40%	65%	52%
Total	57%	61%	61%	48%	72%	59.0%

As tables 2-2, 2-3, and 2-4 show, there is a balanced response in almost every aspect, except from the low response from big companies (more than 250 employees), particularly in ENERGY specific program. In general, we may say that it was considerably more

difficult to motivate participants from big companies to respond to the survey than participants from other types of organization.

Table 2.4: Response rate by type of organization and type of participation.

Type of organisation	Co-ordinator	Other	Total
Higher Education	59%	56%	57%
Research institute	64%	61%	61%
SME	65%	61%	61%
Business (big)	58%	48%	48%
Other	45%	75%	72%
Total	61%	59%	59%

Despite the fact that 58 per cent of co-ordinators from big companies answered the survey, this is small (N=7) compared to the number of all relevant participations from this group (N=199) that it does practically not raise the overall response rate from big companies (48 per cent).

As expected, the response rate is slightly higher in the shared-cost types of research.

The participation response rate of this evaluation is relatively low compared to the participation response rate of the evaluation of the 4FP (71,5 %). But the number of respondents of this survey (839) is about 2,7 times as high as the survey in the 4FP (312 responses). We believe that these results provide a reasonably steady ground in comparing responses from the two surveys.

3 EU's Framework Programme for RTD in context

As the title indicates, this chapter will give a broad account of how the EU's FPs have evolved over the years. The purpose of this is to set the stage for the evaluation, which will be presented in the following chapters, i.e. chapters 4, 5 and 6.

3.1 EU's aim: The European dimension and EVA – European Added Value

Today, the EU's framework programme represents approximately 5% of the R&D funding of its member states. Over the years, this funding has gradually increased. Simultaneously, the EU has developed criteria and guidelines to ensure that the role of EU's R&D policy serves a *EU dimension*, i.e. fulfil a role on a European level. As this has evolved, the EU itself has changed. This is reflected in various treaties and institutional changes. Thus, what constitutes an EU dimension has therefore also changed over the years. The EU dimension of EU level funding has often been referred to as the *European Added Value* (EAV). In the following, this term will be used interchangeably with the EU dimension as the rationale for the EU level R&D policy.

At the start-up of the 1st FP in 1983, the *Reisenhuber Criteria*² were formulated to guide or justify Community involvement in R&D:

- Research activities of a scale that single Member countries either could not provide the necessary financial means and personnel, or could only do so with difficulty;
- Research which would obviously benefit from being carried out jointly, after taking account of the additional costs inherent in all actions involving international co-operation;
- Research which, owing to the complementary nature of work carried out at the national level in a given sector, would achieve significant results in the whole of the Community for problems to which solutions call for research conducted on a vast scale, particularly in a geographic sense;
- Research which contributes to the cohesion of the common market, and which promotes the unification of European science and technology; as well as research which leads where necessary to the establishment of uniform laws and standards.

Later two additional criteria were formulated, one on *social and economic cohesion* in 1987, and one on the *mobility of researchers and the co-ordination of national policies* (Guzzetti 1995).

² Cf.: www.parliament.uk/post/pn083.pdf for further information on this topic

Adding value³ from public support to R&D has been a key ingredient to rationales for R&D policy for a long time and serves as the basis on which national governments provide funds for national R&D efforts. An underlying assumption is that private agents in general under-invest in R&D, and governments will subsidize this activity with the aim to increase overall investments to a level that is in line with some societal optimum.

In the case of the EU-level R&D, there is the further requirement of adding value from the EU-level funds relative to the outcome of nationally funded research. Yellow Window et al (2000) define the European added value in the following way:

”EAV is the value resulting from the EU support for RTD activities which is additional to the value that would have resulted from RTD funded at regional or national levels by both public authorities and the private sector”.

It seems fair to say that the implementation of EAV was operationalized as establishment of cross-national consortia. This is important in itself, in so far as it serves as a key ingredient in building a European research community over time. But as the aspect of added value alone was deemed unsatisfactory, with the formulation of the 5FP, new criteria were issued as to the European added value. These were:

- Establish a critical mass in human and financial terms, in particular through the combination of the complementary expertise and resources available in the Member States;
- Make a significant contribution to the implementation of one or more of the Community policies;
- Address problems arising at Community level, or questions relating to aspects of standardisation, or questions connected with the development of the European area.

Thus, the European dimension, or European value added, has been changed over time, but has basically been attached to the idea of building a research community through *trans-national research collaboration*.

With the 6FP this changes. EU research policy in the 6FP seems to become more similar to USA in favouring *scientific excellence*. With reference to the proposed European Research Council for excellence and basic research, the director general of DG Research, Achilleas Mitsos, stated in a speech in October 2003, at the Irish Royal Academy:

“Until now we have defined European Added Value as the collaboration of teams. Now it is time to bring a new definition to European Added Value, one that incorporates the principle of allowing a researcher in any one of our member states to compete with all

³ This section draws on the report ”Identifying the constituent elements of the European added Value (EAV) of the EU RTD programmes: Conceptual analysis based on practical experience”, Yellow Window, Technofi and Wise Guys, Antwerpen, 2000.

other researchers to win funding. Competition therefore becomes an essential part of a new, forward-looking definition of European Added Value.”

3.2 Salient characteristics of EU's 5FP compared to other FPs

This section will not only look at the 5FP in conjunction with its predecessor, but draw a fuller story to include the 6FP and some ideas about the 7FP.

FPs prior to 5FP

When the first framework programme was put in place in 1984, it was a response to the increasing complexity and disparity of the R&D activities to that date. There was in fact no Community policy on science and technology, and the R&D activities themselves were not strongly co-ordinated with other Community activities.

Responding to this, the Commission wanted to set up the new activities within a system that corresponded to their perceived complexity. The development of the framework programmes since then should be understood in the economic and political context that evolved. The increasing integration in Europe was stimulated by the movement towards the single market. The Single European Act was approved in 1986 and contained reforms to the European institutional set-up, but also had as a key aim to guide the process of European economic integration to its completion by 1992.

The rationale for the second and third FPs thus became development of *concerted technological activities*, in many cases often referred to as *technology platforms*. In particular, these were seen as the main instrument for paving the way and building the knowledge bases for new or emerging industries which the European Community believed essential for its future competitive position. They also implied a gradual shift to include R&D efforts in other Community policies, also in regional policies. The cohesion problem was seen mostly in terms of disparate economic development in various regions in Europe and the upgrading of the RTD systems of the less favored regions was seen as an important instrument to enhance regional growth and, hence, *European cohesion*.

The Maastricht treaty of 1992 created a more demanding framework for the European dimension for R&D, the treaty bringing more policy areas within the attention of the Commission, such as:

- Economic and social cohesion on the one hand and social affairs on the other were given more prominence than they had before.
- Culture, health and consumer matters became Community affairs, and the treaty set out a policy for trans-European transport, telecommunications and energy.
- The principle of subsidiarity was given a key role in setting out a clearer picture of what the European dimension was, including a clearer demarcation between Community responsibilities and those of the member states. Even so, those of the former increased.

The Maastricht treaty affected research in some notable ways. For the first time, other policy areas than the science and technology policy became explicitly relevant for the overall R&D policy: "It re-emphasised, at the highest juridical and institutional level, the idea which originally gave rise to the framework program: the Community's R&TD policy should be, first and foremost, at the service of other Community policies." (Guzetti 1995:153) It gave more legitimacy to the research activities that were not directly linked to the Single Market idea of competitiveness, etc. One aspect of this was that areas like health and environmental research became grouped under a strategic heading: *Quality of life*. But another consequence became evident: Social sciences were opened up and given more priority.

The emergence of 5FP

The development of the 5FP represented a renewed effort to move towards a less technologically driven policy. Social objectives and wider Community concerns became more evident in the preparatory work, and an important publication signalled a change: *Society – the endless frontier*⁴ addressed the need to develop a research policy that should serve the European society, not only industrial development. This was formulated in the mid 1990's at a time of severe unemployment and structural weaknesses in the European economy. In addition, in the early 1990's much attention was given to the problem of policy co-ordination, both within the Commission, and between the EU-level and national levels.

Further, the 5th signalled a significant shift in the way of organising the EU's R&D activities. Whereas a "technology push" linear model thinking dominated the 4FP and was implemented through the means of 15 sub programmes under its first activity and 3 other horizontal support activities⁵, the 5FP implied a greater concentration on defined *key problem areas*. This led to implementing the programme through key actions, a method which was supposed to focus and integrate more basic research with applied. In fact, the 5FP combined concentration efforts with a move towards a more systemic model in the integration of research types.

The change from a linear model to a more systemic or integrated model had more to do with the need to legitimize the use of EU resources as relevant for real European problems, rather than a dramatic change in the way research was conducted. It should be noted that the basic idea from the framework programmes over the years was kept in place: The framework programme was first and foremost an instrument *to stimulate trans-national research collaboration*.

⁴ Cf.: http://europa.eu.int/comm/research/pulse/society_en.html - written in 1997 by P. Caracostas and U. Muldur.

⁵ Co-operation with third countries, dissemination and exploitation of results, and research mobility.

Background of 6FP

If there was a significant shift from the 4th to the 5FP, the shift from the 5th to the 6th has been even more distinct. There are two basic foundations for the recent development:

- Already in the early 1990s there was increasing discussions on ways to move from the framework concept to include member states more directly. Key players in the EU R&D policy domain like Bertti and Reisenhuber introduced a discussion at a EUREKA conference in 1990 on the possibility of intergovernmental co-ordination, and this was at that time seen as possible. The task forces of the 5FP were to a great extent part of the same thinking: “Pooling” and “Critical mass” came more to the centre of design criteria.
- As the perception of a strong link between research, innovation and economic growth became more widespread, political support for R&D had increased during the late 1990's. On this backdrop the European Council decided in its Lisbon meeting in March 2000 to give more priority to R&D, proclaiming that the EU should become the most competitive and dynamic knowledge-based economy in the world. This was followed up by the Barcelona process in 2002 with its agreement on member states to invest at least 3% of GDP in R&D by 2010.

These two foundations were echoed by the Panel for the Five-year assessment of the EU research and technological development programmes, published in 2000. It stated that the framework programme would not be sufficient to reach the Lisbon objectives, and that a more comprehensive strategy for Europe was needed. This encompassed expanding the various tools to be used in consistence with the EU Treaty and adoption of a R&D strategy at the highest level combined with a more decentralised system of implementation.

This trend-shift could be observed in how the new policy was implemented in the 6FP. While the 4FP and 5FP were essentially project-based R&D collaboration to enhance knowledge creation and utilization, and thus essentially a *bottom-up strategy*, the 6FP became a strategy to enhance the competitive strength of European R&D.

More to the point, the 6FP became a structuring device to create what was conceived as better conditions *for excellent research and innovation-driven growth*. It contained a new regime for research collaboration that included the previous instruments of RTD projects and thematic networks, albeit under new names, but introduced profoundly new instruments, notably *integrated projects* (IP) and *networks of excellence* (NoE). The latter was in particular an instrument to structure and integrate the research community in large, sustained networks that could increase the quality of research and operate more autonomously vis-à-vis the Commission. In addition to these two, another new instrument or collaboration scheme was introduced, the ERA-NET, which may be seen as the forerunner of the European Research Area (ERA). The ERA is qualitatively different from a programme; it is a structured co-operation and co-ordination between research funding and support institutions. The aim is to prepare an open co-ordination and participation of

national research programmes at the EU-level.

An interesting feature of the 6FP is the renewed focus on technology platforms in the IPs, a focus that was a key ingredient particularly in the 3FP. This reintroduction reflects the success of technology platforms because of its potential to build integrated knowledge bases for technological development.

Institutional aspects of ERA vs. FP

The ERA as a new, emerging institutional construction should be distinguished from the institution of the FP. The latter is still the main R&D activity of the EU, managed by the Commission, while the ERA is an integration system of the various national R&D institutions and resources.

Beyond 6FP

What will take place in the 7FP? At present, the idea of 7FP is still in its infancy, making predictions conjectural. But it is highly likely that the focus on capacity building and excellence will continue, combined with institutional changes in the overall EU R&D policy. Current signals point to a diffusion of responsibilities from the Commission, i.e. an "agencification" of the implementation structure. A possible new system could be fivefold:

- a) Collaborative research within the classical framework system by DG Research
- b) Support for excellence, even supporting individual projects, by a new European research council
- c) Mobility measures, possibly through an external agency
- d) Technological platforms, possibly through an agency or with member states
- e) Support for infrastructure by DG Research

A development along such lines would mean that participating nations – including Norway - will have to revise their strategy for participation.

3.3 Major perspectives in EU's framework programmes in relation to Norwegian RTD-policy

Assessment of the major perspectives in the EU FPs compared to Norwegian policy has to be on a general or strategic level, taking into account the fact that the FP perspectives have changed over time. In chapter 6, the question of synergies and interaction between Norwegian policy and 5FP will be a major topic.

Summing up this development, it is fair to characterize the different FPs in the following way:

- 1FP and 2FP were oriented towards new industries and a framework for a dialogue with industry;
- 3FP was developed into support for technology platforms as generic support for industry

- 4FP was conceived as enhancing the internal market and growth through technology
- 5FP was reconceptualized to support knowledge production to meet key social objectives (problem-solving)
- 6FP was again revised to support excellence and research capacity and the competitive position of the research community vis a vis US and Japan

The following key issues seem to form the baseline of FP perspectives compared to Norwegian R&D policy:

Generic areas vs national specialization

The EU FPs have in general been focussed on developing selected areas for technological development for the European industry. This has taken place through activities such as technology platforms, work on standardization etc. This means also that the priorities of the FPs over time have been based on the principle of the common denominator, i.e. selecting areas in which the European Community have met identifiable challenges and needed concerted action to remain competitive. Although the process of prioritization is indeed one of negotiation, the outcomes should still be viewed as a set of priorities that are basically generic areas, i.e. areas for R&D that serve the function of joint knowledge bases. Hence, areas of national specialization do not fit in to this pattern, like the Norwegian interest in petroleum research. The implication of this would be that in the communication of Norwegian priorities to the FP process, there should be a conscious distinction between those areas in which Norway will invest in a European context, and those areas where it is more rational to undertake national research aimed at building national economic specialisation, if possible in a bilateral or multilateral mode.

Level of integration between technological R&D and social science research

The Norwegian tradition has been to keep these quite separated, both institutionally and operationally. Having a national focus, the Norwegian investments in social sciences or socio-economic research are relatively higher than in the EU FP-system. The early FPs had virtually no socio-economic research, except for serving as support activities for developing R&D policy. However, more recently, socio-economic research has gained in momentum, and serves not only to address key EU policy areas, but also inter- or multidisciplinary problem areas across the FPs. This was especially the case in the 5FP, where socio-economic research was given high priority due to the legitimacy crisis created by the aftermath of the Maastricht treaty.

Both within the Commission as well as outside (e.g. in the Programme Committees), promoters of socio-economic research in the framework programmes managed to defend an important role for socio-economic research. First of all, although placed in a horizontal programme (Improving Human Potential), it received the status of key action. This meant that socio-economic research should be seen as an ordinary R&D activity together with the other key actions of the first line of the FP.

Socio-economic research has increasingly been recognized as important for the implementation of the other key actions that were often more technological in nature. Hence, all other programme activities are encouraged to include significant elements of socio-economic research, and therefore help promote inter- or multi-disciplinarity in the over all 5FP. Ranging from 2 to 35 % of the various key actions' budget, the amount of socio-economic research in the thematic programmes was at one point in time assessed to be more than 400 MECU or Euro. The corresponding number for the horizontal programmes was 379 MECU. In sum, socio-economic research activities were assessed to represent funding requirements of some 800 MECU, including the 165 MECU for "Improving the Socio-economic Knowledge Base" (Remøe 1999). This also illustrates the increased priority given to multi-disciplinarity in the 5FP. On the other hand, it also illustrates how wider policy concerns were integrated into the 5FP on a broad basis, a process that called for contributions from socio-economic research. For Norwegian social science research, participation in the EU's FP seems to have contributed to a higher degree of inter- and multidisciplinary.

Trans-national collaboration and research types

A feature of major importance in the EU FPs has been trans-national research collaboration to help generate support for the internal market, in fact an internal knowledge market of the EU. Believing that this will promote dynamic knowledge flows, it serves the function of providing the network linkages with national R&D programmes and instruments. But trans-national research collaboration should be seen mostly as an innovation policy feature of the programmes, aimed at creating interactivity and links between innovators to the core of the FPs rationale.

This is different in Norway, as there is little attention to institutionalized systems of trans-national R&D collaboration outside the FPs. On the other hand, research collaboration has a key role in the Norwegian R&D policy through e.g. user oriented R&D, which contains incentives for collaboration in particular between firms and R&D institutions in Norway.

A related difference between the EU/FP and Norwegian orientations is EU's attempts to integrate activities like basic research, technological development and innovation in coherent, multidisciplinary programmes related to key social or EU level priorities. As the priorities change over time, so do the objectives and rationales for the programmes. This is less so in the Norwegian context, where innovation is less coupled with basic research and where targeting and priority setting are weakly coupled with national, long term priorities for economic and social development (see also chapters 5 and 6).

Concentration and focus

Related to some of the points above it seems fair to say that while the EU FPs have gone through a development of concentration and tighter focus on selected areas of high priority, evident in key actions in the 5FP, the Norwegian R&D portfolio remains fragmented.

Although it is true that concentration of themes in the 5FP sometimes implied relabeling than real concentration, a visible communication on priorities is still a key part of the FPs.

This comparison amplifies the need to critically assess to which extent the Norwegian policy is sufficiently prioritised and what should be prioritised in the participation in the FPs. This is all the more the case as the FP, and more generally the EU R&D policy, is about to change dramatically, implying a great need to reconfigure main priorities for Norwegian R&D policy and rationales for international collaboration. As this is currently going on in the context of a reorganisation of the research council, it is recommended to give serious attention to a double strategy:

- *First, to develop a vigorous platform for collaboration in the generic research areas of the EU, and*
- *Second, do the same for those areas that reflect a national economic specialisation that the EU will not include directly.*

4 The Norwegian participation: Size, scope and characteristics

In this section, focus will be set on providing key information on a number of topics relevant for evaluating Norway's participation in 5FP (excluding EURATOM). These are:

- The issue of economic return and the size of the EU-contribution to Norwegians:
 - The Norwegian contribution to the 5FP was estimated to be about € 274 million.
 - Norwegian participants received 248.6 million € from the 5FP. EU's funding of projects with Norwegian participation was better than expected in Environment and Energy specific programs (ESSD). In contrast, Norwegian participation was weaker than expected in IST and INCO specific programs (see also chapter 6).
 - There is *a balance* between the amount of Norwegian contribution to the 5FP budget and the 5FP funding of Norwegian participants. After deduction of "overhead costs" to the EU-system, the economic return, defined as the EU's contribution to Norwegian participants divided by the Norwegian contribution to the 5FP, is close to 1 (break even). Thus, participating in the 5FP did not cause a cash-flow of R&D funds out of Norway.
- The distribution of Norwegian participations in specific programs and types of projects:
 - Norway had 1571 participations, a share of 2 per cent. Research institutes had the highest share of participations. GROWTH and QOL accounted for more than 43 per cent of the Norwegian participations
 - Norway participated in 1086 projects, a share of 7 per cent of the 5FP portfolio. The largest number of Norwegian projects was found in GROWTH and QOL specific programs.
 - Norwegian participation in terms of project type was highest in research projects, which represented 59 per cent of all participations and 71 per cent of all the EU-contributions.
- The institutional and regional distribution of Norwegian participations:
 - Almost half of the Norwegian participations in 5FP involved institutions in the Oslo region.
 - SINTEF is the Norwegian institution with the highest number of participations, followed by University of Oslo and University of Bergen.
- The share of projects that are coordinated by Norwegian participants:
 - Norwegian institutions were prime coordinators of 250 projects. Of these, 40 were situated at the University of Bergen, 30 at the University of Oslo and 25 at the Norwegian university of Science and Technology.
- EU Research Infrastructures in Norway:

-
- In the 5FP Norway had 8 research infrastructures. About 400 non-Norwegians got 5FP funding to work in them.
 - Funding of scholarships in Norway and Norwegians abroad:
 - EU funded 48 Marie Curie Fellowships to researchers coming to Norway. Only 16 Norwegians received Marie Curie funding to work in the EU or associated country.
 - Gender of Norwegian project leaders and participants:
 - The analysis indicates that 17 per cent of project leaders and 28 per cent of the researchers involved in the Norwegian part of the participation were female. This is fairly equivalent with general gender differences in Norwegian academia.
 - Nations that Norway cooperate with in 5FP activities:
 - More than 50 per cent of Norway's collaborations were with United Kingdom, France, Germany, the Netherlands and Italy.

4.1 Norwegian economic return

EU's contribution to Norwegian participants in the 5FP was € 248.6 million, while the total Norwegian contribution to the 5FP is estimated to be about € 274 million, (NOK 2 192 million)⁶. Thus, the economic return is estimated to be 0.9 (248.6 million Euro divided by 274 million Euro). It is important to note that the Norwegian contribution does not exclusively cover funding of RTD activities in the 5FP. It covers also 2 per cent of all costs related to the EU-Community's administration of the 5FP and 2 per cent of all costs related to JRCs (The European Joint Research Centres).

Administration cost of the 5FP⁷ is estimated to be about 10 per cent of the overall budget of the 5FP (€ 1370 million). The JRCs get about 5 per cent of the 5FP budget. Hence, about 15 per cent of the 5FP budget is out of competition for Norwegian or other countries' researchers.

Taking this into consideration, an economic return of 0.9 may be interpreted as a better than expected Norwegian performance. One should expect that only 85 per cent of the Norwegian contribution 'returns' as the EU-contribution to Norwegian participants, that is, 219 million Euro (85 per cent of 274 million Euro, which is the estimated Norwegian contribution to the entire budget of the 5FP), since the last 15 per cent goes to administration and JRC costs. As stated, Norwegian participants received €248.6 million. This is 14 per cent more than the expected, that is, 14 per cent more than the 85 per cent of Norwegian contribution. Thus, a Norwegian economic return of 0.9 should by all means be considered as an indication of a satisfactory participation performance.

⁶ Norway does not contribute to the EURATOM part of the 5 FP.

There is a *balance* between the amount of Norwegian contribution to the 5FP budget and the 5FP funding of Norwegian participants. The economic return, defined as the EU's contribution to Norwegian participants divided by the Norwegian contribution to the 5FP, is close to 1 (break even). Appendix 9 gives the details of how Norway's contribution to the EU's FPs is computed.

4.2 Norway's rate of success

It has not been possible to calculate the exact Norwegian success rate - defined as number of projects granted divided by number of proposals submitted to the 5FP – in this evaluation. Neither it was possible to make a comparison of success rates between participating countries. This is because:

1. There is no reliable information about the total number of project proposals involving at least one Norwegian organisation submitted to the 5FP.
2. There is no reliable information about the total number of project proposals submitted to the 5FP.
3. There is no reliable information about the total number of project proposals involving participations from other countries submitted to the 5FP.

Our understanding is that such data for the entire 5FP will be shortly published by the EU Commission in the annual report on research and technological development activities of the European Union 2003. Until then, we have only annual data on proposals submitted and contracts signed in 2000 to rely on (see also Annex 7). These data indicate that the Norwegian success rate was not significantly different from the 5FP average success rate. However, this is an unreliable indicator since many proposals resulting to contracts signed in 2000 were submitted in 1999 (see also Annex 7). Hence, one has to wait for the statistics on the entire 5FP before a reliable measurement of the Norwegian success rate can be made.

4.3 Number of participants, participation in projects and networks

4.3.1 Norwegian participations

In 5FP, there were 77 145 participations in total. Of these, Norway had 1,571 participations, or a share of 2 per cent. Research institutes had the highest share of participations in the 5FP. See chapter 6.9 for comparison with the 4FP.

⁷ Decision No 182/1999/ of 22 December 1998, article, paragraph 4 states "All administrative expenditure arising from the research activities shall be paid from the overall amount of the programme" (i.e. the 5 FP).

The Norwegian participation: Size, scope and characteristics

Number of participants, participation in projects and networks

Table 4.1: Norway's participation by institutions

Type of institution	Number	Per cent
Research Institutes	581	37 %
Business	503	32 %
Higher Education	376	24 %
Other	111	7 %
Total	1571	100%

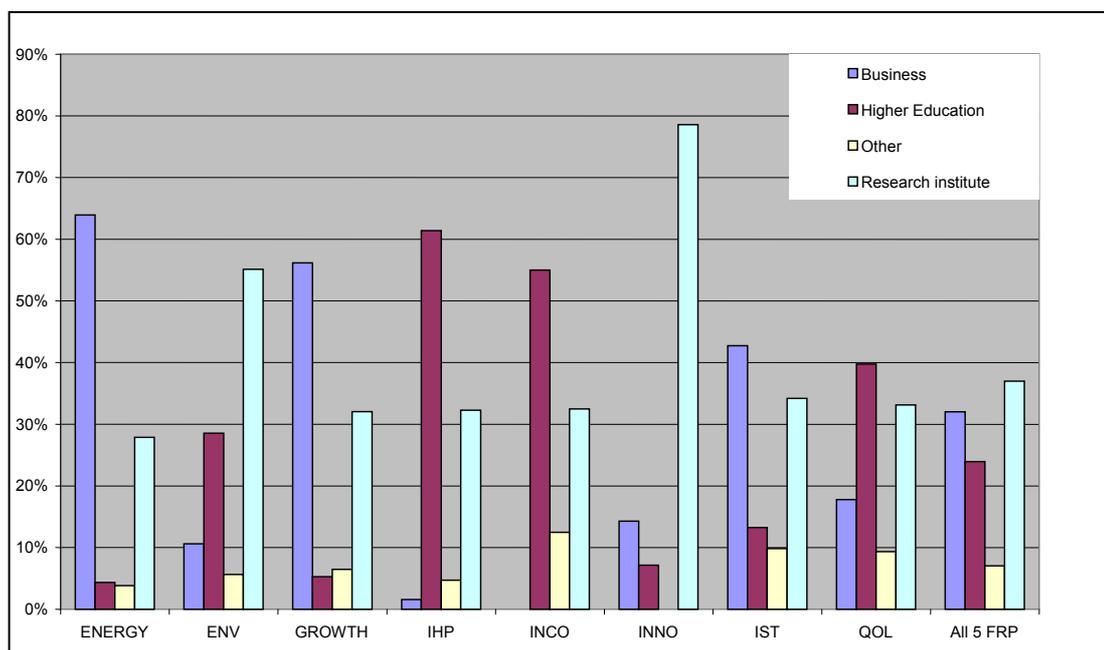
Competitive and sustainable growth (GROWTH) and Quality of Life (QOL) each had more than 20 per cent of the total number of Norwegian participations. These two programs together accounted for 43% of the Norwegian participations. Some key actions in GROWTH, especially the Sustainable mobility and intermodality key action, involved ICT research and, therefore, several Norwegian participants in GROWTH were businesses from the ICT-industry. Also the environment part of 'Energy, environment and sustainable development' - ENVIRO involved a high number of Norwegian participants.

Whereas universities have the highest relative participation in IHP, INCO and also in QOL, industry dominates ENERGY, Growth and IST. Research institutes are most active in ENVIRO specific program.

Table 4.2: Norway's participation by specific program

Specific program	Participations	Per cent
GROWTH	340	22 %
QOL (Quality of Life)	332	21 %
ENVIRO (Environment)	301	19 %
IST (User-friendly information society)	234	15 %
ENERGY	183	12 %
IHP	127	8 %
INCO (International role of Community research)	40	2 %
INNO (Innovation and SME participation)	14	1 %
Total	1571	100 %

Figure 4.1: Shares of Norwegian participation by type of organisation and by specific program.



4.3.2 Norwegian projects

In total, 5FP funded 14 748 projects (excluding EURATOM). Of these, Norway participated in 1.086 projects, i.e the share of project participation was 7 per cent.

Table 4.3: Number of contracts with at least one Norwegian participation, by program

Specific program	Contracts	Per cent
QOL (Quality of Life)	252	23 %
ENVIRO (Environment)	216	20 %
GROWTH	205	19%
IST (User-friendly information society)	160	15 %
IHP	115	10 %
ENERGY	98	9 %
INCO (International role of Community research)	33	3 %
INNO (Innovation and SME participation)	7	1 %
Total	1086	100 %

Norway's large number of participations in GROWTH and QOL correlates with this program having the largest number of projects with Norwegian participation.

4.3.3 The EU-contribution to Norwegian participations

In total, Norway received 248.6 million € in contributions from the EU for its participation 5FP. Table 4.4 shows the size of the EU-contribution by type of organisation. Research institutes received the largest share of the EU-contribution to Norwegians. This correlates

The Norwegian participation: Size, scope and characteristics

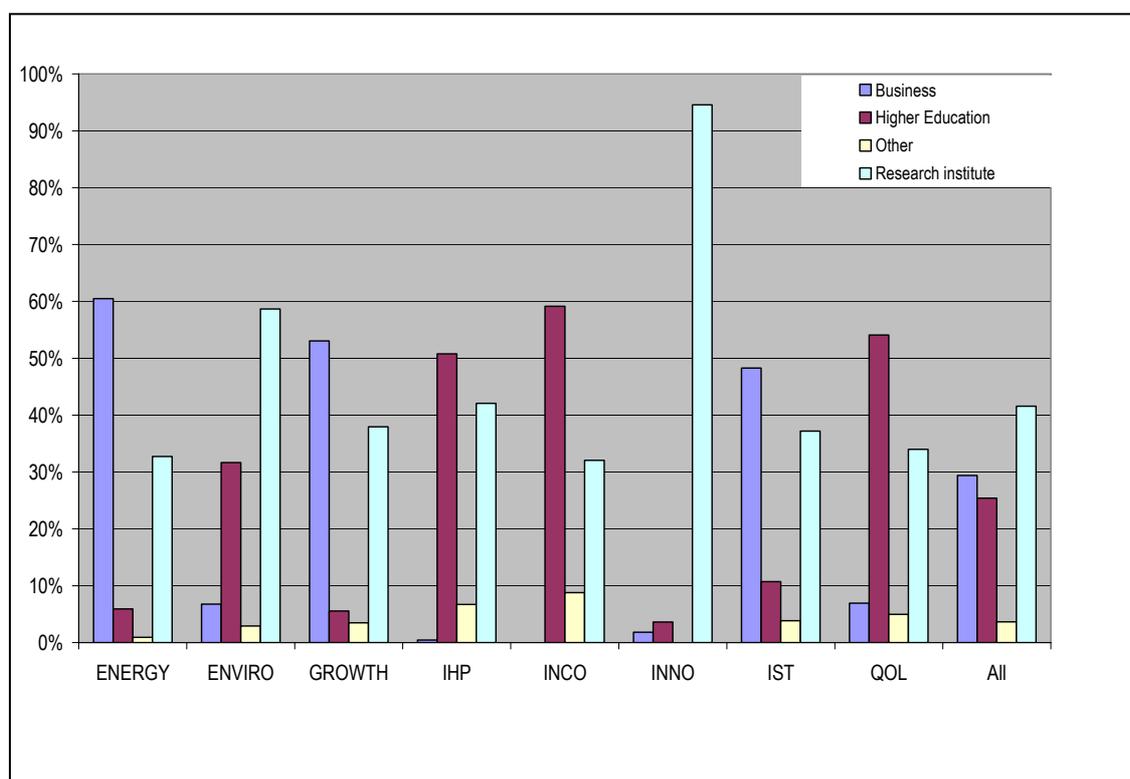
Number of participants, participation in projects and networks

with the fact that research institutes also had most participations, see table 4.1. See chapter 6.9 for comparison with 4FP.

Table 4.4: *The EU contribution to Norwegian participants by type of organisation in 5FP*

Type of Institution	€uro	Per cent
Research Institutes	103 293 992	42 %
Industry	73 116 900	29 %
Higher Education	63 117 043	25 %
Other	9 094 400	4 %
Total	248 622 335	100%

Figure 4.2: *Shares of the EU contribution to Norwegian participants by type of organisation and specific program.*



Norway's participation in INNO is small, so that a high share of the EU-contribution in this program does not amount to much.

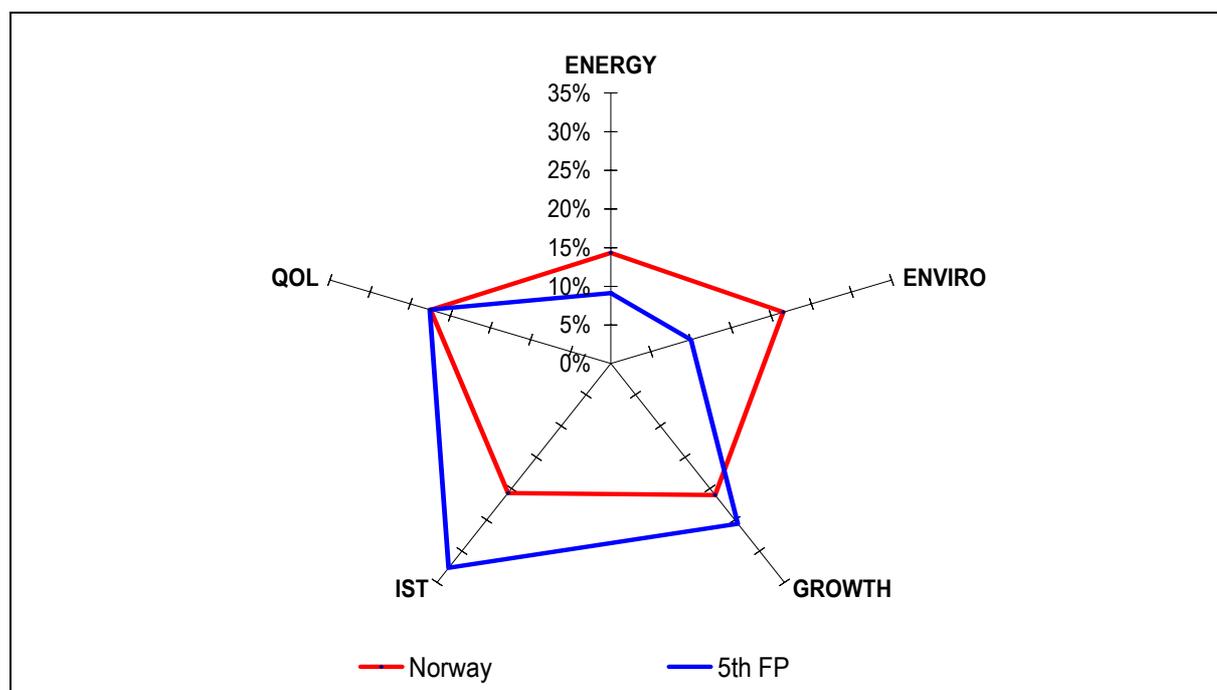
On average, each Norwegian participation received an EU-contribution of NOK 1.3 million.

Figure 4.3 indicates that the profile of Norwegian participation (measured as shares of the EU-contribution to Norwegians by specific program) differed from the profile of the 5FP (measured as shares of the EU-contribution to all participants by specific program).

Norwegian participants received more than the expected shares of the EU-contribution in

ENVIRO and ENERGY. In contrast, Norwegian participants received less than the expected shares of the EU-contribution in IST, and to a lesser extent, in GROWTH. These findings are presented and elaborated in more detail in Chapter 6.

Figure 4.3: EU-contribution to Norwegian participants in First activity of the 5FP compared to total EU-contribution to this activity by specific program. Per cent.



4.3.4 Types of projects and Norwegian participation

Table 4.5: Norwegian participation by type of project and institution. Per cent.

Project Type	Business	Higher Education	Other	Research institutes	All
Access to Research Infrastructures	0 %	2 %	0 %	1 %	1 %
Classical Accompanying Measures	7 %	9 %	17 %	9 %	9 %
Combined Projects	6 %	1 %	8 %	3 %	4 %
Concerted Actions	1 %	4 %	8 %	6 %	4 %
Cooperative Research	13 %	1 %	4 %	6 %	7 %
Demonstration Projects	3 %	0 %	1 %	1 %	2 %
Exploratory Awards	4 %	0 %	0 %	0 %	1 %
Marie Curie Fellowships	0 %	10 %	0 %	1 %	3 %
Research Projects	54 %	57 %	42 %	60 %	56 %
Research Training Network	0 %	6 %	1 %	1 %	2 %
Thematic Network	11 %	10 %	19 %	12 %	12 %
Total	100 %	100 %	100 %	100 %	100 %

Norwegian participation in terms of project type was highest in research projects, this representing 56 per cent, as shown in table 4.5. Furthermore, as shown in table 4.6, 71% of the EU's funding to Norway was contributions to research projects.

Table 4.6: *EU Contribution to Norwegian participants by project type. Per cent.*

Project Type	Business	Higher Education	Other	Research institutes	All
Access to Research Infrastructures	0 %	5 %	0 %	4 %	3 %
Classical Accompanying Measures	10 %	5 %	15 %	8 %	8 %
Combined Projects	9 %	1 %	11 %	3 %	4 %
Concerted Actions	0 %	1 %	2 %	2 %	1 %
Cooperative Research	2 %	1 %	2 %	7 %	4 %
Demonstration Projects	5 %	1 %	1 %	1 %	2 %
Exploratory Awards	0 %	0 %	0 %	0 %	0 %
Marie Curie Fellowships	0 %	3 %	0 %	0 %	1 %
Research Projects	70 %	76 %	61 %	71 %	71 %
Research Training Network	0 %	6 %	2 %	1 %	2 %
Thematic Network	4 %	2 %	7 %	3 %	3 %
Total	100 %	100 %	100 %	100 %	100 %

4.4 Geographical distribution of participants in Norway

Regions having a high share of the EU contributions had almost similar share of participation, i.e. these scores were almost interchangeable. As shown in table 4.7, almost half of the Norway's participation in the EU involved institutions in the Oslo region.

Table 4.7: *Geographical distribution in participations by region*

Region	Per cent
Oslo and Akershus	46 %
Rest of Østlandet	5 %
Sørlandet	5 %
Vestlandet	17 %
Trøndelag	20 %
Nord-Norge	7 %
Total (N= 1571)	100 %

4.5 The most active participants

As with the regional distribution, in analyzing the distribution of Norwegian institutions, both number of participations and contribution from the EU were scored and ranked.

Table 4.8 present all the Norwegian institutions with at least 10 participations in 5FP.

SINTEF is the most active measured by both indicators; the University of Oslo is number two, followed closely by the University of Bergen.

Table 4.8: Norwegian institutions with at least 10 participations

Rank	Institution	Number	Per cent	Cumulative
1	SINTEF	147	9 %	9 %
2	University of Oslo	105	7 %	16 %
3	University of Bergen	101	6 %	22 %
4	Norwegian university of Science and Technology	80	5 %	28 %
5	Norwegian Institute for Air Research	52	3 %	31 %
6	The Norwegian Veritas	37	2 %	33 %
7	Norwegian Hydro	36	2 %	36 %
8	University of Tromsø	36	2 %	38 %
9	Institute of Marine Research	34	2 %	40 %
10	Nansen Environmental and Remote Sensing Center	24	2 %	42 %
11	Statoil	23	1 %	43 %
12	Telenor	22	1 %	44 %
13	Marintek	19	1 %	46 %
14	Agricultural University of Norway	18	1 %	47 %
15	Norwegian Institute for Water Research	16	1 %	48 %
16	The National Institute of Technology	16	1 %	49 %
17	Institute for energy technology	15	1 %	50 %
18	Norwegian Institute for Public Health	15	1 %	51 %
19	Norwegian Meteorological Institute	13	1 %	52 %
20	Institute of Transport Economics	13	1 %	52 %
21	The Norwegian School of Veterinary Science	13	1 %	53 %
22	National Veterinary Institute	13	1 %	54 %
23	Norwegian Polar Institute	12	1 %	55 %
24	Norwegian Computing Center	11	1 %	56 %
25	Rogaland Research	11	1 %	56 %
	Total (all above 10 participations)	882	56 %	

4.6 Number of projects with Norwegian coordinators

In the 5FP, Norwegian institutions were prime coordinators of 211 projects, i.e. 13 % of all the Norwegian participations. Research institutes co-ordinated 37 per cent of these, Higher education 33 per cent and Business 24 per cent.

Table 4.9: Number of Norwegian co-ordinators by specific program and by type of organisation.

Type of institution	ENERGY	ENVIRO	GROWTH	IHP	INCO	IST	QOL	Total	% of all Nor. Partic.
Business	13	2	21			10	4	50	10 %
Higher Education	1	14		11	8	1	30	65	17 %
Other		1	1	1	4	3	2	12	11 %
Research institutes	4	31	7	9	3	14	16	84	14 %
Total	18	48	29	21	15	28	52	211	13 %
% of all Nor. Partic.	10 %	16 %	9 %	17 %	38 %	12 %	16 %	13 %	

The institutions that coordinate the largest amount of projects are shown in table 4.10.

Table 4.10: The six most active co-ordinating institutions (cut-off = 10 projects)

Institution	Coordinations
University in Bergen	40
University in Oslo	30
Norwegian University of Science and Technology	25
SINTEF	19
Norwegian Institute for Air Research	11
Nansen Environmental and Remote Sensing Center	10

4.7 EU Research Infrastructures in Norway

Research infrastructures started as Large Installations Plan in the 2FP (1989-92), and were developed further to Access to Large Scale Facilities action in the 3FP and 4FP. In the 5FP the activity is named “Access to Research Infrastructure”. 139 research infrastructures have been supported with € 120 million, in addition to project- and network-contributions.⁸ Every year more than 2500 researchers have taken part in the arrangement of these. Eight of the infrastructures are situated in Norway; these received € 7 million. Part of this sum

⁸ <http://www.forskningsradet.no/forport/application?pageid=Visningsside&childAssetType=GenerellArtikkel&childId=1060760773549>

funded 350-400 researchers from the EU for staying and working at these facilities. The eight infrastructures situated in Norway are:

*NORSAR seismological observatory*⁹

Norsar is located at Kjeller, just outside Oslo. NORSAR is funded with € 350,000 under 5FP and it covers the period of 2002-2004 (three years). 5FP provides funds for 12 researchers, enabling them to stay for 3 months each at NORSAR, Kjeller.

NORSAR has 43 employees in permanent positions, the majority of these scientific personnel and Norwegians. No financing in 6FP.

*The Wittgenstein Archives (WA)*¹⁰

The Wittgenstein Archives project is located at the department of Philosophy at the University of Bergen and was funded with € 165,433 in the 5FP. In addition to a fixed user fee, 5FP covered travel and living expenses of the visiting researchers. No financing in 6FP.

*Trondheim Marine Systems Research Infrastructure*¹¹

Trondheim Marine Systems Research Infrastructure is a joint initiative of the Norwegian University of Science and Technology (NTNU), SINTEF and Oceanor. It is located at the The Museum of Natural History and Archaeology – Trondheim Biological Station and was funded with € 900,000. Approximately 130 non-Norwegian researchers financed by 5FP used this RI in 2000-2003. Approximately half of the projects were joint projects with Norwegians. Overall, the EU's contribution matched or balanced the costs incurred by the RI, however, some of the sites subsidize others that do not generate enough funds to meet the expenses. No financing in 6FP.

*Bergen Marine Pelagic Food Chain Research Infrastructure (BMFCRI)*¹²

Bergen Marine Pelagic Food Chain Research Infrastructure is located at the Institute of Marine Research, University of Bergen, and received € 900,000 in the 5FP. About 100 researchers had used the BMFCRI, being financed by 5FP. According to the home-page of BMFCRI, there were 52 projects supported by the IHP/5FP.

No financing in 6FP.

*ALOMAR optical observatory*¹³

Arctic Lidar Observatory for Middel Atmosphere Research (ALOMAR) is located at Andenes, Norway, on the island of Andøya, and is owned and operated by Andøya Rocket

⁹ <http://www.norsar.no>

¹⁰ <http://helmer.aksis.uib.no/wab/>

¹¹ <http://www.ntnu.no/trondheim-marine-RI/>

¹² <http://www.uib.no/bergenmarine>

¹³ <http://www.rocketrange.no/alomar>

Range. ALOMAR infrastructure received € 600,000 in project funding. There are about 8-9 scientific and technical staff serving the facility. 30 stays at the facility were funded by the 5FP. The facility is apparently suffering from lack of funding to Norwegian researchers who wish to use the facility. ALOMAR gets funding in the 6FP.

Bergen Computational Physics Laboratory¹⁴

Bergen Computational Physics Laboratory (BCPL) was funded with € 396,000. About 11 permanent host scientists work on modeling of subatomic, atomic and molecular reactions, using supercomputing facilities. BCPL received 61 researchers funded by the 5FP. No funding in 6FP.

Ny-Ålesund International Arctic Environmental Research and Monitoring Facility (LSF)¹⁵

Conducting environmental Arctic research at the Ny-Ålesund LSF research installations, located in Ny-Ålesund, Spitzbergen and funded with € 1.2 million by the 5FP, on the following research topics:

- Atmospheric Climate and Biological Research Facilities (NP)
- Atmospheric Air Research Facility (NP / NILU)
- Ozone/Stratospheric and Climate Research Facilities (AWI)
- Space Geodetic Research Facility (NMA) Nerc Research Station (NERC)

72 projects (stays) in the period 1996-1999 and 49 in the period 2000-2003 have been funded by the EU's FP. No funding in the 6FP.

SINTEF Multiphase Flow Laboratory¹⁶

SINTEF Multiphase Flow Laboratory (SIMlab) is located in Trondheim. The facility conducts industrial scale multiphase flow research, in particular:

- SINTEF Multiphase Flow Laboratory (Industrial Scale)
- High Pressure Flow Assurance Test Rigs (Weel facilities)
- Small Scale High Pressure Flow Loop
- Medium Scale Three Phase Flow Loop

It was funded with € 807,700 involving 6 employees at SINTEF-facility. About 20 researchers used the facility. It is uncertain whether SIMlab will apply for funds in 6FP or not.

¹⁴ <http://www.fi.uib.no/~bcpl/>

¹⁵ <http://www.npolar.no/nyaa-lsf/>

¹⁶ <http://www.iku.sintef.no/SIMlab>

4.8 Fellowships

The EU funded 48 Marie Curie fellowships to scholars visiting Norwegian institutions (Norway as host-country). The fellowships were distributed among the specific programs in the following way:

Table 4.11: *Number of Marie Curie Fellowships, by program*

Specific program	Participations
IHP	31
QOL	11
GROWTH	2
ENERGY	2
ENVIRO	1
INCO	1
Total	48

Not surprisingly more or less all of the receivers of Marie Curie scholarships were situated within Higher education (39 participations), while 7 at research institutes and only 2 within industry.

Based on a different set of data we find that there were 16 Norwegian researchers staying in other EU or associated countries funded by the 5FP, 5 female and 11 male. 4 stayed in the United Kingdom, 3 in France, 2 in Denmark, Spain and Germany, and 1 in the Netherlands, Finland and Italy. 13 stayed for two years, 2 for one year, and one for eight months.

4.9 Gender of Norwegian participants and project leaders

Exact information about the gender of participants and project leaders participating in the 5FP does not exist, neither national, nor in the EU Commission. However, by using information in the survey, it was possible to make some estimates of gender patterns in the Norwegian participations.

The Christian names of respondents reveal their gender. In the web-survey, 839 respondents answered the questionnaire; of these, 789 of the respondents provided their full name. 17 per cent of the respondents were female. Table 4.12 shows the distribution of gender among respondents.

Table 4.12: Respondents' gender by type of institution

Type of institution	Male	Female	Female %	Total
Research institutes	254	66	21 %	320
Businesses	193	23	11 %	216
Higher education	172	22	11 %	194
Other	38	21	36 %	59
Total	657	132	17 %	789

In 2001, 36 per cent of the scientific staff within higher education in Norway¹⁷ were women, compared to 31.5 per cent in research institutes. One should, therefore, expect that the share of female respondents to be higher within higher education than within research institutes and not the other way around, as Table 4-12 shows.

Statistics on scientific staff in Norway show that the number of women in Higher education decreases at higher positions: 30 per cent of assistant professors are women, but only 12 per cent of Norwegian professors are women. Based on this observation, the share of female respondents from Higher Education (11 per cent) seems to follow the patterns of gender distribution of professors in Norway.

Table 4.12 shows also that a large number of the respondents in the category 'other' are women. The reason for this is that more women work in public sector compared to the other three types of participating institutions.

Table 4.13: Respondents' gender by specific programme

Specific Program	Male	Female	Total	Female %
GROWTH	135	41	176	22 %
IHP	148	14	162	21 %
ENVIRO	122	33	155	20 %
QOL	104	16	120	15 %
ENERGY	66	10	76	10 %
INCO	58	10	68	9 %
INNO	14	5	19	2 %
IST	7	2	9	1 %
Unavailable	3	1	4	0 %
Total	657	132	789	100 %

Table 4.13 shows that in some specific programs there is a relatively higher percentage of female respondents than in others. In GROWTH, 22 per cent of the project leaders were female and 20 per cent in ENVIRO. We do know from statistics on scientific staff in

¹⁷ Cf. NIFU, *Science and technology indicators 2003*, table 5: "Researchers/university graduates (head count) by sector of performance: 2001. Doctorates and share of women"

Norway that there are large gender differences related to disciplines. The number of women are at the lowest in technology (16 per cent). Therefore, it is surprising to see a relatively high percentage of female respondents within GROWTH (22 per cent) and only 15 per cent of female respondents in Quality of Life.

Question 4.2.c in the survey asked for the gender of the researchers from the participating organisation that had been involved in the project. 742 respondents answered this question.

As shown in table 4-14, 28 per cent of the researchers involved were women. Table 4.15 shows that there are most female researchers involved within Quality of Life specific program (as expected). Thus, unlike the distribution of respondents, the gender distribution among researchers involved in the Norwegian projects seems to be similar to the general gender patterns of scientific staff in Norway.

Table 4.14: *Researchers involved in the EU-project by type of institution and by gender*

Type of institution	Total involved	Female %
Research institutes	1372	29 %
Businesses	978	18 %
Higher education	761	30 %
Other	240	44 %
Total	3351	28 %

Table 4.15: *Researchers involved by specific programme and by gender*

Programme	Total involved	Female %
QOL	800	40 %
IHP	322	31 %
ENVIRO	586	30 %
INNO-INCO	107	25 %
GROWTH	683	20 %
ENERGY	320	19 %
IST	533	19 %
Total	3351	28 %

4.10 Number of Norwegian national experts in the European Commission

In the 5FP Norway had six national experts in the European Commission. These were:

- Jan Erik Hanssen was a national expert in Energy and Transport DG.
- In Fisheries DG Tore Jakobsen took part.
- In Research DG we had four national experts.
- Sjur Baardsen was responsible for Rural Development Research,
- Per Backe-Hansen for Environmental Research,
- Arne Been for COST – Forestry and Forest Products, and

- Bjørg Ofstad for COST – Social Science.

4.11 Nationality of Norwegian co-participants

In the projects with Norwegian participation, Norwegian institutions had in total 9,937 partnerships with organisations from other countries. Of these 8,482 were with other EU members (85 per cent. As shown in table 4.16, Norwegian participants had most often collaboration with United Kingdom, Germany and France. This is as expected considering the total number of participations from these countries in the 5FP.

Table 4.16: Number of partnerships with other countries in Norwegian projects. Top ten countries.

Nr	Country of collaboration	Number of partnerships	Per cent	Cumulative per cent
1	United Kingdom	1556	16%	16%
2	Germany	1262	13%	29%
3	France	1084	11%	40%
4	Italy	790	8%	48%
5	Netherlands	671	7%	55%
6	Spain	602	6%	61%
7	Sweden	538	5%	66%
8	Denmark	420	4%	80%
9	Greece	396	4%	84%
10	Finland	385	4%	88%

As regarded networks involving co-participation of industry and academic institutions see chapter 6.6.3.

4.12 Changed institutional patterns of participation for universities, research institutes and SMEs, compared with EU's 4FP

Data on Norwegian participation in the 4FP received from the EU-Commission are fragmented (see Chapter 2.3.2). However, this fragmented set of information provides indications to claim the following:

1. Norwegian participation in the IST specific program received substantially lower EU-contribution than the contribution to Norwegian participants in ESPRIT, TELEMATICS and ACTS, despite the fact that the budget of IST was equal to the budgets of ESPRIT, TELEMATICS and ACTS taken together.
2. Norwegian participation in key action "Innovative products, processes and organization" in GROWTH received almost the same amount of the EU-contribution

as in BRITE/EURAM (4FP). But the share of the EU-contribution to Norwegians in Innovative products, processes and organization” was 1.7 of the key action budget, whereas the share of EU-contribution to Norwegians in BRITE/EURAM was 0.7 per cent of the total budget (according to the data from DG Research). Hence, Norwegian participation in “Innovative products, processes and organization” should be considered as higher compared to the 4FP.

The most reliable and updated source of information on institutional patterns of participation in the 4FP is Hauge (1998). Yet, Hauge (1998) provides data only for the first three years of Norwegian participation in the 4FP. This implies that 4FP data in Table 4.17 below are uncertain – and it is not possible to present absolute numbers.

Table 4.17: Comparison of institutional patterns of participation between 4FP and 5FP

Indicators	Business	Higher Education	Other	Research institute	All
Share of the total number of Norwegian participations in the 4. FP	31%	24%	2%	43%	100%
Share of the total number of Norwegian participations in the 5. FP	32%	24%	7%	37%	100%
Share of the EU contribution to Norwegian participants in the 4 FP	39%	21%	1%	40%	100%
Share of the EU contribution to Norwegian participants in the 5 FP	29%	25%	4%	42%	100%

Source: Hauge (1998) and EU-data

Based on this, the following changes of institutional patterns between 4FP and 5FP may be observed:

- The share of participations from research institutes decreased from 43 per cent in the 4FP to 37 per cent in the 5FP whereas their share of the EU contribution to Norwegians increased from 40 per cent in 4FP to 42 per cent in 5FP. Hence, participation of research institutes seem to be more concentrated in relatively larger projects in the 5FP than in 4FP.
- The share of the EU-contribution to businesses decreased substantially in the 5FP compared to 4FP. This may be explained by the fact that participations of SMEs increased while participations of large companies decreased in the 5FP compared to the 4FP.
- In general, participation of large businesses seems to have been substantially weaker in 5FP compared to 4FP. The reason for this is not known, but we recommend a more thorough investigation of this issue in the future.
- The share of the EU-contribution to Higher education increased from 21 per cent in the 4FP to 25 per cent in the 5FP. Thus, Universities seem to have had a better participation in the 5FP relative to the 4FP.
- Other institutions (other) increased their participation substantially from the 4FP to the 5FP.

Furthermore, Norwegian SMEs used more actively the cooperative research type of projects (CRAFT) in the 5FP than in the 4FP (see Waagø et al., page 30)¹⁸. One reason for that may be that this scheme has been less bureaucratic or better known in the 5FP than in the 4FP. Another reason may be that organizations, such as, TI or SINTEF used more actively this type of funding scheme in the 5FP and, thus, attracted a greater number of participating SMEs.

Table 4.18: Thematic correspondence between 5FP and 4FP.

5FP Thematic programmes	4FP Specific Programmes
<i>Quality of Life (QoL)</i> (Improving the quality of life and management of living resources)	1. Biotechnology (BIOTECH 2) 2. Biomedicine & Health (BIOMED 2) 3. Agriculture & Fisheries (FAIR)
<i>Information Society Technologies (IST)</i>	4. Advanced Communications Technologies and Services (ACTS) 5. Information Technologies (ESPRIT) 6. Telematics Applications
<i>Promoting competitive and sustainable growth (GROWTH)</i>	7. Industrial and Materials Technologies (BRITE-EURAM 3) 8. Standards, Measurements and Testing (SMT) 9. Transport
<i>EESD - Environment and sustainable development (ENVIRO)</i>	8. Environment and Climate 9. Marine Science and Technologies (MAST-3)
<i>EESD – Energy (ENERGY)</i>	10. Non-nuclear energies - R&D activities (NNE-JOULE) 11. Non-nuclear energies - Demonstration activities (NNE-THERMIE)
5FP Horizontal Programmes	4FP Specific Programmes
Confirming the international role of Community research (INCO)	12. International Cooperation (INCO)
Promotion of innovation and encouragement of SME participation (INNO)	13. Innovation Programme 14. Technology Stimulation for SMEs
Improving human research potential and the socio-economic knowledge base (IHP)	15. Training and Mobility of Researchers (TMR) 16. Targeted-Socio Economic Research (TSER)

Source: CORDIS

¹⁸ On the other hand, Norwegian SME's have had a very low participation in Exploratory award type of projects in the 5 FP as it was the case in the 4FP.

5 The Norwegian system for information and counselling (support system)

The purpose of this chapter is to assess the effectiveness of the Norwegian system for information and counselling in the 5FP, or national support system, to use a more convenient label. In this, a comparison will be undertaken with nations having a good track record in terms of success in the 5FP.

5.1 Defining criteria of success

High rates of participation may be considered as the most precise expression of success. As shown earlier, although this is difficult to compute, Norway's rate of success may be considered satisfactory. Still, this raises the question of the performance of the national support system. However, the most important determinant of participation rates in the 5FP is the size and quality of the national research base. The message here is that there are limits to the eventual impact of the support system on participation performance. Germany is probably the country with the leanest system while Austria (and, to some degree, Israel) represents the other end of the spectrum. Caution should be taken in making these kinds of comparisons, however, since the Austrian system is centralized – and therefore makes visible – some functions that are done in a decentralised way in Germany, and which therefore are not easily counted.

A key factor for the effectiveness of national support system is the experience and competence of the people involved. In interacting with various national support system organisations and personnel, however, it is also clear – if hard to document – that there are differences in effectiveness, based on the personnel involved. The best have been working for a number of years with the FPs, have wide networks (and therefore good access to informal sources of information), and experience and understanding of the needs of potential participants in the programmes. They understand the EC, its processes and needs, and can therefore actively advise on how to win projects. They also understand national needs and processes, so that they can interact effectively at both national and EU levels. Staffing, staff competence and continuity are therefore significant considerations. Although crucial, in an evaluation perspective, this factor is difficult, if not impossible, to measure, assess and compare.

5.2 Description of the Norwegian support system

During the EU's 5RP, the Norwegian support system consisted of three parts:

- The *Norwegian EU R&D Information Centre* (EU R&D IC – now renamed as EU RTD Department) of the Research Council of Norway, based in Oslo, and

- The *Norwegian Innovation Relay Center* (IRC Norway), which is hosted by SINTEF Industrial Management, in Trondheim, and
- Norwegian *delegates* and *NCPs* to the various programme committees in the 5FP.

Norwegian EU R&D Information Centre

Having an annual budget of approximately NOK 4 million, the Norwegian EU R&D Information Centre was a comparatively small entity as it consisted of four employees throughout the 5FP. Although the unit was reorganized during the 5FP, it remained part of the Research Council of Norway's department of strategy, being closely affiliated to the unit responsible for international R&D relationships.

In presenting itself, the Norwegian EU R&D Information Centre (EU ForskningsInfo in Norwegian) described its mission as promotion and coordination of the Norwegian participation in the EU Framework Programmes. Being the National Contact Point (NCP) for the 5FP and the 6FP in Norway, it has a special responsibility for dissemination of information to the Norwegian research community. It also serves researchers from other countries who wish to collaborate with Norwegian institutions or enterprises, or who is going to Norway on a EU grant.

The Norwegian EU R&D Information Centre is responsible for national EU RTD information. Its main task is to stimulate increased Norwegian participation by research institutes, universities, SME's and other sectors of industry in the EU's framework programmes. The EU R&D Information Centre is an associate member of the Innovation Relay network, and cooperates closely with the Norwegian IRC which is located in Trondheim.

The EU R&D Information Centre has organized a variety of activities and stimulation measures to increase the participation of Norwegian research facilities, universities, industry and SMEs in the EU's 5FP. Many tasks are related to upstream activities, such as information dissemination through newsletters and the World Wide Web, partner searches, consultations, telephone help-line and meetings with potential applicants. The EU R&D Information Centre is also the secretariat for monthly meetings between the national delegates (one person is always recruited from the staff of the Research Council) to all the specific programmes. At the start of 5RP, there were 15 delegates from the staff of the Research Council serving the various national delegations, in addition to the staff of the EU R&D Information Centre. Thus, whereas the EU R&D Information Centre had a modest size, it was a central node in a comparatively large network of personel working for the promotion and participation of Norwegian in 5FP.

Throughout the 5FP, the Centre has organized information days on all the specific programmes, arranged courses on the use of CORDIS, seminars and courses for research institutes and SME on contractual matters and on issues related to project management of

the EU projects. The Centre is also regularly updating statistics on Norwegian participation in the EU programmes, these being an important source of information for this evaluation.

Norwegian Innovation Relay Center

Being part of the European Innovation Relay Centre Network, IRC Norway employed nine persons in the period 1998-2002. The purpose of the IRC Network is to assist companies and research organizations with downstream activities, that is, technology transfer, technology transfer agreements, license agreements, intellectual property rights, and to identify sources to finance innovation. Having its main focus on SMEs, IRC Norway has organized a network of offices affiliated with the following regional research centres in Norway:

- SINTEF in Trondheim
- Christian Michelsen Research in Bergen
- NORUT Gruppen AS in Tromsø
- MATFORSK in Ås
- RF - Rogaland Research in Stavanger.

The Innovation Relay Centre Network is supported by the European Commission's Directorate-General for Enterprise as part of the Innovation and SME programme. IRC Norway received the prize for the best Transnational Technology Transfer Agreement in the Innovation Relay Centre Network in Europe in 2001.

IRC Norway is working close with the national technology transfer program TEFT, and has close relations with most of the regional offices in Innovation Norway (earlier regional offices in the National and Regional Development Fund – SND. IRC Norway will be an integrated part of KOMPMEG which is a new national technology and competence transfer program releasing TEFT from 2004. The IRC Network has also established close relations with EUREKA Network and ESA Network.

5.3 Comparison of national structures for Framework Programmes - Austria, Finland, Germany, Israel, Netherlands and Sweden

In this part of the evaluation, a benchmarking exercise was undertaken to develop a picture of how other countries support participants in the Framework Programmes (FPs), and how they have been adapting to challenges of 6FP.¹⁹ This benchmark included how these

¹⁹ The six independent national studies can be found in Appendix 1

national systems communicated with their counterparts in Brussels, and how they integrated stakeholders in national policy formation. The focus then turned specifically to the operation level; systems (which are highlighted in table 5.1 below), co-operation, tools, definition of target groups, funding, and evaluation – concluded by a discussion of the various challenges these systems are facing. The goal of the benchmark was to develop some points for consideration for future development in Norway, which are presented in the concluding part of this comparison.

There appear to be at least four important drivers of the way countries' national systems for FP support operate:

- *Scale of the country*: In small countries with limited numbers of stakeholders at national level, a simpler form of organisation is sometimes possible than in large countries, where many people and organisations have stakes in the relationship with the EU programmes.
- *Amount of experience* that the national research and innovation system has in dealing with the FPs. As systems learn, so their needs for information and assistance change. Some segments of the population need continuing help, while others are increasingly best able to tackle the relationship with the EU programmes on their own.
- *Organisation and governance of the national research and innovation system* affect how it is best linked to the EU level.
- *The evolving nature of the FPs themselves* mean that national level support needs change – especially in the more radical transition from the fifth to the sixth programme.

The six countries chosen for examination and comparison with Norway are collectively biased towards smaller countries with a limited history of FP participation (Austria, Finland, Sweden and Israel) but include a medium-sized (Netherlands) and a large (Germany) example of more established members of the EU, in order to provide a contrast. Still, it is difficult to make strong conclusions in an area as complex as interaction with the EU programmes. Nonetheless, if we take the situations of the individual countries into account, some regularities seem to appear.

5.3.1 Supporting/funding agencies

To start this comparison, we will begin with the organisation(s) responsible for funding and steering of the participation in the EU's 5FP. In all cases there has been strong ministerial support for the setting-up of the national liaison bodies:

- In Sweden, there has been primary support from the Ministry of Education and Science,
- In Finland and the Netherlands this is supplemented by the (primary) involvement of the ministries of Trade and Industry in the co-ordination of the EU FP research activities.

- In Austria and Israel, there has been broader support – In Israel 4 Ministries and the council of higher education are involved, in Austria this increases to 6 ministries, regional bodies, and chambers of Labour, and of Federal Economics.

5.3.2 Representation in Brussels

In the benchmarked countries the relationship and interaction with the EU Commission is done through various approaches:

- Sweden has two persons stationed in the Brussels office. The Brussels office maintains close contact with the Programme Committee (PC). They also make regular visits to Sweden, to participate in seminars and workshops with stakeholders - keeping them (first-hand) up-to-date with what is going on in the field.
- Netherlands and Finland: Both nations are represented in Brussels by a specially designed body. In both cases the national FP co-ordination bodies are represented (in Finland the EU-R&D Office and in The Netherlands NEST), alongside the Science academies, associations of universities, and research institutes.
- Israel has limited contact between the national FP body (ISERD) and the Brussels representation (Delegation of the EC to Israel). ISERD has representation in the Programme Committees.
- Austria has a large representation in Brussels, however, available resources and specific know-how for FP specific lobbying is limited.
- Germany with its fairly lean support system and its strong reliance on self organised support of the research community has a strong and highly visible representation in Brussels as far as research organisations are concerned: KOWI (Liaison office of the German research organisations) co-operates closely with national support organisations such as the EU-office and various National Contact Points (NCPs).
- Norway's representation in Brussels is relatively small, this being maintained by the science attaché at the Norwegian delegation to the EU.

5.3.3 Representation of stakeholder issues/views

The way different nations represent stakeholders is significant. Usually, is done in conjunction with Programme Committee (PC) systems:

- In Finland, the NCPs allocate members to the PCs. In addition, Finland has developed a system of setting up Support Groups under each FP-theme as a way in which to work together with representatives from both the business and research communities. The Finnish FP-representatives in Brussels regularly visit Finland for general meetings and

for promotion of opportunities for Finnish participants. This was thought to be beneficial.

- In the Netherlands, the various PCs (made up of members from the most relevant ministries / NWO and Senter/EG-Liaison) are supported by 4 to 5 experts. They meet every two months in an Interdepartmental workgroup. This group communicates with industry and research via panels – which assists in bringing stakeholders into the process.
- In Germany, the members of the decentralised and large NCP system in Germany are actively involved in the formulation and representation of German positions in the respective PCs.
- In Israel the NCPs, just as in Germany, have membership in all PCs, and work alongside representatives from various ministries to formulate the Israeli standpoint.
- In Austria the NCPs are represented within the various PCs, these providing good avenues for stakeholder to influence policy formation. Again, close contact with target groups through a decentralised approach being a distinctive advantage.
- In Sweden, the PC system is not used as extensively as the other countries. There is, however, good contact between the various NCPs and the Programme Committees to feed back into the policy formation process (although no formal interaction).

5.3.4 Operational aspects

Most of the agencies in countries analyzed seem to be similar in their centralised character, except for Germany, which has chosen a decentralised approach. This perhaps is a reflection of size - and challenges associated with large numbers of potential participants. Although centralised, a number of the countries have more than one main player involved in Liaison tasks. In Finland for example there are three bodies involved (TEKES, Academy of Finland & the Ministry of Trade & Industry). In the Netherlands the same principle applies; as in Finland, the challenges of 6FP have seen the need to co-operate with the Science Agency to reach target groups in universities and research institutes, the Liaison office.

The use of regional bodies was a common feature of Austria and Finland, and, in a different way, also in Germany. In the different countries there are differing degrees of co-operation within sponsoring agencies in the promotion/support of FP work.

The Norwegian system for information and counselling (support system)

Comparison of national structures for Framework Programmes - Austria, Finland, Germany, Israel, Netherlands and Sweden

Table 5.1: Overview of National Framework Dissemination Bodies / NCPs / IRCs

Country <i>Name of FP Co-ordination body</i>	No. Bodies involved in national info. dissemination	No. Staff in head organisation involved in European Activities (including FP/ NCP /IRC/EUREKA etc)	Main Representation Body in Brussels	National Contact Point	Innovation Relay Centre
Austria <i>BIT</i>	1 (+ 4 regional contact points)	Staff of 40 in BIT with 25 exclusively for FP. Regional Network has approx. the same manpower		Co-ordinated by BIT - 24 from the 40 within BIT – others situated in regional centres, PC members,	BIT
Finland <i>Secretariat for EU R&D</i>	3	13 (Finnish Secretariat for EU R&D)	EU R&D Liaison Office	Co-ordinated by Finnish Secretariat for EU R&D - NCPS also come from the Academy / various ministries & other bodies such as VTT & regional devt. agencies	Finnish Secretariat for EU R&D
Germany <i>EU-Office</i>	many	70 NCPs (40 FTE) - various bodies – research institutes/ technological services/ specialised programme management organisations		Decentralised to include bodies such as research institutes, technological services, specialised programme management organisations such as VDE/VDI-IT	
Israel <i>ISERD</i>	3	13 (ISERD)	Delegation of Israel to EC	ISERD	MATIMOP
Netherlands <i>EG-Liaison</i>	2	30 (EG-Liaison)	NEST (inclusive EG-Liaison Members)	EG-Liaison	EG-Liaison
Sweden <i>Council for EU R&D</i>	1	12 (2 in Brussels) Swedish Council for EU R&D	Swedish Council for EU R&D (EU/FoU)	Swedish Council for EU R&D – (2 themes have additional bodies involved)	Swedish Council for EU R&D
Norway <i>EU R&D Information Centre</i>	1	6 EU info + all NCPs	Delegation of Norway to EU	Research Council of Norway	IRC Norway in Trondheim

5.3.5 Co-ordination with other (regional) parties

The EU offices in the universities and larger research organisations are important across the countries:

- In Germany, various interest groups have also set up specific information services for interested participants. To mention here are contact offices in Brussels set-up and managed by the major research organisations like Fraunhofer, or Max-Planck. Furthermore the 'Association for the Promotion of European and International Co-operation in Science' has established a European liaison office of the German research organisations (KOWI).
- In Sweden, the Council co-operates with networks of intermediaries, universities (all of whom have EU Offices) and higher education bodies, institutes, research councils, industry, and other public funded bodies. The contacts with the various bodies is seen as a way in which to use existing partnerships/networks, and as (the only) way in which to target some of the stakeholders, such as SMEs in the regions or researchers at universities.
- In Finland, Tekes has begun paying more attention to businesses outside the Helsinki area, and is trying to alert them to CRAFT opportunities and help them with finding partners and drafting proposals. Tekes has chosen a number of centres (those in university towns) in which to start a series of information sessions. They believe that this is the way to best approach regional businesses, as the contacts with the centres are already developed.

5.3.6 Tools and implementation of support

On this topic, the attention will be set on what seems to work best, what is considered to be the most effective mix, and where the emphasis lies in the various countries.

All the countries seem to offer a similar set of tools in information and support (see table 5.2), these include:

- general advice,
- newsletters,
- information workshops,
- partner searching,
- training, assistance in proposal drafting and
- judicial / financial advice.

Over the years, the quality of information coming from the Commission has improved – previously there was a need for national delegates to absorb, and ‘translate’. Advances being made in IT application, development of national websites, in

particular as gateways to Cordis information, support this. For the countries benchmarked in this study, this development has caused a change in focus, from its initial bias towards information dissemination, to one in which *pro-activity and assistance play key roles*. This focus puts more emphasis on tools such as partner-searching (also improved through IT developments), assistance in proposal development, and even going as far as project management and the funding of these types of related costs.

Nonetheless, in certain areas – notably with respect to small business – there is a need for dissemination in the form of translating information into the ‘language’ of business and researchers, and helping them understand changes and where they fit in.

Another relevant point is the use of Commission visits, usually in conjunction with information seminars/workshops. In addition, they also ‘get people talking’, which is seen to be necessary to build the relationships required under the 6FP. Because 6FP is a more complex programme in the eye of the (potential) participants, this has been a specific challenge for the national organisations involved. In most cases the changes from the 5FP to the 6FP – in particular the introduction of the IPs and NoEs - have not been met with radical changes in the types of assistance provided, however, there have been changes to the content in the various tools.

The use of seminars was seen by the benchmarked countries as being one of the most effective (and efficient) ways in which to reach participants in the overarching goal of information dissemination. An added value of this approach was bringing (potential) participants together to support networking and sharing of experiences / knowledge of FP projects.

Several times a year, the Swedish EU-R&D Council arranges courses on various themes e.g. proposals, project management and contacts. These were seen to be the most successful of all tools.²⁰ This advice has been in a continual development phase, in particular with changes from 5FP to 6FP. For specific target groups, such as municipalities, small enterprises, industry organisations and regional organisations, the Council designs tailor-made information days or workshops. In response to the success training courses are also being developed for SMEs.

²⁰ Interview with the Director of the Swedish EU R&D Council – Karin Hjorth Rybbe

The Norwegian system for information and counselling (support system)

Comparison of national structures for Framework Programmes - Austria, Finland, Germany, Israel, Netherlands and Sweden

Table 5.2: Dissemination tools of the various national FP systems

Dissemination Tools (aimed at participants)	Austria Bureau for International Research & Technology Co- operation (BIT)	Finland Finnish Secretariat for EU R&D	Germany decentralised through NCPs – coordinated by EU-Office & assisted by KOWI	Israel ISERD	Netherlands EG-Liaison as co-ordinator – with some assistance from NWO	Sweden Swedish Council for EU R&D	Norway EU R&D Information Centre
National Guides for European R&D	X	X	X	X	X	X	X
Dedicated information for target groups	X	X	X		X		X
Workshops and information days	X	X	X	X	X	X (+ tailor made sessions for certain target groups)	X (+ tailor made sessions for certain target groups)
Newsletters / magazines	X	X	X	X	X	X	X
Information on judicial & financial aspects of projects		X (using Tekes expertise)		X	X	X	X
Training programmes / courses		X	X (mostly for intermediaries)	X	X	X	X
Partner search (can be through IRC tasks)	X	X	X	X	X	X	X
Funding - project preparation & additional implementation costs	X	X					X
Support in drafting project proposals	X	X	X	X	X	X	Some – use of consultants
Project management support		under development			X		Courses offered
Support in implementation of project				X			Courses offered

Preparation of proposals, and advice related to this is seen by all of the countries as one of the most important tools offered. The nature of 6FP has also seen an increase of larger participant groups, which has also become a key point in the type of proposal assistance offered.

Partner searching is another interesting tool and is defined in many ways. The central question is the development of FP specific databases – including both potential and current participants, and a more proactive approach by the liaison offices (or NCPs in some countries). A future development could be a more concrete approach to disseminating names of potentially interesting partners²¹.

5.3.7 Target groups

The benchmark also included aspects of defining and contacting target groups. In the first instance it was interesting to see that both Austria and the Netherlands have a more structured approach to defining their ‘client’ base. In Austria BIT has developed a customer relations management system. Profiling customers – both institutional and individual, and their interactions and support from the Bureau. In the Netherlands, Senter, together with NWO, undertook a mapping exercise to link Dutch research with 6FP. In parallel they produced a list of possible Dutch participants at the beginning of 6FP, whom are in turn invited to attend workshops when the various calls are posted. In addition to this proactive approach, they also try to ‘push’ for participation by various parties whom they consider as having a good chance. Norway, in contrast, seems to lack a system for proactive customer relations management.

5.3.8 Funding for participants

Like Norway, Austria and Finland have funding opportunities (covering participation costs) for participants. In Finland it covers both SMEs, and university & research institute projects. It is divided into assembly of integrated projects – industry (50%) and up to 100% for research organisations, and preparation of research projects – max 15,000 euro for participants having a major role (co-ordinators) or 7,000 for other participants. SMEs can also apply for funding in the initial preparation phases. The Academy also has funding possibilities for travel to meetings for preparation of projects and proposals to other key organisations. Funding is available for both co-ordinators and other parties taking part for costs incurred in the preparation of integrated projects & networks of excellence. Funding can be granted up to a maximum of 40,000 euro per project.

²¹ A good example of a very pro-active approach to partnering is the special project (sponsored under the 5 FP) to provide assistance in the searching of partners & preparation of proposals for 6 FP in the Life sciences in Finland (www.finbio.net).

Austria has two programmes that offer 'additional' financial support for participants in the EU-FP 6. The first one is managed by FFF (Forschungsförderungsfonds), the major Austrian funds for research and development in the enterprise sector. The programme provides financial support for SMEs preparing the EU projects, and aim to reduce entry barriers for firms. The second form of financial support addresses universities. It is managed by BMBWK (ministry for education and science) and covers 'additional' costs during project implementation that are not covered by the EU-funding.

5.3.9 Evaluation

While many countries study the impact of the framework programmes, little serious evaluative effort has been devoted to the effectiveness of national support systems and instruments. However, in the majority of countries, feed back forms for all participants in information days, workshops, training etc are common practice. In Finland for instance there is support to develop a more formalised method to receive input and feedback on all services in 2004. In addition, the ongoing impact study of 5FP will, as did the study for 4FP, provide input for development of the services offered.

5.3.10 New roles for FP liaison bodies

The 6FP with its focus on Centres of Excellence has for the first time put the emphasis on researchers / universities and consortia. This has meant a realigning of support systems to include advice and training for the setting up consortia, for drafting contracts within them, dealing with IP issues, and management of such large groups. However, none of the countries studied have yet made organizational adjustments to accommodate these new challenges.

5.3.11 Lessons from the country cases

The national support systems compared in this study serve a dual function: On the one hand, they provide a measure of policy co-ordination by channelling communications between the national and European level. On the other hand (and this is the primary focus of our study), they encourage and assist national R&D stakeholders to participate in the EU (and sometime other international) programmes.

We need to be cautious about drawing 'hard' conclusions from a small number of cases. However, some aspects may be highlighted:

- **Scale:** Generally, small systems are easier to co-ordinate than large ones. People know each other and self-organise, and often the same people occupy multiple

roles, so there can be less need for formal co-ordination or communication in small countries. Correspondingly, in small systems the limited resources mean there is a need to be opportunistic in allocating tasks to people – giving the right person the responsibility to be a National Contact Point may be more important than worrying about whether they work for an agency, a ministry or a university. Arrangements can, therefore, often look untidy, but it does not follow that their performance is poor.

- **National experience** of FPs affects the needs that the national support system must address. These needs shift over time, but different stakeholder segments' needs change in different ways. Once they can find their way around the Brussels systems, national policy makers can engage more directly with their EU counterparts and their support needs change. The more capable (usually larger) companies also learn how to play the necessary games in the FPs, and to understand the benefits and limitations of participating. They have large networks of relationships with other companies and with the knowledge infrastructure. The underlying relationships are among *people* rather than institutions; they rely on friendship and experience, and evolve through word of mouth.
- **Organisation and governance** of the national research and innovation system are also important. The new instruments under the 6FP mean that much larger consortia will be formed. Their management requires a new scale of project management and new skills. The barriers to entry are much bigger than in previous framework programmes. Support systems can add value by playing a more active role in 'deal making' to set up large consortia.

If the aspects elaborated above are valid in terms of how national support systems should be structured, it becomes clear that there is not single 'one size fits all' or 'best practice' model that can be copied and adopted in Norway.

5.3.12 Strategic perspectives on 6FP

It has been possible for member states to treat previous FPs as interesting but optional supplements to national R&D priorities and funding. 6FP and the attempt to create a European Research Area have changed this, to the extent that it no longer aims simply to network European capabilities selectively to build continental-scale clusters of capability on a par with equivalents in the USA or Japan. This means linking together and selectively growing existing areas of strength across the member states, and to some degree developing new ones. Member states' ability to participate will depend even more than before on the extent to which their funding priorities, as well as the strengths of their knowledge infrastructures, match with the priorities of 6FP. Current

EC policy therefore brings pressure to bear on framework participants to develop more explicit strategies about how they will relate to 6FP and ERA.

Increasingly, representations in Brussels will evolve towards fulfilling two functions:

- first, to support and enable stakeholder groups' own contacts with the EC; and,
- second, to act as a 'listening post' for informally communicated information.

They tend not to represent member states' positions to the Commission – this is done by people based in the home countries:

- The stronger and better organised the national stakeholders are, the better they are able to deal with the EC and the less important the role of a dedicated interface organisation needs to be in maintaining communications.
- The value of having a strong, single organisation handling the national support system function is probably rather high for countries in the early stages of EU membership, but diminishes over time, as the needed role shifts from learning to co-ordination and intelligence-gathering.

5.3.13 National organization

Variations among the countries surveyed in the way national research and innovation institutions are organised and governed means that there is no clear pattern of division of labour concerning who acts as NCPs or PC members. Norway's pattern of focusing the NCPs within RCN is one of a range of behaviours, but other ways of doing things seem also to work. More important may be to make sure that the NCPs are adequately backed up and supported, to be able to do their jobs, with links into the national stakeholder communities as well as to the EC. National representation consisting of more than one body (Industrial, Scientific, Universities, Research Institutes) seemed to have benefits of feeding back information into the (entire) national system and vice versa.

Setting up formal "support groups' or 'panels' containing research bodies and industry to formally input into national policy formation is a good way in which to formalise stakeholder involvement. Co-operation of FP tasks with national European networks (EUREKA, COST, IRCs) is important in making better use of existing interaction and drawing on tacit knowledge gained through their experiences.

Use of regional bodies to disseminate information, signpost and deliver services has been essential in reaching SMEs, especially in countries with geographically dispersed participants.

EU contact points at research institutes and universities are important. They can be used as information distribution points and for signposting potential participants.

5.3.14 Tools for support

In general, the cases show that there has been a change in focus from information dissemination to a more pro-active advice role. The quality of EC information has improved radically over the past three FPs. For this reason, and because national stakeholders increasingly have experience of EU programmes, there is much less need to ‘broadcast’ information. Seminars and support with proposal preparation were seen as the most important tools in reaching the goals of the liaison bodies.

5.4 Assessment of the Norwegian national support system

In the evaluation, two sources of data were basic for analyses in making assessment of the Norwegian national support system for participation in the EU’s 5FP:

- information obtained from the questionnaire (cf. Appendix 5), and
- information obtained from interviews with a number of key informants related to Norway’s participation in 5FP, cf. Appendix 6 for a list of informants and Appendix 4 for the interview guide that was used.

Although small in scale, the Norwegian national support system is similar in most aspects to that in the countries studied in the benchmarking exercise undertaken in the evaluation. Of course, there are differences, but these reflect adjustments to national conditions, however, as the drivers are almost the same for Norway as with the other countries – the “responses” are similar. As pointed out earlier, the national support systems have co-evolved with the various, succeeding FPs, reflecting both that actors involved in the FPs learn and gain experience, and that the national supports systems make adjustments to accommodate the changing nature of the FPs themselves. However, looking more closely into the material from the interviews and other sources, Norway’s main challenge in terms of a national support system will be: To make a coherent national R&D and innovation strategy with a special focus on international R&D and innovation activities. This claim is based on a number of observations from Norway’s participation in 5FP that will be elaborated below.

- Apart from a few cases, the strategic overlap or convergence between national R&D and innovation priorities and Norwegian participation in 5FP has been weak, or coincidental. The main reason for this is that strategy, agenda and priority setting – and implementation of these at the national level are done within a national context; in these, participation in the EU’s FPs do not command high focus. Thus, questions such as whether participation in the EU’s FPs represent a substitution, symbiosis or a synergy with national priorities and strategies are difficult to answer because this is not high on decision makers’ agenda. This point is important as a structural factor for how the national support system works,

because to some extent this explains the outcomes and actions of various elements within the national support system, as will be elaborated below.

- Apart from some of the large industrial firms (e.g. Statoil), some of the research institutes (e.g. NILU) and, to a lesser extent, some of the universities (e.g. NTNU), Norwegian institutions that participated in 5FP seem to lack a coherent R&D and innovation strategy. Thus, what may be observed on a national level is also reflected on institutional level. Although most of the institutions explain that participation in the EU's FP is important for internationalization, establishment of international networks and new market entry opportunities, gaining access to important sources of information, etc., linking this to the institution's own strategy is often weak. Except from one institution, evaluation of its participation in the EU's 5FP has not been undertaken. Although this lack of strategy may provide room for a high degree of bottom-up initiatives and entrepreneurship (of which there are many notable examples of successes), the link to an institutional strategy is weak, chiefly because institutional strategies and portfolio management are not strongly developed.
- In looking at the relationship between the EU FP-system and the national system, one may observe how Norwegian actors, in particular representatives of the Research Council of Norway, operate in the roles as NCPs and delegates to various programme committees, etc. Although most of the people undertaking these task seem to do a good job, their modus operandi do not necessarily to reflect national priorities or interests in a coherent way. One would expect that R&D and innovation issues related to vital national economic or societal interest (e.g. energy, environment, marine resource management, etc.) should be given high priority in order to induce high activity in R&D areas relevant for these. In contrast, one would expect other areas would require less attention and resources. However, individual entrepreneurship (which in itself is an asset) more than strategic design and priorities seem to explain their modus operandi. This may, of course, be beneficial for some interests, but these are not necessarily in areas requiring much strategic attention for national interests. This aspect reflects the first point above, a general absence of national priority setting.
- In spite of these weaknesses, there are many cases of successful entrepreneurship which have been beneficial for the national support system. In particular, the "IT&FoU-Forum" in Brussels, which was established in year 2000 (almost midway in 5FP) as result of an initiative from the Norwegian delegation to the EU, is considered highly successful. The reason for this is its format and agenda that provides those attending an opportunity for informal dialogue and networking with other stakeholders, in particular it has given Norwegian participants valuable relationships to policy makers and decision takers in the EU-system. Most of the

informants claimed that they gave attendance to meeting of the “IT&FoU-Forum” in Brussels high priority. Some stated that through this meeting point, they had been able to invite important “DG-people” to Norway for visits, guest lectures, etc. – this contributing to valuable relationship building. As a result, some cited being put on various informal mailing lists and consultation groups for DG-people, this giving them opportunity to comment early drafts, etc., i.e. influence outcomes of decisions and policies important for them and giving them advance insight into upcoming issues and initiatives. Thus, a more coherent national strategy has to allow for individual entrepreneurship in order to harvest the better of two worlds.

In general, informants claim that using official channels of communication, such as attendance in programme committees, is not effective; the meetings are mostly formal occasions for EU officials to make announcement of their decisions, a *fait accompli* in terms of policy and strategy. At the level of programs, Norwegian representatives claim that they have the greatest possibility of influencing outcomes at three points:

- As members of working groups (WGs) of a programme committee that has been established to provide input for a special purpose, such as making input for the next FP. Some informants who were members of 4FP WGs claimed that this was important for putting Norwegian interests into the agenda of 5FP.
- As members of WGs in programme committees to make specific work programs for a FP, or midway revision of these.
- Nomination of influential Norwegian experts (typically university professors) as candidates for various WGs or expert committees within a FP.

Needless to say, the personal capabilities, networks and interests of NCPs and delegates have been important for Norway’s participation in 5FP and exploiting the opportunities stated above. However, as stated initially, because of weak strategy, this also makes Norway vulnerable: Vital national interests may suffer for shortcomings related to the persons involved – the system lacks robustness.

In general, in the opinion of key informants interviewed, they were generally favourable to the Norwegian EU R&D Information Centre in the Research Council of Norway. Typically, many stated that they provided general and useful information on FPs in an efficient manner to interested parties in Norway. Their newsletter, web-based announcements and information meetings were considered beneficial for raising awareness of the EU’s FPs in general – and for dissemination of important information related to new FPs. This is typical of the “broadcast” mode found in most of the national support systems benchmarked in the evaluation. Although generally considered positive and responsive to requests from users in Norway, some improvement potentials were identified, in particular:

- For newcomers, the EU's FPs represent a cultural barrier. In particular, they are confronted with concepts and procedures that are unfamiliar and non-intuitive. This was amplified in the 5FP because this was structurally more complex than its predecessors. The EU-Forskningsinfo should strive to make these concepts and procedures more understandable, i.e. "translate", "educate" and "demystify" were words that informants used to describe the challenges.
- The personnel, as some of the NCPs, are usually not experts. For this reason they may be incapable of providing expert advice. When approached by users seeking advice on complex matters, they should pass them on to real experts in the national support system.
- Creating interest for the EU's FPs in regions and among SMEs: Most informants admit that this is a difficult challenge, however, they claim that some simple, and possibly efficient initiatives may be taken by being more "market oriented", i.e. searching for potentially interested institutions and firms. This should be an area of cooperation between the Research Council of Norway and the newly established Innovation Norway (the former SND). In general, regional state colleges should be encouraged to take greater interest in participation in EU's FPs; in doing this, they may be able to involve other organizations and firms in the regions.

In the questionnaire, respondents were asked to consider and score various actors in the national support system as either "useful" or "not used or not very useful". The results obtained from this question are shown in table 5.3. As shown, "EU's homepage" was ranked highest, i.e. being considered most useful. In interpreting this table, one has to be careful because the immediate impression may be dramatic – and somewhat deceptive. More than anything else, the response should be interpreted as giving an expression of the sources of information that participants use – not an assessment of their quality. Because many participants use the EU's homepages, perhaps daily at times, this probably explains its high score. In contrast, few if any ordinary participants have any interaction with the science attaché of the Norwegian EU-delegation in Brussels, this being a domain far removed from their work as scientists or engineers. Note should be taken that the range of variation in the responses is limited, and that the question has lumped together "Not used" and "Not very useful", which are two different aspects.

Table 5.3: *Usefulness of information sources used by Norwegian participant in the EU's 5FP*

Information source Norwegian participants in the EU's 5RP	Not used or not very useful (%)	Useful (%)	Total (%)
EU's home pages	63	37	100
EU programme coordinators	77	23	100
Norwegian R&D institute with experience from the EU system	83	17	100
EU research coordinators at the universities	86	14	100
External consultants	87	13	100
EU-Forskningsinfo in the Norwegian Research Council	88	12	100
National programme responsible in the Norwegian Research Council	93	7	100
Other parts of the Norwegian Research Council	96	4	100
Forskningsråd in Brussels	97	3	100
EU Innovation	98	2	100

5.5 Recommendations based on analysis of strengths and weaknesses

As shown, the Norwegian system is clearly small in scale. It is by now quite experienced with Framework Programmes, but the low investment of Norwegian industry in R&D means that there may be a substantial number of companies needing help in gaining access to the programmes. Research and innovation funding is highly centralised to RCN. The transition from the 5FP to the 6FP has been uncomfortable, not least since the centralising tendencies of 6FP run counter to the interests of small countries, and is likely to need considerable national effort to achieve.

Based on the information collected and analyzed in the evaluation, the following broad recommendations about the Norwegian national support system may be made:

- Norwegian research and innovation funding priorities should be reviewed in the light of the 6FP priorities and what is beginning to emerge about FP7. An explicit strategy should be devised about how to align national with EU funding priorities. Also, key actual and potential centres of excellence should be identified, in order

to guide interaction with the EC, other framework programme participants and the research-performing community

- The primary role of the Norwegian national support system should be to support Norwegian stakeholders' interactions with EC programmes. Except to meet the special needs of smaller firms in relation to dedicated programmes such as CRAFT and to assist other newcomers to the FPs (such as state universities), the national support system should minimise its activities that 'broadcast' information already available from EC sources. Instead, strategic considerations related to achieving synergy with specific Norwegian R&D and innovation strategies should serve as guideposts for its operations.
- As shown in the benchmarking exercise, comparable nations with a good track record in the participation in EU's FPs (e.g. Finland, Sweden, Netherlands) maintain a stronger presence in Brussels than Norway. For Norway, the arrangement of national experts working in the EU Commission contributes to this, but they are outside the operative support system. Norway should consider the strategic advantage of strengthening its liaison functions in Brussels.
- The focus of the Norwegian national support system activities should be on training and advice needed to support 6FP participation (especially in relation to the new instruments), intelligence gathering, organising and representing Norwegian stakeholder interests and co-ordinating the implementation of the national strategy. Stakeholder organisations – such as university EU officers, industry associations, etc – are key customers of the national support system.
- New skills in areas such as law, finance and IPR should be integrated into the national support system, to tackle the specific needs generated by 6FP
- Where there are significant numbers of Norwegian stakeholders without their own system for supporting FP activities, the national support system should establish support groups or panels to advise it and the EC on Norwegian needs and priorities.
- There is a need for providing support and advice to firms and organizations in the regions, in particular to SMEs. This should be provided in a more proactive mode, i.e. based on active encouragement and support to those that are capable of participating, or would benefit from participation. This should be an area of cooperation between the Research Council of Norway and the newly established Innovation Norway (the former SND). Regional state colleges should be encouraged to take greater interest in participation in EU's FPs.
- The risks and costs incurred for proposal of proposals and establishment of large FP-projects are high, representing a disincentive for participation. The present financial support mechanism (pilot project support, positioning support) should be amplified and tailored to match national R&D strategies and goals related to the participation in EU's FPs.

- Detailed monitoring of 6FP participation should be done, using good international practice (eg BIT) as a source of inspiration in systems design. The difficulties experienced by NIFU and STEP in contacting 5FP participants suggest there is scope for improvement here, compared with good international practice

6 Significant issues for Norwegian R&D and innovation policy and strategies

The topic of this chapter is the relevance and impact of 5FP in a perspective of Norwegian research and innovation policy and strategy. In approaching this, focus will be set on the following issues:

- *How competitive was the Norwegian research system in 5FP?*

Norwegian participation in the 5FP, measured as a share of the EU-contribution to projects in the 5FP, was reasonably good. However, several thematic areas with weak participation are identified. Thematic areas showing high Norwegian participation have a strong position and focus in the Norwegian R&D and innovation base. (Cf. 6.1)

- *What is the synergy between the EU's 5 RP and national research programs in terms of topics and funding?* It is still the case that national and EU research are regarded and managed as two separate R&D spheres (Cf. 6.2). Ideally, the national research portfolio should be structured in conjunction with the EU's framework programs. This does certainly not mean a passive adoption of themes and priorities of the EU's RTD policies.

- *What was perceived as the main incentives and barriers to participate in the 5FP?*

Access to research networks and access to competence are the most important motives for participating in the 5FP for all types of participants. These are also the most tangible achieved results of the EU-projects. The most important hindrance for participation seems to be high proposal costs. Project and participation management costs do not seem to be a serious obstacle (Cf. 6.3).

- *Why non-participation?* The views of some business firms that did not participate in 5FP, but participated in the 4FP are presented. (Cf. 6.4)

- *What is the additionality of the Norwegian EU-research? Would R&D projects funded by the EU have been undertaken irrespective of this funding?* According to the respondents and others the additionality of the EU-projects seems to be high. (Cf.6.5)

- *What is the effect of participation on the building of competence, on networking, on the quality and on internationalization of Norwegian research?* Respondents' overall judgment of their participation is positive. About 77 per cent answered that their participation was an overall success, only 3 per cent answered that their participation was basically a failure. (Cf. 6.6)

- *Has participation in the EU's projects improved industry's innovation capability?*

Evidence from the survey and other data sources show that the Norwegian industry's innovative capability has improved, especially regarding the building up of competences

and knowledge networks. However, there is a need for stimulating mechanisms of “absorption and transfer” of the knowledge and competence emerging from the participation. The potential benefits from an increased “absorptive capacity” of the Norwegian innovation system are considerable (Cf. 6.7).

The presentation and analysis in this chapter is based on the data sources discussed in chapter 2.3. In general, all four data sources gave convergent information. The results from the survey are first presented graphically (figures) or in tables, in order to give the overall picture, that is, all responses to the specific group of questions in the survey (see Appendix 5). In the text, the focus will be set on policy implications of the main findings and, when they occur, on reporting statistically significant²² differences.

6.1 The competitiveness of Norwegian participants

An appraisal of a country’s competitiveness may be made using two criteria:

- the amount (as a share in %) that a country obtains of the financial contribution to the 5FP, and
- the country’s share of number of participations in the 5FP.

If both criteria are equal to or exceed the share of the country’s contribution to the 5FP’s budget, one may characterize this as satisfactory in terms of competitiveness. As noted in chapter 4.1 the Norwegian contribution was about 2 per cent of the budget of the 5FP.

Criterion of appraisal: Norwegian shares of financial contribution 5FP’s projects or shares of number of participations that equal or exceed 2 per cent are considered as indications of satisfactory competitiveness. Conversely, shares below 2 per cent are considered as indication of weak participation.

6.1.1 The overall Norwegian participation performance was as expected

Based on the assumption elaborated above, the Norwegian participation as a whole may be considered as a moderate success since:

- The Norwegian share of the 5FP’s financial contribution to contracts²³ was 2 per cent (Table 6.1, indicator 6 under “Total”).
- The Norwegian share of all participations in the 5FP was 2 per cent (see Table 6.1, indicator 4 under “Total”).

²² For the analysis of ordinal variables we used three tests for the identification of statistically significant differences between the four groups of respondents, calculated in SAS 7th edition. The three tests are: Wilcoxon test which performs an analysis of the ranks of the data, Median test which performs an analysis of the median scores and ANOVA test which performs a standard analysis of variance. For categorical variables we used the chi-square test.

²³ That is, funding of RTD activities in the 5 FP, excluding EU administration costs.

Significant issues for Norwegian R&D and innovation policy and strategies

The competitiveness of Norwegian participants

Table 6.1: Indicators of Norwegian participation performance by specific program

Key indicators on Norwegian projects in the 5th FP	ENERGY	ENVIRO	GROWTH	IHP	INCO	INNO	IST	QOL	Total
1. Number of projects with at least one Norwegian participation	98	216	205	115	33	7	160	252	1086
2. Share of projects with at least one Norwegian participation in the 5th FP	10%	23%	9%	3%	3%	3%	6%	9%	7%
3. Number of Norwegian participations	183	301	340	127	40	14	234	332	1571
4. Norwegian participation as shares of the total number of participations in the 5. FRP	2.9%	3.7%	1.9%	1.5%	1.1%	1.1%	1.3%	2.3%	2.0%
5. EU contribution to Norwegian participation (MNOK)	254.7	382.3	373.9	147.9	27.1	35.0	368.2	399.9	1989.0
6. EU contribution to Norwegian participation as share of the total EU contribution to the 5. FRP	3.3%	4.6%	1.7%	1.5%	0.8%	1.6%	1.3%	2.1%	2.0%
7. Total eligible cost of Norwegian participants (MNOK)	609	639	675	177	40	76	647	589	3453
8. % EU contribution to eligible costs (Norwegian participant) (= 5 / 7)	42%	60%	55%	83%	67%	46%	57%	68%	58%
9. EU contribution to the entire project with at least one Norwegian participant (MNOK)	1095	2377	2977	658	120	83	2055	2638	12002
10. Total eligible R&D cost of the projects with at least one Norwegian participant, (MNOK)	2358	3625	4854	727	153	149	3441	3662	18969
11. % EU contribution to eligible costs for the entire project (= 9 / 10)	46%	66%	61%	91%	78%	56%	60%	72%	63%
12. Average size of the projects with at least one Norwegian participation (MNOK) (= 10 / 1)	24	17	24	6	5	21	22	15	17
13. Sum of number of participations, that is, number of distinct organisations, in the Norwegian projects	997	2471	3262	699	200	67	1502	2442	11640
14. % of total participants in the Norwegian projects	9%	21%	28%	6%	2%	1%	13%	21%	100%

Source: European Commission – Data for Norway

Norwegian institutions participated in 1086 projects in the 5FP. These projects represent about 7 % of the projects and 12 per cent of the total contribution to the 5FP (EURATOM always excluded). The total eligible cost of these projects, that is, the total R&D cost of these projects including the EU contribution and the contribution of participants, was about 19 billion NOK.

In order to understand what this figure means we may compare it with the 20,3 billion NOK which was the total R&D expenditure in Norway in 1999 (24,5 billion NOK in 2001). This figure alone indicates the sheer magnitude and the potential of the Norwegian participation in the FP's as a national research policy instrument.

Table 6.1 reveals, however, that even if the Norwegian participation as a whole should be considered as a moderate success, there is considerable variation in the participation performance between and within the various specific programmes. Key indicators 4 and 6 in Table 6.1 demonstrate that:

-
- Norwegian participation in Environment and in Energy specific programmes was relatively high (Indicators 4 and 6 above 2 per cent)
 - The participation in Quality of Life and to a lesser extend in Growth specific programmes was as expected (Indicators 4 and 6 about 2 per cent)
 - The participation in IST and INCO scored comparatively low (Indicators 4 and 6 significantly lower than 2 per cent).

Norwegian research facilities (part of IHP specific program) received 5 per cent of the overall EU-contribution to this type of R&D-funding – that is, 3 per cent more than expected. In contrast, Norwegian participation in Marie Curie Fellowships (also part of IHP specific program) received only 0,5 per cent of the total EU-contribution to contracts in this activity (1,5 per cent lower than expected).

Norwegian participation in projects targeted towards SME's (Co-operative research) received 2,5 per cent of the total EU-contribution to this type of research. Otherwise, the Norwegian participation in the remaining of INNOVATION specific programme seems to have been low. Also Norwegian SME participation in Exploratory awards projects was low (0,2 per cent of the total EU-contribution to this type of research).

Areas of high participation – more detailed

Based on the data from the European Commission²⁴ we were able to identify Key actions (or thematic activities) where Norway had a particularly high participation (measured as Norwegian share of the key action's budget²⁵). These were:

1. Sustainable marine ecosystems – 6.6 per cent of the action budget (Environment)
2. Enhancing access to research infrastructures – 5 per cent of the EU contribution to contracts (IHP).
3. Global change, climate and biodiversity – 5.6 per cent of the action budget (Environment)
4. Research and technological activities of a generic nature – 4.8 per cent (Environment)
5. Economic and efficient energy for a competitive Europe – 4.3 per cent of the action budget (Energy)

²⁴ A warning to the reader: The precision of our analysis is less accurate at the Key action level. It may be that funding of projects under certain key actions as reported in the EU-data has been, in reality, provided by other key actions within the same specific programs or by other specific programs. Having said that, we believe that we have captured the main trends and tendencies at the key action level.

²⁵ Unfortunately, except for Access to research Infrastructures and Marie Curie Fellowships we have no data on EU's contribution to contracts at key action level. Therefore, we are using budget figures, but these include EU administration costs which are estimated to be about 10 per cent of the key action budget. Thus, Norwegian shares above 1,8 of the key actions' budget indicate a performance better than the expected.

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6. Sustainable agriculture, fisheries and forestry and integrated development of rural areas including mountain areas – 3.9 per cent (Quality of Life - QoL)
 7. Land transport and marine technologies – 3.6 per cent (Growth)
 8. Sustainable mobility and intermodality – 3.4 per cent (Growth)
 9. The city of tomorrow and cultural heritage – 3.1 per cent (Environment)
 10. Future and generic technologies (IST) – 2.9 per cent
 11. Improving the socio-economic knowledge base – 2.9 per cent (IHP)

Areas of low participation- more detailed

Key actions (or thematic activities) where Norway had a low participation (measured as Norwegian share of the key action's budget) were the following:

12. New perspectives for aeronautics – 0.3 per cent of the action's budget (Growth)
13. Marie Curie Fellowships – 0.4 per cent of the EU contribution to Marie Curie contracts (IHP)
14. Multimedia content and tools – 0.6 per cent of the action's budget (IST)
15. Confirming the international role of Community research²⁶ – 0.8 per cent (INCO)
16. Support for the development of scientific and technology policy in Europe – 0.8 per cent of the action's budget (IHP)
17. Essential technologies and infrastructures – 1 per cent of the action's budget (IST)
18. The ageing population and disabilities – 1.2 per cent (QoL)
19. New methods of work and electronic commerce – 1.3 per cent (IST)
20. The "cell factory" – 1.3 per cent (QoL)
21. Study of socio-economic aspects of energy within the perspective of sustainable development (impact on society, the economy and employment) – 1.3 per cent (Energy)

Participation in the action “Innovative products, processes and organisation” under Growth specific programme was moderate (1.7 per cent of the action's budget), but much stronger compared to the 4FP, where Norway had a rather pale presence in the BRITE/EURAM 3.

Thus far, we identified the thematic areas of the 5FP showing high or low Norwegian performance. We shall now discuss the forces that may have been important in shaping the Norwegian performance and profile in the 5FP.

6.1.2 Explaining the Norwegian participation profile

The following factors are relevant for analyzing the Norwegian participation performance in the 5FP:

²⁶ No information available about the breakdown of Norwegian participation on Key actions in INCO specific program.

1. The scientific base of the Norwegian innovation system
2. The industrial base of the Norwegian innovation system
3. The institutional base (types of institutions and their performance) of the Norwegian innovation system
4. The degree to which Norwegian actors have been active in the proposal phase of the 5FP
5. The degree of thematic synergy and synergy of funding schemes between the 5FP and national research.
6. Hindrances and barriers to participation related to participation, and how this may explain non-participation.

Issues in 1-4 above will be discussed in this section, while 5 and 6 constitute the themes of the sections 6.2 and 6.3.

- *The Norwegian scientific and industrial base*

Evidence from bibliometric indicators (see Norges forskningsråd 2001 – indiktorrapporten: 164) shows that scientific fields such as marine, environmental and aquatic sciences, geophysics and immunology have a strong scientific base in Norway. This may explain the high Norwegian participation in the identified key actions above, except perhaps, for the high participation in the key action 8 (Land transport and marine technologies) and 5 (Economic and efficient energy for a competitive Europe).

Scientific fields such as Biochemistry, biophysics, physics, chemistry, material sciences and Engineering do not have a strong scientific base in Norway. This may partly explain the low performance in the key actions 12-21, but not necessarily for the key action 7 (The ageing population and disabilities).

For several reasons, patent indicators (cf. Norges forskningsråd 2001, p.177) cannot provide as clear picture of the industrial and technological basis in Norway as the bibliometric indicators for the national scientific basis.

Industrial sectors such as fishing (and especially, fish farming), shipping, extraction of crude oil and gas, activities and construction related to oil and gas extraction are particularly developed in Norway. In particular, industrial interests related to gas production may to some extent explain Norway's high participation in key action 5 above (Economic and efficient energy for a competitive Europe). The high performance in key action 8 (Sustainable mobility and intermodality) is, however, not easily explained only by the large Norwegian shipping industry and may be also related to the high Norwegian participation in the 4FP and, perhaps, the innovative organisation of the national R&D program activities in this field (see 6.2).

Obviously, Norway has neither a strong scientific nor a strong industrial base relevant to key actions "New perspectives for aeronautics", "Multimedia content and tools", "New

methods of work and electronic commerce”, “Essential technologies and infrastructures – IST” and “Cell factory”, but the question remains: Should Norway have shown a higher participation in these key actions?

- *The institutional profile of participation*

Research institutes: The Norwegian innovation system comprises a sizable number of research institutes – the so-called research institute sector. These research institutes participated heavily in the 5FP and they received 42% of the EU contribution to all Norwegian participants.

Table 6.2: *Indicators of Norwegian participation performance by type of institution.*

Indicators	Business	Higher Education	Other	Research institute	All
Number of Norwegian participations	503	376	111	581	1571
Share of the total number of Norwegian participations in the 5. FRP	32%	24%	7%	37%	100%
EU contribution to Norwegian participation (MNOK)	585	505	73	826	1989
Share of the Norwegian EU contribution in the 5. FRP	29%	25%	4%	42%	100%
Number of Co-ordinators	50	65	12	84	211
Number of co-ordinators as share of number of Norwegian participations	10%	17%	11%	14%	13%

This is above the expected share of participation for this type of institutions considering that *research institutes* account for about one fourth of the total R&D expenditure in Norway.

NILU, SINTEF, Institute of Marine Research (HI) and the Nansen Environmental and Remote Center (NERSC) together represented 45 per cent of all participations from research institutes. Socio economic research institutes (especially Institute of transport economics, TØI) had also a high presence in the 5FP. SINTEF participation should also be seen in relation to participation of and collaboration linkages with NTNU University in Trondheim.

Table 6.3: *The participation profile of the Norwegian research institutes. Number of participations.*

Institution	ENERGY	ENVIRO	GROWTH	IHP	INCO	INNO	IST	QOL	Total	%	Cum %
SINTEF	28	13	47	8		3	44	5	148	25%	25%
NILU		45	2	1			2	2	52	9%	34%
HI		8		1	1		3	21	34	6%	40%
NERSC	1	16	1		3		3		24	4%	44%
MARINTEK			17				2		19	3%	48%
NIVA		10	1	1	1		1	2	16	3%	50%
TI		1	11			3	1		16	3%	53%
IFE	11	1	1		1		1		15	3%	56%
FOLKEHELSEA					1			14	15	3%	58%
Norsk met. kontor		10		1			2		13	2%	61%
TØI		2	11						13	2%	63%
Vet. Inst.								13	13	2%	65%
NP		8		3			1		12	2%	67%
NR	1	2					8		11	2%	69%
RF	6	2	1			1	1		11	2%	71%
NORUT		6	2			2	1		11	2%	73%
Other	4	42	15	26	6	2	10	53	158	27%	100%
Total	51	166	109	41	13	11	80	110	581	100%	

Source: European Commission – Data for Norway

Higher Education: The Higher education sector (universities and colleges) have had a close to expected level of participation given the fact that this sector's share of the total R&D expenditure in Norway equals its share of the Norwegian participations in the 5FP (about 25 per cent).

Table 6.4: *Participation profile of the Norwegian higher education organisations. Number of participations.*

Institution	ENERGY	ENVIRO	GROWTH	IHP	INCO	INNO	IST	QOL	Total	%	Cum %
UiO		22	3	29	5	1	10	35	105	28%	28%
UiB	1	26	1	20	7		6	41	102	27%	55%
NTNU	6	18	12	19	1		10	14	80	21%	76%
UiT		16		2	2		1	15	36	10%	86%
NLH		2			6			10	18	5%	91%
VTH (vet)				1				12	13	3%	94%
NHH				3			1		4	1%	95%
Others	1	2	2	4	1		3	5	18	5%	100%
Total	8	86	18	78	22	1	31	132	376	100%	

It is important here to note that the Norwegian State University Colleges (Høgskoler) were almost absent from the 5FP with only 2 per cent of the participations in the Higher education group. This should be compared to the 10 per cent share of the State university colleges of the total R&D expenditure performed by Higher education sector in 2001.

Of course, it was not expected that these colleges would have shown a massive participation in the 5FP, given their mission and their limited resources to perform R&D activities. On the other hand, many of these institutions are expected to play a pivotal role in connecting local businesses to the national and international knowledge production. They should be stimulated to upgrade their international R&D networks, either through a direct participation to the FP's or indirectly through secondary networking with Norwegian participants from universities or research institutes.

The business sector: About 32 per cent of Norwegian participations are from Norwegian businesses. We identified 280 different companies. Four big Norwegian companies, The Norwegian Veritas (DNV), Norsk Hydro (Hydro), STATOIL and Telenor represent about 60 per cent of all participations from all Norwegian big companies in the 5FP and 23 per cent of the overall Norwegian business participation in the 5FP. In terms of funding these four companies received about 30 per cent of the EU-contribution to Norwegian businesses.

Table 6.5: EU-contribution to most active businesses. MNOK.

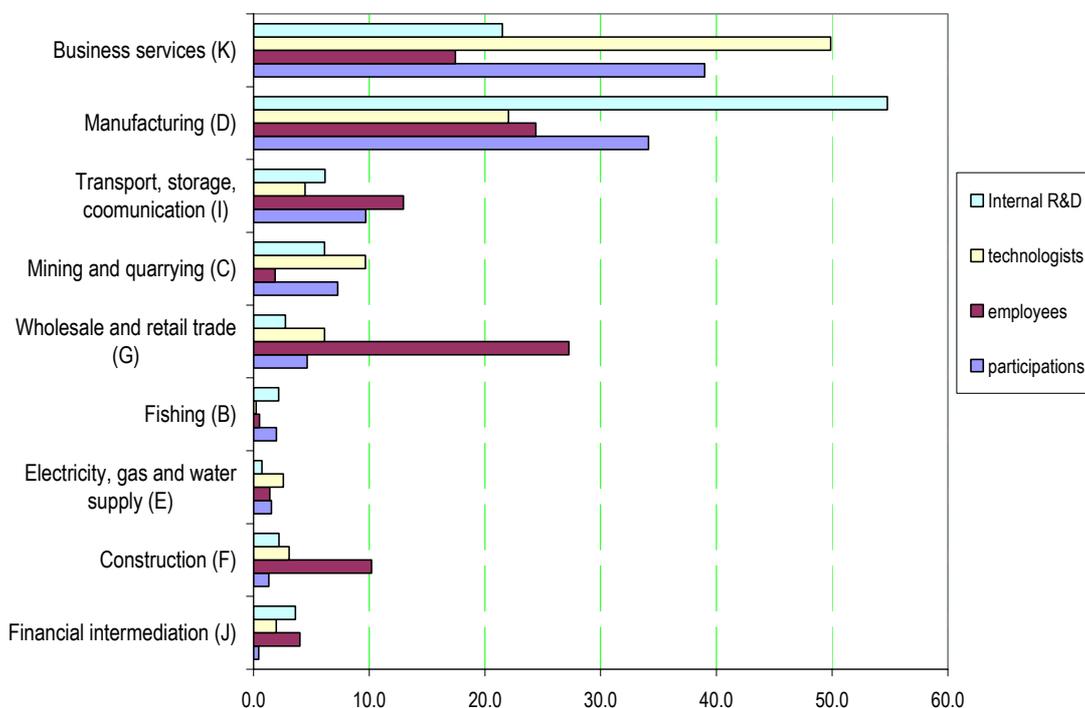
Nr.	Business	ENERGY	ENVIRO	GROWTH	IHP	INNO	IST	QOL	Total	%	Cum %
1	Telenor						28%		50.3	9%	9%
2	DNV	5%	4%	16%			3%		45.1	8%	16%
3	Norsk Hydro	20%	10%	5%			1%		44.4	8%	24%
4	Statoil	12%		2%			1%		23.2	4%	28%
5	MMS-UK			11%					22.2	4%	32%
6	Sensor ASA			2%			9%		18.7	3%	35%
7	Park Air Systems AS			8%					15.8	3%	38%
8	Geco AS	2%					7%		14.9	3%	40%
9	Enviroarc Technologies	7%							11.0	2%	42%
10	Elkem ASA	4%		2%					9.1	2%	44%
11	Logit A.S.			4%					8.7	1%	45%
12	Phillips	5%							7.6	1%	46%
13	Master Marine AS	5%							7.0	1%	48%
14	Computas AS			2%			2%		6.4	1%	49%
15	EPM Technology AS						4%		6.3	1%	50%
265	Other	41%	86%	49%	100%	100%	47%	100%	294.1	50%	100%
280	Total	100%	100%	100%	100%	100%	100%	100%	584.9	100%	

About five per cent of businesses participating in the 5FP (the 15 shown in Table 6-5) received 50 per cent of total Norwegian the EU-contribution.

Table 6.6: Business participations in 5FP, by industry sector²⁷ (NACE Rev 1). Number of participations.

Industry sectors / (NACE-section codes)	Number	%	Cum %
Business services (K)	177	35%	35%
Manufacturing (D)	155	31%	66%
Transport, storage and communication (I)	44	9%	75%
unknown	44	9%	83%
Mining and quarrying (C)	33	7%	90%
Whole sale and retail trade; etc (G)	21	4%	94%
Fishing (B)	9	2%	96%
Electricity, gass and water supply (E)	7	1%	97%
Construction (F)	6	1%	99%
Other services (O)	3	1%	99%
Financial intermediation (J)	2	0%	100%
Hotell and resaurants (H)	1	0%	100%
Education (M)	1	0%	100%
Grand Total	503	100%	

Figure 6.1: Shares of participations by industry sectors as opposed to shares of internal R&D funding, shares of employees with higher education in Natural science or technology fields, and shares of all employees. NACE-section codes.



Data source: CIS (2001), AA-data 2001 and EU-data.

²⁷ This is based on information from Brønøysund - Enhetsregisteret

This demonstrates how skewed the EU-contribution is distributed among Norwegian businesses. However, the distribution of innovation costs in the Norwegian business sector is even more skewed. According to data from Community Innovation Survey (CIS-2) we know that about five per cent of Norwegian businesses spend 90 per cent of the overall costs for innovations (see Braadland et al. 2001).

Table 6.6 shows an interesting aspect of business participation. About 35 per cent of all business participations relates to firms belonging to technical services/consultancies (Forretningsmessig tjenesteyting). This industrial sector surpassed participation from the Manufacturing sector in the 5FP. Business services seem to have had a better participation in the 5FP compared to participation in the 4FP. In contrast, manufacturing companies had, in relative terms, a somewhat lower participation in the 5FP compared to the 4FP (see Waagø et al.: 25).

The share of all technologists (employees with higher education in Natural science or technology fields at post-degree level) working in the various industrial sectors is highly correlated with the share of participations of the respective industrial sectors. Based on this observation, some key industrial sectors, such as, Mining and quarrying (C) and Business services (K) may have had a potential for an better participation in the 5FP than observed.

SME's: About 61 per cent of all business participations were participations from small and medium size enterprises (SMEs), that is, companies with less than 250 employees. The SMEs' share of Norwegian participations in the entire 5FP was about 20 per cent. About 20 per cent of all SME participations were funded by the INNO-program as co-operative research project participations (CRAFT-scheme). This type of projects seems to attract the interest of Norwegian SMEs because it is less demanding both in the preparation of proposals and in the carrying out of the project. Two research institutes seem to have had an important role in recruiting SMEs to this type of research; The National institute of Technology (TI)²⁸ and SINTEF. We may conclude that Norwegian SMEs had a reasonable participation in the 5FP, but there are possibilities for further improvements.

Others: Norwegian authorities and non-for-profit organisations had 111 participations in the 5FP (7 per cent of all Norwegian participations). These 111 participations are interesting considering the increased focus on innovation in the public sector services.

- *Analysis of the Norwegian proposals submitted to the 5FP*

We have not been able to get good data on proposals submitted to the 5FP from Norway or other countries. However, annual reports 2001 and 2002 provide statistics on proposals received in 2001 by country, measured as participation by specific programme (Cf.

²⁸ TI is not to be considered as a research institute any longer. Since January 2003 is operating as an knowledge firm with no public support.

European Commission, *Annual report 2002*, p. 50-51) and on proposals received in 2000 by country, measured as representation by specific programme (Cf. European Commission, *Annual report 2001*, p. 44-45).

Based on this scattered information one may conclude the following:

1. The exact Norwegian success ratio - defined as number of projects granted divided by number of proposals submitted to the 5FP – is not possible to calculate, due to lack of relevant data (see also Annex 7). However, there are indications that the Norwegian success ratio was not significantly different from the 5FP average success ratio, but it seems to be significantly lower than the success ratios of France and UK.
2. The number of Norwegian proposals submitted to IST and IHP specific programs were significantly lower than the 5FP average. This suggests that the low Norwegian performance in these two specific programs is due to a low number of proposals and not due to a low success ratio. Consequently, the immediate Norwegian challenge is to increase the number of proposals in these areas in the 6FP.
3. The number of Norwegian proposals submitted to Environment specific program was in relative terms the highest among participating nations. This is part of an explanation of the good Norwegian performance in this programme.
4. There are (statistically significant) variations of proposal patterns between participant countries which require a more thorough investigation when the final statistics on the entire 5FP are available.

6.2 Synergy between EU's 5 RP and national research programmes in terms of topics and funding

In general, there is a potential for a better thematic synergy between the national research system and the EU's FPs pointed out in chapter 5. Norwegian participation in the EU's RTD activities is by far the most important channel of internationalisation of the Norwegian R&D system. This presupposes the active use of the Norwegian EU-project portfolios in the design and execution of national research programmes.

An example of this may be observed in the thematic area of maritime transport, which has attempted to make a systematic and continuous link between national and the EU-project portfolios. Norway participated in a large number of maritime transport projects in the 4FP Framework programme. Based on the knowledge developed in these projects, the Research Council of Norway designed a national research programme on maritime transport. This national programme provided again a financial and thematic platform for the Norwegian participation in the 5FP (Key action 3 in GROWTH specific programme). The Norwegian participants in this key action received almost twice as high EU contribution (3,6% of the available funds in the key action) compared to the average for the Norwegian average in the overall 5FP (1, 9% of the available funds in the 5FP).

However, this success may also be explained in terms of a large Norwegian shipping sector.

Below, we examine three aspects of possible synergies in a greater detail:

- Synergies with national funding schemes
- Thematic synergies
- Characteristics of the the EU-projects as compared to Norwegian R&D project portfolio

6.2.1 Synergy with national funding schemes

The following issues will be discussed below:

1. Co-funding particularly of research institutes is a key policy issue
2. Support to Norwegian applicants was limited – possibilities for improvements
3. Need for better co-funding of Marie Curie fellowships and Norwegian research facilities

1. Co-funding is a matter of concern to the participants

A large number of respondents stressed the need for a better national co-funding of the Norwegian participation in the 5FP. This is, as expected, an issue of importance for the majority of research institutes as well as for the universities and business participants. In contrast to universities, the participation of research institutes rises the question of co-funding the 50 per cent of eligible costs. Several respondents from research institutes stated (free text field, question 12 in the survey) that Norwegian participation could have been higher if there was a more suitable national co-funding of participation in the 5FP (see also Godø 2002; Wiig et al. 2001). Other respondents experienced that their participation in the 5FP turned out to be an economic burden.

The Environmental research institutes (NILU, NIVA, NINA/NIKU, NP) had a large number of participations in the 5FP both in absolute numbers and especially when weighted by their number of employees. The total EU-contribution to these institutes is estimated to be about 170 million NOK, generating co-funding needs of additional 170 million NOK. This success of Environmental research institutes in Norway should also be seen in relation to their favourable co-funding terms compared to other research institutes. Whereas other research institutes received no co-funding support the Environmental research institutes received earmarked co-funding from The Ministry of the Environment of about 5 million NOK annually. Compared to the 170 million NOK of co-funding needs the co-funding support from the Ministry of the Environment seems of minor importance. However, co-funding needs are spread across the 2-3 years of the project duration. This means that the annual co-funding needs of the environmental research institutes is about 20-28 million NOK. Compared to that, the support from the Ministry of Environment is substantial (17-20 per cent of annual co-funding needs).

These facts seem to give support to the hypothesis that better co-funding terms lead to higher propensities of participation from research institutes. Since research institutes receive about 40 per cent of the EU-contribution to all Norwegian participants and since the EU-contribution to Norwegian researchers is about 500 million NOK per year, a 20 per cent co-funding support from the Norwegian authorities imply a need to generate 40 million NOK (that is, 500 plus 0.4 plus 0.2) of public money annually²⁹. This sum seems to be modest for the Norwegian State.

Whether research institutes have had the potential to an even larger participation than what is realised in the 5FP is, however, a complex question. Survey responses indicate that research institutes have had lower success rates than other types of participants. 65 per cent of respondents from research institutes answered that they forwarded at least one proposal in the 5FP (in addition to the successful proposal related to their participation) which have not been granted. Only 35 per cent of respondents from other types of institutions had the same experience.

This could mean that not all of the proposals submitted from research institutes were thoroughly elaborated and well-structured. This could also mean that research institutes reached a level of participation above which there may be diminishing returns.

If co-funds are limited, one should avoid lump-sum grants, but instead prioritize thematic areas of national strategic importance or thematic areas with low Norwegian participation or both. An example: there may be a need to stimulate Norwegian participation in information technology RTD activities. If this is so, research institutes should get better co-funding for their participation in the IST program compared to participations in other thematic activities.

2. Support to Norwegian applicants was limited – possibilities for improvements

The Research Council of Norway estimates its support to preparation of project proposals in the 5FP to 30-40 million NOK. As we show later on, this represents 5-7 per cent of the total Norwegian proposal costs in the 5FP. Given the fact that this type of funding is much appreciated, the Research Council of Norway could increase and use this type of funding more strategically by differentiating the degree of support between thematic areas, types of actors and calls in the 6th and future FPs.

3. Need for better co-funding of Marie Curie fellowships and Norwegian research facilities

²⁹ If co-funding stimulates a wider participation, than the needs of annual co-funding will be greater than the 40 million NOK estimated here. In fact, there must be a saturation point were additional co-funding cannot generate increased participation from research institutes. Any co-funding above this saturation point is of no use.

One of the areas with a potential to increase synergy of funding schemes is in the horizontal activities of the FPs, in particular, the Marie Curie Fellowships, Research training networks and, to a lesser extent, the Access to Research Infrastructures.

The number of Norwegian proposals for Research training networks and Marie Curie Fellowships was comparatively much lower than that of many other countries and compared to the Norwegian proposal activity in other specific programmes. This may be explained by funding to Norwegian fellows not being as attractive as the Norwegian schemes. Norwegian institutions could stimulate Norwegian Marie Curie participation by matching Marie Curie grants to Norwegian researchers with additional national grants.

In 5FP, Norwegian research facilities received 5 per cent of the EU contribution to European research infrastructures. This is a sign of good performance. Being selected as a European Research facility provides prestige and attracts high quality researchers from Europe and elsewhere. Needless to say, this type of research mobility creates a variety of positive effects for the Norwegian research system. Yet, some interviewees claimed that there is not always adequate funding to support the increased activity at these Norwegian facilities.

The EU regards research facilities receiving funding from the EU as a key instrument to enhance “scientific excellence” in Europe. Norwegian research policy makers should pay attention to how these facilities (in Norway, but also in other countries) may be actively used as a national instrument to enhance “scientific excellence” in Norway.

6.2.2 Thematic synergy

Various approaches may be used for analysing thematic synergies. One common method is budgetary comparisons between national and the EU's funding of thematic areas. This is, however, not done due to complex structures and substantial differences between national R&D programmes and the EU's 5FP. However, some differences of this kind were possible to identify. ICT research receives at most 12 per cent of the Research Council of Norway R&D funds whereas it receives at least 30 per cent of the 5FP funds. It is, perhaps, interesting to note that the sum of the EU-contribution to Norwegian participants in IST specific program is about equal to the national funding of ICT research over the budget of the Research Council of Norway.

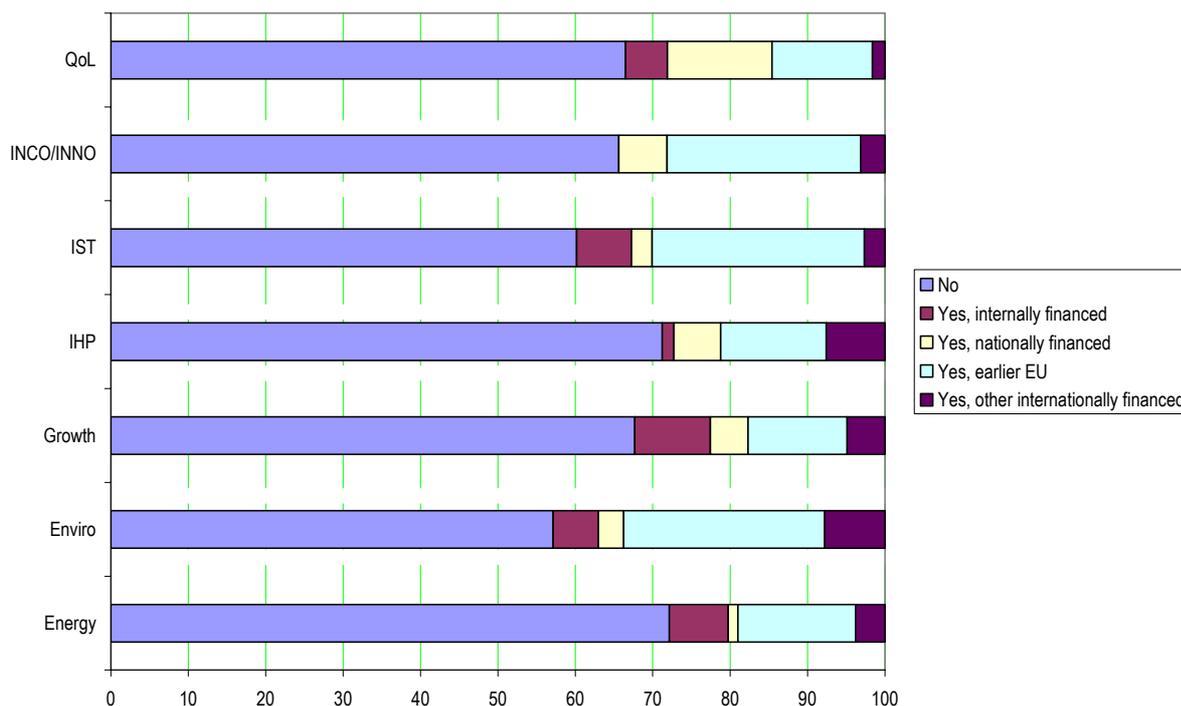
About half of the respondents in the survey answered that there is a need to improve the co-ordination between the participation in the 5FP with national R&D programs. In particular, respondents from research institutes expressed this opinion clearly (66 per cent, question 11.5.c).

About 65% of the survey-respondents replied that their participation was not a continuation of a previous project. Of those who gave an affirmative answer to this

question, only 17 per cent ticked off the box "EU-participation was a continuation of a *nationally* financed project". In contrast, 52 per cent ticked off the box "EU-participation was a continuation of a previous EU-project".

The share of those who stated nationally financed project as the origin of their participation was lowest in IST programme and highest in Quality of Life.

Figure 6.2: *Is the current EU-project a continuation of another R&D project? Per cent of respondents. Results from question 0401 in the survey (N=793).*

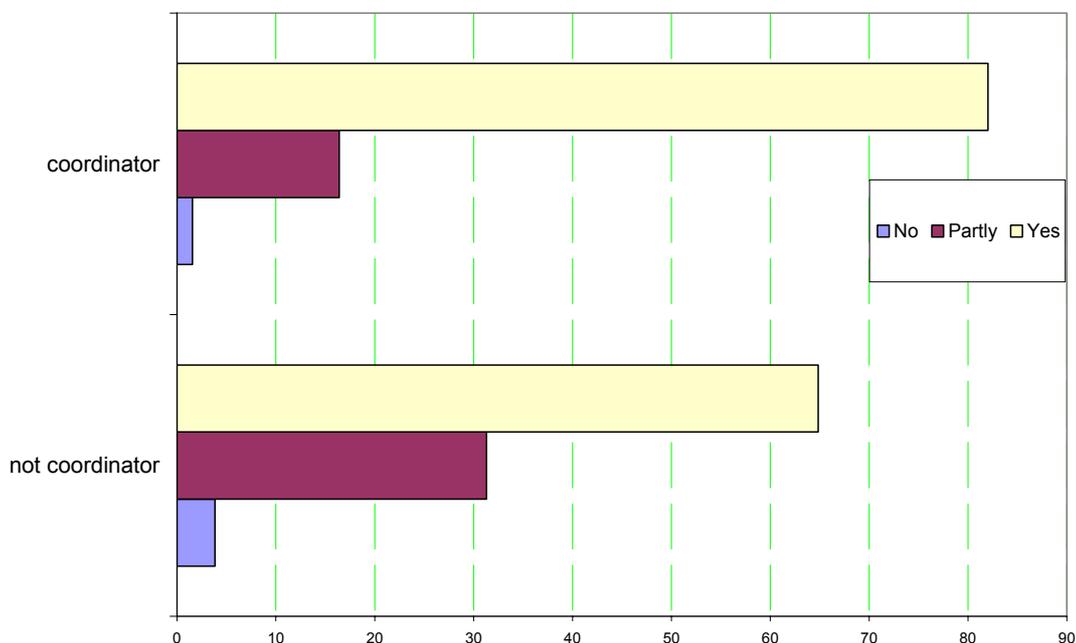


These results may indicate a weak thematic concordance between the EU's and Norwegian R&D programmes, particularly in the area of information technology.

Obviously, the thematic profile of the 5FP seems to suit the thematic profile of Norwegian participants. Figure 6.3 provides an indication of that.

Many interviewees applauded the introduction of "Expressions of interests" before launching the 6FP as a mechanism to provide bottom-up ideas directly into the design of future Framework Programmes. Some interviewees thought and felt that bringing in bottom-up ideas and opinions in to the design of 5FP was difficult.

Figure 6.3: *Has the EU 5FP Framework Program had a thematic profile which fits the knowledge requirements of your institution? Per cent of respondents. Results from question 11.06 in the survey (N=722).*



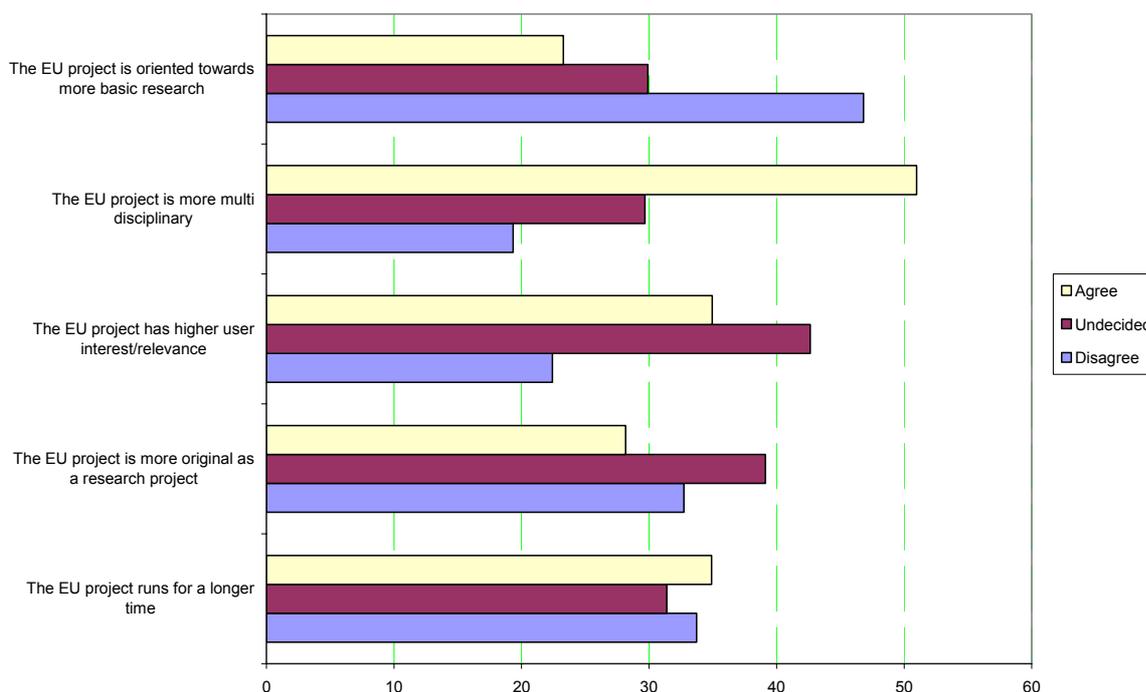
6.2.3 Synergy of R&D instruments – characteristics of the EU-projects compared with the Norwegian R&D project portfolio

A relevant aspect of the issue of thematic synergy concerns the characteristics of EU-projects. Is the nature of a participation in an EU-project significantly different from participations in other research projects?

There is no evidence that the EU-projects differ in nature compared to the Norwegian participants' ordinary project portfolio, except for the fact that about 50 per cent of respondents judged the EU-project as clearly more interdisciplinary non-basic research. Interdisciplinary orientation was also one of the major objectives of the 5FP³⁰. From this point of view, the response of Norwegian participants provides an indication that supports the European Commission's goal.

³⁰ "Key actions" will mobilise the wide range of scientific and technological disciplines - both fundamental and applied - required to address a specific problem so as to overcome the barriers that exist, not only between disciplines but also between the programs and the organisations concerned" (see <http://www.cordis.lu/fp5/src/over.htm>).

Figure 6.4: Compare the nature of the EU-project to other R&D-projects in your research unit /firm. Per cent of the respondents. Results from question 0407 in the survey (Nmax=769 Nmin=765).



Data from the European Commission show that the average total eligible R&D cost per Norwegian *research project* (that is, not thematic networks etc.) in the 5FP amounts to NOK 23 million.

It is difficult to find a set of national funded programmes which may be used as a benchmark to the Norwegian research project portfolio in the 5FP in terms of financial budgets. However, we could indicatively mention that the average cost of a market orientated R&D project funded by the Research Council of Norway in 1995 was about NOK 10.5 million (see Hervik og Nettet, 1997), that is, about half the R&D costs of an average EU-project with at least one participation.

Respondents reported that, on average, 4 persons from their institution were involved in the EU-project. European Commission reported an average of 4.7 participating organisations per project granted in 2001 (see Annual report 2002). If the Norwegian average of four persons involved is the norm, then, we estimate that the average EU project involves about 20 researchers in total. We have no information about the average number of participants per nationally financed project, but we believe that this figure is much lower than 20.

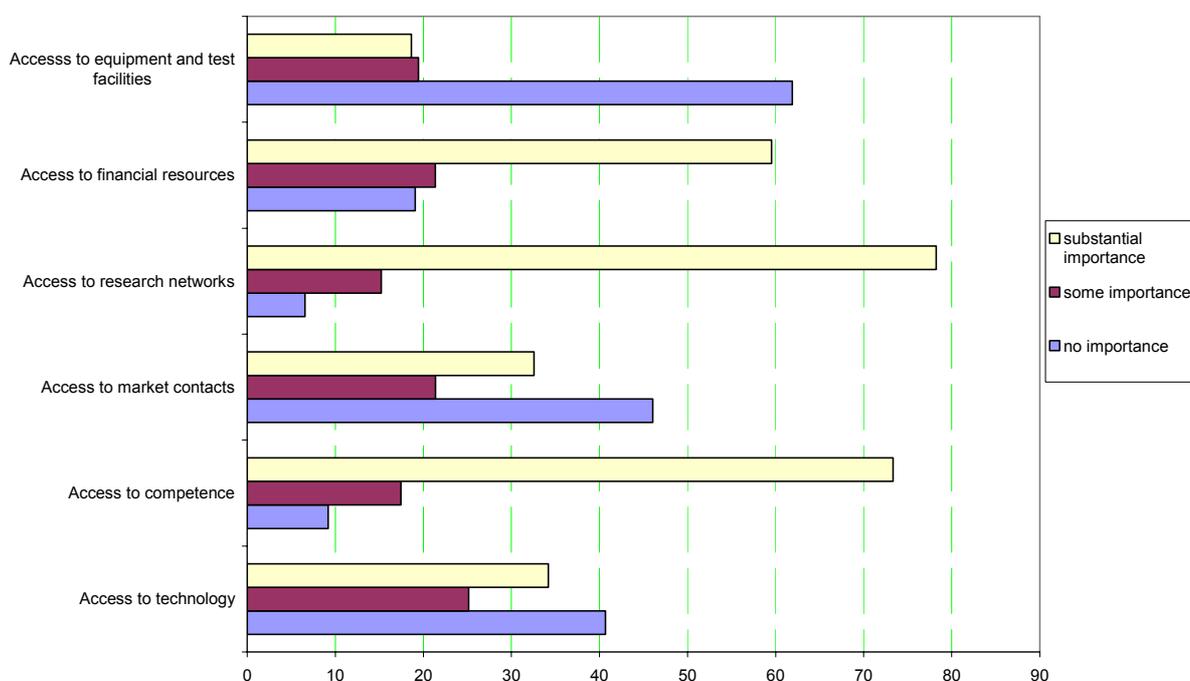
We may conclude that the EU-projects differ from other nationally funded projects in terms of their size, their international orientation and their multidisciplinary non-basic research character.

6.3 Incentives and barriers to Norwegian participation

6.3.1 Incentives to participate

According to the respondents in the survey, access to research networks and access to competence are the most important motives for participating in the 5FP for all types of participants. Surprisingly enough, it is mostly respondents from Higher Education who consider funding as an important motive to participate. 68% of them stated that access to financial resources was important, while 60 per cent of respondents from research institutes and 50 per cent of participants from Businesses answered the same.

Figure 6.5: Motives to participate in the 5FP. Per cent of respondents. Results from question 0503 in the survey (Nmax = 750, Nmin = 734).



Furthermore, about 50% of the respondents from businesses and 50% of respondents in ENERGY specific program answered that access to technology was an important motive to participate. Market contacts were of substantial importance for 46 per cent of the participants from businesses. Participants from research institutes did not, on average, consider market contacts as a very important factor to participate. Only 37 per cent of them said that this is an important motive.

6.3.2 Barriers

In the evaluation, data was collected on the topic of costs related to proposal of proposals. Respondents (N = 720) estimated that, on average, they spent 1.7 working months and

additional 20000 NOK in travels, networking etc. in the proposal phase of their project. We have indications that about 5600 Norwegian participations were involved in proposals submitted to 5FP. We know that 1571 Norwegian participations have been granted, about 4000 failed.

It is reasonable to assume that the proposal costs were lower in the case of the proposals that failed. Assuming this, this may be estimated as each proposal costing 1 working month and approximately NOK 10,000 in travel expenses, etc. The cost of a working month may be assumed to be on average NOK 80,000.

Based on these assumptions, we estimate that the proposal costs related to the Norwegian participation in the 5FP were at least 605 million NOK, or at least 30 per cent of the EU contribution to Norwegian participants. If valid, this is a considerable expense; it means that the ticket to participate in the 5FP was quite expensive for Norway.

As mentioned in 4.3.2, one may assume that a larger part of the proposal costs are carried by the research institutes, since respondents from these organizations answered that they submitted at least one failed proposal twice as often as respondents from other organisations. On the other hand, costs related to proposals exist in all R&D funding schemes. One third of the respondents complained about formalities and rules of project description.

However, at least one third of participants signaled the need for better support in writing proposals, and understanding the EU's criteria for being eligible. One should also bear in mind that the 4FP and 5FPs were quite similar in form and simpler in structure than the 6FP. If one third of experienced participants expressed their need of this kind of help in the 5FP, we expect that this is a more serious problem in the 6FP. This was also the opinion of several interviewees.

Significant issues for Norwegian R&D and innovation policy and strategies

Incentives and barriers to Norwegian participation

Figure 6.6: *Hindrances during the proposal phase. Per cent of respondents. Results from question 0504 in the survey (Nmax =723 , Nmin =717).*

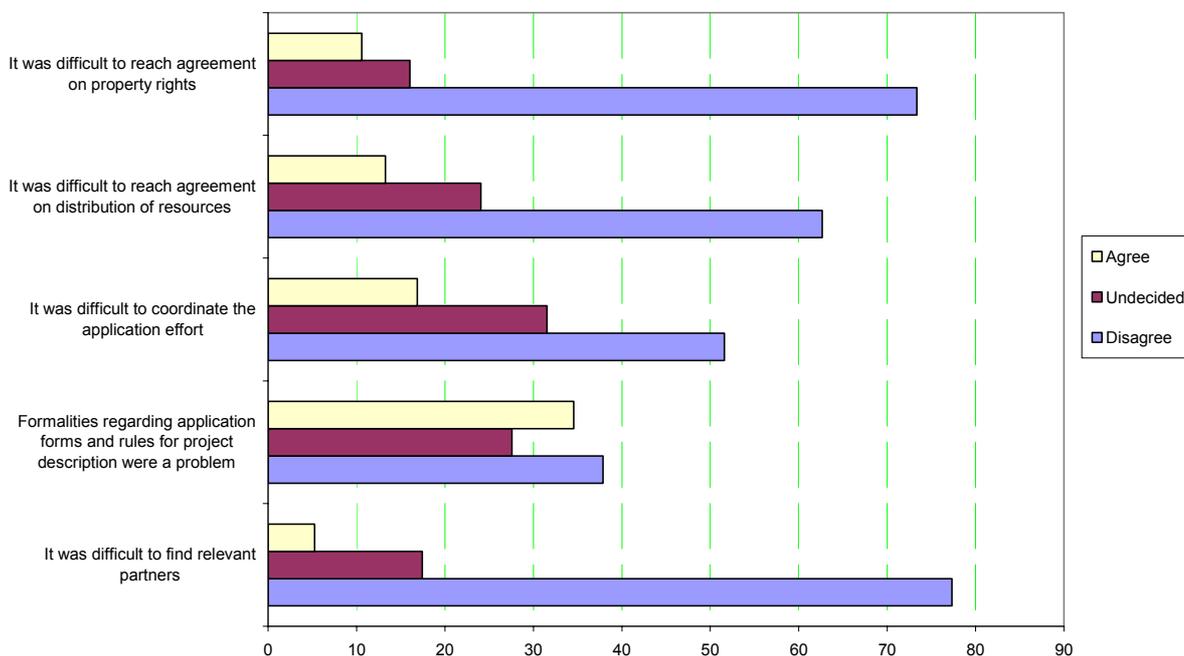
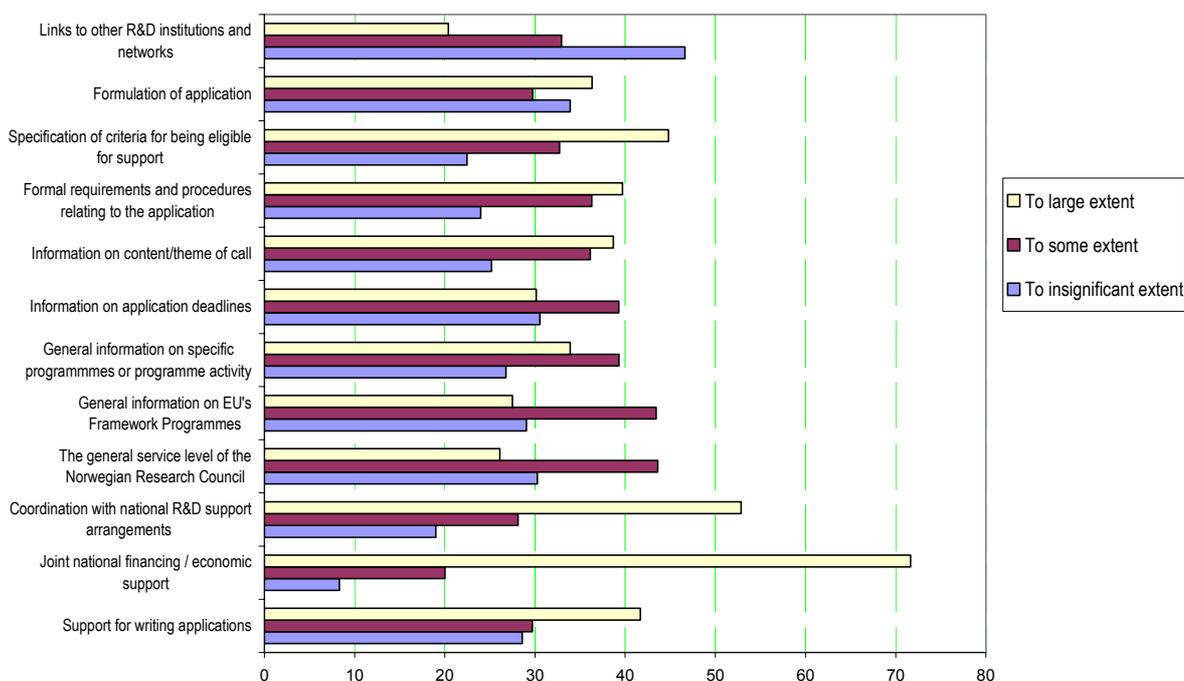
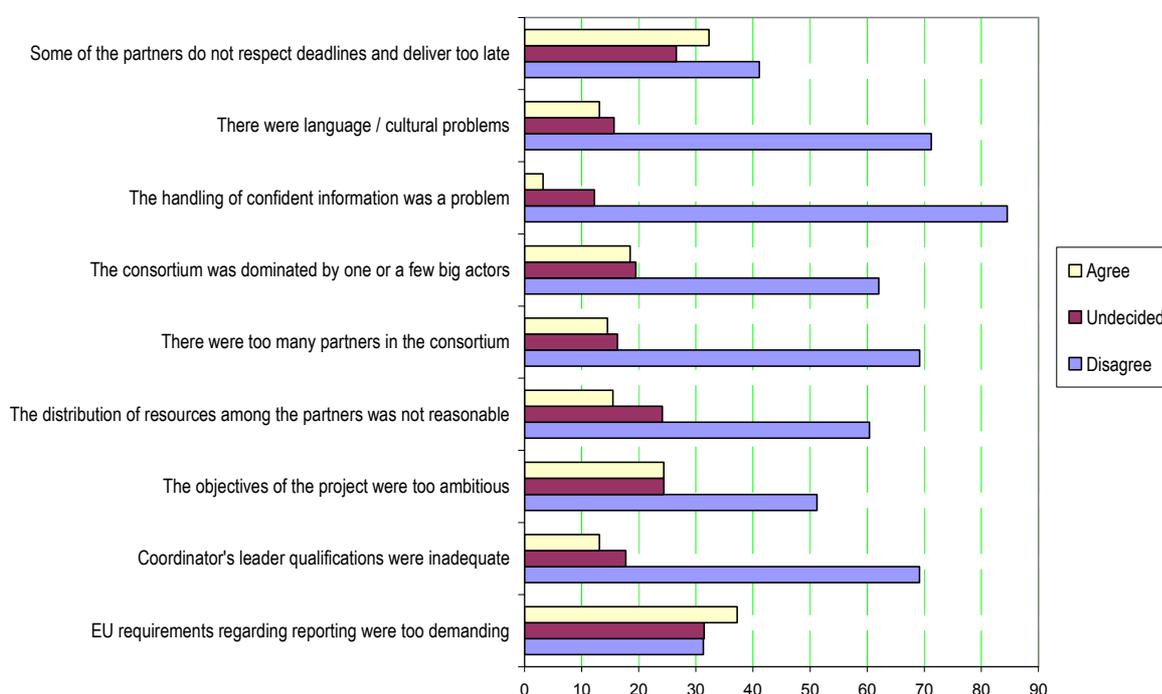


Figure 6.7: *Needs for improvement in support for participation in the EU's Framework Programs. Per cent of respondents. Results from question 11.05 in the survey (Nmax = 710, Nmin = 699).*



There are, otherwise, no major hindrances related to the carrying out the EU-projects (see figure 6.8). EU requirements and late deliverables from other partners seem to create some tensions in the EU projects, but the overall picture is rather positive. A few respondents mentioned that late financial deliveries from the EU-Commission and uncertainties about whether or not parts of their expenses will be accepted, created a major obstacle to their participation and a financial problem to their organization. These cases seem to be limited in number, but there is no doubt that uncertainty or delays of funding were a serious matter to them.

Figure 6.8: *Hindrances in the carrying out of the EU-project. Per cent of respondents. Results from question 0505 in the survey (Nmax = 744, Nmin = 733).*



6.4 Why non-participation – The point of view of experienced businesses

We interviewed 10 companies. 9 of these companies were randomly selected from the pool of companies who participated in the 4FP but not in the 5FP. One company has never taken part in the EU research programmes. For a more lengthy account of this investigation see Annex 3. Here we present the main conclusions only:

- Time-consuming reporting and administration for project participants, in particular for project co-ordinators, is emphasised as the singlemost important barrier to participate.
- The spending of resources in the EU-projects are difficult to justify as relevant for the commercial aims in the firms. If technology and market monitoring network building are the only aims, they it can be achieved otherwise and less costly.

-
- In smaller companies that have next to no personnel or financial resources allocated to R&D activities, the task of searching for research networks and project teams may be an important hindrance to participate.

These answers prove that there is no point to stimulate uncritically business, and especially SMEs, to participate in the EU's RTD activities. Businesses have to see clearly the relevance and the potential results from their participation. If not, they do not participate. Thus, the challenge is to design national support schemes which can help Norwegian firms to identify opportunities and absorb values created in the EU-projects either directly through participation or indirectly through collaboration with other participants.

6.5 Additionality

Additionality is a concept that has been used with many different meanings in the evaluation literature. Therefore, it has to be defined in an adequate way for the purpose of this evaluation. From a member state point of view, additionality is achieved when participation in the EU's FPs advances the national R&D and innovation system. There are two major channels for achieving that:

1. Directly, by improving the innovative capability of the Norwegian participants in the 5FP.
2. Indirectly, either as knowledge spill-overs to the Norwegian business sector, or as knowledge needed for better policy decisions or addressing and accommodating pressing societal needs.

The rest of this chapter (see 6.6, 6.7 and 6.8 below) deals with aspects of additionality of both type 1 and type 2.

There is, however, another and narrower definition of additionality which is related to three issues:

- a) The extent to which the EU funds generate additional R&D funding covered by the participants
- b) The extent to which the EU funds generate Norwegian R&D efforts that could not have been carried out otherwise.
- c) The extent to which the EU funds generate more risk-seeking R&D efforts.

These three issues will be the topic of the following subsections.

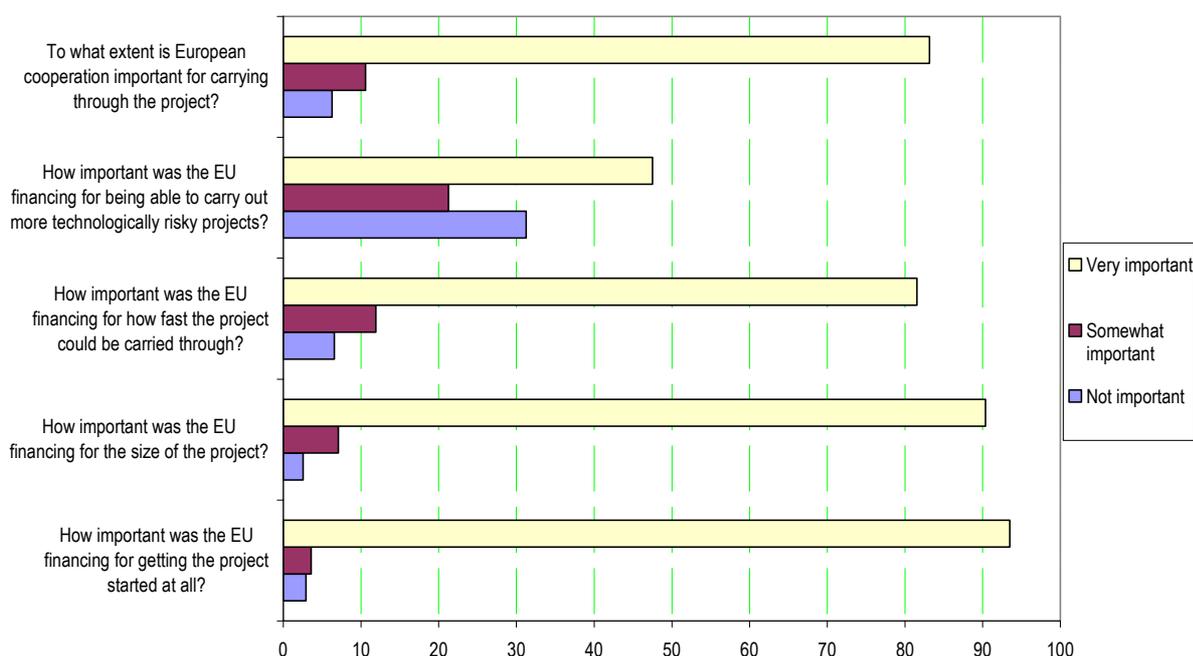
6.5.1 Additional R&D funding covered by the participants

Indicator 8 in Table 6.1 shows that 42 per cent of the eligible R&D costs of the Norwegian participants are covered by themselves, and 58 per cent by the EU-contribution. If correct, one may estimate that the Norwegian participants funded NOK 1.4 billion from own sources.

6.5.2 Would R&D projects funded by the EU have been undertaken irrespective of this funding?

Almost 95 per cent answered that the EU-funding was very important for getting the project started. More than 80 per cent of respondents consider international collaboration in the project as very important for the carrying through of the project. This may give support to a claim that the narrow additionality of participation in the 5FP is high.

Figure 6.9: Aspects of narrow additionality. Per cent of respondents. Results from question 10.03 in the survey (Nmax=753, Nmin=701).



6.5.3 Risk-taking trade-offs

In general, innovation research has shown that technologically risky projects are less likely to be funded without public support, but if they are successfully carried out they may lead to technological breakthroughs implying considerable positive external (economic or societal) effects, hence high 'additionality'.

Less than 50 per cent of participants answered that the EU-funding is very important in carrying out more technologically risky projects. 70 per cent of respondents from academia, usually representing the norms of basic research, do not, on average, consider the EU-projects as risk-taking. However, 30 per cent of them do. Respondents from the research institutes are split (1/3 yes, 1/3 no and 1/3 undecided) and industry considers its participation as clearly more risk-taking than not.

Perhaps, this is a good balance: If a greater share of respondents from academia found their EU-project risky this could imply that 5FP is too much oriented towards basic research.

Conversely, if a lower share of respondents from business found their EU-projects risky this could imply that RTD activities in the 5FP were too near-to-market. Thus, the 5FP seems to hit the middle-ground in the trade-off between basic, applied and near-to-market research.

6.6 Quality of research, networking and internationalization of Norwegian participants

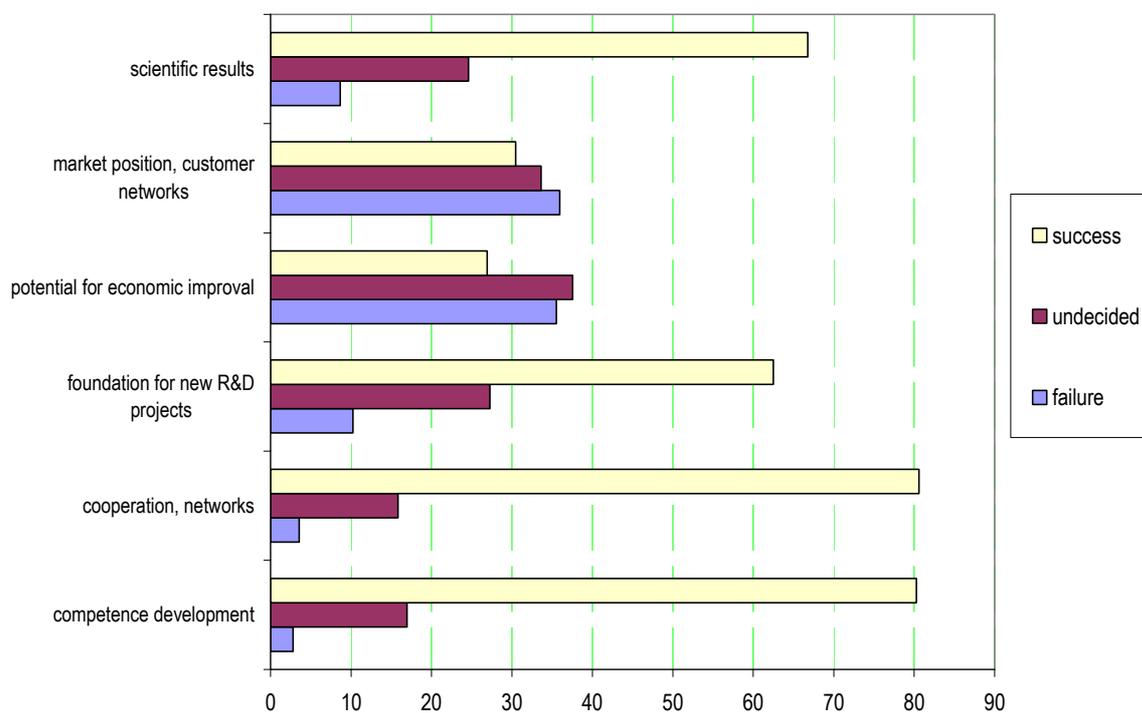
About 77 per cent answered that their participation is an overall success, only 3 per cent answered that their participation is basically a failure. Thus, respondents' overall judgment of their participation is overwhelmingly positive.

Respondents were asked to specify the degree of success related to specific aspects of their participation. The answers obtained are shown in figure 6.10, however, the following should be highlighted:

- About 80 per cent of participants answered that building up of competence and of networks was successful, and
- about 67 per cent replied that they considered the scientific results of their participation as successful.
- 60 per cent answered that they believed that the EU-participation laid the foundations for a new R&D project in the near future.

When it comes to the potential to economic improvement, improvement of market positions and the creation of customer networks the results show that expectations are not as positive as in the case of building competence and networks. The average respondent, including respondents from businesses, answered that the effect of their participation on these aspects is rather uncertain. Respondents from research institutes and from businesses were, as expected, slightly - but enough to be significant - more positive in their answers than respondents from Higher education and other organizations (Others).

Figure 6.10: Evaluation of different aspects of the EU-participation. Per cent or respondents. Results from question 10.02 in the survey (Nmax=755, Nmin = 752).



Based on Figure 6.10, we may assume that the major effect of participation in the 5FP is on the quality of research and innovation (success in scientific results), on networking and on building up of relevant competence.

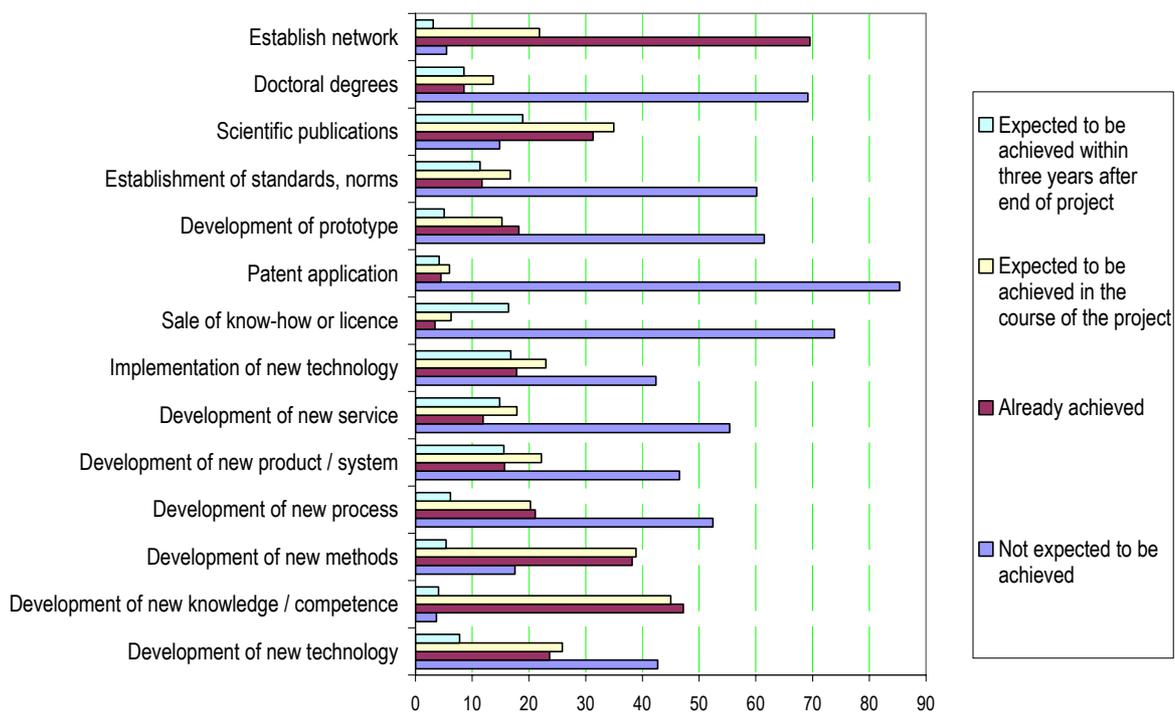
In the following, we shall discuss the effects of their participation on the quality of their research, the type of competence gained, and on their R&D contacts (networks) in greater detail.

6.6.1 Quality of the EU-projects

An assessment of the quality of research in Norwegian participations requires good data on achieved results. Such data do not exist, partly due to the fact that many of the EU-projects are not completed yet. Consequently, we have to rely on the answers of the respondents as the only source of information to this issue.

Figure 6.11 shows the achieved and expected results from the Norwegian participation. It is difficult to judge whether this record of results is satisfactory without a benchmark, but we note the high production of scientific publications as opposed to the low production of intellectual property rights as an interesting feature of the Norwegian participation.

Figure 6.11: *Achieved or expected results from the participation. Per cent of respondents. Results from question 06.01 in the survey (Nmax=760, Nmin=670).*



6.6.2 Types of competence

Figure 6.12: *Effects on competence building. Per cent of respondents. Results from question 0801 in the survey (Nmax = 745, Nmin= 724).*

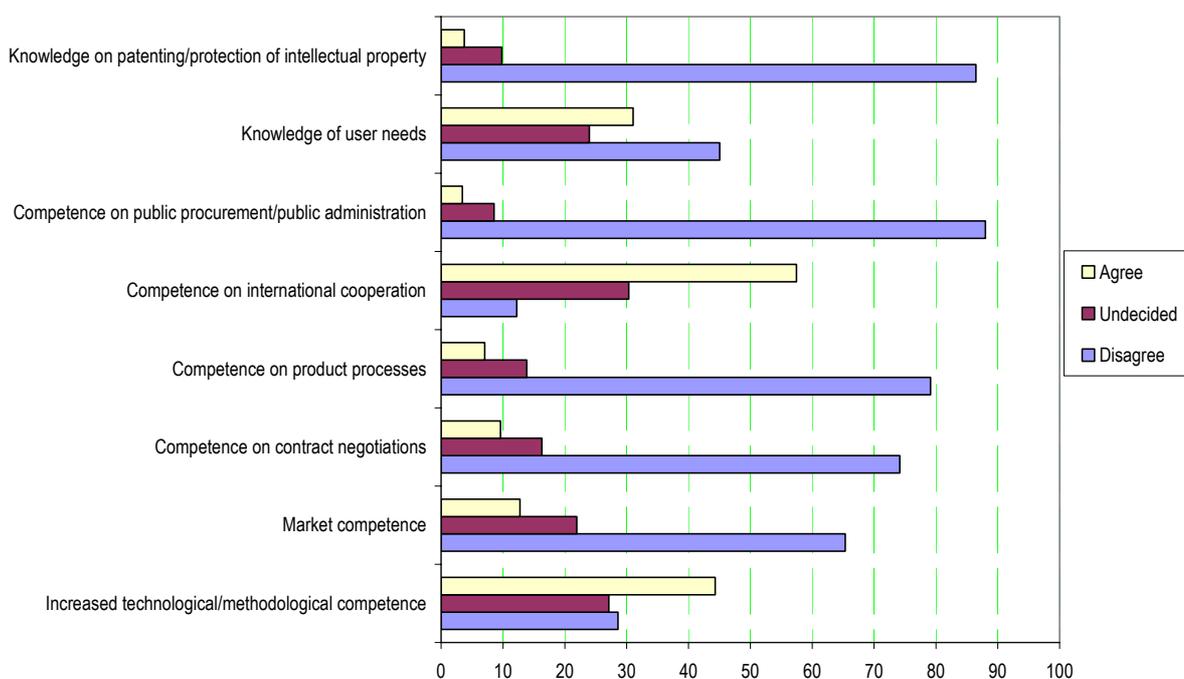
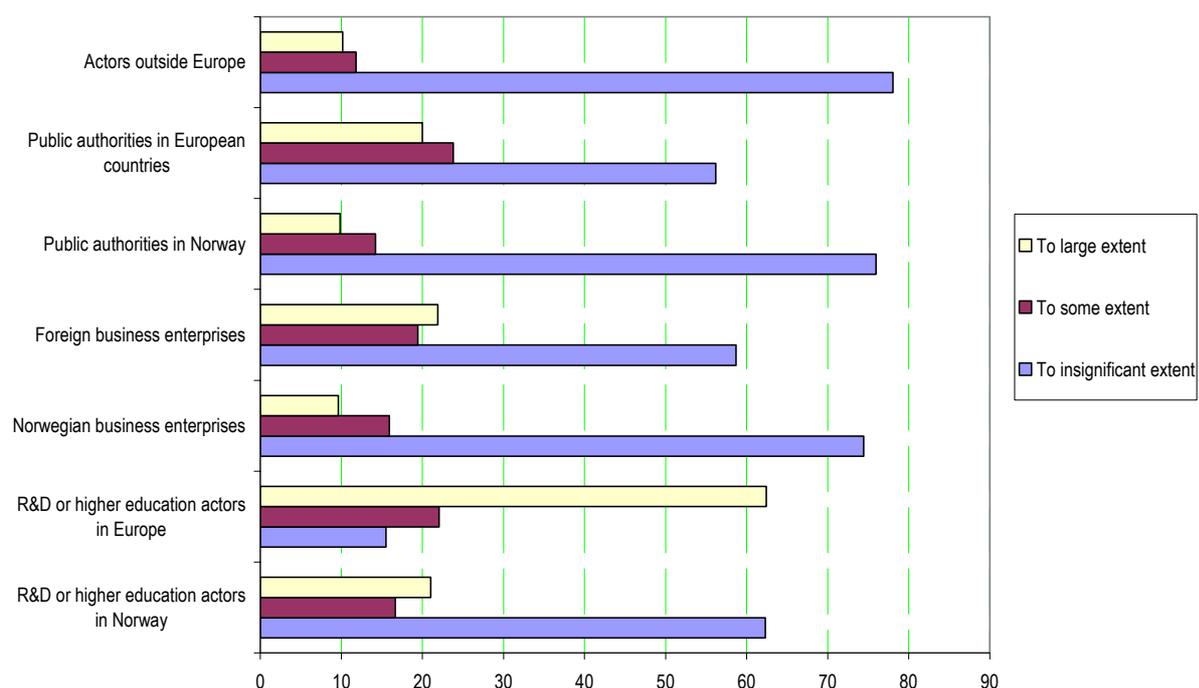


Figure 6.12 above correlates well with the findings in figure 6.10 because it shows that almost 60 per cent of respondents signaled the positive effects of their participation on their organizations' competence to collaborate internationally.

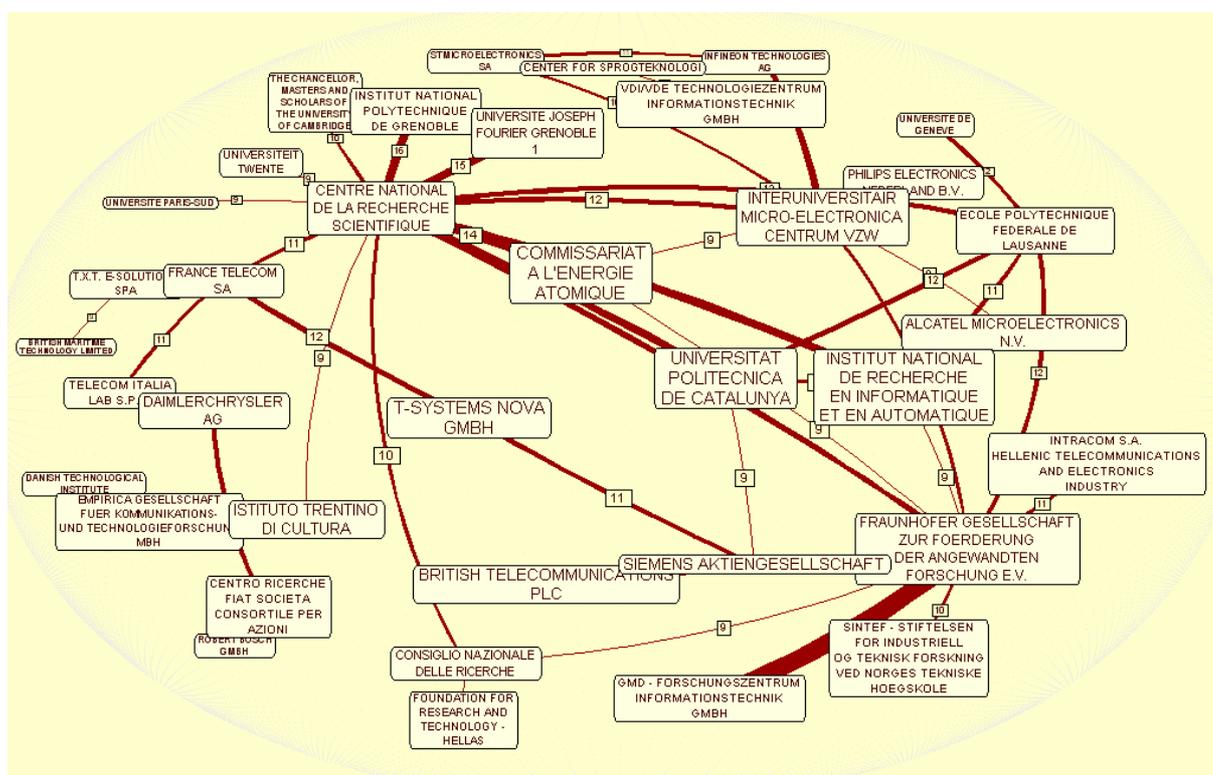
6.6.3 Types of networking and internationalization

Figure 6.13: Types of achieved new long term collaboration contacts. Per cent of respondents. Results from question 0802 in the survey (Nmax = 748, Nmin = 729).



As shown in figure 6.13, more than 60 per cent of the respondents answered that they to a large extent achieved new, longterm collaboration relationship with R&D or higher education actors in Europe. About 50 per cent of respondents from businesses answered the same. Furthermore, 20 per cent of all the respondents and about half (N=79) of the respondents from businesses answered that they achieved long-lasting collaboration with foreign businesses.

Figure 6.14: Network patterns between organisations in the IST specific program having at least 9 common projects.



Source: Grobelnik, M., Mladenic, D., (2002)

Figure 6.14 provides an example of a graphical representation of networks in the IST-program. Each collaboration link between institutions in the IST projects is counted. Organisations with fewer than nine common projects with other institutions are not represented in the figure.

In this network, only one Norwegian institution is represented (SINTEF) as a satellite of the German Fraunhofer Gesellschaft, which again is one of the gravity centers (high degree of centrality) in IST-programme together with the French Centre National de la Recherche Scientifique.

Graphic presentations of this kind allow for a study of the collaboration patterns emerging from the 5FP. Unfortunately we could not find similar graphs of collaboration links in the projects of other specific programs in the 5FP.

6.7 The degree to which Norwegian actors have been active participants

One may claim that the more involved the Norwegian participants are in the EU-projects the greater the chances for them and for the Norwegian innovation system to absorb a large share of this value and, hence, the greater additionality of the EU-participation. Therefore,

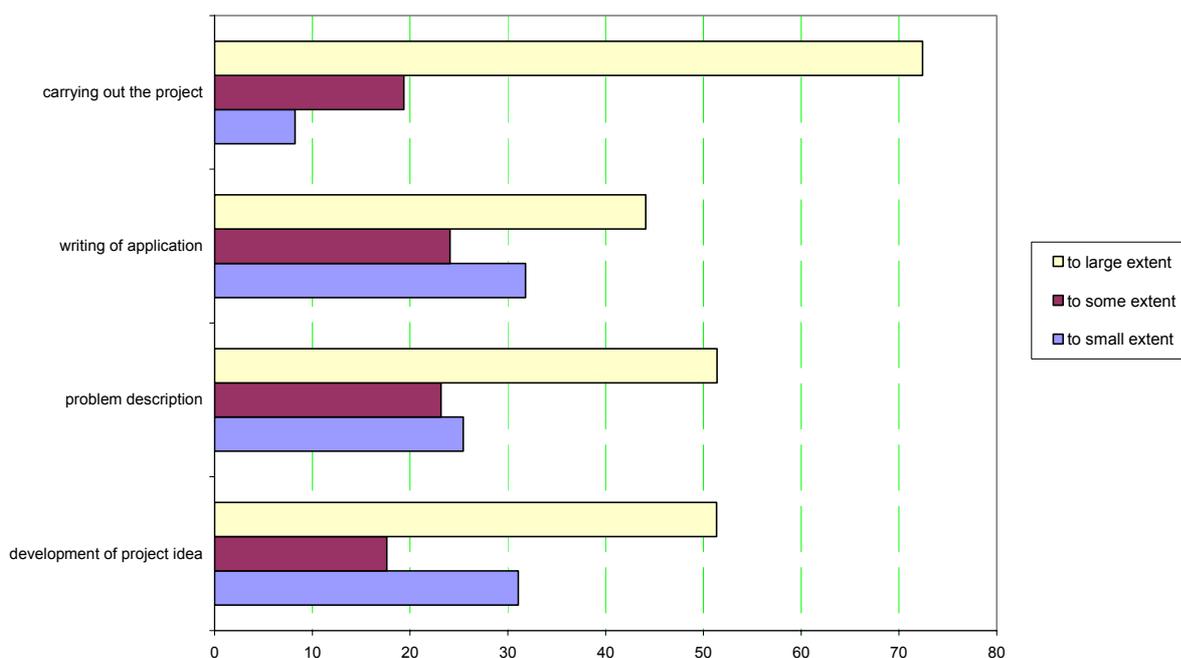
participants were asked about their degree of R&D experience and about their roles in the EU-projects. Below, focus will be set on this topic.

6.7.1 Experienced participants

Prior to 5FP, more than 90 per cent of the respondents had participated in at least one other national or international R&D program. The majority of the 10 per cent (N =51) without previous experience from an R&D program were participants from businesses and “Others”. For this reason, one may assume that the respondents were generally experienced, which makes their opinions interesting.

6.7.2 Norwegian participants did have an active role in the EU-projects

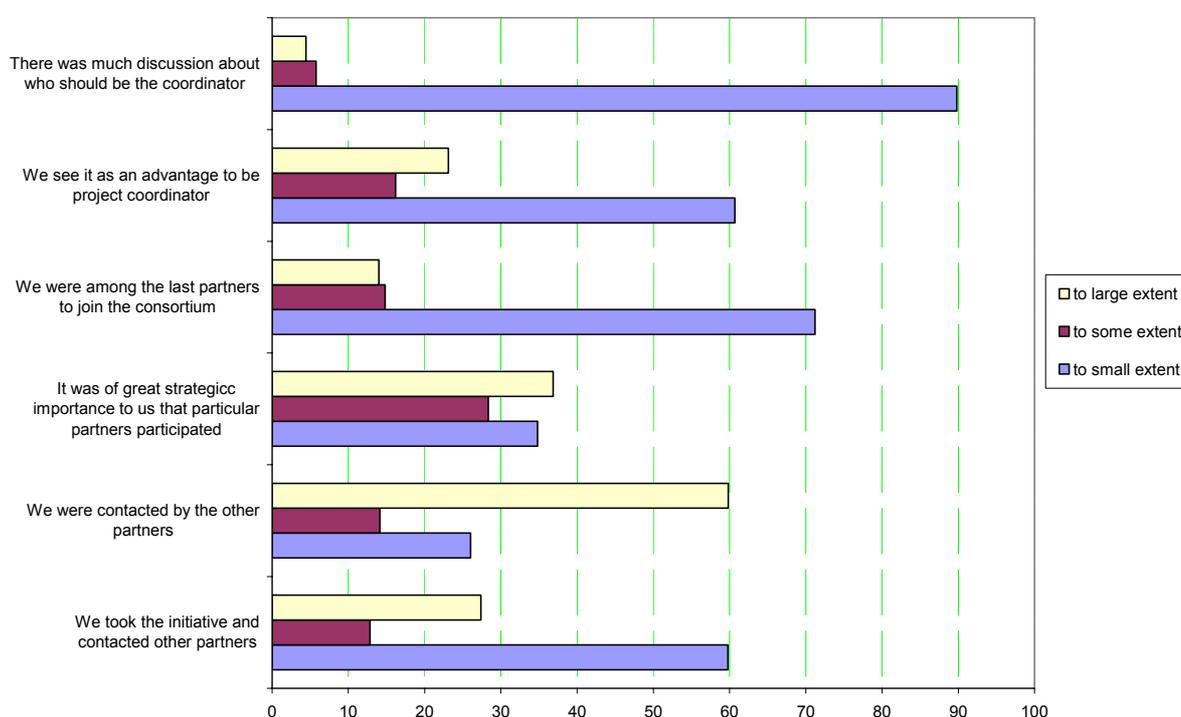
Figure 6.15: Role in the EU-project. Per cent of respondents. Results from question 0404 in the survey. (Nmax³¹ = 790, Nmin =780).



It is clear that respondents, in general, did have an active role in the EU-project. About 70 per cent were active in carrying out the project – but 30 per cent were not so active, about half contributed to develop the project idea and about 40 per cent contributed to the writing of the proposal. In general, respondents from Higher education and research institutes seem to be more involved in the EU-projects than participants from business and “Other”.

³¹ Nmax and Nmin indicate the number of respondents who answered the question 0404. Not all respondents answered all the sub-questions of the 0404 question. Thus, Nmax indicates the maximum

Figure 6.16: Respondents' role in the selection of consortium. Results from question 0405 in the survey Nmax= 756, Nmin = 736.



About 60 per cent of the respondents have been contacted by other project members to join the project (see Figure 6.16). As expected, co-ordinators were significantly more involved in all aspects of the project than ordinary participants.

6.7.3 The issue of being co-ordinator – a blessing or a curse?

It is commonly believed that co-ordination of an EU-project is associated with substantial administration costs that more often than not are not covered fully by the greater share of the EU-contribution in the project. On the other hand, being co-ordinator provides the chance to have some more influence on the directions and critical choices to be taken in the course of the project.

Thus, there may be a trade-off between co-ordination costs and the potential value and strategic importance of the participation. The type of questions we asked in the survey do not deal with this issue, but co-ordinators do seem more satisfied with their overall participation than other respondents. This may be an indication that there were greater (intangible) benefits than losses in leading an EU-project.

6.8 Has participation in the 5FP improved industry's innovation capability?

Assessing the effects of participation on Norwegian industry's innovation capability is difficult. The term may be understood as the extent, quality, organisation and effectiveness of innovation activities in the Norwegian industry. It is important to note that innovation capability is different from profitability, although one of the major goals of firms' innovation efforts is to increase profits.

Second, there are both direct and indirect effects of a participation in the 5FP. The direct effects relate to the effects that the EU-participation induces on the innovation activity - that is, the extent, the quality, the organisation (including interaction and collaboration patterns) and the effectiveness of the in-house innovations - of the participating private firm.

The indirect effects relate to the impact that the EU-participation has on innovation in the entire industry. Thus, participations from all the four institutional categories, that is, business, Higher education, Research institute and 'Other' may or may not contribute to improvements on industry's innovation capability.

Perhaps the most important indirect effect from the EU-participation is knowledge (competence) and technological spill-overs, that is, the transfer of useful knowledge to non-participating Norwegian industry. Evidence from other studies indicates that R&D programmes generate, in general, a high degree of knowledge spill-overs between adjacent producers and users (of this knowledge), therefore, their socio-economic value is high. In contrast, knowledge embodied in the specific products of major innovations seem to be too use-specific to spill over into other proposals (Geroski, 1994, Jaffe and Trajtenberg, 2002).

Based on these considerations, and on the fact that the total eligible cost of the EU-projects with Norwegian participation is 19 billion NOK, we expect that the potential knowledge spill-overs from the Norwegian participation to the Norwegian industry are large. The crucial question is whether and how these potential knowledge spill-overs are realised. However, the data gathered in this evaluation are not suitable for an assessment of this type. Yet, the answer to this question depends on how the national system of innovation *absorbs* and *transfers* useful international knowledge flows.

Therefore, a policy issue related to the Norwegian participation in the EU's R&D activities concerns how to organise an efficient national system of absorbing and transferring knowledge produced in the EU's RTD activities.

6.8.1 Direct effects on the industry's innovation capability

Focusing on the effects of participations, the following topics seem relevant:

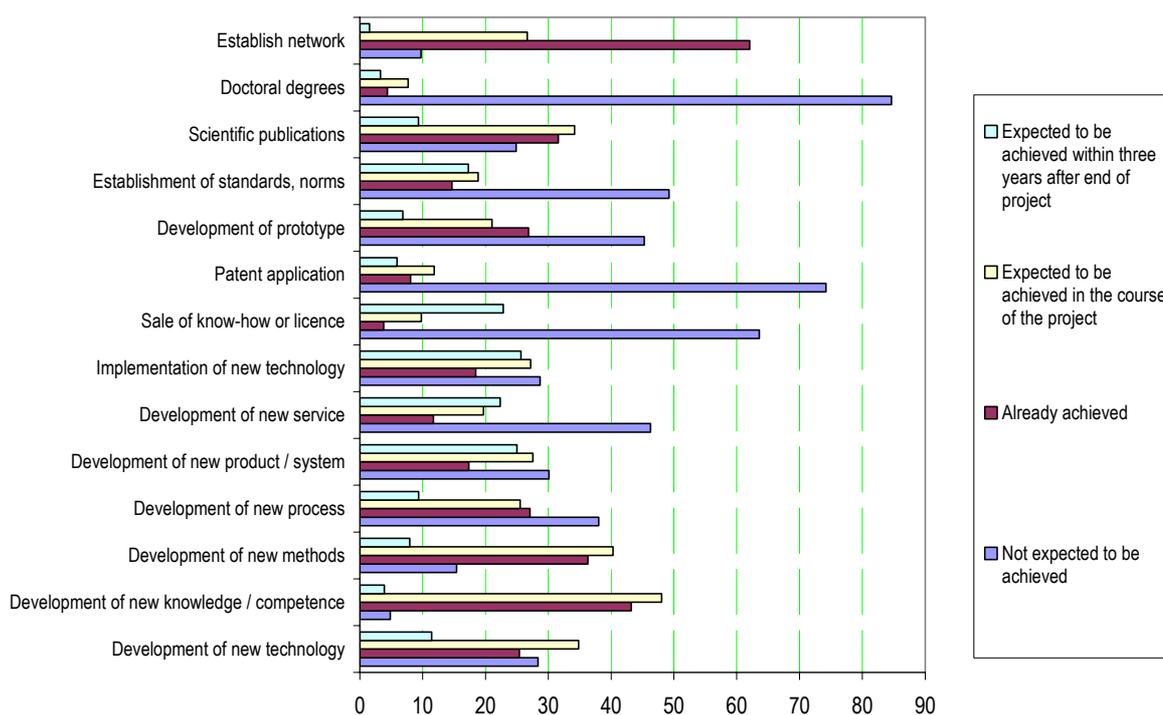
- Building of competence, and long-term external relationships
- Production of tangible results, such as, prototypes, new technology, intellectual property rights etc.
- Market position of the firm
- Participations' strategic importance for the participating organisation

- *Building of competence, and long-term external relationships*

We mentioned above that respondents stressed the effects of participation on *competence building* and on the *building of long-term relationships*, in particular with R&D and higher education actors in Europe. These have direct positive effects on the participants' innovation capability.

- *Production of tangible results, such as, prototypes, new technology, intellectual property rights etc.*

Figure 6.17: *Achieved or expected results from the participation. Only participants from businesses. Per cent of respondents. Results from question 06.01 in the survey (Nmax=206, Nmin=188).*



In interpreting the responses, the following may be highlighted:

- About 70 per cent responded that they achieved or expect to achieve development of new product,
- 70 per cent responded that they achieved or expect to achieve development of and implementation of new technology,

- 50 per cent responded that they achieved or expect to achieve development of prototype and
- 50 per cent responded that they achieved or expect to achieve development of a new service.

On the other hand, more than 75 per cent of respondents from businesses do not expect any *patents* from their participation:

- Only 8 per cent stated that they already produced at least one patent.
- Neither significant sales of know-how nor licenses are expected.
- About 75 per cent of the respondents from businesses answered that they had published or they expect to publish in scientific journals.
- Only 35 per cent of respondents from businesses stated that the results of their EU-project are protected.
- Of those who said that the results are protected, 70 per cent replied that the protection form is 'secrecy' and 30 per cent through patenting.
- Of the 65 per cent of the respondents from businesses who signaled that the results are not protected:
 - 30 per cent believed that it is not possible to protect them,
 - 16 per cent believed that it is too early to say whether or not the results may be protected, and
 - 54 per cent believed that publishing the results is more important than protecting them.

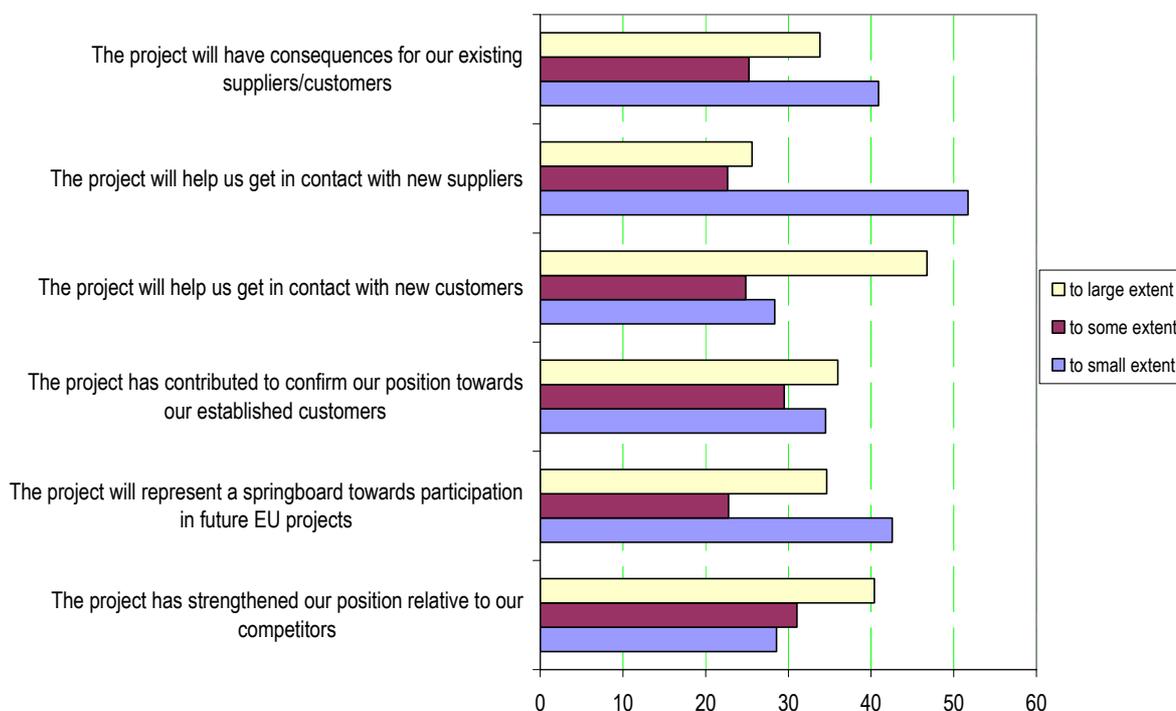
In general, it seems to be difficult (or not relevant) for Norwegian businesses to protect knowledge produced in the EU-projects through patenting, but there is a plethora of achieved or expected outputs witnessing the high productivity of the R&D activities. However, this reflects the character of the FPs, i.e. that they are generally open and "pre-competitive".

- *Market position of the firm*

About 40 per cent of the respondents from businesses claimed that the EU-project strengthened the market position of the firm compared to its competitors and 45 per cent responded that the EU-project will help their firms to get in contact with new customers

(see Figure 6.18 below). These results show that the respondents had high expectations of effects on the Norwegian industry's market position.

Figure 6.18: *Effects of the project on the market position of the firm. Only participants from businesses. Per cent of respondents. Results from question 06.02 a-f in the survey (Nmax=203, Nmin=198).*



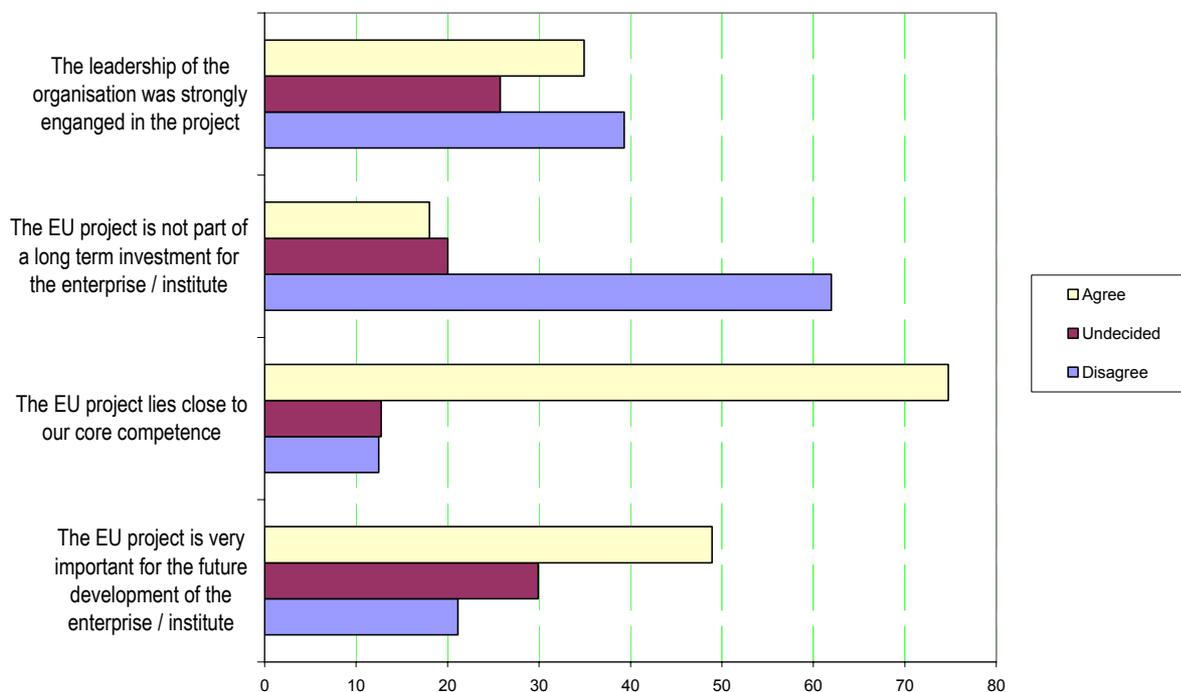
- *Strategic importance*

Was the participation of strategic importance for the organisation? Figure 6.19 provides key information on this issue. About 75 per cent of the respondents stated that the EU-project lies close to the organisations' core competence.

If we assume that the more relevant the participation is to the core activities of the organisation the greater are the chances of long-lasting effects of the EU-project on the core-competence of the organisation, Norwegian participation seems to contribute to improving the innovation capabilities of the participating organisations. Furthermore, one may assume vicinity to core competences increases the organisations' capacity to absorb and capitalise upon the knowledge produced in the EU-project.

If these answers reflect the real importance of the EU-participation for the involved organizations, we may conclude that the Norwegian participation in the EU has profound impacts on the innovation capabilities of the participants. On the other hand, participants in general and respondents in particular may tend to have a positive bias about the effect of their participation on the organization. We should, therefore, be cautious in interpreting the survey results related to this question.

Figure 6.19: *The strategic importance of the EU-project for the participating organisations. Per cent of respondents. Results from question 10.04 in the survey (Nmax=753, Nmin=729).*



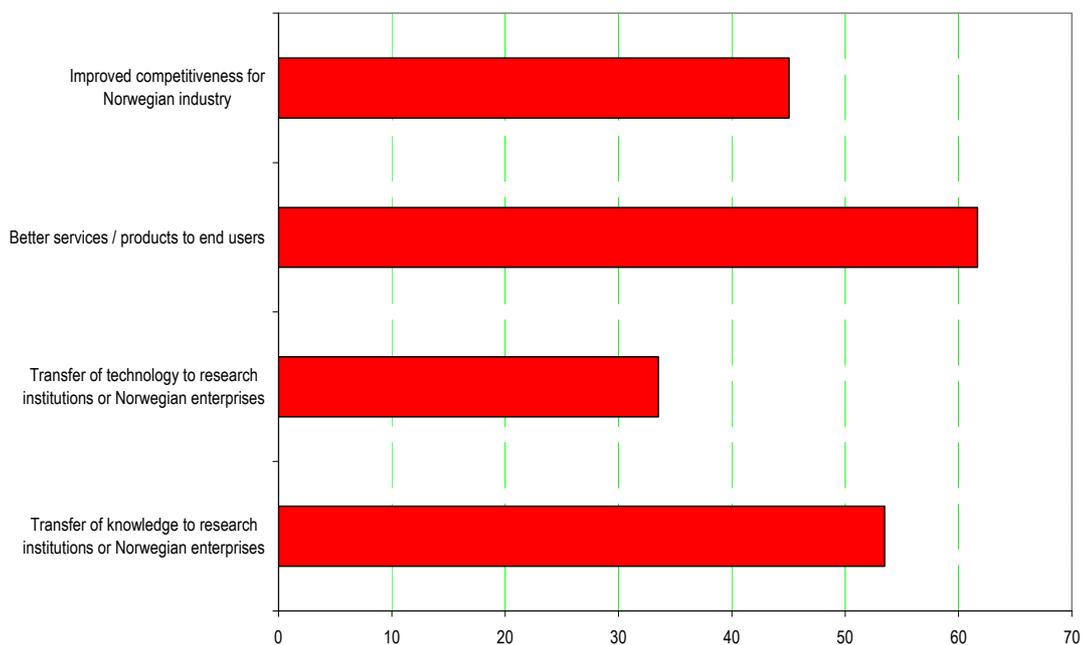
There were no significant differences between respondents from different groups of types of organization or between specific programs. This means that figure 6.19 also reflects how respondents from businesses answered this question. Project co-ordinators, however, gave significantly more positive answers to all the questions in Figure 6.19.

The results in Figure 6.19 are fairly consistent with the results from the evaluation of the Norwegian participation in the 4FP. The only difference is that respondents from the 5FP were a little less positive in their answers compared to the respondents from the 4FP (see NIFU-report, page 80 and NTNU-report, page 43).

6.8.2 Indirect effects on the innovation capability of Norwegian businesses

53 per cent of the respondents (N=746) answered that their participation will result in knowledge transfer to research institutes or Norwegian companies. Furthermore, 60 per cent answered that their participation will result in better services or better end-use products and 45 per cent of the respondents stated that their participation will contribute to the improvement of the competitiveness of the Norwegian industry (questions 09.02 in the survey).

Figure 6.20: Potential spillovers of the Norwegian participation to the Norwegian industry. Per cent of 'yes'. Results from question 0902 in the survey (Nmax=746, Nmin=746).



The question is again whether this will hold to be true in practice, and whether there are adequate transfer mechanisms to realize the full potential of knowledge spillovers of the participation in the 5FP.

7 Conclusions and recommendations

7.1 Summary of main findings

7.1.1 The Norwegian participation in the EU's 5FP: Size, scope and characteristics

The general picture is that Norway's participation performance in the EU's 5FP has been reasonably successful. As elaborated in chapter 4, Norway had 1,571 participations, a share of 2 per cent of all participations in the EU's 5FP; Norway participated in 1,086 projects, a share of 7 per cent of all projects in the EU's 5FP. Research institutes had the highest share of Norwegian participations, followed by businesses and Universities (Higher Education).

Norwegians participated in European R&D-projects worth € 2.4 billion (NOK 19 billion). Thus, the participation represents access to numerous options and opportunities with a considerable future potential for the Norwegian participants and, in general, for the Norwegian knowledge system.

The EU-contribution to Norwegian participants in the 5FP was € 248.6 million, while the total Norwegian contribution to the 5FP is estimated to be about € 274 million (2,192 million NOK). Dividing these two figures, the economic return is estimated to be 0.9, i.e. that Norway incurred a "deficit" of approximately 10%. However, on the level of the individual programmes, administration cost of the 5FP is estimated to be about 10 per cent of the overall budget of the 5FP (€ 1,370 million). In addition, the EU's Joint Research Centres get about 5 per cent of the 5FP budget. Hence, about 15 per cent of the 5FP budget was out of competition for Norwegian or other countries' researchers. Taking these aspects into consideration, the Norwegian economic return of 0.9 is an indication of a satisfactory participation performance, in budgetary terms.

However, this estimate does not include the considerable costs that preparing project proposals to the 5FP incurred to the Norwegian organizations, nor the costs related to management of the Norwegian participation at the policy (Ministries, Research Council of Norway), institutional (Research institutes, Higher Education, etc.) and project levels.

In the evaluation, the following details related to the participation in the EU's 5FP emerged:

- EU's funding of Norwegian participants:
 - Research institutes in Norway received 42 per cent of the Norwegian 5FP contributions.
 - EU's funding of projects with Norwegian participation was more than expected in EESD, particularly in the Environment part, but below the expected in IST.

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- Norwegian participation in terms of project type was highest in research project, which represented 56 per cent of all participations and 71 per cent of the EU-contribution to Norway.
 - The rate of success of Norwegian proposals to the 5FP seemed to be on 5FP's average.
 - Almost half of the Norwegian participations in 5FP involved institutions in the Oslo region; Bergen and Trondheim had a substantial share of the rest.
 - In spite of this, the Trondheim-based SINTEF was the Norwegian institution with the highest number of participations, followed by University of Oslo and University of Bergen. SINTEF often has close collaboration with NTNU, this possibly explaining NTNU's ranking as no. 4.
 - Norwegian institutions were coordinators of 211 projects. Of these, the University of Bergen, having 40 prime contractors, had the highest number, followed by 30 prime contractors at the University of Oslo and 25 prime contractors at NTNU.
 - The Marie Curie Fellowships scheme funded 48 non-Norwegians to stay and work in Norwegian R&D organisations in 5FP. Only 16 Norwegian researchers (0.6 per cent of all Marie Curie Fellowships) received funds to stay and work in R&D organisations outside Norway.
 - In the 5FP, eight Norwegian research infrastructures were funded by the EU.
 - More than 50 per cent of Norway's collaborations in the projects are with participants from United Kingdom, Germany, France, Italy and the Netherlands.
 - An analysis of respondents to the questionnaire survey in the evaluation indicates that 17 per cent of project leaders and 28 per cent of the researchers in the Norwegian participation in 5FP were female. This is fairly similar to the pattern of gender differences in Norwegian R&D community.

7.1.2 The Norwegian support system for participation in the EU's 5FP

As elaborated in chapter 5, during the EU's 5FP, the Norwegian support system consisted of the following elements:

- The *Norwegian EU R&D Information Centre* (EU R&D IC – now renamed as EU RTD Department) of the Research Council of Norway, based in Oslo,
- The *Norwegian Innovation Relay Center Network* (IRC Norway), which is hosted by SINTEF Industrial Management, in Trondheim, and
- Delegates to the programme committees and NCPs.

The Norwegian EU R&D Information Centre was a comparatively small entity as it consisted of four employees throughout the 5FP. Its mission is to promote and coordinate the Norwegian participation in the EU Framework Programmes. Being the National Contact Point (NCP) for the 5FP and the 6FP in Norway, it has a special responsibility for dissemination of information to the Norwegian research community. The EU R&D Information Centre is also the secretariat for monthly meetings between the national

delegates (one person is always recruited from the staff of the Research Council) to all the specific programmes.

Being part of the European Innovation Relay Centre Network, IRC Norway employed five persons. The purpose of the IRC Network is to assist companies and research organizations with technology transfer, license agreements, intellectual property rights, and to identify sources to finance innovation. Having its main focus on SMEs, it has organized a network of offices affiliated with regional research centers in Norway. This Innovation Relay Centre network is supported by the European Commission's Directorate-General for Enterprise as part of the Innovation and SME programme.

At the start of 5FP, there were 15 delegates from the staff of the Research Council serving the various national delegations, in addition to the staff of the EU R&D Information Centre. Thus, whereas the EU R&D Information Centre had a modest size, it was a central node in a comparatively larger network of personnel working for the promotion of Norwegian participation in RTD management processes of the 5FP in Brussels.

Being described as service-minded and efficient, these purposes seem to be served fairly adequately by the national support system during 5 FP. Still, the evaluation identified two areas that need more attention:

- First, because the barriers for firms to participate in the EU's FPs are high, particularly for SMEs, the support system should adopt a more active role in creating interest and supporting firms and organizations that have a potential as participants. The "broadcast"-mode that was used during the 5FP is not adequate for these groups.
- Second, apart from a few cases, the strategic overlap or convergence between national R&D and innovation priorities and Norwegian participation in 5FP seems to be weak, or coincidental.

The Research Council of Norway has a key role in achieving synergy and coordination between national R&D programs and 5FP. To appoint staff with good knowledge on the national R&D programs as delegates in relevant Program Committees (both in the 4FP and 5FP) seems to be a good strategy to achieve synergies. This was also the opinion of the evaluators of the Norwegian participation in the 4FP.

Although the people undertaking these tasks seem to do a good job, one could question whether the Research Council of Norway used optimally the resources available (time used and personel by specific program). Firstly, one would expect that R&D and innovation issues related to vital national economic or societal interests (e.g. energy, environment, marine resource management, etc.) should have be given high priority and more resources in order to induce higher participation in the 5FP. Secondly, one would expect that the greater the size of the specific programs, the greater should be the allocation of resources to these areas in the Research Council of Norway. In contrast, one would expect other

areas would require less attention and resources. Thirdly, one would expect a systematic exchange of experiences between delegates at Programme Committees in the 5FP and the Norwegian EU R&D Information Centre.

Yet individual entrepreneurship (which in itself is a valuable asset for Norway) more than strategic priorities seems to explain the patterns of resource allocation to the 5FP in the Research Council of Norway. Furthermore, although it is of utmost importance that delegates in Program Committees are insightful and experienced, as is the case with the Norwegian delegates, one has to recognise the fact that Program Committees seem to play a less important role in the preparation and implementation of specific programs in 6FP than what was the case in 4FP.

7.1.3 Significant issues for Norwegian R&D and innovation policy and strategies

Four significant issues were addressed in the evaluation:

- the *competitiveness* of Norwegian researchers in 5FP,
- *barriers* for participation,
- the *additionality*, or extra benefit gained from the participation, and,
- the *impact* of 5FP on the innovation capability of Norwegian industry.

Competitiveness

Since the Norwegian contribution corresponds to 2 per cent of 5FP's budget, the following criterion of assessing the Norwegian participation is adopted: If Norwegian shares of financial contribution to the EU-projects in 5FP-projects or Norwegian shares of total number of participations in the 5FP are equal to or exceed 2 per cent, then Norwegian participation is considered as satisfactory. Conversely, shares below 2 per cent are considered as indication of weak participation.

Based on this criterion, Norway's participation in 5FP has been uneven: Thematic areas having high Norwegian participation have also a strong position and focus in the Norwegian R&D and innovation system. In contrast, some areas had a weak participation, such as in IST. Participation in this area seems to have been decreased from 4FP to 5FP. Although considered strategic in national R&D priorities, Norway has a weak industrial base in the ICT-sector, which to some extent may provide a structural explanation for this. Still, because of the high priority given to this area in the national R&D strategy, one would assume that increased participation in IST should be an important strategic aim in the future.

At present, Norwegian participation in the EU's R&D programmes is by far the most important channel of internationalisation of the Norwegian R&D system. In general, there is a potential for a better thematic synergy and synergy of funding schemes between the national research system and the EU's Framework programmes. However, under 5FP, the national and the EU research are regarded and managed as two separate R&D spheres.

This points to the need for making improvements; efforts should be made to integrate the participation in the EU's research and the national research efforts into a more comprehensive and coherent national R&D and innovation strategy.

Barriers

High costs of preparing proposals constituted the most severe barrier for participation in 5FP. Probing further; for non-participating industry, the following barriers seem most important:

- Time-consuming reporting and administration for project participants, in particular for project co-ordinators, is emphasised as the single-most important barrier to participate.
- Spending resources in the EU-projects needs to be justified by tangible commercial aims. If technology and market monitoring network building are the only aims, these may be obtained more inexpensively by other means.

For all participants, access to research networks and knowledge are the most important motives for participating in the 5FP. Market contacts were considered of substantial importance for participants from businesses. These are also the most tangible achieved results of the EU-projects.

Additionality

The concept of additionality as a benefit gained from R&D in the EU's 5FP has been analyzed in the evaluation. Additionality is essential for justifying Norway's participation in the EU's FPs, i.e. it characterizes to what extent Norway benefits from its participation in projects worth € 2.4 billion. Although this is an elusive concept, it may be defined in two ways: In a narrow sense and in a broad sense. The narrow understanding of additionality defines this as whether or not the EU-projects would have been undertaken irrespective of this funding. Survey results obtained in the evaluation leave no doubt: Almost 95 per cent answered that the EU-funding was very important for getting the project started. Furthermore, more than 80 per cent of respondents consider international collaboration in the project as very important for the carrying through of the project.

In the broader understanding of the concept of additionality, i.e. the impact of the participation on the overall quality of the participants' R&D activities, the evaluation found that the respondents' overall judgment of their participation is positive. About 77 per cent answered that their participation was an overall success, only 3 per cent answered that their participation was basically a failure. The EU-funding seems to stimulate businesses to get involved in more risky research than otherwise. This may widen businesses' technological horizons and opportunities. However, risk may also explain why respondents in general are uncertain about the impact of their participation on their organisations' economic profitability or market potential. For this reason expectations are not high for the potential for making immediate economic improvement, improvement of market positions and the creation of customer networks. The average respondent, including

respondents from businesses, answered that the effect of their participation on these aspects is uncertain. Respondents from research institutes and from businesses were slightly - but enough to be significant - more positive in their answers than respondents from Higher education and other organizations (Others).

Impact on the innovation capability of the Norwegian industry

By “innovation capability” we mean the extent, the quality, the organisation and the effectiveness of innovations in the Norwegian industry. It is important to note that innovation capability is different from profitability, although one of the major goals of firms’ innovation efforts is to increase profits.

There are both direct and indirect effects of the Norwegian participation in the 5FP. The direct effects relates to the effects that the EU-participation induces on the innovation activity - that is, the extent, the quality, the organisation (including interaction and collaboration patterns) and the effectiveness of the in-house innovations - of the participating private firm. The indirect effects relate to the impact that the EU-participation has on innovation of the entire industry. Thus, participations from all the four institutional categories, that is, business, Higher education, Research institute and ‘Other’ may or may not contribute to improvements on industry’s innovation capability.

The survey provides strong indications to claim that the most important direct effect from the EU-participation on the Norwegian businesses is the development of key competence and knowledge networks in the EU-projects. As regards the indirect effects, the survey provides indications that knowledge spill-overs, that is, the transfer of useful knowledge to non-participating Norwegian industry can be considerable. This and the fact that the total eligible cost of the EU-projects with Norwegian participation is 19 billion NOK, suggest that the potential knowledge spill-overs from the Norwegian participation to the Norwegian industry are large. The crucial question is whether and how these potential knowledge spill-overs are realised. However, the data gathered in this evaluation are not suitable for an assessment of this kind. Yet, the answer to this question depends on how the national system of innovation *absorbs* and *transfers* useful international knowledge flows.

Therefore, a policy issue related to the Norwegian participation in the EU’s R&D activities concerns how to organise an efficient national system of absorbing and transferring knowledge produced in the EU’s RTD activities.

7.1.4 Implications of findings

As shown, the general picture that emerged from the evaluation is that Norway’s participation in the EU’s 5FP has been reasonably successful in terms of outcomes and benefits; however, most important: The participation represents access to numerous options and opportunities with a considerable future potential for the Norwegian participants. The evaluation found that in terms of budgetary perspectives, Norway’s

participation in the EU's 5FP may be characterized as a balanced relationship. The participation in the EU's RTD represents a strategy for a small nation such as Norway to gain access to, and become member of, a large knowledge and innovation community at the forefront of a dynamic development, and Norway's participation in the EU's 5FP is part of this. In spite of the generally positive findings, the evaluation identified numerous issues having a potential for improvement. Most important of these: In order to leverage the opportunities inherent in the EU's FPs, Norway should make efforts to couple or integrate its national R&D and innovation programs with the EU's FP. This and related aspects will now become the main topic of this chapter.

7.2 Recommendations: Norwegian R&D and innovation strategy & policy

7.2.1 R&D and innovation strategy: Finding a balance between adaptive and pro-active

Being an associated participant in the EU's RTD activities and a small nation, Norway does not have a "sound voice" in the EU system. In the evaluation, it became clear that the challenge for Norway is to find the right balance between being adaptive to the main structures imposed by the EU system, and being pro-active in making the most out of opportunities that arise in synergy with the EU-system – to the extent that these serve Norwegian interests. Finding this "right" mix of adaptive and pro-active demands a strategy.

The picture that emerged in the evaluation was that "right mix" issue was of secondary importance in the national R&D and innovation strategy and priority setting in the period 1998-2002. This applies to all levels of the research policy actors in Norway, but it is most visible in the Research Council of Norway, which has a central role in Norway's participation in the EU's FPs. More specifically, the evaluation showed that there is a need for making coherent national R&D and innovation programs with a special focus on international (not only the EU's FPs) R&D and innovation activities. This claim is based on the following key observations:

1. Apart from a few cases, the strategic overlap or convergence between national R&D and innovation programs and Norwegian participation in 5FP has been weak, or coincidental. The main reason for this is that strategy, agenda and priority setting – and implementation of these at the national level are done within a narrow national context; in these, participation in the EU's FPs is practically not an issue. This point is also important in understanding how the national support system functioned in 5FP.
2. With some notable exceptions, what may be observed on a national level is also reflected on institutional level. Although this weakness of strategy may provide room for a high degree of bottom-up initiatives and entrepreneurship (of which there are

many notable examples of successes), the link to an institutional strategy is weak in the majority of the participating organizations, chiefly because institutional strategies and portfolio management are not strongly developed. This is especially a challenge for the research institutes, but also for Universities and State colleges.

3. The value of the 5FP EU-projects that Norway participates in is about NOK 19 billion (€ 2.4 billion). This is in the same order of magnitude as the budget of The Research Council of Norway in this period. Thus, the potential benefits from the participation - either direct benefits to participants or as knowledge spill-overs to non-participants in Norwegian industry - are large. There is, however, little focus on policy instruments that may be used to increase the national capacity to absorb and capitalise on the values created in the 5FP.

7.2.2 Other areas for consideration

In addition to these crucial points above, attention should be given to the following:

- Thematic areas where Norwegian participation is weak and where the EU-budgets are particularly large should be given a priority; policy actions to upgrade participation should be considered if this serves national R&D priorities. This is particularly relevant for IST's "Essential technologies and infrastructures", in Growth's "New perspectives for aeronautics", Marie Curie Fellowships and QoL's "Cell factory".
- The number of Norwegian proposals submitted in IST and IHP specific programs was significantly lower than the 5FP average. Consequently, there is a need to stimulate the interest in participating in these programs in the Norwegian innovation system, because these areas have high priority in the national R&D and innovation strategy.
- A great number of respondents in the survey stressed the need for a better national co-funding of the Norwegian participation in the 5FP. This is an issue of high importance for the majority of research institutes, but this is also a need for university and business participants.
- One of the areas with the greater potential to increase synergy of funding schemes is to be found in the horizontal activities of the 5FP, in particular, the Marie Curie Fellowships and, to a lesser extent, the Access to Research Infrastructures. Norwegian authorities should stimulate Norwegian Marie Curie participations by matching Marie Curie grants with additional and adequate national funding.
- It would be more relevant for manufacturing companies to join if there were routines that ensured a minimum of user relevance early in the proposal process. This implies that there has to be dialogue between different types of project partners

(universities/research institutes, technology consultants/suppliers, manufacturing units, etc.) in early phases of the project.

- If necessary, a more targeted and proactive use of support should be provided to prepare proposals.

7.3 Recommendations: National support system

7.3.1 Becoming more targeted

As pointed out earlier, although the existing system seems to work well considering the boundary conditions, there is a potential for improvement which may be leveraged by coupling and making a more coherent national R&D and innovation strategy. Until now, the domain of participation in the EU's FPs was considered as a different arena than the national R&D and innovation programs. The aim should be to integrate these two spheres. Specifically, the national programs should be empowered to make decisions and allocations for R&D funding for Norwegian institutions participating in the EU's FPs. Furthermore, the administration and other people working to support the national R&D and innovation community should become integral parts of this. The present system of having one person serving as NCPs or specific program delegate, needs to be revised, allowing for resource allocation and management attention, so that thematic areas of high national interest are given greater resources than more peripheral areas. Needless to say, this demands a more precise overall national strategy, as pointed out above.

7.3.2 Other areas for consideration

In addition to the recommendation made above, there are some other aspects that should be considered about the Norwegian national support system:

- Norwegian research and innovation funding priorities should be reviewed in the light of the 6FP priorities and what is beginning to emerge about FP7. An explicit strategy should be devised about how to align national with EU funding priorities. Also, key actual and potential centres of excellence should be identified, in order to guide interaction with the EU, other framework programme participants and the research-performing community
- The primary role of the Norwegian national support system should be to support Norwegian stakeholders' interactions with EC programmes. Except to meet the special needs of smaller firms in relation to dedicated programmes such as CRAFT and to assist other newcomers to the FPs (such as state universities), the national support system should minimise its activities that 'broadcast' information already available from EC sources. Instead, strategic considerations related to achieving synergy with specific Norwegian R&D and innovation strategies should serve as guideposts for its operations.

- As shown in the benchmarking exercise, comparable nations with a good track record in the participation in EU's FPs (e.g. Finland, Sweden, Netherlands) maintain a stronger presence in Brussels than Norway. For Norway, the arrangement of national experts working in the EU Commission contributes to this, but they are outside the operative support system. Norway should consider the strategic advantage of strengthening its liaison functions in Brussels.
- The focus of the Norwegian national support system activities should be on training and advice needed to support 6FP participation (especially in relation to the new instruments), intelligence gathering, organising and representing Norwegian stakeholder interests and co-ordinating the implementation of the national strategy. Stakeholder organisations – such as university EU officers, industry associations, etc – are key customers of the national support system.
- New skills in areas such as law, finance and IPR should be integrated into the national support system, to tackle the specific needs generated by 6FP
- Where there are significant numbers of Norwegian stakeholders without their own system for supporting FP activities, the national support system should establish support groups or panels to advise it and the EC on Norwegian needs and priorities.
- There is a need for providing support and advice to firms and organizations in the regions, in particular to SMEs. This should be provided in a more proactive mode, i.e. based on active encouragement and support to those that are capable of participating, or would benefit from participation. This should be an area of cooperation between the Research Council of Norway and the newly established Innovation Norway (the former SND). Regional state colleges should be encouraged to take greater interest in participation in EU's FPs.
- The risks and costs incurred for proposals and establishment of large FP-projects are high, representing a disincentive for participation. The present financial support mechanism (pilot project support, positioning support) should be amplified and tailored to match national R&D strategies and goals related to the participation in EU's FPs.
- Detailed monitoring of 6FP participation should be done, using good international practice (eg BIT) as a source of inspiration in systems design. The difficulties experienced by NIFU and STEP in contacting 5FP participants suggest there is scope for improvement here, compared with good international practice

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Appendix 1: National Benchmark Country Reports

Austria

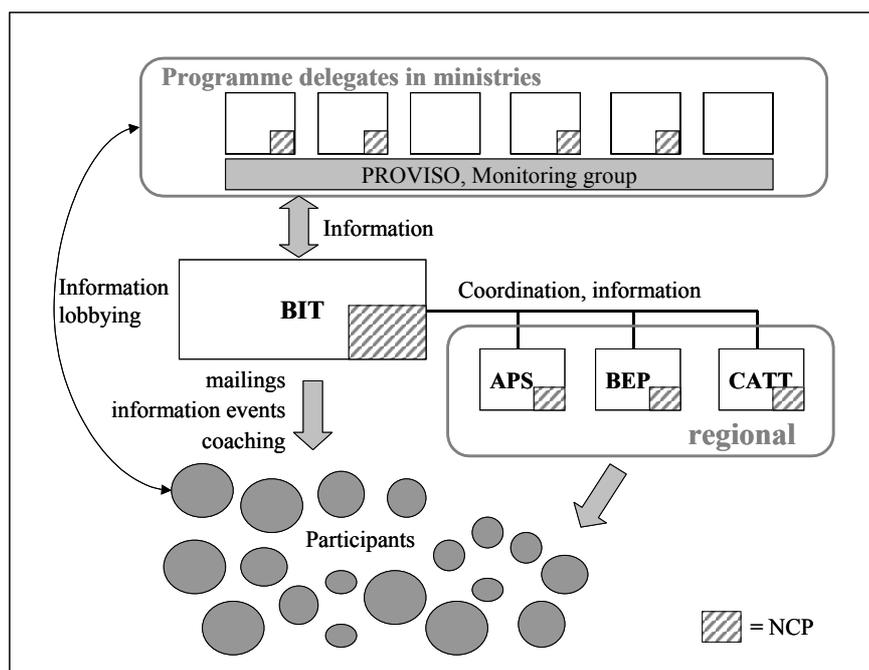
Participation in EU-FP's has been high on the Austrian policy agenda since the early 90's. The cornerstone of the support structure as it is today was laid in 1993 with the foundation of BIT, the 'Bureau for International Research and Technology Cooperation'. BIT is the Austrian information and service centre for participants in European and international programmes. Beside BIT a number of regional contact points³² have been set up in order to ease entry barriers especially for small and medium sized companies. Overall the Austrian support structure is considered as a showcase for a fairly centralised and well-staffed structure.

Organisations and services

In the Austrian support structure we find basically three types of organisations. In the very centre is BIT. It processes and distributes all relevant information on programme activities to a broad audience. Furthermore it offers individual coaching and helps with partner search. On the regional level four organisations were established. Mostly in cooperation with BIT they set various support activities and specifically address small and medium size companies in the regions. Programme Committee delegates are the third important support body. Their focus lays in making Austria's voice heard in Brussels. For participants the delegates have become an important first hand information source and lobbyist in the project selection phase. Exhibit 1 shows the basic outline of the Austrian support structure.

³² Currently four regional organisations support participants: APS (Kärnten), BEP (Vorarlberg, Tirol), CATT (Salzburg, Oberösterreich)

Exhibit 1: Austrian support structure



Bureau for International Research and Technology Cooperation - BIT

BIT was founded as the office of the association for international cooperation in research, technology and education (VIKOP). The list of members of VIKOP includes all relevant ministries³³, regions (Bundesländer), as well as interest groups like the chamber of labour and the federal economic chamber. This broad base reflects the strong political commitment to help the Austrian research community in its internationalisation efforts. At the same time it ensures that BIT is strongly anchored in the relevant Austrian institutions. The bulk of the BIT budget comes from the ministry of science and education. In the last years BIT successfully managed to acquire additional funding (mostly EU) on basis of its project activities.

According to its mandate BIT covers not just EU-FP but a wide range of international programmes open to Austrian scientists and firms. Thus, support services for participants in 6FP is just one among other activities BIT offers. It also provides information and support on EUREKA and INTAS. Furthermore BIT is the coordinator of the INNOVATION Relay Centre Austria.

With respect to FP 6 BIT has two main functions: First, it is the central information and contact point for (interested) participants. Second, it coordinates the Austrian network of national contact points (21 out of the 40 situated within BIT).

³³ Federal Ministries of external affairs, of economic affairs, of health and consumer protection, of agriculture & forestry, of environment, youth & family and of science, transportation & arts.

Information and coaching

As for the information and support activities towards participants BIT offers general information services (mailing service and information events) as well as individual coaching of participants. According to latest information form BIT it provides more than 27.000 persons and 14.000 organisations with regular customised information. Between 1998 and 2002 about 6.000 organisations were in direct contact with BIT. For comparison: At the same time 5.181 project proposals with the involvement of 7.393 Austrian participants were submitted. It is likely that BIT is used by the majority of Austrian participants, but the question as to what extent the information and coaching service of BIT eventually influences participation rates or even success rates remains difficult to answer. According to information provided by BIT the group of participants that that has used BIT seems to have a significant higher success rate than others. This is at least an indication that BIT indeed is helpful in identifying appropriate funding opportunities for projects brought forward from Austrian participants.

Coordination, network of national contact points

The establishment of national contact points broadened the information and support structure in Austria. Regional support organisations³⁴ were upgraded to national contact points in specific thematic areas. Also some programme delegates took up the NCP function. Overall the majority of NCP's are still situated in BIT (21 out of 40), which is also the role of NCP coordinator. According to the interviews we conducted in the course of this research the division of labour and particularly the information flow between the different organisations hosting NCP's is still somewhat vague. Particularly the role of the coordinator (BIT) seems to be unclear.

Monitoring and support of programme delegates

Austria has put quite some effort in establishing a comprehensive monitoring structure. Currently there are two separate systems in place

- **Proviso** stands for the monitoring group within the ministry of education and science. It was established in the late 90's on the initiative of the ministry of transport, infrastructure and innovation. The aim of Proviso is to provide national delegates with comprehensive and timely information on participation performance in specific thematic areas. Proviso relies on data it receives from national delegates³⁵. In practice Proviso has set up a comprehensive database containing all participation data available. On this basis Proviso produces reports on participation performance (intensity, success rates) in specific thematic areas. This should help Austrian programme delegates to

³⁴ Currently there are 4 organisations in place that provide information & support in the regions

³⁵ Up to now access to and dissemination of participation data has been is an unsolved problem. Proviso relies on data from delegates. Not all delegates have been prepared to hand over data for which they personally are responsible, according to EU data handling standards. Thus the database of Proviso is still far from comprehensive as several thematic areas are not covered. The second front lies between Proviso and BIT. BIT has at least to some extent the task to monitor and report Austrian participation performance. For that it relies on data from Proviso, who on the other side seems reluctant to deliver.

identify areas of weaknesses and strength and thus enable them to initiate more specific activities in mobilising relevant research communities

- **INNOMAN** refers to the information system of BIT. It consists basically of an advanced database that allows monitoring of all support and information activities of BIT. It is an essential working tool which not just supports the planning promotion activities but allows BIT to organise its internal workflow in an efficient way. Furthermore, programme delegates have access to certain areas of the database via Internet

Financial support

Austria has two programmes that offer 'additional' financial support for participants in EU-FP 6. The first one is managed by FFF (Forschungsförderungsfonds), the major Austrian funds for research and development in the enterprise sector. The programme provides financial support for small and medium size firms preparing EU-projects. This should reduce the entry barriers for firms.

The second form of financial support addresses universities. It is managed by BMBWK (ministry for education and science) and covers 'additional' costs during project implementation that are not covered by EU-funding.

Resources and impact

Compared to other member states Austria's support structure seems big in terms of manpower. Alone BIT has about 40 employees of which about 25 exclusively work as consultants for participants in FP 6. About the same manpower is available in the regional support organisations. If we take Germany as benchmark and compare the resources Germany concentrates in its network of NCP's (about 40 full time equivalents) then Austria's resource base looks luxurious (Germany is about ten times as big as Austria). Of course, comparisons are problematic as different structures and different degrees of centralisations make it difficult to single out the number of staff working on similar tasks. However the impression that Austria devotes considerable resources to the support of participants in EU-FP is also underlined by the fact that the major national research fund (FFF) for the enterprise sector has about as many employees as BIT.

As it is difficult to assess whether the observed resources are adequate it is difficult to derive impacts of the support structure on the participation performance. Austria's participation performance in FP 4 and FP 5 has been reasonable good even though not overwhelming. If we take Austria's success rate in FP 5 of 25,7 % (number of participations in submitted projects/number of participations in successful projects) Austria ends up somewhat under the European average (27,5 %). This holds true for all sub areas but 'sustainable development' where Austria was above the average (39,1 versus 36,9)

At the same time however the participation rate (share of proposed projects with Austrian participation) increased from 8,2 % (4FP) to 11,1 % (5FP). This is remarkable if we consider that almost half of the participating firms in FP 5 were newcomers. All in all there

is a clear indication that the Austrian support structure has had its share of influence in this development.

Points for consideration

The most distinctive features of the Austrian support structure are:

- Support of participants is core business for all organisations in place.
- There is a clear centre on federal level, which has been able to build up competence and a solid infrastructure.
- Integration between national research funding and EU-FP is weak on the operational level. To some extent this separation is balanced out at the level of programme delegates who often are also responsible for national funding in specific thematic areas, and by the small scale of the system as a whole

Finland

Information structure³⁶

The **Ministry of Trade and Industry** is responsible for the EU research activities in Finland. This Ministry is responsible for the management and coordination of the national preparation of the EU R&D policy in cooperation with the Ministry of Education. The Ministry of Trade and Industry is in charge of the Sub-Committee on Research and Technology (EU20) of the Finnish Committee for EU matters, which is a part of the Finnish national administration and provides a system for drafting and coordinating EU matters in Finland.

A Tekes representative (Finnish EU-R&D Liaison) in Brussels together with the joint representative of the Academy of Finland, the Finnish Universities and the Ministry of Education form the **EU R&D Finnish Liaison Office**. They collect background information, perform tasks assigned to them by their own organisations and participate in information providing activities. The Brussels office promotes the interaction between Finnish national technology programmes and the European Union R&D programmes. One aim is to develop a contact network to strengthen the communication between Finnish counterparts and EU.

In Finland there are three bodies, which are responsible for the specific programmes of the Sixth Framework Programme. These are the National Technology Agency (Tekes), the Academy of Finland and the Ministry of Trade and Industry. These organisations have nominated the national contact point persons for programme and key actions under their responsibility. The coordination of national contact point system is organised by the Finnish Secretariat for EU R&D.³⁷ Tasks of NCPs are to

³⁶ See Exhibit 1 for overview

- Assist committee members and attends committee meetings when necessary
- Participate in the work of the NCP network
- Give information and advice with the help of Secretariat
- Act as secretary to the support group
- Gather information on Finnish proposals and participation
- Disseminate information
- Promote networking of national and EU programmes
- Collect data on the Finnish participation in cooperation with the EU-R&D Secretariat
- Provide advice on the project proposals
- Maintain contact with the Secretariat of the research programme/activity in the Commission and with other Member States

³⁷ TEKES homepage.

Exhibit 2 Information structure for FP participation in Finland

Organisation	Role	Target group	Tools
Ministry of Trade & Industry	<ul style="list-style-type: none"> • Management and co-ordination of the national preparation of the EU R&D policy in cooperation with the Ministry of Education. • Ministries' Sub-Committee on Research & Technology (EU20) provides a system for drafting & coordinating EU matters in Finland. 	<ul style="list-style-type: none"> • National agencies 	
Finnish Secretariat for EU R&D (hosted by TEKES)	<ul style="list-style-type: none"> • supports potential participants, activities of Finnish committee members, and responsible organisations • co-ordinates the Finnish contact point system • collects data on the Finnish participation in EU research projects • maintains contact with EC & other key organisations • co-operates closely with the EU R&D Liaison Office in Brussels 	<ul style="list-style-type: none"> • Finnish companies • institutions of higher education • research centres 	<ul style="list-style-type: none"> • statistics • homepage • news • legal advice • information concerning prospects offered by EU R&D programmes
TEKES EU R&D Liaison Office (Brussels)	<ul style="list-style-type: none"> • promote the interaction between Finnish national technology programmes and the EU R&D programmes, • collect background information, • perform tasks assigned to members by their own organisations • participate in information providing activities • develop networks between Finland & other member states • actively participate in the Informal Group of Liaison Offices • Information transfer to and from Finland • Briefing people in Tekes, Academy of Finland and in the universities on a weekly basis • Following current issues of policy making in the field of R&D • Assistance in contacts with European institutions i.e. Commission, Parliament and Council 	<ul style="list-style-type: none"> • EU R&D liaison officers • research managers at universities and research institutes • key persons in national research and technology programmes • European R&D networks 	<ul style="list-style-type: none"> • Information • proposal assistance, • seminars

	<ul style="list-style-type: none"> • Assists in seminar arrangements in Brussels 		
<p>Programme Committee Members</p> <p>(National representatives in EU institutions)</p>	<ul style="list-style-type: none"> • Influence implementation of research programmes and EU policy. • More specifically, they assist the Ministry of Trade and Industry in the formulation of national positions, ensuring that the views of different players will be taken into consideration, • ensure that Finnish objectives will be taken into account in the work programme, • maintain contact with the management of the research programme/activity in the Commission and with the representatives of other Member States, • participate in the committee meetings and ensure, if possible, that Finland is adequately represented in different Commission working and expert groups , report meetings without delay 	<ul style="list-style-type: none"> • Most are representing a ministry, central agency. • Also take part in national level through the national contact points system – namely chairing the various thematic support groups 	<ul style="list-style-type: none"> • Thorough preparation of well-thought-out initiatives, • active and competent representation • timely information dissemination
<p>National Contact Points (NCP)</p>	<ul style="list-style-type: none"> • Assist committee members and attend committee meetings when necessary, • participate in the work of the NCP network, • give information and advice with the help of Secretariat, • gather information on Finnish proposals and participation, • promote networking of national and EU programmes, • collect data on the Finnish participation in cooperation with the EU-R&D Secretariat, • provide advice on the project proposals, • maintain contact with the Secretariat of the research programme/activity in the Commission and with other Member States 	<ul style="list-style-type: none"> • Potential participants, • committee members, 	<ul style="list-style-type: none"> • Information, data, advice, network access

The **Finnish EU-R&D Secretariat**, located at the National Technology Agency of Finland (Tekes), functions as the national coordinator for information and support activities related to the EU's R&D programmes. The Secretariat provides information and legal advice about the opportunities offered by EU R&D programmes, coordinates the Finnish contact point system and collects data on the Finnish participation in the EU research projects. In addition to national cooperation, the Secretariat is active in the European network of national contact points, maintains contacts with the Commission and other key organisations and cooperates closely with the EU R&D Liaison Office in Brussels. Tekes is also the focal point of several European networks and research activities. And is closely involved with the following EU activities: IRC, Eureka, COST, TAFTIE, NI, OPET & ESA.

The **Academy of Finland** works together with the Finnish EU-R&D Secretariat and although it isn't the official national contact point it is responsible for a number of the thematic programmes within the FPs. In this case there is a split of themes, with the Secretariat taking some and the Academy others, although they are jointly responsible for the programme coordination of research activities under "Strengthening the Foundations of ERA" programme. The academy serves as the Finnish contact for a number of international scientific organisations, and subsidises participation of Finnish researchers in international research through contributions to research expenses. This contribution covers research undertaken under projects from the EU, with Nordic organizations, European Science Foundation, and the UN.

A **National Contact Point** (NCPs) is appointed for each thematic priority area and horizontal activity, coming from the institute of the responsible partner (Tekes, Academy, or Ministry of Trade and Industry). The partner will appoint a contact person for the various thematic areas under their control, establish national Support Groups and put forward members to take part in the Programme Committees (PCs). This system seems to work well according to Ahola³⁸, and all NCPs meet every few months, together with Tekes and the Academy to exchange information, develop ideas to present in Brussels, etc. This communication is also extended and/or facilitated by an intranet for the NCPs – allowing them to share information and keep up to date on what is happening.

What is interesting, and has been a development from the 5FP to the 6FP, is the appointment of an **assistant NCP** (coming from one of the other responsible institutes). Their task is to support the work of the head NCP in matters falling within their own working sphere. Apart from their specific input, the reason for the introduction of this assistant NCP was to increase co-ordination between the two bodies, to facilitate information flows, and to provide a better service to stakeholders.

³⁸ Interview with Eela Ahola Finnish EU-R&D Secretariat www.tekes.fi

The missions of the two bodies are interesting in that Tekes is more focussed on businesses, while the Academy more on researchers and universities – this co-operation was thought to be a necessary, especially under 6FP due to the changing focus and larger (mixed) consortia. In principle the co-operation should enhance the opportunities for the two ‘worlds’ to co-operate within 6FP. This co-operation is being promoted under the various information days – where both organisations contribute and invite participants from their spheres. Important to stress here is that this co-operation has been built upon a solid base- Tekes and the Academy have always had close ties, and work together in many other platforms.

Next to this the NCPs establish the Finnish **Support Groups**. The Support Groups consists of a balanced representation of both business and research communities. Their task is to assist responsible entities in the formation of national views. Programme Committee members (see below) participate in the work of the Support Groups in the capacity of a chairman.

Programme committees are among the multitude of forums in which member countries’ voices can be heard about the practical implementation of EU research programmes. Every research programme has its own programme committee, with each member country contributing two expert members. The Programme Committee members:

- assist the Ministry of Trade and Industry in the formulation of national positions and to ensure that the views of different players will be taken into consideration
- ensure that Finnish objectives will be taken into account in the work programme
- participate in the work of the national support group in the capacity of chairman
- maintain contact with the management of the research programme/activity in the Commission and with the representatives of other Member States
- participate in the committee meetings and ensure, if possible, that Finland is adequately represented in different Commission working and expert groups
- report meetings without delay

Dissemination of information on FP

Both the Finnish Secretariat for EU R&D and the Academy of Finland give general information on the opportunities in EU research programmes, and advice on how to apply, a significant part of the information dissemination takes place in various seminars, and newly developed courses. Information dissemination in the way of printed material has been and continues to be an important tool employed.

The Secretariat extensively uses the website to come into contact with the target groups. Being hosted on the TEKES site the hit rate is rather high, and when they post invitations to information days, seminars etc there is a good response – which means that they do not proactively approach potential participants. They produce a

magazine which is sent to 4000 subscribers every 2 months, and an e-letter sent every 2 weeks. The subscribers include the Academy, Ministries, NCPs, Universities, Research bodies etc.

The Secretariat, which is a department within Tekes, is trying to develop ties with the Technology Programme officers within Tekes – in particular trying to parallel EU info sessions with national Technology sessions organised by their colleagues. This is seen to be difficult, and highlights the problems of co-ordination (even within organisations), and paralleling national and European technology areas. Next to this the secretariat is becoming more proactive in disseminating information and developing its tools for universities, recent developments have been specific university visits where they do courses for the FPs in general and courses for drafting proposals.

Tekes also provides funding for participation in 6FP. It is provided both for SMEs, and university & research institute projects with Finnish participation. This funding is divided into a) assembly of integrated projects – industry (50%) and up to 100% for research organisations. And b) preparation of research projects – max 15,000 euro for participants having a major role (co-ordinators) or 7,000 for other participants, in this case SMEs can apply for funding in the initial preparation phases, while other can only apply once the commission has evaluated the proposal.

The Academy also has funding possibilities for participants. They fund travel to meetings for the preparation of projects and proposals to other key organisations. Funding is available for both co-ordinators and other parties taking part for costs incurred in the preparation of integrated projects & networks of excellence. Funding can be granted to a maximum of 40,000 euro per project.

The NCPs (within Tekes and the Academy) have however a more proactive approach, which makes sense as they are working primarily in the thematic area under the Finnish national technology programmes. They know who is who (made easy by the relatively small size of the country / population) and are able personally to approach researchers, institutes, business etc to participate in seminars, info days or to alert them to possibilities for participation. The NCPs have also developed a database, which has all names of previous participants, and which is used as a base for sending information about the FPs in general and more specifically under the various themes.

What is perhaps worth a mention is the increasing importance of regions in Finland (especially since the new Parliament came into power in March 2003). Tekes has responded by paying more attention to businesses outside the Helsinki area, and is trying to alert them to CRAFT opportunities and help them with finding partners and drafting proposals.

In addition there is a network of Employment and Economic Development Centres across the country, each of which has a Tekes representative in-house. These centres deal with business advice (funded by the Industry Ministry, Structural Fund possibilities, agriculture, and most importantly dissemination of information to local businesses through their 'Info points'. Tekes has chosen a number of centres (those in university towns) in which to start a series of information sessions. They believe that this is the way to best approach regional businesses, as the contacts with the centres are already developed. In addition they hope to activate ties between the universities and companies, promoting co-operation for participation in the FP funding rounds.

The tools for dissemination are developing, both organically and in response to the challenges of developments within the FPs. Due to an increased participation of research institutes and universities – and of large consortia, there is commitment to develop a IPR helpdesk within the Secretariat in 2004. There has also been activity in the area of project management, also as a reaction to 6FP – with consortium agreement courses and financial issues courses already being given. The secretariat is however planning to buy project management courses to be offered to stakeholders, and is currently undergoing staff training in this area.

The CRAFT support group is active in developing its services as a thematic area. They are developing partner search databases for SMEs, their own web-site, and in developing their own contract courses (currently facilitated by Swedish Colleagues). The NCP group as a whole would like to extend their partner search services in the coming year.

The development of tools and the way in which participants influence the support have been influenced by a report on Finnish participation in the FPs³⁹. The situation with regard to Finland's official channels, such as TEKES national office as well as the one in Brussels, were reported to have improved and are considered to provide sufficient information about the FP. The report however did underline that it is important for participants to be involved in the preparation of the programmes and in the evaluation of proposals.⁴⁰ Some respondents emphasised a need for further assistance in filling in proposal forms, obtaining information on deadlines, in interpreting work plans and in co-ordinating information dissemination. General information was easily available but there was a need to improve more detailed information.⁴¹

³⁹ Luukkonen and Niskanen, 1998.

⁴⁰ Luukkonen and Niskanen, 1998.

⁴¹ Luukkonen and Niskanen, 1998.

Next to such a formal study the Secretariat provides feed back forms for all participants of information days, workshops, training etc. It is however not really viewed as a mechanism, and there is support to develop a more formalised method to receive input and feedback on all services in 2004. In addition the impact study of 5FP will, as did the study for 4FP, provide input for development.

Encourage collaboration/networking

Maintaining contacts with other Member States and the Commission is an important aspect of the Secretariat's work. In addition to this, the secretariat participates in shaping Finnish EU R&D and monitors Finnish success in programmes.

Tekes is constantly searching for both practical and pragmatic ways to increase the level of cooperation between the national R&D programmes in Europe and in turn, enhancing the objectives of the European Research Area. They are the focal point of several European networks and research activities (along side being the FP Liaison Office) and act as a guide along various paths of international cooperation where suitable Finnish counterparts may be found. Tekes is closely involved with the following European activities:

- EUREKA
- COST
- ESA
- NI
- IRC
- OPET
- TAFTIE

The Finnish Secretariat for EU R&D is the co-ordinator of the Finnish contact point system (NCPS). The Secretariat provides general information on all programmes and ensures that cooperation between national contact persons flows smoothly, achieved through NCP extranets and regular meetings (including Ministries / Programme Committee members / Research bodies etc).

Evaluation also provides important input in the development of this co-ordination task. A report on Finnish participation in the FPs⁴², showed that personal contacts were the most effective means of disseminating information on EU research programmes, most respondents hearing about their respective research programmes through partners. Informed social and professional networks were seen as being important in obtaining information about research programmes.

⁴² Terttu Luukkonen and Pirjo Niskanen, *Learning through Collaboration: Finnish Participation in Framework Programmes*, Helsinki: VTT Technology Studies Group, 1998.

According to Luukkonen's and Niskanen's report on Finnish participation in FPs, for university and research institute participants, the most usual way to get to know their partners was through previous research contacts outside the EU projects. For companies, on the other hand, previous research contacts outside the EU collaboration, EU collaboration, and other partners were all fairly important.⁴³

The Secretariat has in response been increasing efforts in the development of collaboration at the national level. It has begun to organise informal meetings for all EU offices within the universities and research institutes together with the NCPs. This has been a reaction once again to the changing target groups from 5FP to 6FP. These meetings will also be extended to include Ministerial representation.

The co-ordinators in the 6th funding round are fewer than in the previous, due primarily to the consortia approach. In the initial round under 6FP there are approximately 8/9 Finnish co-ordinators. The Secretariat has taken up a suggestion of one of the co-ordinators to develop a support groups for the co-ordinators, a platform where they can exchange good practices and experience.

This co-operation / networking isn't limited to the national borders. Finland participates in the Nordic-Baltic meetings which have been set up by the Estonians as a yearly event to exchange ideas and get to know each others 'neighbours' so to speak. This platform has been extended to include a website where partners can inform each other when there are EU information days in their country, so that all partners can benefit (by attending and not having to travel to Brussels or having to duplicate information (costs) by organising their own)

Influencing implementation

As we saw earlier the **EU R&D Finnish Liaison Office** in Brussels promotes the interaction between Finnish national technology programmes and the European Union R&D programmes. One aim is to develop a contact network to strengthen the communication between Finnish counterparts and the EU. The communication between the national representatives of the Finnish Liaison Office and the Academy of Finland and the Brussels office is seen to be particularly good⁴⁴, with the Brussels colleagues regularly visiting Finland for general meetings and for promotion of opportunities for Finland in the field. What was stressed was the good personal relations between the members of the organisations – with telephone contact on a weekly basis.

⁴³ Luukkonen and Niskanen, 1998.

Finnish delegates to the programme committees in the 4FP were surveyed about their views on the opportunities to influence EU policies as well as implementation of these policies. The Finnish delegates were also asked about the objectives, which they regarded as central to their activities. Most respondents thought that they had appropriate influence on the definition of FP priorities.⁴⁵

Delegates pointed out that it would be helpful with more support in preparing the matters and formulating Finnish standpoints, some of their colleagues had well-prepared notes from their domestic support services. Delegates might be important in prompting national organisations to participate and by disseminating information in an active and timely way.

Other ways of increasing Finnish influence indicated

- Appointing more Finns to the commission and expert tasks
- Increasing the influence of Programme Committees
- Efficient networking

Germany

Germany has established a fairly decentralized information and support system for FP participants. Another characteristic of the German approach lies in its close organisational linkages between European R&D-funding and its national funding structure. The following chapter will outline the basic features of the German information and support structures and elaborate strengths and weaknesses.

Network of National Contact Points (NCP)

Like every other participating country Germany has set up a network of national contact points. The network of around 70 NCP's is coordinated by the EU-office⁴⁶, which was established at the German Aerospace Centre (DLR), and is financed by the Ministry of Education and Research (BMBF). The underlying strategy in setting up the network of NCP's was to ensure good access to specific research communities. Thus the majority of NCP's are situated at national programme management organisations, so called *Projekträger*. Among this group of *Projekträger*-organisations hosting NCP's one can find:

- large **research institutes** like the Research Centre Jülich (4.200 staff) or the German Aerospace Centre (DLR),

⁴⁴ Interview Eela Ahola www.tekes.fi

⁴⁵ Luukkonen and Niskanen, 1998.

⁴⁶ <http://www.eubuero.de/>

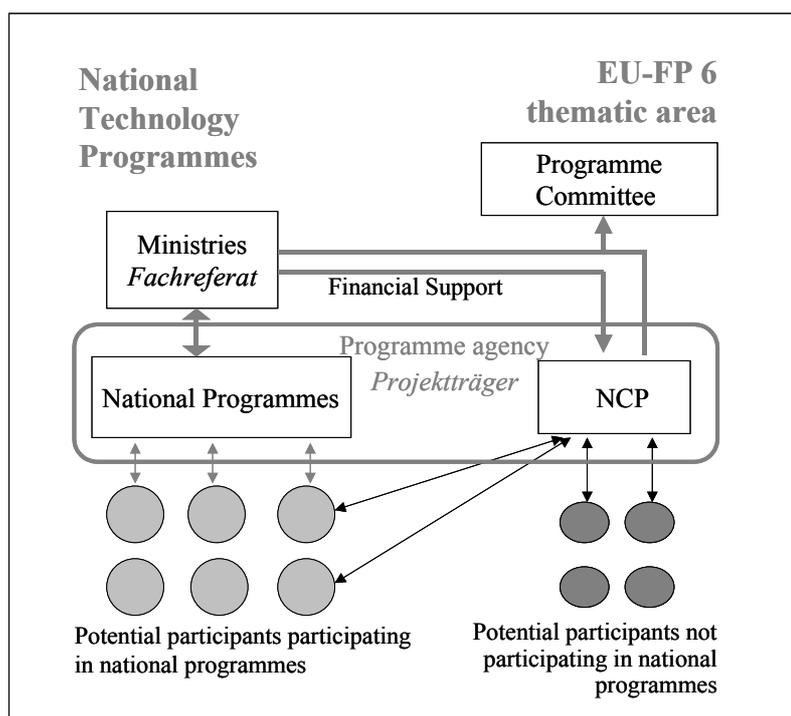
- large **technological service** institutes like TÜV Rheinland (measurement and testing, 7.500 staff worldwide) or the Federal institute for Materials Research and Testing (BAM, 1.670 staff),
- **specialised programme management organisations** like VDE/VDI-IT.

The organisational link between national R&D funding and EU-FP's is seen as an important factor that should help to mobilise potential participants in all relevant scientific communities. The proximity to national research communities however, leads to a rather decentralised network with overlapping responsibilities. In practice several thematic areas are covered by more than one NCP's. For example, in the thematic area '*sustainable development, global change and ecosystems*' there are six different organisations hosting a national contact point. They form a sub-network with one NCP taking the coordinating role.

Steering mechanisms and service

The NCP network is coordinated by the EU-office which itself hosts several NCP's - mostly in horizontal thematic areas like *Mobility, Infrastructure or Knowledge Society*. The financial support of the various NCP's comes from ministerial departments responsible for a certain thematic area (Fachreferate). In this context, the decentralised NCP structure goes parallel with a decentralised financing structure. These financial arrangements should further strengthen the link between national technology programmes and EU-FP. NCP's financed by ministerial departments and hosted by national programme agencies should not just support (interested) participants but also provide feedback and input from national research activities to the formulation of German positions in the respective programme committees at the EU level (see Exhibit 3).

Exhibit 3: German NCP Model



As for resources, current staff numbers for the whole NCP structure amounts to 40 full time equivalents. According to recent experience the EU-office considers this resource base to be on the very low end of the necessary capacity required.

Against this background the portfolio of offered services has some limitations. Important here is that NCP's are trying to work closely with other organizations that provide support services outside the NCP structure. **Services** provided by NCP vary according to thematic specifications and available resources of the respective NCP. However the bottom line of offered services is set out in a common functional specification that lists a range a activities and functions for German NCP's.

In general terms NCP's see themselves as information interface between EU-programme management and potential participants. This includes the provision of **customized information** on recent programme activities and operational details. Most used information channels for rather broad audiences are their homepage - containing basic programme information, on the other hand most NCP's run regular mailings with recent information on programme activities.

Another important information channel are presentations and training activities. The target groups for training are primarily multipliers and intermediaries. This points to the next layer of support structure: the **EU-contact persons** (EU-Referenten) in the research community itself (see next chapter).

Beside the information activities NCP's provide individual coaching services for participants. Up to now coaching covers principally the preparation phase. Some NCP's also provide support for setting up new consortia (partner search). Even though demand for project management coaching is expected to increase in FP 6 it has not been addressed by the support structure so far.

Overall German NCP's have positioned themselves as initial contact points with a clear thematic anchor and good access to the specific research community falling under the theme. The specific value added German NCPs offer lays in specific domain knowledge with a comprehensive overview of actors and activities in each specific field, and their integration into information flows on EU-level - which provides them with first hand information. NCP's are actively involved in the formulation and representation of German positions in the respective programme committees. In sum, the German NCP structure seems well positioned to distribute information to target groups and to close relevant feedback loops. As far as coaching of individual participants is concerned the available capacity seems to be fairly limited.

Interest groups and other helping hands

The NCP's can be seen as the backbone of the German support structure. However, participants are likely to find a whole range of organisations or contact persons within, or affiliated with, their own research organisation. Various interest groups have set up specific information services for interested participants. To mention here are contact offices in Brussels set-up and managed by the major research organisations like Fraunhofer, Helmholtzgemeinschaft (HGF) or Max-Planck-Gesellschaft (MPG). Furthermore the 'Association for the Promotion of European and International Co-operation in Science' has established a European liaison office of the German research organisations (KOWI). KOWI receives financial support from DFG (Deutsche Forschungsgesellschaft). Another very important support on the local level comes from EU-contact persons (EU-Referenten), who can be found in almost every university and research organisation. The last service and information points to mention are the IRC (Innovation Relay Centres) and EIC (Euro Info Centres), European wide networks initiated and (partly) financed by the EU-commission. With respect to EU-FP 6 these Centres do not provide specific information but function more like signposts pointing to more specialised organisations. Nevertheless they are perceived as important local entry gates to the whole support structure.

In the following we illustrate the most important support organisations in more detail.

KOWI (Liaison office of the German research organisations)

KOWI was established in 1991 in order to provide German researchers with a central support unit focussing on European Community research promotion, with the mission

to facilitate access to European funding schemes. With offices in Brussels and Bonn KOWI keeps close contact to both EU institutions and national level.

Against this background KOWI integrates two functions: Lobbying activities for the German research community and provider of information and direct services to participants in EU-FP. As for the service and information side KOWI offers four main products

- ***AIDonline*** is an e-mail service that provides customized information on FP-activities for researchers and administrators in public research organizations
- ***Homebase Brussels***. KOWI offers workshop facilities and guest offices in its premises in Brussels. German participants can use this for project meetings with partners or in the course of temporary visits
- ***Training***. Together with EU-programme coordinators KOWI runs a training programme for EU-contact persons
- ***Partner search***. KOWI is a member of the IGLO network⁴⁷, which offers a forum for publishing and disseminating details of proposed 6FP projects. Thus the service should help users to find partners with specific skills and competences

With a staff of 12 KOWI cooperates closely with the German NCP structure.

EU-contact persons (EU-Referenten)

Most research organizations and universities employ specialized EU-contact persons. Currently about 200 EU-contact persons are active. This group has a central interface function. From the perspective of NCP's and KOWI EU-contact persons are the very customers of their information service. From the perspective of participating researchers they are most likely the first contact point. EU-contact persons are considered to be generalists covering a relatively wide range of thematic areas. Their role within the support structure can be described as advanced customers of more specialised information and service organisations. Accordingly they are the central target group for information products and activities aimed at mobilising additional German participation in 6FP.

Most EU-contact persons are organized in regional networks, which are used as platforms for information sharing and diffusion of 'successful practice'. On the national level an information and coordination platform for EU-contact persons from universities was established. It's called BAK (Bundesarbeitskreis der EU-Referenten).

⁴⁷ The IGLO project search covers research actors in the following countries:
IGLO Offices: Finland, France, Germany, Hungary, Israel, Italy, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Third Country RTD Group: Argentina, Australia, Brazil, Canada, China, Japan, Russia, South Africa and the USA.

In practice one EU-contact person from each state (Bundesland) participates in the network meetings. The aim is to share information and coordinate work programmes. BAK sees itself as a dedicated interest group for German universities with respect to EU research funding.

Points for consideration

Compared to support structures of other participation countries the German one is characterized by

- A high degree of decentralization,
- Strong linkages to the national research funding system and
- Strong reliance on the 'self-organisation' of the major players in the research community
- Strong presence in Brussels.

The question on efficiency and effectiveness of the German system is too early to answer. However at this level of analysis the following factors seem critical for future performance:

- The current support structure is strongly focused on research organizations, universities and big companies. Support for small and medium sized firms seems underdeveloped. Besides the fairly generic and first level information provided by IRC and EIC very few dedicated organizations seem available for SME's.
- Even though the whole support system is lean in terms of resources the system looks complex, especially for first time participants. Some thematic areas are covered by several different institutions. Accordingly coordination between different information and service suppliers seems a challenging task.

Israel

In 1995 Israel signed an agreement with the European Union's Commission on Science, Research and Development to join the Fourth Framework Program. Israel is the first country outside of Europe to participate in the program. The agreement enables Israeli research entities in academia and industry to apply to become involved in projects that are funded through the program. In addition, due to the nature of the agreement that dictates reciprocity, European Union research entities (academic and industrial) may participate in the programs of the Office of the Chief Scientist of the Ministry of Industry & Trade in Israel.

Information structure⁴⁸

The Israel - Europe R&D Directorate for FP (ISERD) is an inter-ministerial directorate, founded by the Ministry of Industry and Trade, the Ministry of Science, Culture and Sport, the Planning and Budgeting Committee of the Council for Higher Education, the Ministry of Finance and the Ministry of Foreign Affairs in order to promote the Israeli participation in the European Union framework programme for R&D. ISERD is chaired by the Chief Scientist of the Ministry of Industry and Trade, who heads the ISERD steering committee made up from the above mentioned ministries and bodies.

In 1994 the ministries of Trade and Industry, and of Science – together with the Council for Higher Education – wanted to gain entry to opportunities offered through the European Union, to this end they created a body in support of this. This independent body was placed within the parameters of MATIMOP (see below for description) for the reason that they wanted to get it up and running as fast as they could, the establishment of a new institute was seen to restrict this process, and it was decided to place it within an existing organisation. The budget for participation at the time, was filled by the Ministry of Trade and Industry (45%), the Council for Higher Education (45%), and the Ministry of Science (10%).

At this time there was no connection to the FPs – which came in the 1995 agreement, and therefore no inclusion of dissemination activities and National Contact Point representation. Developments towards participation saw the interest from other bodies (Ministries of Finance and of Foreign Affairs), and at this point the members of the steering committee were appointed. It is this steering committee that ISERD currently services.

The current organisation of ISERD was established in 1998, when core-groups were established (in line with benchmark studies undertaken – in particular using the Dutch approach). At this point the steering committee was formalised, as were the tasks of MATIMOP and ISERD. It was decided that ISERD would become the liaison for the Framework Programme, while MATIMOP would focus on more administrative tasks associated with the EU. At this time the NCP system was also put into place within ISERD.

ISERD main goal is promoting joint Israeli-EU R&D ventures within the Framework Programme, and is the national liaison centre for the EU R&D Programme. ISERD provides help identifying various partners and business opportunities and aids in proposal preparation, it also offers help throughout the formal stages of submitting the proposal to the EC and the phases of implementation. ISERD representatives

⁴⁸ See exhibit 1 for overview of bodies, goals and services offered

participate in the Framework Programme Committees, for each theme there is an ISERD representative together with another member who is either an expert in the theme, or represents a Ministry, university etc.

The **Delegation of the European Commission to Israel's** main objective is to provide information about the relationship between EU and Israel. The Delegation's website can be used as a tool to access basic information on EU-Israel relations and as a gateway to a better understanding of the EU in general. The Delegation is responsible for managing official relations between Israel and the European Commission. In the scientific field, the Delegation helps implement the science and technology agreements between Israel and the EU and promotes cooperation between the Israeli technological and scientific organizations and their European counterparts.

MATIMOP - the Israeli Industry Centre for R&D is a public non-profit organization, founded by the three major associations of manufacturers in Israel. Functioning as the interface between Israeli companies and their international counterparts, to promote joint developments of advanced technologies, MATIMOP encourages participation in the many international programs, and bi-lateral and multi-lateral cooperation in industrial R&D signed and funded by the Office of the Chief Scientist (OCS) of the Ministry of Industry and Trade.

MATIMOP is also the major channel for information and assistance regarding co-operation between companies and organizations from Israel and the European Community. MATIMOP tasks in this area include:

- National contact point for most of the bi-lateral industrial R&D programs of the OCS, and providing services for the OCS international activities.
- Official Israeli liaison office for the EUREKA program, which helps companies and research institutes pool their resources in the development of leading edge technology.
- Operating the Israeli IRC (Innovation Relay Centre) - a part of the European network, whose main objective is to enhance transfer of technologies, particularly for SMEs. This is done in co-ordination with the Manufacturers Association of Israel and The Forum of the Universities Research Authorities

MATIMOP provides support services to Israeli organizations wishing to participate in other European funding and networks. This includes seminars, identification of opportunities, assistance with partner search as well as representation of Israel at overseas events. Consultation services are provided mainly to companies but attendance at events and other activities are generally open to all organizations. MATIMOP also assists overseas organizations in identifying Israeli partners and in some technical areas provides a proactive partner search service.

Exhibit 4 Information / Influence structure for FP participation in Israel

Organisation	Role	Target group	Tools
Israel - Europe R&D Directorate for FP (ISERD)	<ul style="list-style-type: none"> Promote joint Israeli-EU R&D ventures within the FP. Act as the NCP for Israel Disseminate information & raise awareness of FP opportunities Appoint the Israeli Delegates for the Programme Committees & NCPs to the various programs Collate data about Israeli participation in the FPs Promote and assist Israelis in participation in the FPs 	<ul style="list-style-type: none"> Industry Researchers Higher education 	<ul style="list-style-type: none"> General assistance Training Consulting Information dissemination (national and links to Cordis) Partner search Help in proposal preparation
The Delegation's of the European Commission to Israel	<ul style="list-style-type: none"> Provide information about the relationship between EU and Israel Manage official relations between Israel and the EC Help implement the S&T agreements between Israel & the EU Promote cooperation between the Israeli technological and scientific organizations and their European counterparts. 	<ul style="list-style-type: none"> Society in general National bodies such as S&T Agencies / Universities / Centres of Excellence Ministries 	<ul style="list-style-type: none"> Website to be used as a tool to access basic information on EU-Israel relations and as a gateway to a better understanding of the EU in general. Information dissemination through the Delegation library, Internet site, & its "Europe in Israel" newsletter
MATIMOP – the Israeli Industry Centre for R&D	<ul style="list-style-type: none"> Interface between Israeli companies & international counterparts Encourages participation in international programs for bi-lateral & multilateral cooperation in industrial R&D, signed & funded by the Office of the Chief Scientist of the Ministry of Industry & Trade. Major channel for information and assistance regarding co-operation between companies and organizations from Israel and the European Community Liaison office for Eureka and the IRC in Israel 	<ul style="list-style-type: none"> Industry / Companies Foreign partners 	<ul style="list-style-type: none"> Partner search database Information dissemination (including website / newsletters) Brokerage events in Israel Representation of Israel at overseas events

Dissemination of information on FP

ISERD is the only active body involved with information dissemination for the FPs, while MATIMOP is involved with the administrative tasks of other EU tasks and with other bi- and multi-lateral co-operation. To this end there is NO co-operation between the two (even though ISERD is legally part of MATIMOP and resides in the same building). The above description and exhibit outline the tools, which are used for dissemination purposes. This will now be explained further, keeping within the parameters of FP and focusing only on targets and tools employed by ISERD.

According to Shaton⁴⁹ the small geographical and population size of Israel means that there is a good knowledge of the players in the system. To gain their attention, alongside personal contact, ISERD publishes information about info days in various publications. Next to this there are European offices at all the 8 universities, whose mandate includes promoting co-operation within the FPs. ISERD works closely with them (meeting once every 2 months) to ensure that these set of potential participants has access to knowledge and assistance. According to Director-General Shaton, industry contacts were the most difficult to penetrate, and as a response ISERD focuses primarily on this group.

Shaton stated that their perceived main role was to reduce the psychological barriers to participation, reducing the anxiety that many businesses have in co-operating in European projects – in most cases the step to EU level being their biggest perceived problem – thinking they don't know their way around in this new 'world'. In this sense the initial tool used by ISERD are twice monthly info session about the general rules, content and philosophy of the FP. Their website is also seen as an info tool, more focused on providing the right links into Cordis and European level information.

After this initial session businesses are encouraged to contact one of the team specialised in their area for a more one-to-one personalised approach to advice and assistance. In this phase the theme director helps the party to establish partnerships - not per se a partner search, as ISERD see themselves as facilitators, and do not want to take responsibility for these types of decisions. In this stage there is also assistance in drafting and editing proposals.

In a later stage there is also assistance to consortia / projects themselves. This comes in the form of advice on IPR (in fact ISERD held a seminar on this subject with experts invited from Brussels), management of projects and consortia, and negotiation.

⁴⁹ Interview with Marcel Shaton –Director General of ISERD www.iserd.il

What was interesting about this very personalised approach is that in fact was a reaction to evaluations (2) undertaken by ISERD. These evaluations were primarily undertaken as a way to measure the penetration of the idea of partaking in FP programmes by businesses, with suggestions on how to 'get them on board'. Next to this goal the ISERD service was also under the spotlight and judged on its quality by the respondents.

What came out of the evaluation was the need for a more personalised approach, and it was decided to spend less money on advertising in the press and more on the one-to-one approach. Next to this there was the decision to take a more active approach in developing a presence in Israel – to this end ISERD has been partaking in a number of seminars – academic, research, start-ups, IPR etc. i.e. 'going where the participants are'.

Encourage collaboration/networking

Although not specifically FP based the government of Israel has signed a number of bilateral R&D cooperation agreements with foreign governments and the European Union in order to encourage contacts between Israel and overseas companies to facilitate joint ventures in R&D, manufacturing and marketing. MATIMOP implements these agreements on behalf of the Office of the Chief Scientist (OCS) of the Ministry of Industry and Trade. As such, MATIMOP serves as a contact point for various agreements, including the MOU with Sweden, Germany, France and the European programs - Eureka and IRC. In this sense MATIMOP has a good overview of possible partners for Framework Programme collaboration. More importantly is the promotion of international agreements / co-operation for Israeli partners as a way in which to gain valuable experience, eventually increasing their knowledge / interest in pursuing further possibilities – including FP participation. Specific programmes co-ordinated by MATIMOP include

- The Israeli liaison office of eureka
- Italy- Israel industrial cooperation programs
- The OCS and cooperative R&D projects with Germany
- MOU for co-operation between Israeli companies with Sweden, India and France
- BIRD: US bi-national industrial research and development foundation
- USISTC: USA- Israel science and technology commission
- BRITECH: UK- Israel industrial R&D foundation
- CIIRDF: Canada-Israel industrial R&D foundation
- Program for Chinese- Israeli technological cooperation
- Hong Kong - Israel technological cooperation
- KORIL-RDF: Korea- Israel industrial R&D
- SI-IRD: Singapore- Israel industrial R&D fund

Influencing implementation

Israel is the only non-European country that has been fully associated to the EU Framework Programme for Research and Development. By virtue of S&T co-operation agreements, Israel brings a financial contribution to the FP's budget (Euro 150 million in 5FP and around Euro 200 million in 6FP). In return Israel benefits from the same participation rights as any EU Member State and Israeli organisations, which take part in joint EU-Israel selected projects, can receive a financial contribution from the Commission consisting of the reimbursement of the eligible costs incurred. Details of the results of co-operation within 5FP show that Israel has more than 600 joint projects. The first 6FP calls for proposals have been issued in December 2002. First results show that Israel continues to play an active role with some 140 proposals selected involving Israeli partners.

In the economic field the Delegation of the EC to Israel plays a important role and is in regular contact with government ministries, dealing with issues that are of importance to the Commission. It also deals with a range of issues connected with the EU-Israel agreements (including that which covers the Framework participation) and provides professional information to Israeli organizations that wish to carry out economic activities in Europe. Additionally, the Delegation provides information on economic events that take place in Europe and are relevant to Israel, such as for example, the single currency - the euro - and reports to the Commission in Brussels about relevant economic events in Israel.

One of the objectives of the Scientific Section of the Delegation is the encouragement and support of collaboration. They will continue contributing to the reinforcement of Israel-Europe scientific co-operation, through continued participation of Israel in the European Community Framework Programmes for RTD, but also by identifying and implementing suitable co-operation schemes likely to support shared interests between Israeli and European organisations.

The role of ISERD is also important in communicating ideas / issues that stem from dissemination and implementation of FPs – in particular feeding back ideas coming from the field / stakeholders. In this regard ISERD has moderate contact with both the Delegation and with the Israeli scientific attaches, although at this level the influence is negligible. The fact that ISERD has representation in the Programme Committees from Israel has more influence, but the way in which the message is really brought to Brussels is through ISERD visits to the scientific councillors in Brussels.

The Netherlands

Information structure

The EG(EC)-Liaison representative in Brussels together with the representatives from Dutch Science Agency (NWO), Royal Academy of Arts and Sciences (KNAW), the Association of Universities (VSNU) and the Netherlands Organisation for Applied Research (TNO) form the **Netherlands House for Science and Technology (NEST)**⁵⁰. NEST promotes participation by Dutch scientists, research institutes and companies in the Research & Development (R&D) programmes of the European Commission, pursuing fundamental, strategic and applied research. It introduces into the Brussels circuit the current views prevailing in the Dutch scientific and private R&D world regarding the content of European R&D and higher education policy. In addition it supports interaction in Brussels between representatives of the NEST member organisations, both in policy development and with regard to the relationship of the NEST member organisations with Brussels.

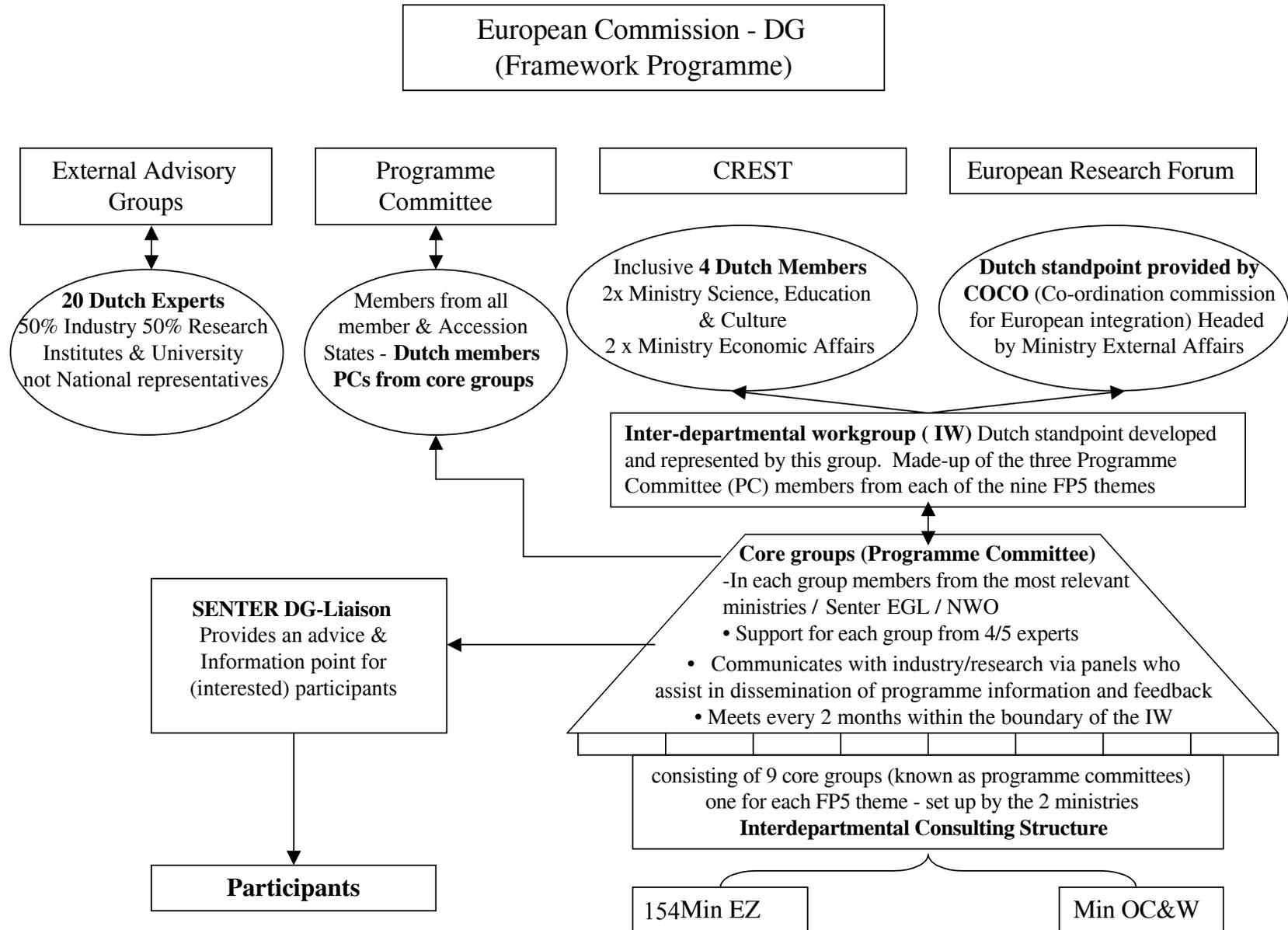
NEST is largely concerned with political/administrative issues and with strategic information provision and lobbying. This means that in Brussels NEST seeks contact mainly with relevant policymakers, while in the Netherlands it targets people connected with policy in the NEST member organisations. Individual scientists in search of information and specific advice on submitting proposals for participation in European R&D programmes can approach the NEST member organisations in the Netherlands, and in particular the programme advisors of Senter/EGL or staff of NWO who are concerned with EC programmes.

The **Ministry of Economic Affairs (EZ)** and the **Ministry of Science, Education and Culture (OC&W)** are responsible for the co-ordination of EU FP research activities within the Netherlands. Together they co-ordinate and manage an **Inter-departmental Consulting Structure** that is made up of nine core groups – in the case of 5FP – one for each theme. *Exhibit 1*⁵¹ shows the flows of information between the various bodies engaged in Framework Programme input and information dissemination.

⁵⁰ www.nestbrussel.be

⁵¹ Source information came from: Ministry of Economic Affairs, The Dutch 5 FP Structure: How and what in the European Commissions 5th Framework Programme

Exhibit 5 Overview of Dutch co-ordination of EU Framework Programme (Information dissemination / support) Exclusive NEST



Each core group within the consulting structure is known as a **Programme committee**, which, alongside their importance in Dutch information collection and dissemination, are a forum in which member countries' can voice their opinions etc at the European level about the practical implementation of EU research programmes. Every framework programme research theme has its own programme committee in the Dutch case. At the European level each member country contributes two expert members to the Programme Committee.

In the Netherlands the various Programme Committees are made up of members from the most relevant ministries / NWO and Senter/EG-Liaison. Each theme group is supported by 4/5 experts, and meets every two months within the boundary of an Interdepartmental workgroup. Primary tasks of PCs internal (national) role are:

- Assisting the Ministries in the formulation of national positions and to ensure that the views of different players are taken into consideration
- Communicating with industry and research via panels – which assists in dissemination of programme information and provides feedback from stakeholders into the process.

This **Interdepartmental Workgroup Framework Programme**, (amalgamation of the 9 programme committees) synthesises the Dutch standpoint, and provides input into the Co-ordination Commission for European integration COCO (headed by the Ministry of External Affairs), and for the Dutch delegates of the Scientific and Technical Research Committee (CREST).

The **EG-Liaison (European Commission-Liaison)** office, located within Senter (execution agency of The Ministry of Economic Affairs EZ), functions as the national coordinator for information and support activities related to the EU's R&D programmes. EG-Liaison provides information and legal advice about the opportunities offered by EU R&D programmes, coordinates the Dutch National Contact Point and the Dutch Innovation Relay Centre. In addition to national cooperation, the Secretariat maintains contacts with the Commission and other key organisations and cooperates closely with the EU R&D Liaison Office (NEST) in Brussels.

The European **National Contact Points** (NCPs) are appointed for each thematic priority area and horizontal activity. These run parallel to the work of the Framework Programme – and in this case EG Liaison have a dedicated contact point for each theme. The **Innovation Relay Centre** (IRC) is also organised by themes, which also fit in with the international work of EG-Liaison. In short the bundling of these services provides for a well serviced target group, with as little as possible overlap in provision of services.

The following ***Exhibit 2*** summarises the main organisations involved in dissemination and collection of information for the Framework Programme, their role, target group and tools used.

Exhibit 6 Information structure for FP participation in the Netherlands

Organisation	Role	Target group	Tools
<p>NEST European Liaison Office in Brussels – including the following organisations:</p> <ul style="list-style-type: none"> • NWO • KNAW • VSNU • EG-Liaison • TNO 	<ul style="list-style-type: none"> • Promote participation by Dutch scientists, research institutes & companies in R&D programmes of the EC, pursuing fundamental, strategic & applied research. • Introduce into the Brussels circuit the current views prevailing in the Dutch scientific & private R&D world regarding the content of European R&D & higher education policy. • Support interaction in Brussels between representatives of the NEST member organisations, both in policy development & with regard to the relationship of the NEST member organisations with Brussels. 	<ul style="list-style-type: none"> • EU R&D liaison officers • Research managers at universities and research institutes • Key persons in national research & technology programmes • European R&D networks 	<ul style="list-style-type: none"> • Representing NL scientific & technological community in "Brussels" • Dissemination in NL of reliable & relevant formal and informal information on EU R&D-activities • monthly newsletter • Strategic advising on (participation in) EU R&D-programmes • Dissemination in NL of strategic information on relevant (political) developments regarding science & science policy in "Brussels" • Research partner search • Providing meeting, working & training facilities in the NEST Office in Brussels • Establishing & maintaining functional contacts both with EU officials & with officials in NL (e.g. NWO, ministries, industry and research institutes) • Where relevant, representing formally NL in EU committees & or EU working groups • Following & advising on Developments within 6FP, in particular new instruments, Networks of Excellence & Integrated projects well as the implementation of the ERA-NET scheme.
<p>Ministries of Economic Affairs (EZ) / Science, Education & Culture (OC&W)</p>	<ul style="list-style-type: none"> • Management and co-ordination of the national preparation of the EU R&D policy 	<ul style="list-style-type: none"> • National bodies - particularly Ministries & associated agencies 	<p>Co-ordination Strategy – achieved through the Interdepartmental Workgroups for FPs</p>

Dissemination of information on FP52

Since 1983 EG-Liaison has been supporting interested companies and institutions in obtaining European FP funding. It was established through a co-operation between the Ministry of Economic Affairs and Ministry of Science as the central Dutch information point in parallel to the first framework programme. Funding for the agency comes primarily from EZ (80%), the remaining 20 coming from various ministries, including: Science, Agriculture, Health, and Environment. They present a very abstract annual plan to the Ministries with targets such as the number of information requests to be handled, and number of advisory meetings and workshops to be undertaken. There are monthly meetings with EZ, which cover progress and provide a platform in which policy and future development can be discussed. In principle however EG-Liaison works at arms length from the Ministry, located within Senter.

Their aim is to promote (Dutch) participation in European R&D programmes and to stimulate European cooperation in the field of innovation. EG-Liaison's project officers provide information and independent advice, free of charge. Frequently they are involved in special training programmes dedicated to project proposes. Moreover, they support parties, both Dutch and European, in finding the right project partners. The following lists the various services provided by the EG-Liaison office, followed by a more in-depth discussion of the information structure, target groups, tools, and developments.⁵³

EG-Liaison - information

EG-Liaison offers a wide range of information issued by the European Commission on R&D funding.

Publications include:

- The Guide for European R&D presents an overview of relevant subsidy programmes in Europe.
- Dutch magazine 'R&D in Europe' (free of charge), dealing with actual calls for proposals and tenders and presenting requests for collaboration.
- 'CRAFT-information magazine' dedicated to SMEs.

In addition, EG-Liaison provides information dedicated to various target groups and programmes, e.g. brochures, CD-ROMS, etc. EG-Liaison also organises events like workshops, congresses and information days.

⁵² Information available on the EG-Liaison website <http://www.senter.nl/asp/page.asp?alias=egl>

⁵³ In-depth information based on interview with Eelco Denekamp – General Director EG-Liaison, The Hague, The Netherlands +31 70 373 52 50

EG-Liaison - advice

EG-Liaison supports its clients in formulating project proposals

- Highlighting the degree of innovation
- Determining where it fits in the various European subsidy programmes
- Helping to set up a project proposal as successfully as possible
- Providing information on juridical and financial implications involved
- Choosing the right partners for the project

EG-Liaison - training programmes

EG-Liaison aims to transfer its knowledge and experiences to interested parties willing to participate in a European project. For that purpose dedicated training programmes are organised frequently, not only in the Netherlands but especially in States in the pre-Accession phase tot the EU. Specific subjects of these programmes are:

- How to write a successful proposal
- Juridical and financial aspects of a European project
- Project management
- Participation of Small and Medium-sized Enterprises in European project

EG-Liaison - finding European partners

EG-Liaison supports organisations in finding the necessary partners for their RTD-project. This service is available for both Dutch and European organisations.

EG-Liaison's officers are spread out over the various FP themes. Each theme has a contact officer that is directly contactable for interested parties. This information is clearly displayed on their web-site (including telephone numbers and email addresses) and has been successful in the efficient connection between information services and 'clients'.

EG-Liaison – IRC Netherlands

As part of its remit EG-Liaison also has the function of Innovation Relay Centre (IRC) for the Netherlands. In this respect it functions as the information point for business searching for 'technology' partners. Having at its disposal the European database of technology offers and requests, and through organising thematic congresses, the IRC has close contact with businesses, and the opportunity to relay framework programme opportunities through to them, in parallel to their partner search service.

EG-Liaison – Web-site information

Highlights the Framework Programme calls – first selecting a theme the user then receives a list of open and forthcoming calls, in connection to this there is also a list of EG-Liaison contact persons for the specific themes with agency.

The above gives a static overview of the types of tools employed to inform Dutch industry and researchers of possibilities in European Funding under the FPs. But who are in-fact their **target groups**? Obviously with 80% of the budget covered by the Ministry of Economic Affairs there has been a slight bias towards industry, however with the introduction of 6FP and the growing importance of research institutes and universities – there have been developments to increase participation by these groups. This has been supported by an increased co-operation (informal) with NWO (Science Agency) to promote an increase in the number of proposals coming from research. This co-operation has been part of a formal agreement between Senter and NWO.

Senter, together with NWO undertook a mapping exercise to link Dutch research with 6FP. In addition they produced a list of possible Dutch participants at the beginning of 6FP, whom in turn were invited to attend workshops, undertaken as the various calls are posted. Next to this proactive approach, they also try to ‘push’ for participation by various parties whom they consider as having a good chance. Another point to mention here is that EG-Liaison has no grants available for participants, while NWO does have some funding – in this respect NWO does employ the services of EG-Liaison to assist in the selection of proposals for funding.

This does not mean that the industrial sector is forgotten. The contacts that were made in the previous rounds are maintained...However, as a result of the type of / or focus of funding in this round there has been a decrease in interest by industry – according to Denekamp this is in part due to the more ‘fundamental’ character of funding in this round.

The various **tools** used by EG-Liaison of course have different weighting in their use. On average about 50% of the budget goes on advice, 15% on partner searching, 10% on training (participants are asked to contribute to these costs) and 25% on information. The distribution however has been changing, in the beginning there was a lot of focus on information, but according to Denekamp the quality of Cordis (Commission) information is improving - it is becoming more extensive and easier to use – so to avoid duplication and waste of their own budget EG-Liaison is linking more of its clients through to the Cordis web-site for this type of assistance.

Advice, in particular preparation of proposals, is seen as the most important tool offered. With the increasing interest in the ERA, the Ministry is not only interested in the number of Dutch participants, but in the success of Dutch consortia. In this sense the advice has developed to include negotiation assistance, and general assistance in other aspects that could help participants strengthen their research in the various themes. The nature of 6FP has also seen an increase of larger participant groups, which has also become a key point in assistance offered.

Workshops are one of the most important methods for giving advice. The 6FP study, undertaken by EG-Liaison, NWO, and Dutch Universities, listed the potential parties from industry, university and different sectors – including various participants from the previous round. Within the different thematic areas experts were also asked to define possible participants. When the call for proposals was posted the most suitable parties were invited to attend meetings in which the nature of the calls and how to set up proposals were discussed (often a representative from Brussels was invited). There were workshops for each of the themes. In addition EG-Liaison organised workshops at TNO and various universities on how to write proposals for FP participation. All parties have the possibility to send their proposals to EG-Liaison for comment and further development.

In regards to testing their **effectiveness** as an organisation there have been no external studies undertaken. However they expect that this may be required in the near future. They do however keep account of all Dutch participation and regularly (every 3 months) send evaluation forms to 10% of organisations who have received advice from them, in addition all workshops participants are asked to complete evaluation forms at the end of the workshops. According to Denekamp there has been a good reaction from users, he also points to the fact that Dutch participation is relatively high – which he hopes reflects the high quality of the service, as suggested by users and other third parties.

NEST also provides a limited information service for individual scientists in search of information and specific advice on submitting proposals for participation in European R&D programmes. Scientists can approach the participating NEST member organisations in the Netherlands or staff of NWO who are concerned with EC programmes. They provide more strategic advice on (participation in) EU R&D-programmes

Encourage collaboration/networking

One of the most important conditions for receiving subsidies via European programmes is that participants must co-operate with European partners. For possible participants finding partners is therefore important, and in most cases a bottleneck to submitting a proposal.

The EG-Liaison is the Dutch National Contact Point (NCP), takes the lead in the Dutch Innovation Relay Centre (IRC), hosts the Dutch COST programme, and is the information point for the Framework Programme. In this respect it has a broad overview of what is available for its clients in terms of funding, and next to this a large client database (due to its many work areas). This means that EG-Liaison has a

good overview of potential programme participants, their technological and partnering needs, and can (internally) identify possible partners. The participation in the IRC network has been a good way in which to identify international partners for its clients, its matchmaking character providing perfect symmetry with collaboration goals.

EG-Liaison also promotes networking and organises many workshops and seminars within the IRC and FP themes. This means that potential participants (both Dutch and International) have a chance to meet each other in a more informal setting, and develop their own networking within their specific sector.

EG-Liaison is also looking further afield and helping to promote partnering outside the EU. Partners in excellence: Brokerage event for the Canadian and Dutch Biotech industry - is a current activity to promote this. Life sciences are one of the key issues of Dutch research policy. The aim of this two day brokerage event is to promote international cooperation between Dutch and Canadian research institutes, biotech companies and venture capitalists.

Influencing implementation of EU research programmes

The way in which Dutch stakeholders influence EU research programmes is set out above. The main body being the House of Science & Technology (NEST) which includes members from a cross-section of stakeholders: Dutch Science Agency (NWO), Royal Academy of Arts and Sciences (KNAW), the Association of Universities (VSNU) and the Netherlands Organisation for Applied Research (TNO). Part of their mission is to in fact effectively bring under the attention of the "Brussels R&D-circuit" R&D policy views from Dutch scientific and private R&D-bodies and to support the interaction of the partner-organisations in NEST vis-à-vis their policy development in relation to "Brussels" and/or to their broader European collaborations.

NEST is also involved in activities and initiatives aiming at the realisation of the European Research Area and EU R&D Policy (with a special view for the Dutch situation, including:

General discussions and (new) measures for the implementation of the ERA

- Progress of the implementation of the Lisbon strategy
- Developments within 6FP, in particular the new instruments Networks of Excellence and Integrated projects, and implementation of the ERA-NET scheme.
- Activities in the field of benchmarking and mapping of excellence.
- The research infrastructure programme of 6FP
- The discussions on the role of the universities in the Europe of knowledge
- Mobility of researchers

Long term developments with possible influence on EU R&D-policy

- The European Convention and the subsequent IGC-round
- Governance in Europe, in particular the effects of new forms of governance on government interference on R&D and the management of R&D-programmes (the possible creation of a European Research Council or European R&D-agencies)
- Administrative reform of the European Commission and its repercussions on the research related DG's

Next to NEST there are various other way in which the Dutch message is delivered in Brussels. There are Dutch members in the EC level Programme Committees, CREST and the European Research Forum, all of whom receive bottom up input through the Interdepartmental Work Group for the Framework Programme – which in itself is bottom up – through the use of Panels to reach industry and research.

Development and learning aspects

Future of Dutch Participation in the Framework Programmes

At the request of the Ministers of Economic Affairs and Education, Culture and Science, the Advisory Council for Science and Technology Policy (AWT) has drafted an advisory report⁵⁴ to discuss the policy that the government needs to pursue to allow the Netherlands to participate successfully in the European Union's 6th Framework Programme. The report is focused on the consequences of the new instruments in 6FP: the *Networks of Excellence* and the *Integrated Projects*. But might be of interest when looking at the development in how participation in the FP is supported in the Netherlands.

One of the three questions that this advisory report addresses gives us some insight into measures and actions that the government should take to ensure successful participation by the Netherlands in the new instruments of the 6th Framework Programme.

Given the AWT's terms of reference, it focuses on the role of the government (and its intermediary organizations such as NWO and EU Liaison/Senter) and on the measures to be taken by it. The Council arrived at three main groups of **recommendations** designed to ensure effective participation in 6FP by Dutch research institutes in the shorter term, and to strengthen the international position of Dutch companies and research institutes in the longer term.

⁵⁴ Advisory Council for Science and Technology Policy (AWT) June 2002. Making 6 FP work: Stimulating Dutch participation: profit and policy

A. Creation of stimulating conditions and facilitation

The AWT feels the government's most important role is to create the conditions to stimulate and facilitate the proper functioning of the Dutch public and private research infrastructure in a context of internationalisation. The ultimate aim is to allow the actors in the field to perform their own roles optimally and to seize opportunities in terms of 'knowledge as capacity'. This is not only important for participation in 6FP in the shorter term but also for the international position of the Dutch research system. More specifically, the Council's recommendations are:

- *'Invest' structurally and at an adequate level in the research institutes; at the same time ensure a good balance between (a) excellence and focal points, (b) a broad basis and (c) scope for innovation.*
- *Invest more time & attention at senior level in the government's networking function by strengthening & improving the formal & informal representation in Brussels.*
- *Improve the coordination and interaction between the national and international policy circuits in the Netherlands.*

B. Active facilitation and stimulation of participation in 6FP

A second group of recommendations is concerned specifically with participation in 6FP. The government should actively facilitate and stimulate this participation from the perspective of 'knowledge as capacity'

- *Pro-active high calibre publicity about 6FP, aimed at 'brokering' between relevant parties.*

Given the new instruments in 6FP, besides general information (developments and possibilities) a more proactive role than in the past is needed in providing information aimed at forging partnerships ('brokering').

- *Provide a clear impression of what is actually happening in partnerships in the research field relevant for the Framework Programme.*

There should be a clearer impression than at present of what is actually happening in the research field: substantive monitoring. This is needed in order to be able to 'broker' between parties interested in forming (international) consortia, but also to give the government a good impression of Dutch participation in qualitative and quantitative terms in the consortia that are created.

- *Produce a good helpdesk for the necessary support for participation in 6FP*

Thirdly, a national helpdesk should be established to provide support in the actual formation of consortia in 6FP, especially to properly regulate contractual matters.

- *Assign the three tasks of brokering, substantive monitoring & helpdesk to EU Liaison. This will require a repositioning of EU Liaison, with different & additional tasks.*

Although the AWT's main concern is that the government ensures the three tasks are carried out, it would prefer to see these tasks assigned mainly to EU Liaison. EU Liaison should also involve other parties, especially NWO and VNO/NCW. EU Liaison in its existing form will not be able to carry out these tasks. EU Liaison will have to be repositioned and it will have to be assigned different and additional tasks.

C. Vision on far-reaching internationalisation of research policy

The third group of recommendations comprises establishing a timetable for longer-term strategic issues surrounding research policy in the context of internationalisation. The specific recommendation is:

- *Initiate strategic discussions about further internationalisation of research policy.* These discussions will preferably lead to a joint vision and shared positions that can be put forward elsewhere in order to promote Dutch interests as forcefully as possible. The point is to make these discussions part of current processes and practices. The AWT distinguishes three types of issue that require further strategic discussion:
 - Policy issues that touch on openness of the Dutch research and innovation systems.
 - A Dutch vision on the structure of the future European research system and the place of the Framework Programmes in it.
 - The preferred content of future Framework Programmes from a Dutch perspective.

Cabinet Response

The cabinet responded to this report. Their reactions to the recommendations showing what likely developments are going to be supported and implemented by the government. Following are some highlights from sections A and B:

A. Creation of stimulating conditions and facilitation

The cabinet agrees that the thematic priorities fit well with Dutch research priorities, set out in the NWO Strategic Plan 2002-2006, Genomics and ICES/KIS. However they also highlight that the Top Technological Institutes (TTIs) and research schools models/plans as also ripe for 6FP participation, which up to now has only been marginal. Min EZ introduced EG-Liaison to the TTIs in the beginning of 2003 – which has resulted in all 4 TTIs submitting expression of interest. Min OC&W is planning to meet with the various institutes (VSNU / NWO / KNAW) with the mapping and enlarging of potential participation of research schools as the focus point.

The cabinet sees short-term secondment of other ministries as alternatives as a way in which to improve Dutch representation in Brussels, and in general a strengthening of all other Dutch representatives within various European fora. The cabinet also see the integration of internationalisation into normal policy as a future goal, so that national and EU policy can influence and stimulate each other.

B. Active facilitation and stimulation of participation in 6FP

In the future Senter/EGL shall focus on high value and more pro-active information, with special attention to supporting ‘wheeling and dealing’, which is important for the support of the formation of consortium. EG-Liaison and NWO should also promote higher levels of information sharing.

Both EG-Liaison and NWO should invest further in the monitoring and analysing of co-operation between parties / and the scientific content within the FP programmes/projects. This should build upon the recently signed co-operation agreement between the two bodies.

Senter/EGL should function as a help desk. The form of the new instruments will bring with them more complex questions and higher demands for service provision. More attention needs to be given to co-operation rules, contracts between consortia, financial and judicial aspects of projects, and to monitoring and evaluation aspects of projects.

With respect to the participation of university research groups a co-operation between Senter/EGL and NWO is seen as being crucial. A positive point is the work agreements made between the two about the co-operation for the 6FP. For increased participation of SMEs within the 6FP there needs to be research to increasing knowledge diffusion via the Innovation Relay Centre.

Dutch participation Figures 5FP 1999-2001

Although direct parallels cannot be made, we can suppose that the support structure in the Netherlands has to some extent assisted in the realisation of high levels of Dutch participation, and in an above average success rate across all themes, and in the number of total project proposals funded. Exhibit 3 shows Dutch project proposals in the various themes across the three years 1999-2001, while Exhibit 4 shows average success rate across the same time frame, both highlighting this success rate.

Exhibit 7 Dutch project success rate 5FP 1999-2001

Theme	Success Rate Dutch projects (%)	Success Rate EU projects (%)
Quality of Life (average 99-01)	18.9	16.3
1999	18.8	14.9
2000	17	15
2001	21	19
Information Society (average 99-01)	33.8	25.7
1999	24.6	21.2
2000	41	29
2001	36	27
Growth (average 99-01)	40.8	28
1999	42.3	30.0
2000	42	27
2001	38	27
Environment (average 99-01)	20.7	17
1999	22	18
2000	9	13
2001	31	20
Energy (average 99-01)	45.7	36
1999	38	28
2000	42	42
2001	57	38
INCO (average 99-01)	26.6	24.2
1999	34.9	27.6
2000	29	20
2001	16	25
SMEs (average 99-01)	48.7	40
1999	44	40
2000	49	42
2001	53	38
Human Potential (average 99-01)	44.7	37.1
1999	46.1	36.4
2000	44	35
2001	44	40

Exhibit 8 Average Dutch project success rate 5FP 1999-2001

	Average Dutch Success Rate (Projects %)	Average EU Success Rate (Projects %)
1999	33.8	27
2000	34.1	27.9
2001	37	29.2

Sweden

Information structure

In Sweden the Ministry of Education and Science, Division of Research policy, is responsible for general matters of research policy. This division is responsible for co-ordinating the Government's research policy and research collaboration within the EU. The Ministry developed the Swedish EU R&D Council in 1992 to disseminate information to (potential) Swedish participants, and keep abreast of developments in Brussels. At this stage, there was a strong need to educate researchers and companies about the opportunities. In the meantime, these users' needs have shifted as they themselves have learnt how to participate. 6FP, with its new types of instrument brings new requirements for setting up more complex partnerships and managing larger, longer projects.

The **Swedish EU-R&D Council** is the national co-ordinator of the Fps in Sweden. It provides the necessary infrastructure for Swedish organisations involved in EU funded research and acts as the National Contact Point, (NCP) for the majority of programmes within 6FP for research and technical development. The council works together with Vinnova, who are the NCP for SMEs and Co-ordination/Support, the Swedish National Space Board who head the Aerospace theme, and the Swedish Research Council – also involved in 6FP Co-ordination/Support. In addition there is close contact between the NCPs and the Swedish Programme Committee members for the various themes. The Council works closely with the PC members, who come from various bodies such as Vinnova, Science Foundation etc. There are regular info days in which PC members and NCP members work together.

The Council employs 12 people, 2 of whom are based at the **office in Brussels**. The Council is responsible for the information dissemination in Sweden. They provide information and advice concerning all aspects of FPs: Research areas and priorities, legal issues, rules for participation, model contracts and other agreements, proposals, partner search, mobility, etc. In order to monitor Sweden's progress in the FPs, the Council compiles statistics and performs evaluations/ analysis.

Dissemination of information on FP

The Swedish EU-R&D Council is the National Contact Point and obtains highly valuable information via direct contact with the European Commission, increased by the fact that the Brussels based body is the same as the national one i.e. the Council. They disseminate this information in a variety of ways. For instance, they have a complete e-mail news service in Swedish to potential participants in the framework programme. The Council also publishes a magazine with examples of interesting

Swedish research projects. They also produce material about all aspects of EU framework programmes, which they publish as fact sheets, brochures or guides.

Next to information dissemination the Swedish EU-R&D Council advises and supports participants in all aspects of the EU framework programmes, from research priorities to proposals and contract issues. Their national contact persons are familiar with the priorities in every area and can give advice concerning the search for a partner. The Council's legal counsel answers questions about rules for participation, contracts and other agreements. What was seen to be important was to have staff available (in the office) for participants, web-sites and newsletters etc may be effective, but on a more personal level there needs to be the possibility for one-to-one contact. The Council also travels a lot in Sweden, not only for information dissemination, but marketing of the Council in general.

Several times a year, the Swedish EU-R&D Council arranges courses on various themes e.g. proposals, project management and contacts. These were seen to be the most successful of all tools.⁵⁵ The instructors are highly knowledgeable and have longstanding experience with EU framework programmes. Practical cases are usually included in the courses. They also invite researchers who have concrete experience with e.g. filing proposals or coordinating large projects as guest lecturers. This advice has been in a continual development phase, in particular with changes from 5FP to 6FP, they are currently developing training courses to include management of consortia, how to set up consortia agreements and proposal writing. The Council provides information about the courses in its e-mail newsletter.

For specific target groups, such as municipalities, small enterprises, industry organisations and regional organisations, the Council is able to design tailor-made information days or workshops, which allows researchers to discuss and give advice concerning their specific questions and projects. Training courses for SMEs are also being developed to encourage and help them take the opportunities offered under the FP.

The Council also arrange regular conferences and information days e.g. in conjunction with the opening of a proposal round, sometimes independently and sometimes in co-operation with other stakeholders around the country. The Council's contact persons frequently attend seminars in various locations in Sweden. This was seen as being very important, as it seems that participants have a problem with the new rules and goals of the instruments introduced into each round, in particular trying to find the niche in the programme. As this is the case the Council spend a lot of time and energy in these general info days. According to Hjorth Rybbe this has been

⁵⁵ Interview with the Director of the Swedish EU R&D Council – Karin Hjorth Rybbe

successful and the Council is happy with the high number of Swedish proposals in the first round of 6FP. These courses are evaluated for user friendliness, with evaluation forms being completed by participants, again the response has been very positive, both on aspects of content and facilitation.

In all of these tasks the Council co-operates with networks of intermediaries, universities (all of whom have EU Offices) and higher education bodies, institutes, research councils, industry, and other public funded bodies. This was seen as being exceptionally important in a large geographically spread country. The contacts with the various bodies is seen as a way in which to use existing partnerships/networks, and as (the only) way in which to target some of the stakeholders, such as SMEs in the regions or researchers at universities. In addition the Council has no grant possibilities for participants, while other bodies do; in this case it is a fruitful co-operation when the Council can work together with other bodies not only to disseminate information and advice, but to really get projects/proposals off the ground.

Exhibit 9 Information structure for FP participation in Sweden

Organisation	Role	Target group (to whom?)	Tools (How?)
The Swedish EU-R&D Council (EU/FoU rådet)	<ul style="list-style-type: none"> • Provides information, advice and assistance concerning all aspects of the EU Framework Programmes, including research areas and priorities, legal issues, rules for participation, model contracts and other agreements, proposals, finding partners, mobility, etc. • NCP for all programmes within the FP • In order to monitor Sweden's progress in the framework programme, the Council compiles statistics and performs evaluations/ analysis. 	<ul style="list-style-type: none"> • All Swedish organisations, which have an interest in the Community R&D programmes 	<ul style="list-style-type: none"> • Homepage • Publications & guides for EU funded research • Printed & electronic newsletters • Extensive CORDIS database searches • Help desk, partner search, & pre-screening of proposals • specific lectures, training courses, & bilateral consultations • gate opener to the Swedish research community • Establishing links with relevant Commission officials • Providing office & meeting room facilities for visitors • publish a magazine (Inside) with examples of interesting Swedish research projects • fact sheets • brochures • guides • legal counsel answers questions about rules for participation, contracts & other agreements

Appendix 1: National Benchmark Country Reports - Sweden

The Swedish EU-R&D Council's office in Brussels	<ul style="list-style-type: none"> • assist potential participants with the right EU contacts • act as a link, contact point and discussion partner when you want to present your activities, arrange seminars etc on-site in Brussels • provide workstations for temporary Swedish visitors & conference room if needed 	<ul style="list-style-type: none"> • Swedish organisations, which have an interest in the Community R&D programmes 	<ul style="list-style-type: none"> •
EU-information at the Ministry of Foreign Affairs' press- & information unit	<ul style="list-style-type: none"> • Information about government's EU policy and current EU issues 	<ul style="list-style-type: none"> • National agencies • The public 	
EU-information at the Parliament (EU-upplysningen)	<ul style="list-style-type: none"> • Informs the public about EU and the Swedish membership • Publishes fact sheets • Operates a database - EUSVAR – with questions and answers 	<ul style="list-style-type: none"> • The public 	
Sweden's EU representation in Brussels (Sveriges ständiga representation vid EU)	<ul style="list-style-type: none"> • Represents the Swedish government at EU meetings • Important actor in the exchange of information with EU institutions 	<ul style="list-style-type: none"> • Government departments 	
Universities	See annex	internal	
Institutes	See annex	internal	
Companies	See annex	internal	

Encourage collaboration/networking

The Swedish EU R&D Council works intensively with various national networks as seen above, they believe that these bodies have a better overview of the right people and are in a better position to promote co-operation. In addition the Council does work together with the IRC in trying to find partners t a more general level.

The Swedish EU-R&D Council's office in Brussels assist potential participants with the right contacts e.g. with the European Commission, the office acts as a link, contact point and discussion partner when potential participants want to present their activities, arrange seminars etc. on-site in Brussels – or simply establish the right contacts. The office provides workstations for temporary Swedish visitors and a small conference room.

Influencing Implementation

As far as influencing implementation the Council supports institutes and companies with seminars held in Brussels, while the Brussels staff regularly come to Sweden to discuss proposals from the EC with stakeholders. The Brussels office of the Council is for the most part not really involved in policy discussions, but does have close contacts with the Programme Committee members, which do have good contact.

SWEDISH COUNTRY REPORT APPENDIX A: Swedish organisations involved in dissemination of information on EU research programmes

Det finns många olika myndigheter och organisationer i Sverige som sysslar med någon form av EU-relaterad information. Nedan hänvisas till en del av dem:

Forskningsrådet för arbetsliv och socialvetenskap, FAS

FAS är sedan 1 januari 2001 ett nybildat forskningsråd under Socialdepartementet. FAS tar över verksamheterna från tidigare Socialvetenskapliga forskningsrådet och delar av Rådet för arbetslivsforskning.

Forskningsrådet för miljö, areella näringar och samhällsbyggande, Formas

Formas stödjer grundforskning och behovsstyrd forskning inom områdena miljö, areella näringar och samhällsbyggande. Formas främjar en ekologiskt hållbar tillväxt och utveckling i samhället, mång- och tvärvetenskaplig forskning samt internationellt forskningssamarbete och erfarenhetsutbyte. Rådet ansvarar vidare för information om forskning och forskningsresultat.

Närings- och teknikutvecklingsverket, Nutek

NUTEK ger allmän information om EU:s strukturfonder, samt har en guide över EU-stöd för små och medelstora företag.

Internationella Programkontoret

Programkontoret svarar för information och kontakter beträffande EU-bidrag inom utbildning och kompetensutveckling.

SUNET - Swedish University Network

SUNET:s mål är att genom samverkan mellan högskolorna i Sverige främja datakommunikation som är till nytta för högskolan, i första hand genom att tillhandahålla möjligheter till datakommunikation till/från/mellan universitet och högskolor (och ytterligare organisationer som tillhör samma intressesfär) nationellt och internationellt, i andra hand genom att stödja och samarbeta med organisationer som har som målsättning att erbjuda datakommunikation åt hela samhället.

Kommerskollegium, National Board of Trade

Sveriges expertmyndighet för utrikeshandel och handelspolitik, som bland annat förser regeringen med analyser och annat beslutsunderlag. Ett annat av uppdragen är att hjälpa svenska företag och medborgare som stöter på handelshinder, både på och utanför EUs inre marknad.

Vetenskapsrådet

Vetenskapsrådet är en myndighet under Utbildningsdepartementet vars uppgift är att stödja forskarinitierad grundforskning av högsta vetenskapliga kvalitet inom samtliga vetenskapsområden. Det övergripande målet för verksamheten är att försäkra Sverige en position som ledande forskningsnation.

Inom Vetenskapsrådet finns det tre ämnesråd. De omfattar medicin, naturvetenskap och teknikvetenskap samt humaniora och samhällsvetenskap.

Verket för innovationssystem - VINNOVA

VINNOVA stödjer behovsmotiverad forskning och utveckling inom teknik, arbetsliv och transporter samt verkar för att ny kunskap så effektivt som möjligt omsätts i produkter, processer, tjänster och arbetsliv.

En viktig uppgift för VINNOVA är att identifiera möjliga tillväxtområden, kartlägga hur innovationssystemet ser ut kring dessa områden samt vilka initiativ som behövs för att stärka system.

Appendix 2: Interview questions national benchmarking

Our project budget permitted us to have one interview with a key person in the main FP dissemination body in each country. Below is the outline for the interview questions. For some countries, these questions might be covered in advance, through desk research.

INFORMATION STRUCTURES

1. When was your information structure set up? How? What kind of model did it follow?
2. Why are the national information structures centralised/ decentralised?
3. Does the information structure/s cover all the relevant actors, are there any evident gaps?

TARGET

- How do you identify relevant actors that you need to reach?
 - Who are your target groups
 - Have your target groups changed over time? broader/narrower? Why?
4. What kind of difficulties do you encounter in reaching target groups?
 5. What kind of difficulties do you encounter in enhancing networking?
 6. Is there any knowledge profile that the national structure is using/might use (e.g. If Finland is strong in mobile communication, the relevant organisation might choose to focus particular information and matchmaking efforts in this field).

TOOLS

7. Which tools get most funding / attention?
8. Where does the money come from for your work / are there any grants for participants?
9. Which of these tools are the most effective, according to your or your users' experience?

EVALUATION

10. What kind of feedback do you get from the users about the information structures?
11. What (if anything) is contributing to the inefficiency of the structures?
12. What (if anything) is contributing to the inefficiency of the tools (initiatives)?

RESPONSE TO CHALLENGES IN 6FP

13. Does 6FP offer any new challenges with regard to information structures or networking
Is the information structure changing its strategy, seeking to catch new opportunities in 6FP?

Appendix 3: Brief description of non-participating companies analyzed in chapter 6

1. Moelven Timber Group

Moelven Industries is a Scandinavian industrial group, supplying products with accompanying services mainly to the Scandinavian building market. The main part of the production is carried out in Norway and Sweden, which are also the Group's primary markets. The Group's businesses have some 3,100 employees and an annual turnover of NOK 4.8 billion. The Group has 42 independent business units, which are arranged into two business areas – the Moelven Timber Group and the Moelven Building Group. The Moelven Timber Group consists of three divisions: Timber, Wood and Laminated Timber. Production consists of the manufacture of timber-based building products, and the Group also delivers semifinished goods for other producers of wooden building materials and for the furniture, packaging and paper industries. The main products are timber and laminated timber for load bearing constructions, interior products such as floors, skirting boards and mouldings, as well as fire and rot-proof timber and components. These products are sold to the building trade and other industries

2. Gilde Norge ans

According to themselves Gilde is today the strongest brand in meat products in Norway. Gilde Norge BA is a subsidiary in Norsk Kjøttamvirke and is responsible for the brand Gilde and for product development, quality, sales and marketing of Gilde-products. Gilde was established in 1964 and the brand was acquired as a nationwide trade brand for meat products.

3. Stranda Spekemat as

The company was established in 1973 with the vision to build up a company specialized in production and marketing of cured meat products. From the start 10 employees had equal shares of ownership in the company. Today the company is owned by Jensen Holding AS, Trondheim, ca. 80 % of the company and the remaining 20% is mainly distributed to employees in the company. Jensen Holding also owns Grilstad Fabrikker AS, Trondheim.

Turnover was 135 mill. NOK in 2002. The number of employees is today 68. The products are brought to the market all over the country. Strandaskinke and Strandamør are in the shelves of most store chains. Stranda Spekemat also produces cured meat with other brands.

4. Bandak as

Bandak as is a typical Norwegian mechanical engineering workshop and offers customized mechanical technology products and services. The company has around 65 employees and an annual turnover of about NOK 70 mill. Located in Lunde, Telemark the more than 40 year old company is ca. 2 hours from Oslo. In its relatively new premises (from 1997)

Bandak as has more than 5000 m² workshop facilities and 1500 m² administration offices at its disposal. Bandak is a supplier to customers that demand quality in all links of the value chain. Ever since 1995 the company is certified with reference to the ISO 9001 standard. The company's main markets are the mechanical engineering industry, the offshore industry, the process industry, and the automobile and defence industry. The company has a range of modern technology and machinery and equipment that can solve most tasks. Its core technology areas are:

Milling according to customers specifications

Coating technology

Self developed products to offshore activity

5. Jotun as

The Jotun Group is one of the world's major manufacturers of paints, coatings and powder coatings. The concern is split into three main divisions. Jotun Paints is responsible for developing, manufacturing, marketing and selling coating systems and cathodic protection for the marine market (Jotun Marine Coatings), industry (Jotun Protective Coatings) and the decorative sector (Jotun Decorative Paints). The division is responsible for marine and industrial coatings worldwide and for decorative paints outside Scandinavia. Division Jotun Dekorativ counts Norway, Sweden, Denmark and Iceland as its market. Comprising two companies Jotun Dekorativ and Scanox the division aims to be a leading supplier of decorative coatings in Scandinavia by focusing on brands and strengthening its position in Sweden and Denmark. And thirdly, Jotun Powder Coatings is developing, producing and marketing thermosetting powder coatings for cost efficient decoration and protection of mass-produced articles.

6. Mycoteam as

Mycoteam as is a consulting company giving advice and working within damages caused by moisture, wood destructuring fungus and insects, and problems linked to the growth of mould fungus (indoor climate). For 15 years Mycoteam has undertaken several thousand inspections in private estates, industry buildings, schools, kindergardens and antique buildings, searching for damages caused by moisture, mould- and rot fungus, and damages caused by different insect species. This has given the company unique experience concerning the relations between different types of housing construction/way of building and the different damages that can break out in these.

7. Omnitech as

Located in Bergen, Norway, Omnitech develops and manufactures advanced acoustical imaging systems for distribution worldwide. Since its foundation in 1989, OmniTech has pioneered the development of real time 3D sonar systems, resulting in the production of a unique 3D imaging device. The EchoScope is a true 3D real time sonar. It uses a single acoustic pulse to generate a 3D image of a volume. All pixels are georeferenced and relative positions of objects are correct regardless of sonarhead movements.

8. Alfa Skofabrikk as

Have not found info about Alfa

9. Atlas-Stord as

With a history spanning more than 100 years Atlas-Stord is an experienced company which has always been at the forefront of the technological development and a trendsetter in the market. Atlas-Stord is an equipment and process designer integrating process know-how with plant delivery. The company has specialized in mechanical and thermal dewatering. Upgrading of products, energy savings and environmental protection are important parameters for Atlas-Stord supplies. Atlas-Stord is a supplier to world leaders in the feed, environmental protection and chemical industries. Atlas-Stord works closely together with a range of highly qualified production centres and subsuppliers throughout the world. Atlas-Stord has in-house research and development, laboratory and bench scale test facilities and the company works in close co-operation with a range of customers on full-scale trials. This ensures that new equipment and processes launched in the markets are fully optimized and thoroughly tested. Plant durability, reliability and service are keywords for Atlas-Stord supplies, whether a single piece of equipment or a complete turnkey plant. All activities within Atlas-Stord Denmark A/S related to providing our customers with the right products and solutions are controlled under our certified ISO 9001 quality management system.

10. Jøtul

Jøtul ASA, a Norwegian corporation, is the world's oldest and largest producer of cast-iron stoves. Established 1853, Jøtul produces approximately 100,000 woodstoves and fireplaces each year to an established international market of over 20 countries. It utilizes three subsidiary companies, Jøtul USA, Inc. for the United States market, Jøtul France S.A. for the French market and Jøtul Deutschland GmbH for the German, Swiss and Austrian markets, with the remaining nations being marketed by importers.

The Jøtul manufacturing facility is located in Fredrikstad, Norway and is equipped with the most up-to-date casting and molding machinery available. The entire plant is operated by hydroelectric power and is designed to be extremely environmentally friendly. Jøtul's commitment to the environment is further enhanced by the use of recyclable materials in the production of its stoves and fireplaces. Jøtul does not use pig-iron (iron supplied in ingot form mined from the earth); instead only recycled cast iron is used.

Stoves are designed on our advanced CAD computer systems, but it's the people behind the computers that make the difference. The skilled Pattern makers carve molds of each part to exacting specifications. These wood molds are used to produce master patterns for final production. Stoves are tested in our own labs to make certain they meet all safety and emission standards. Jøtul uses recycled iron to produce our products. The scrap iron is loaded into bins and placed into our non-polluting electric melting furnaces. Here's where the fireworks begin! Molten cast iron, at temperatures exceeding 2000 degrees F, is poured from the furnace into a large holding bucket. Iron is poured into sand molds that were made from the patterns. Each part in a Jøtul stove is cast separately in this fashion. After

the molten metal cools, the sand is removed. The part are cleaned and inspected and sent to drilling and assembly stations. Machinists drill the parts for latches, bolts, etc. The drilled parts are assembled into stoves. This worker is spraying a base coat of our popular enamel finish. This porcelain enamel is actually colored glass, which is melted onto the cast iron to produce a beautiful and durable finish. The coated parts go into the red-hot enameling ovens. The finish is baked onto the cast-iron at temperatures of approx. 1400 degrees F. Stoves are carefully packed for shipment all over the world. Our warehouse facility allows us to meet worldwide demand.

Appendix 4: Interview guide used for interviews of Norwegian key personel

Navn:

Dato:

Organisasjon/firma:

Stilling nå - og under EUs5RP:

Antall prosjekter og type prosjekter de deltar i (hvis aktuelt)

Spørsmål:

Litt historikk:

- rolle i 5RP
- hvor lenge har bedriften deltatt i EU-prosjekter
- EU-deltakelsens plass i bedriften/organisasjonen

1. Hadde du noen instruksjer, retningslinjer eller mandat for ditt arbeid?
2. På hvilken måte og til hvem rapporterte du?
3. Hvordan besluttes deltakelse i EU-prosjekter?
4. Har du ofte vært i Brussel – og hvilken deler av EU-kommisjonen hadde du mest kontakt med?
5. (Hvis aktuelt) Har du mye kontakt med de andre partnere i prosjekt(ene)?
6. Er det noe bestemt mønster i dette?
7. Hadde du/bedriften/organisasjonen din muligheter til å påvirke innholdet i EUs 5. rammeprogram?
8. Hvordan har samarbeidet og kontakten med Forskningsrådet og annet norsk støtteapparat vært?
9. Hva har du vektlagt i ditt arbeid?
10. Hvilken betydning har deltakelsen hatt for din organisasjon/bedrift?
 - a. Større konsentrasjon og fokus i forskning
 - b. Markedstilgang
 - c. Innovasjonsevne

- d. Økonomisk utbytte
- e. Samarbeidsrelasjoner – nettverksbygging
- f. Kunnskap og FoU-metoder

11. Hvordan vurderer du samspillet mellom deltakelse i EUs 5RP og nasjonale programmer?

- a. Tematisk
- b. I forhold til aktører/deltakere
- c. I forhold til institusjonelle sammensetning

12. Kan du forklare hva som kunne gjøres bedre (mht økt deltakelse og kvalitet fra norsk siden) og på hvilken måte?

13. Hvordan har EUs5RP fungert som forsknings- og innovasjonspolitisk virkemiddel?

14. Hva nytt har du lært av 5. rammeprogram? – Hva er erfaringene som kan videreføres i 6. og 7. rammeprogram?

Opplyse om at melding om rapporten kommer via email – kan lastes ned - ca primo februar 2004

Appendix 5: Questionnaire sent to Norwegian participants in EU's 5FP

*Questionnaire sent to participants in research institutes,
higher education and others*

Del 1 Bakgrunnsinformasjon

Spørsmålene er fordelt på 13 seksjoner. Det vil ta ca 20 minutter å besvare undersøkelsen. Du kan navigere fram og tilbake i skjemaet ved hjelp av knappene nederst på sidene.

1.1 Generell informasjon (Vennligst kontroller at forhåndsutfylt informasjon er korrekt)

Navn på institusjon:

Organisasjonsnummer:

Adresse:

Postnr:

Poststed:

Respondent (navn):

E-postadresse:

Stilling:

Telefonnr:

Faks:

Eventuelle spørsmål kan besvares av:

Helge Godø

NIFU

22595172

helge.godo@nifu.no

Aris Kaloudis

SINTEF STEP

22868012

aris.kaloudis@step.no

NB!

Vennligst kryss av under om du ønsker du å få informasjon om den ferdige rapporten

Ja takk, send meg en mail når rapporten er publisert

1.2 Om prosjektet

Kontraksnummer

Prosjektittel

Prosjektakronym

Særprogram

Prosjekttype

Prosjektleder i din organisasjon (om forskjellig fra respondent)

Har din organisasjon hatt koordinatoransvar i dette prosjektet?

Ja Nei

Del 2 Organisasjonstype

Spørsmål 2 - 1 Organisasjonstype

- FoU-institutt (forskning og utvikling)
- UoH-institutt (universitet og høyskole)
- Annet

Del 3 Generelt om FoU-virksomheten

Spørsmål 3 - 1 Har du eller din forskningsgruppe deltatt i andre nasjonale eller internasjonale forskningsprogrammer?

Ja
Nei

Hvis ja, vennligst angi hvilke forskningsprogrammer?

- 1. Program i Norges Forskningsråd
- 2. EUs 6. rammeprogram
- 3. EUREKA programmet
- 4. Andre internasjonale FoU programmer
- 5. Andre særprogram i EUs 5. rammeprogram
- 6. EUs 4. rammeprogram
- 7. Nordisk industrifond
- 8. Annet

Spørsmål 3 - 2 Har du eller din forskningsgruppe søkt og fått avslag på annen deltakelse i EUs 5. rammeprogram?

- Ja
- Nei

Hvis ja, hvor mange ganger har dere opplevd å få avslag?

Hva har oftest skjedd med de avslåtte prosjektene?

- 1. De har blitt utsatt inntil videre
- 2. Man har søkt og gjennomført prosjektet under annet program
- 3. Man har gjennomført prosjektet med egne midler

Del 4. EU-prosjektet

Definisjoner: EU-prosjektet gjennomføres av et internasjonalt konsortium bestående av koordinator, partnere, assosierte partnere og underleverandører.

Spørsmål 4 - 1 Er dette prosjektet en videreføring av et annet FoU-prosjekt?

Nei

Ja, videreføring av internt finansiert FoU-prosjekt

Ja, videreføring av nasjonalt finansiert FoU-prosjekt

Ja, videreføring av et tidligere EU-prosjekt

Ja, videreføring av annet internasjonalt finansiert FoU-prosjekt

-
-
-
-
-

Spørsmål 4 - 2 Vennligst oppgi antall personer fra din organisasjon som er involvert i EU-prosjektet

a) Totalt antall personer (**ikke årsverk**)

b) Hvor mange av de involverte er doktorgradsstudenter?

c) Hvor mange av de involverte er kvinner?

Spørsmål 4 - 3 Hvor mange partnere er det i konsortiet tilknyttet EU-prosjektet, og hvor mange av disse er nye samarbeidspartnere for deg eller din forskningsgruppe ikke har

	Totalt antall	Antall partnere som du eller din forskningsgruppe <u>ikke</u> har samarbeidet med før
a) Koordinator	<input type="text"/>	<input type="text"/>
b) Partner	<input type="text"/>	<input type="text"/>
c) Assosierte partnere	<input type="text"/>	<input type="text"/>
d) Underleverandører	<input type="text"/>	<input type="text"/>

Vennligst benytt følgende skala i etterfølgende spørsmål

1 2 3 4 5
I svært liten grad I noen grad I svært stor grad

Spørsmål 4 - 4 I hvilken grad har du eller din forskningsgruppe deltatt i de følgende aktivitetene?

1 2 3 4 5

- a) Utvikling av prosjektidé
- b) Problembeskrivelse
- c) Søknadsutforming
- d) Prosjektgjennomføring

Spørsmål 4 - 5 Din/din forskningsgruppes rolle ved utvelgelse av partnere og sammensetning av konsortiet

1 2 3 4 5

- a) Vi tok initiativet og kontaktet andre partnere
- b) Vi ble kontaktet av de andre partnerne i konsortiet
- c) Det var av stor og strategisk betydning for bedriften at bestemte partnere deltok
- d) Vi var blant de siste partnere som kom med i konsortiet
- e) Vi oppfatter det som en fordel å inneha rollen som koordinator for prosjektet
- f) Det var mye diskusjon om hvem som skulle være koordinator

Spørsmål 4 - 6 Vennligst karakteriser EU-prosjektet ved hjelp av følgende påstander

1 2 3 4 5

- a) Prosjektet krever utvikling av helt ny teknologi/metoder
- b) Prosjektet krever utvikling av helt ny kunnskap
- c) Prosjektet kan gjennomføres uten deltakelse fra de andre partnere i EU-prosjektet
- d) Prosjektet kan bidra til å etablere organisasjonen i helt nye forskningsområder
- e) Prosjektet kan bidra til å etablere relasjoner mot nye
- f) Prosjektet kan bidra til å etablere relasjoner mot nye
- g) Prosjektet kan bidra til å etablere relasjoner mot nye
- h) Prosjektet bygger på at det overføres kunnskap/teknologi mellom involverte aktører
- i) Prosjektet innebærer en videreutvikling av et (en) eksisterende produkt/prosess/ tjeneste

Vennligst benytt følgende skala i etterfølgende spørsmål

1 2 3 4 5
Svært uenig Ubestemt Helt enig

Spørsmål 4 - 7 Hvordan er EU-prosjektets karakter i forhold til andre FoU-prosjekter som du eller din forskningsgruppe har deltatt i?

1 2 3 4 5

- a) EU-prosjektet strekker seg over lenger tid
- b) EU-prosjektet er forskningsmessig mer originalt
- c) EU-prosjektet har større brukerinteresse/relevans
- d) EU-prosjektet er mer tverrfaglig
- e) EU-prosjektet er orientert mot mer grunnleggende forskning

Del 5. Incentiver og hindringer for å delta i EU-samarbeidet

Spørsmål 5 - 1 Hvor store ressurser (omtrentlig) ble anvendt fra din institusjon i forbindelse med utforming av EU-søknaden?

- a) Antall månedsverk:

b) Direkte utgifter (reiser etc.) i kroner

c) Finansieringskilder: (%-vis andel)

	Midler fra egen institusjon	<input type="text"/>	%
	Forprosjekt/posisjoneringmidler fra Forskningsrådet	<input type="text"/>	%
	Annent ekstern kilde	<input type="text"/>	%
Sum		<input type="text"/>	% (Skal være 100)

Spørsmål 5 - 2 Hvor store ressurser ble (eller vil bli) anvendt fra din institusjon i forbindelse med gjennomføringen av EU-prosjektet?

a) Antall månedsverk:

b) Direkte utgifter (reiser etc.) i kroner

c) Finansieringskilder: (%-vis andel)

	Midler fra egen institusjon	<input type="text"/>	%
	Midler fra EUs 5 rammeprogram	<input type="text"/>	%
	Midler fra Forskningsrådets programmer	<input type="text"/>	%
	Annent ekstern kilde	<input type="text"/>	%
Sum		<input type="text"/>	% (Skal være 100)

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Ingen betydning		Noe betydning		Svært stor betydning

Spørsmål 5 - 3 Vennligst vurder betydningen av følgende momenter som motiv for din forskningsgruppes deltakelse i EU-samarbeidet på dette prosjektet? (Sett ett kryss pr. utsagn)

	1	2	3	4	5
a)Tilgang til teknologi	<input type="radio"/>				
b)Tilgang til kompetanse	<input type="radio"/>				
c)Tilgang til markedskontakter	<input type="radio"/>				
d)Tilgang til forskningsnettverk	<input type="radio"/>				
e)Tilgang til finansielle midler	<input type="radio"/>				
f)Tilgang til utstyr og testanlegg	<input type="radio"/>				
g)Annet, spesifiser: <input style="width: 150px;" type="text"/>	<input type="radio"/>				

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Svært uenig		Ubestemt		Helt enig

Spørsmål 5 - 4 Hindringer i søknadsfasen:

	1	2	3	4	5
a)Det var vanskelig å finne relevante partnere	<input type="radio"/>				
b)Formaliteter mht. skjemaer og regler for prosjektbeskrivelsen var et problem	<input type="radio"/>				
c)Det var vanskelig å samordne søknadsarbeidet	<input type="radio"/>				
d)Det var vanskelig å bli enige om ressursfordeling	<input type="radio"/>				
e)Det var vanskelig å bli enige om rettigheter (eiendomsrett/bruksrett for kommersiell utnyttelse)	<input type="radio"/>				

Spørsmål 5 - 5 Hindringer i gjennomføringsfasen:

	1	2	3	4	5
a)Rapporteringskravene fra EU var for omfattende	<input type="radio"/>				
b)Koordinatorens ledelseskvalifikasjoner var for dårlige	<input type="radio"/>				
c)Den faglige målsetting var for ambisiøs	<input type="radio"/>				

- d) Prosjektet har ikke fått en god fordeling av ressurser mellom partnerne
- e) Det var for mange partnere med i konsortiet
- f) Konsortiet var dominert av en eller flere store aktører
- g) Håndtering av konfidensiell informasjon var problematisk
- h) Det eksisterer kultur/språkproblemer
- i) Enkelte av partnere respekterer ikke tidsfrister, og leverer resultater for sent

Del 6. Prosjektets resultater

Spørsmål 6 - 1a

Oppnådde eller forventede resultater	Forventes ikke oppnådd	Er oppnådd	Forventes oppnådd i løpet av prosjektet	Forventes oppnådd i løpet av 3 år etter avslutningen av prosjektet
--------------------------------------	------------------------	------------	---	--

(kryss av for hvilke resultater som er oppnådd/forventes for din institusjon)

- | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Utvikling av ny teknologi | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) Utvikling av ny kunnskap/kompetanse | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) Utvikling av nye metoder | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) Utvikling av ny prosess | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) Utvikling av nytt produkt/system | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f) Utvikling av ny tjeneste | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| g) Implementering av ny teknologi | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| h) Salg av know-how eller lisens | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| i) Søknad om patent | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| j) Utvikling av prototyp | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| k) Etablering av standarder, normer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| l) Vitenskapelige publikasjoner | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| m) Doktorgrader | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| n) Etablert nettverk | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Spørsmål 6 - 1b Hvor mange av følgende resultater er oppnådd hittil?

- | | |
|--|----------------------|
| a) Antall artikler i vitenskapelige tidsskrifter | <input type="text"/> |
| b) Antall doktorgrader | <input type="text"/> |
| c) Antall patentsøknader | <input type="text"/> |

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
I svært liten grad		I noen grad		I svært stor grad

Spørsmål 6 - 2 Resultatene relevans for norske bedrifter, forvaltningsorganer, organisasjoner og forskningsmiljøer

- a) Er det bedrifter i Norge som kan implementere/utnytte prosjektets resultater? Ja Nei Vet ikke

- b) Er prosjektets resultater relevant for offentlige forvaltningsorganer?
- c) Er prosjektet relevant for norske organisasjoner (NHO, LO, TBL, Abelia, osv.)?
- d) Er prosjektets resultater relevant for andre norske forskningsmiljøer?
- e) Er prosjektets resultater relevant for andre utenlandske forskningsmiljøer?

Del 7. Økonomiske effekter

Vi har forståelse for at det for mange vil være vanskelig å angi sikre og eksakte svar på spørsmål 7. Vi understreker derfor at spørsmålene angår forventninger omkring fremtidige økonomiske forhold. Dine svar vil derfor kunne reflektere kvalifiserte antakelser, men forventes ikke å ha høyt presisjonsnivå. Omtrentlige svar er bedre enn ikke-svar.

Spørsmål 7 - 1 Forventes direkte økonomiske effekter i form av økt oppdragsmengde til institusjonen eller forskningsgruppen som resultat av prosjektet?

- Nei, ingen direkte økonomiske effekter
- Ja

Spørsmål 7 - 2 Vennligst oppgi om resultatene av EU-prosjektet er beskyttet

- Resultatene er beskyttet
- Beskyttelse er ikke aktuelt

Hvis ja, hvordan? Hvis beskyttelse ikke er aktuelt, hvorfor?

- Patent For tidlig
- Hemmeligholdelse Kan ikke beskyttes
- Viktigere å publisere/at resultatene blir kjent er viktigere enn beskyttelse

Del 7. Økonomiske effekter - detaljer

Spørsmål 7 - 3 Forventes økte royalties eller lisensinntekter som en direkte eller indirekte følge av EU-prosjektet?

- Ja
- Nei

Spørsmål 7 - 4 I hvilken grad vil den forventede oppdragsmengde øke som en følge av dette prosjektet de første 5 årene?

- Ikke i det hele tatt I noen grad I meget stor grad

Del 8. Effekter på din institusjons innovasjonsevne

Vennligst benytt følgende skala i etterfølgende spørsmål

- 1 I svært liten grad 2 3 I noen grad 4 5 I svært stor grad

Spørsmål 8 - 1 Vurder i hvilken grad du er enig eller uenig i følgende påstander vedrørende kompetanseoppbygging i forbindelse med EU-prosjektet (sett ett kryss pr. utsagn)

- a) Vi har opparbeidet en unik faglig/vitenskapelig kompetanse som bringer oss i front internasjonalt
- b) Vi har særlig opparbeidet økt teknologisk/metodisk kompetanse som følge av prosjektet

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| c) Vi har særlig opparbeidet <u>markedskompetanse</u> som følge av prosjektet | <input type="radio"/> |
| d) Vi har særlig opparbeidet kompetanse på <u>kontraktsforhandlinger</u> | <input type="radio"/> |
| e) Vi har særlig opparbeidet kompetanse på <u>produksjonsprosesser</u> | <input type="radio"/> |
| f) Vi har særlig opparbeidet kompetanse på <u>internasjonalt samarbeid</u> | <input type="radio"/> |
| g) Vi har særlig opparbeidet kompetanse på <u>offentlig innkjøp/offentlig forvaltning</u> | <input type="radio"/> |
| h) Vi har gjennom prosjektet fått økt kunnskap om <u>brukerbehov</u> | <input type="radio"/> |
| i) Vi har gjennom prosjektet fått økt kunnskap om <u>patentering/beskyttelse av intellektuell eiendom</u> | <input type="radio"/> |

Spørsmål 8 - 2 Vennligst oppgi om man har oppnådd nye langsiktige samarbeidsrelasjoner med: **1 2 3 4 5**

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) FoU/UoH-miljø i Norge | <input type="radio"/> |
| b) FoU/UoH-miljø i Europa | <input type="radio"/> |
| c) Norske bedrifter | <input type="radio"/> |
| d) Utenlandske bedrifter | <input type="radio"/> |
| e) Offentlig forvaltning i Norge | <input type="radio"/> |
| f) Offentlig forvaltning i et eller flere europeiske land (inkl. Kommisjonen) | <input type="radio"/> |
| g) FoU/UoH-miljø/Bedrift/Offentlig forvaltning utenfor Europa | <input type="radio"/> |

Del 9. Prosjektets ringvirkninger

Spørsmål 9 - 1 Vil det faktisk at du eller din forskningsgruppe deltar i EU-prosjektet få samfunnsmessige ringvirkninger på noen av disse områdene? **Ja Nei**

- | | | |
|--|---|-----------------------|
| a) Miljø | <input type="radio"/> | <input type="radio"/> |
| b) Helse | <input type="radio"/> | <input type="radio"/> |
| c) Utdanning | <input type="radio"/> | <input type="radio"/> |
| d) Bedret ressursbruk og energiutnyttning | <input type="radio"/> | <input type="radio"/> |
| e) Transport | <input type="radio"/> | <input type="radio"/> |
| f) Lover, reguleringer, standarder | <input type="radio"/> | <input type="radio"/> |
| g) Økt kunnskapsgrunnlag for politikkutvikling | <input type="radio"/> | <input type="radio"/> |
| h) Annet (spesifiser) | <input style="width: 100px; height: 20px; border: 1px solid black;" type="text"/> | <input type="radio"/> |

Spørsmål 9 - 2 Vil det faktisk at du eller din forskningsgruppe deltar i EU-prosjektet få næringsøkonomiske ringvirkninger på noen av disse områdene? **Ja Nei**

- | | | |
|---|-----------------------|-----------------------|
| a) Overføring av kunnskap til norske bedrifter | <input type="radio"/> | <input type="radio"/> |
| b) Overføring av teknologi til norske bedrifter | <input type="radio"/> | <input type="radio"/> |
| c) Bedre tjenester/produkter til sluttbrukere | <input type="radio"/> | <input type="radio"/> |
| d) Økt konkurransekraft for norsk industri | <input type="radio"/> | <input type="radio"/> |

Del 10. Totalvurdering

Spørsmål 10 - 1 Hva er din totalvurdering av prosjektet samlet sett så langt?

Svært mislykket Mislykket Ubestemt Vellykket Svært vellykket

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Svært mislykket		Ubestemt		Svært vellykket

Spørsmål 10 - 2 I hvor stor grad vil du si at følgende elementer er vellykkede eller mislykkede innenfor prosjektet? **1 2 3 4 5**

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Kompetanseutvikling | <input type="radio"/> |
| b) Samarbeidsmessige resultater/ nettverksbygging | <input type="radio"/> |
| c) Grunnlag for nye FoU prosjekt | <input type="radio"/> |
| d) Potensial for økonomisk resultat | <input type="radio"/> |
| e) Markedsposisjon og kundenettverk | <input type="radio"/> |
| f) Forskningsresultater/ | <input type="radio"/> |

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Ingen innvirkning		Noe innvirkning		Helt avgjørende

Spørsmål 10 - 3 Vennligst angi hvor avgjørende EU-finansieringen totalt sett var for prosjektet?

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a)Hvor avgjørende var EU-finansieringen for at prosjektet overhodet kunne startes opp | <input type="radio"/> |
| b)Hvor avgjørende var EU-finansieringen for størrelsen på prosjektet | <input type="radio"/> |
| c)Hvor avgjørende var EU-finansieringen for hvor raskt prosjektet kunne gjennomføres | <input type="radio"/> |
| d)Hvor avgjørende var EU-finansieringen for at man kunne gjennomføre mer teknologisk risikable prosjekter | <input type="radio"/> |
| e)I hvilken grad er europeisk samarbeid avgjørende for gjennomføringen av prosjektet | <input type="radio"/> |

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Svært uenig		Ubestemt		Helt enig

Spørsmål 10 - 4 Prosjektets strategiske betydning for institusjonen

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a)EU-prosjektet har stor betydning for instituttets fremtidige utvikling | <input type="radio"/> |
| b)EU-prosjektet ligger nært opp til vår kjernekompetanse | <input type="radio"/> |
| c)EU-prosjektet er ikke ledd i noen spesiell langsiktig satsing for instituttet | <input type="radio"/> |
| d)Ledelsen har engasjert seg sterkt i EU-prosjektet | <input type="radio"/> |

Spørsmål 10 - 5 På bakgrunn av dine erfaringer så langt, vil din institusjon søke om EU-støtte en gang til i 6. eller 7. rammeprogram?

- Ja
- Nei
- Vet ikke

Vennligst gi en kort begrunnelse dersom instituttet IKKE akter å søke

Hvordan vil dere da alternativt bruke egne FoU-ressurser?

- 1. Delta i nasjonale samarbeidsprosjekter
- 2. Delta i andre internasjonale samarbeidsprosjekter
- 3. Drive FoU-arbeid med andre problemstillinger
- 4. Annet

Del 11. Virkemiddelapparatet

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Ingen nytte		Ubestemt		Meget stor nytte

Spørsmål 11 - 1 Vennligst kryss av hvilke informasjonskilder som er benyttet i forbindelse med deltakelse i EU-prosjektet, og angi hvilken nytte dere har hatt av den enkelte del av virkemiddelapparatet:

Del av virkemiddelapparat	Ikke benyttet	Benyttet	1	2	3	4	5
a) EU ForskningsInfo i Norges forskningsråd	<input type="radio"/>						
b) Nasjonalt programansvarlig i Norges forskningsråd	<input type="radio"/>						
c) Andre deler av Norges forskningsråd	<input type="radio"/>						
d) EU-Innovasjon	<input type="radio"/>						
e) Forskningsråden i Brussel	<input type="radio"/>						
f) Norsk FoU-institutt med erfaring fra EU-systemet	<input type="radio"/>						
g) EU-forskningskoordinatorene ved universitetene	<input type="radio"/>						
h) EUs hjemmesider	<input type="radio"/>						
i) EUs programkoordinator (e.l.)	<input type="radio"/>						
j) Eksterne konsulenter	<input type="radio"/>						

Spørsmål 11 - 2 Vennligst kryss av hvilke *uformelle* informasjonskilder som er benyttet i forbindelse med deltakelse i EU-prosjektet, og angi hvilken nytte dere har hatt av den enkelte del av støtteapparatet:

Del av virkemiddelapparat	Ikke benyttet	Benyttet	1	2	3	4	5
a) Norske kollegaer med erfaring fra EU-forskning	<input type="radio"/>						
b) Utenlandske kollegaer med erfaring fra EU-forskning	<input type="radio"/>						

Spørsmål 11 - 3 Er egen kontakt med andre forskere en viktigere informasjonskilde enn virkemiddelapparatet?

- Ja
- Nei
- Like viktige

Spørsmål 11 - 4 På hvilke områder føler du størst behov for råd/veiledning fra det offentlige virkemiddelapparatet?

	Ja	Nei	Ikke aktuelt
a) Generell informasjon om særprogram eller programaktivitet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Informasjon om søknadsfrister	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Informasjon om innhold/tema for utlysning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Formelle krav og prosedyrer i forbindelse med søknaden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Klargjøring av kriterier for å kunne oppnå støtte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Søknadsutforming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) Sammensetning av konsortier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) Kobling mot andre FoU-miljøer/bedrifter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) Veiledning om kontrakter/rettigheter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
---	---	---	---	---

I svært liten grad

I noen grad

I svært stor grad

Spørsmål 11 - 5 I hvilken grad føler du behov for forbedringer av støtte i forbindelse med deltakelse i EUs rammeprogram på følgende områder?

1 2 3 4 5

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Støtte til utforming av søknad | <input type="radio"/> |
| b) Nasjonal medfinansiering/økonomisk støtte | <input type="radio"/> |
| c) Samordning med nasjonale støtteordninger for FoU (NFR/SND) | <input type="radio"/> |
| d) Norges forskningsråds generell servicenivå | <input type="radio"/> |
| e) Generell informasjon om EUs rammeprogrammer | <input type="radio"/> |
| f) Generell informasjon om særprogram eller programaktivitet | <input type="radio"/> |
| g) Informasjon om søknadsfrister | <input type="radio"/> |
| h) Informasjon om innhold/tema for utlysninger | <input type="radio"/> |
| i) Formelle krav og prosedyrer i forbindelse med søknaden | <input type="radio"/> |
| j) Klargjøring av kriterier for å kunne oppnå støtte | <input type="radio"/> |
| k) Søknadsutforming | <input type="radio"/> |
| l) Kobling mot andre FoU-miljøer/bedrifter | <input type="radio"/> |

Spørsmål 11 - 6 Har EUs 5. RP hatt en tematisk profil som passer institusjonens kunnskapsbehov?

- Ja
- Nei
- Delvis

Spørsmål 11 - 7 Hvilke tematiske områder dekkes ikke godt nok i:

5.

rammeprogram:

6.

rammeprogram:

Del 12. Andre synspunkter på 5 rammeprogram

Her kan du kommentere spesielle forhold av interesse vedrørende ditt prosjekt, eller også foreslå aktuelle forbedringstiltak for EUs rammeprogram og den norske deltakelsen:

Questionnaire sent to business participants

Del 1 Bakgrunnsinformasjon

Spørsmålene er fordelt på 13 seksjoner. Det vil ta ca 20 minutter å besvare undersøkelsen. Du kan navigere fram og tilbake i skjemaet ved hjelp av knappene nederst på sidene.

1.1 Generell informasjon (Vennligst kontroller at forhåndsutfylt informasjon er korrekt)

Navn på bedrift:

Organisasjonsnummer:

Adresse:

Postnr:

Poststed:

Respondent (navn):

E-postadresse:

Stilling:

Telefonnr:

Faks:

Eventuelle spørsmål kan besvares av:

Helge Godø

NIFU

22595172

helge.godo@nifu.no

Aris Kaloudis

SINTEF STEP

22868012

aris.kaloudis@step.no

NB!

Vennligst kryss av under om du ønsker du å få informasjon om den ferdige rapporten

Ja takk, send meg en mail når rapporten er publisert

1.2 Om prosjektet

Kontraksnummer

Prosjektittel

Prosjektakronym

Særprogram

Prosjekttype

Prosjektleder i din organisasjon (om forskjellig fra respondent)

Har din organisasjon hatt koordinatoransvar i dette prosjektet?

Ja Nei

Del 2 Organisasjonstype

Spørsmål 2 - 1 Bedriftens eierforhold

- Inngår som del av konsern (dvs. annen virksomhet har eierandel større enn 33 % i denne bedriften)
- Er et frittstående selskap

Spørsmål 2 - 2 Antall ansatte pr. 01.01. 2003

- færre enn 10
- 11 - 20
- 21 - 50
- 51 - 100
- fler enn 100

Spørsmål 2 - 3 Hvilken bransje er bedriften tilknyttet (hvis flere, velg hovedaktiviteten)?

- 1. Produksjon av elektriske apparater, materiell. Data og systemutvikling.
- 2. Verkstedprodukter: Hydraulikk, elektronikk, skipsutstyr, utstyr og instrumenter for offshorevirksomhet.
- 3. Grafisk produksjon og trevarer
- 4. Produksjon av metallvarer, maskiner, mineralske produkter.
- 5. Utvikling og produksjon av miljøtekniske produkter, gummi/plastprodukter, farmasøytiske produkter, kjemisk tekniske produkter
- 6. Industriproduksjon ellers
- 7. Teko, trevare, møbler, bygg og anlegg
- 8. Fiskeindustri, fiskeoppdrett, næringsmidler
- 9. Annet(spesifiser):

Spørsmål 2 - 4 Omsetning

Vennligst angi omsetning 2001 MNOK 2002 MNOK

Spørsmål 2 - 5 Eksportandel

Vennligst angi eksportandel (i % av omsetningen) 2001 % 2002 %

Del 3 Generelt om FoU-virksomheten

Spørsmål 3 - 1 Omfang

Totale FoU kostnader i 2002 MNOK

Spørsmål 3 - 2 Har bedriften eller prosjektenheten deltatt i andre nasjonale eller internasjonale forskningsprogrammer?

- Ja
- Nei

Hvis ja, vennligst angi hvilke forskningsprogrammer?

- 1. Program i Norges Forskningsråd
- 2. EUs 6. rammeprogram
- 3. EUREKA programmet
- 4. Andre internasjonale FoU programmer
- 5. Andre særprogram i EUs 5. rammeprogram
- 6. EUs 4. rammeprogram
- 7. Nordisk industrifond
- 8. Skattefunn
- 9. Annet

Spørsmål 3 - 3 Har bedriften eller prosjektenheten søkt og fått avslag på annen deltakelse i EUs 5. rammeprogram?

- Ja
- Nei

Hvis ja, hvor mange ganger har dere opplevd å få avslag?

Hva har oftest skjedd med de avslåtte prosjektene?

- 1. De har blitt utsatt inntil videre
- 2. Man har søkt og gjennomført prosjektet under annet program
- 3. Man har gjennomført prosjektet med egne midler

Del 4. EU-prosjektet

Definisjoner: EU-prosjektet gjennomføres av et internasjonalt konsortium bestående av koordinator, partnere, assosierte partnere og underleverandører.

Spørsmål 4 - 1 Er dette prosjektet en videreføring av et annet FoU-prosjekt?

- Nei
- Ja, videreføring av internt finansiert FoU-prosjekt
- Ja, videreføring av nasjonalt finansiert FoU-prosjekt
- Ja, videreføring av et tidligere EU-prosjekt
- Ja, videreføring av annet internasjonalt finansiert FoU-prosjekt

Spørsmål 4 - 2 Vennligst oppgi antall personer fra din organisasjon som er involvert i EU-prosjektet

- a) Totalt antall personer (ikke årsverk)
- b) Hvor mange av de involverte er doktorgradsstudenter?
- c) Hvor mange av de involverte er kvinner?

Spørsmål 4 - 3 Hvor mange partnere er det i konsortiet tilknyttet EU-prosjektet, og hvor mange av disse er nye samarbeidspartnere for din bedrift?

- | | Totalt antall | Antall partnere som bedriften eller prosjektenheten <u>ikke</u> har samarbeidet med før |
|------------------------|----------------------|---|
| a) Koordinator | <input type="text"/> | <input type="text"/> |
| b) Partner | <input type="text"/> | <input type="text"/> |
| c) Assosierte partnere | <input type="text"/> | <input type="text"/> |
| d) Underleverandører | <input type="text"/> | <input type="text"/> |

Vennligst benytt følgende skala i etterfølgende spørsmål

- | | | | | |
|--------------------|---|-------------|---|-------------------|
| 1 | 2 | 3 | 4 | 5 |
| I svært liten grad | | I noen grad | | I svært stor grad |

Spørsmål 4 - 4 I hvilken grad har bedriften eller prosjektenheten deltatt i de følgende aktivitetene?

- | | | | | | |
|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a) Utvikling av prosjektidé | <input type="radio"/> |
| b) Problembeskrivelse | <input type="radio"/> |
| c) Søknadsutforming | <input type="radio"/> |
| d) Prosjektgjennomføring | <input type="radio"/> |

Spørsmål 4 - 5 Bedriftens rolle ved utvelgelse av partnere og sammensetning av konsortiet

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a) Vi tok initiativet og kontaktet andre partnere | <input type="radio"/> |
| b) Vi ble kontaktet av de andre partnerne i konsortiet | <input type="radio"/> |
| c) Det var av stor og strategisk betydning for bedriften at bestemte partnere deltok | <input type="radio"/> |

Sum Annen ekstern kilde %
 % (Skal være 100)

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Ingen betydning		Noe betydning		Svært stor betydning

Spørsmål 5 - 3 Vennligst vurder betydningen av følgende momenter som motiv for din bedrifts deltakelse i EU-samarbeidet på dette prosjektet? (Sett ett kryss pr. utsagn)

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a)Tilgang til teknologi | <input type="radio"/> |
| b)Tilgang til kompetanse | <input type="radio"/> |
| c)Tilgang til markedskontakter | <input type="radio"/> |
| d)Tilgang til forskningsnettverk | <input type="radio"/> |
| e)Tilgang til finansielle midler | <input type="radio"/> |
| f)Tilgang til utstyr og testanlegg | <input type="radio"/> |
| g)Annet, spesifiser: <input type="text"/> | <input type="radio"/> |

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Svært uenig		Ubestemt		Helt enig

Spørsmål 5 - 4 Hindringer i søknadsfasen:

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a)Det var vanskelig å finne relevante partnere | <input type="radio"/> |
| b)Formaliteter mht. skjemaer og regler for prosjektbeskrivelsen var et problem | <input type="radio"/> |
| c)Det var vanskelig å samordne søknadsarbeidet | <input type="radio"/> |
| d)Det var vanskelig å bli enige om ressursfordeling | <input type="radio"/> |
| e)Det var vanskelig å bli enige om rettigheter (eiendomsrett/bruksrett for kommersiell utnyttelse) | <input type="radio"/> |

Spørsmål 5 - 5 Hindringer i gjennomføringsfasen:

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a)Rapporteringskravene fra EU var for omfattende | <input type="radio"/> |
| b)Koordinatorens ledelseskvalifikasjoner var for dårlige | <input type="radio"/> |
| c)Den faglige målsetting var for ambisiøs | <input type="radio"/> |
| d)Prosjektet har ikke fått en god fordeling av ressurser mellom partnerne | <input type="radio"/> |
| e)Det var for mange partnere med i konsortiet | <input type="radio"/> |
| f)Konsortiet var dominert av en eller flere store aktører | <input type="radio"/> |
| g)Håndtering av konfidensiell informasjon var problematisk | <input type="radio"/> |
| h)Det eksisterer kultur/språkproblemer | <input type="radio"/> |
| i) Enkelte av partnere respekterer ikke tidsfrister, og leverer resultater for sent | <input type="radio"/> |

Del 6. Prosjektets resultater

Spørsmål 6 - 1a	Forventes ikke	Er oppnådd	Forventes	Forventes
Oppnådde eller forventede resultater	oppnådd		oppnådd i løpet av prosjektet	oppnådd i løpet av 3 år etter avslutningen av prosjektet

(kryss av for hvilke resultater som er oppnådd/forventes for bedriften)

- | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Utvikling av ny teknologi | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) Utvikling av ny kunnskap/kompetanse | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) Utvikling av nye metoder | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) Utvikling av ny prosess | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) Utvikling av nytt produkt/system | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f) Utvikling av ny tjeneste | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| g) Implementering av ny teknologi | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| h) Salg av know-how eller lisens | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| i) Søknad om patent | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| j) Utvikling av prototyp | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| k) Etablering av standarder, normer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| l) Vitenskapelige publikasjoner | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| m) Doktorgrader | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| n) Etablert nettverk | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Spørsmål 6 - 1b Hvor mange av følgende resultater er oppnådd hittil?

- a) Antall artikler i vitenskapelige tidsskrifter
 b) Antall doktorgrader
 c) Antall patentsøknader

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
I svært liten grad		I noen grad		I svært stor grad

Spørsmål 6 - 2 Vennligst besvar følgende spørsmål vedrørende forventede fremtidige endringer i din bedrifts markedsposisjon som følge av EU-prosjektet:

- | | 1 | 2 | 3 | 4 | 5 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Prosjektet har styrket vår posisjon i forhold til våre konkurrenter | <input type="radio"/> |
| b) Prosjektet har blitt et springbrett mot andre EU-prosjekter | <input type="radio"/> |
| c) Prosjektet har bidratt til å befeste vår posisjon overfor våre etablerte kunder | <input type="radio"/> |
| d) Prosjektet representerer en innfallsport mot nye kunder | <input type="radio"/> |
| e) Prosjektet representerer en innfallsport mot nye leverandører | <input type="radio"/> |
| f) Prosjektet vil få konsekvenser for vår bedrifts eksisterende leverandører/kunder | <input type="radio"/> |

Del 7. Økonomiske effekter

Vi har forståelse for at det for mange vil være vanskelig å angi sikre og eksakte svar på spørsmål 7. Vi understreker derfor at spørsmålene angår forventninger omkring fremtidige økonomiske forhold. Dine svar vil derfor kunne reflektere kvalifiserte antakelser, men forventes ikke å ha høyt presisjonsnivå. Omtrentlige svar er bedre enn ikke-svar.

Spørsmål 7 - 1 Forventes direkte økonomiske effekter i form av økte salgsinntekter eller reduserte kostnader som kan knyttes til prosjektet?

- Nei, ingen direkte økonomiske effekter
- Ja

Hvis ja, vennligst spesifiser (begge kan krysses av)

- omsetningsøkning
- kostnadsreduksjon

Spørsmål 7 - 2 Vennligst oppgi om resultatene av EU-prosjektet er beskyttet

Resultatene er beskyttet

Beskyttelse er ikke aktuelt

Hvis ja, hvordan? Hvis beskyttelse ikke er aktuelt, hvorfor?

- Patent
- Hemmeligholdelse
- For tidlig
- Kan ikke beskyttes
- Viktigere å publisere/at resultatene blir kjent er viktigere enn beskyttelse

Del 7. Økonomiske effekter - detaljer

Spørsmål 7 - 3 Forventes økte royalties eller lisensinntekter som en direkte eller indirekte følge av EU-prosjektet?

Ja

Nei

Spørsmål 7 - 4 Angi i hvilken grad du forventer resultatforbedringer de første 5 årene etter avslutningen av prosjektet (som følge av prosjektet)

Ikke i det hele tatt

I noen grad

I meget stor grad



Spørsmål 7 - 5 Angi første året med omsetning/salg eller observert kostnads-/produksjonsgevinst:

a) Antall måneder etter prosjektoppstart

Spørsmål 7 - 6 Angi totale forventede investeringer (utviklingskostnader) frem til salg/ implementering (inkludert kostnadene knyttet til EU-prosjektet):

a) Totale investeringer

 MNOK

Del 8. Effekter på bedriftens innovasjonsevne

Vennligst benytt følgende skala i etterfølgende spørsmål

1

2

3

4

5

I svært liten grad

I noen grad

I svært stor grad

Spørsmål 8 - 1 Vurder i hvilken grad du er enig eller uenig i følgende påstander vedrørende kompetanseoppbygging i forbindelse med EU-prosjektet (sett ett kryss pr. utsagn)

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Vår bedrift har <u>totalt sett</u> oppnådd økt kompetanse som følge av prosjektet | <input type="radio"/> |
| b) Vi har særlig opparbeidet økt <u>teknologisk/metodisk kompetanse</u> som følge av prosjektet | <input type="radio"/> |
| c) Vi har særlig opparbeidet <u>markedskompetanse</u> som følge av prosjektet | <input type="radio"/> |
| d) Vi har særlig opparbeidet kompetanse på <u>kontraktsforhandlinger</u> | <input type="radio"/> |
| e) Vi har særlig opparbeidet kompetanse på <u>produksjonsprosesser</u> | <input type="radio"/> |

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| f) Vi har særlig opparbeidet kompetanse på <u>internasjonalt samarbeid</u> | <input type="radio"/> |
| g) Vi har særlig opparbeidet kompetanse på <u>offentlig innkjøp/offentlig forvaltning</u> | <input type="radio"/> |
| h) Vi har gjennom prosjektet fått økt kunnskap om <u>brukerbehov</u> | <input type="radio"/> |
| i) Vi har gjennom prosjektet fått økt kunnskap om <u>patentering/beskyttelse av intellektuell eiendom</u> | <input type="radio"/> |

- Spørsmål 8 - 2 Vennligst oppgi om man har oppnådd nye langsiktige samarbeidsrelasjoner med:**
- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a) FoU/UoH-miljø i Norge | <input type="radio"/> |
| b) FoU/UoH-miljø i Europa | <input type="radio"/> |
| c) Norske bedrifter | <input type="radio"/> |
| d) Utenlandske bedrifter | <input type="radio"/> |
| e) Offentlig forvaltning i Norge | <input type="radio"/> |
| f) Offentlig forvaltning i et eller flere europeiske land (inkl. Kommisjonen) | <input type="radio"/> |
| g) FoU/UoH-miljø/Bedrift/Offentlig forvaltning utenfor Europa | <input type="radio"/> |

Del 9. Prosjektets ringvirkninger

- Spørsmål 9 - 1 Vil det faktisk at bedriften deltar i EU-prosjektet få samfunnsmessige ringvirkninger på noen av disse områdene?** **Ja/Nei**
- | | | |
|--|-----------------------|-----------------------|
| a) Miljø | <input type="radio"/> | <input type="radio"/> |
| b) Helse | <input type="radio"/> | <input type="radio"/> |
| c) Utdanning | <input type="radio"/> | <input type="radio"/> |
| d) Bedret ressursbruk og energiutnyttning | <input type="radio"/> | <input type="radio"/> |
| e) Transport | <input type="radio"/> | <input type="radio"/> |
| f) Lover, reguleringer, standarder | <input type="radio"/> | <input type="radio"/> |
| g) Økt kunnskapsgrunnlag for politikkutvikling | <input type="radio"/> | <input type="radio"/> |
| h) Annet (spesifiser) | <input type="radio"/> | <input type="radio"/> |

- Spørsmål 9 - 2 Vil det faktisk at bedriften deltar i EU-prosjektet få næringsøkonomiske ringvirkninger på noen av disse områdene?** **Ja/Nei**
- | | | |
|---|-----------------------|-----------------------|
| a) Overføring av kunnskap til andre norske bedrifter | <input type="radio"/> | <input type="radio"/> |
| b) Overføring av teknologi til andre norske bedrifter | <input type="radio"/> | <input type="radio"/> |
| c) Bedre tjenester/produkter til sluttbrukere | <input type="radio"/> | <input type="radio"/> |
| d) Økt konkurransekraft i din bransje | <input type="radio"/> | <input type="radio"/> |

Del 10. Totalvurdering

- Spørsmål 10 - 1 Hva er din totalvurdering av prosjektet samlet sett så langt?**
- Svært mislykket Mislykket Ubestemt Vellykket Svært vellykket
-

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Svært mislykket		Ubestemt		Svært vellykket

- Spørsmål 10 - 2 I hvor stor grad vil du si at følgende elementer er vellykkede eller mislykkede innenfor prosjektet?**
- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| a) Kompetanseutvikling | <input type="radio"/> |
| b) Samarbeidsmessige resultater/ nettverksbygging | <input type="radio"/> |
| c) Grunnlag for nye FoU prosjekt | <input type="radio"/> |

- d) Potensial for økonomisk resultat
- e) Markedsposisjon og kundenettverk
- f) Forskningsresultater/

Vennligst benytt følgende skala i etterfølgende spørsmål

1 2 3 4 5
Ingen innvirkning Noe innvirkning Helt avgjørende

Spørsmål 10 - 3 Vennligst angi hvor avgjørende EU-finansieringen totalt sett var for prosjektet? 1 2 3 4 5

- a) Hvor avgjørende var EU-finansieringen for at prosjektet overhodet kunne startes opp
- b) Hvor avgjørende var EU-finansieringen for størrelsen på prosjektet
- c) Hvor avgjørende var EU-finansieringen for hvor raskt prosjektet kunne gjennomføres
- d) Hvor avgjørende var EU-finansieringen for at man kunne gjennomføre mer teknologisk risikable prosjekter
- e) I hvilken grad er europeisk samarbeid avgjørende for gjennomføringen av prosjektet

Vennligst benytt følgende skala i etterfølgende spørsmål

1 2 3 4 5
Svært uenig Ubestemt Helt enig

Spørsmål 10 - 4 Prosjektets strategiske betydning for bedriften 1 2 3 4 5

- a) EU-prosjektet har stor betydning for bedriftens fremtidige utvikling
- b) EU-prosjektet ligger nært opp til vår kjernekompetanse
- c) EU-prosjektet er ikke ledd i noen spesiell langsiktig satsing for bedriften
- d) Ledelsen har engasjert seg sterkt i EU-prosjektet

Spørsmål 10 - 5 På bakgrunn av dine erfaringer så langt, vil din bedrift søke om EU-støtte en gang til i 6. eller 7. rammeprogram?

- Ja
- Nei
- Vet ikke

Vennligst gi en kort begrunnelse dersom bedriften IKKE akter å søke

Hvordan vil dere da alternativt bruke egne FoU-ressurser?

1. Delta i nasjonale samarbeidsprosjekter
2. Delta i andre internasjonale samarbeidsprosjekter
3. Drive FoU-arbeid med andre problemstillinger
4. Annet

Del 11. Virkemiddelapparatet

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
Ingen nytte		Ubestemt		Meget stor nytte

Spørsmål 11 - 1 Vennligst kryss av hvilke informasjonskilder som er benyttet i forbindelse med deltakelse i EU-prosjektet, og angi hvilken nytte dere har hatt av den enkelte del av virkemiddelapparatet:

Del av virkemiddelapparat	Ikke benyttet	Benyttet	1	2	3	4	5
a) EU ForskningsInfo i Norges forskningsråd	<input type="radio"/>						
b) Nasjonalt programansvarlig i Norges forskningsråd	<input type="radio"/>						
c) Andre deler av Norges forskningsråd	<input type="radio"/>						
d) EU-Innovasjon	<input type="radio"/>						
e) Forskningsråden i Brussel	<input type="radio"/>						
f) Norsk FoU-institutt med erfaring fra EU-systemet	<input type="radio"/>						
g) EU-forskningskoordinatorene ved universitetene	<input type="radio"/>						
h) EUs hjemmesider	<input type="radio"/>						
i) EUs programkoordinator (e.l.)	<input type="radio"/>						
j) Eksterne konsulenter	<input type="radio"/>						

Spørsmål 11 - 2 Vennligst kryss av hvilke *uformelle* informasjonskilder som er benyttet i forbindelse med deltakelse i EU-prosjektet, og angi hvilken nytte dere har hatt av den enkelte del av støtteapparatet:

Del av virkemiddelapparat	Ikke benyttet	Benyttet	1	2	3	4	5
a) Norske kollegaer med erfaring fra EU-forskning	<input type="radio"/>						
b) Utenlandske kollegaer med erfaring fra EU-forskning	<input type="radio"/>						

Spørsmål 11 - 3 Er egen kontakt med andre forskere en viktigere informasjonskilde enn virkemiddelapparatet?

- Ja
- Nei
- Like viktige

Spørsmål 11 - 4 På hvilke områder føler du størst behov for råd/veiledning fra det offentlige virkemiddelapparatet?	Ja	Nei	Ikke aktuelt
a) Generell informasjon om særprogram eller programaktivitet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Informasjon om søknadsfrister	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Informasjon om innhold/tema for utlysning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Formelle krav og prosedyrer i forbindelse med søknaden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) Klargjøring av kriterier for å kunne oppnå støtte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) Søknadsutforming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) Sammensetning av konsortier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) Kobling mot andre FoU-miljøer/bedrifter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) Veiledning om kontrakter/rettigheter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vennligst benytt følgende skala i etterfølgende spørsmål

1	2	3	4	5
I svært liten grad		I noen grad		I svært stor grad

Spørsmål 11 - 5 I hvilken grad føler du behov for forbedringer av støtte i forbindelse med deltakelse i EUs rammeprogram på følgende områder?

1 2 3 4 5

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) Støtte til utforming av søknad | <input type="radio"/> |
| b) Nasjonal medfinansiering/økonomisk støtte | <input type="radio"/> |
| c) Samordning med nasjonale støtteordninger for FoU (NFR/SND) | <input type="radio"/> |
| d) Norges forskningsråds generell servicenivå | <input type="radio"/> |
| e) Generell informasjon om EUs rammeprogrammer | <input type="radio"/> |
| f) Generell informasjon om særprogram eller programaktivitet | <input type="radio"/> |
| g) Informasjon om søknadsfrister | <input type="radio"/> |
| h) Informasjon om innhold/tema for utlysninger | <input type="radio"/> |
| i) Formelle krav og prosedyrer i forbindelse med søknaden | <input type="radio"/> |
| j) Klargjøring av kriterier for å kunne oppnå støtte | <input type="radio"/> |
| k) Søknadsutforming | <input type="radio"/> |
| l) Kobling mot andre FoU-miljøer/bedrifter | <input type="radio"/> |

Spørsmål 11 - 6 Har EUs 5. RP hatt en tematisk profil som passer din bransjes kunnskapsbehov?

- Ja
- Nei
- Delvis

Spørsmål 11 - 7 Hvilke kunnskapsbehov dekkes ikke godt nok i:

5.
rammeprogram:

6.
rammeprogram:

Del 12. Andre synspunkter på 5 rammeprogram

Her kan du kommentere spesielle forhold av interesse vedrørende ditt prosjekt, eller også foreslå aktuelle forbedringstiltak for EUs rammeprogram og den norske deltakelsen:

Appendix 6: List of informants interviewed in the evaluation

Ministries in Norway – Forskningsråd in Brussels

- Grete Ek Ulland, previous ekspedisjonssjef UFD
- Hugo Parr, Ekspedisjonssjef NHD
- Karen Nossun Bie and Brynhild Synnevåg, UFD
- Kristin Hauge, UFD/NHD
- Tore Grunne, OED
- Jostein Mykletun – previous Forskningsråd i Brussel
- Gard Titlestad – forskningsråd i Brussel
- Tore Grønningssæter - previous Forskningsråd i Brussel
- Sjur Baardsen – previous National expert at the EU-Commission

EU-Commission – DG Research

- Petter Fisch
- Costas Caracostas
- Isi Saragossi
- Clara de la Torre
- Birgit de Boissezon

Research Council of Norway

- Kari Kveseth, NFR
- Simen Ensby and Lena Endresen, EU-Forskningsinfo
- Ole Andreas Flagstad, previous Head of EU-Forskningsinfo
- Gudrun Langthaller – EU-Forskningsinfo
- Hilde Friedl, Inger Jensen, Per Magnus Kommandantvold - EU-Forskningsinfo
- Paul Sørensen, NFR (GROWTH-TRANSPORT)
- Ragna Valen og Viggo Mohr, NFR (QoL)
- Tone Visli, NFR (Marie Curie and Access to Research Infrastructure, IHP)
- Trygve Lande (Socio-economic knowledge base, IHP)
- Steinar Kvitsand, NFR (IST)
- Sissel Øverli, NFR (INNO)
- Egil Eike, NFR (GROWTH)
- Astrid B. Brenna, NFR (GROWTH)
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- Lisbeth Alnæs, Odd Myklebust, Aud Wærnes – SINTEF (5FP participants)
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- Sissel Hertzberg, NTNU
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- Ingrid Sogner, UiO
- Nils Petter Thorshaug, Norsk Hydro
- Ole Andreas Flagstad (DnV)
- Rolf Haugen, Telenor FoU
- Terje Torp, Statoil
- Robert Engels, Cognit

Branch associations

- John Vigrestad, TBL
- Knut Aune, Abelia
- Sindre Finnes, Prosessindustrien

Appendix 7: Brief note on rates of success

Success rate is normally defined as number of proposals granted to number of proposals submitted. Unfortunately, we have no reliable information from EU to calculate Norwegian or other countries' success rates in the entire 5FP or in the specific programs. Of course, this information is important in evaluating national performance in the 5FP. Having said that we have some indications that Norwegian success rate may not be far from the 5FP average. The purpose of this technical note is to explain how we may conclude that.

We know that 1086 Norwegian projects with 1571 Norwegian participations have been granted. The number of Norwegian participations in project proposals submitted to the entire 5FP seems to have been about 5,600. Yet, we should note that this is a highly uncertain figure. Thus, the Norwegian success rate, based on number of participations and not projects, is estimated to be about 28 per cent (1571 participations in projects granted divided by 5,600 participations in proposals submitted).

The annual report 2002 (COM(2003) 124 final) published some official statistics on participations in proposals received in 2001 by country (pages 50-51). The same report published official statistics on number of participations contracts signed in 2001 by country (pages 52-53). The EU-Commission warns that it is not possible to calculate national success rates from these tables since a contract signed in year 2001 might have been received as a project proposal in year 2000 or even in year 1999.

That is certainly true, but based on the figures in the annual report it is, after all, possible to calculate some first (and far from accurate) estimates of success rates for all member countries in the 5FP for the year 2001, as the ratio of number of participations from country A in contracts signed this year by the number of participations from country A in proposals submitted in 2001. All inconsistencies of this estimate should be equally relevant to all countries. Thus, this gives us a basis to compare country performance.

This way we find that the average success rate in the entire 5FP in 2001 was 25 per cent, compared to the 26 per cent Norwegian success rate in 2001. This is, in fact, the only indication that Norwegian success rate seems to be slightly above the 5FP average we have.

However, the warning from the EU-Commission should be taken seriously. We can only calculate the actual performance of Norway (measured as success rate) compared to other countries if and only if the official statistics on contract signed and proposals submitted for the entire 5FP are published. Before that we can only speculate on this matter.

Note also that the annual report 2001 (COM (2001) 756 final) published official statistics on country representation in proposals received in 2000 by country (pages 50-51) and number of participations contracts signed in 2000 by country (pages 52-53). It is not possible to calculate first estimates of success rates in 2000 based on these figures, since country representation (that is, at least one participation from country A in a proposal submitted in 2000) is incommensurable with total number of participations from country A in contracts signed in 2000.

Appendix 8: Estimate of the Norwegian contribution to the 5FP

The Norwegian contribution to the 5FP is determined by the Article 82(1)(a) in the agreement of the European Economic Area (EØS-avtalen).

The EFTA and Norwegian contribution is calculated each calendar year on the basis of the running payment obligations related to the 5FP. As known, many EU-projects in the 5FP are not completed before 2007. Therefore, Norway has to contribute to 5FP payments until the year 2006-2007. Before this date it is not possible to know the exact size of the Norwegian contribution to the 5FP.

Box: Article 82

1. When the cooperation envisaged under the present Part involves a financial participation of the EFTA States, this participation shall take one of the following forms:

(a) The contribution of the EFTA States, arising from their participation in Community activities, shall be calculated proportionally:

- to the commitment appropriations; and

- to the payment appropriations;

entered each year for the Community in the general budget of the Community for each budgetary line corresponding to the activities in question.

The proportionality factor determining the participation of the EFTA States shall be the sum of the ratios between, on the one hand, the gross domestic product at market prices of each of the EFTA States and, on the other hand, the sum of the gross domestic products at market prices of the EC Member States and of that EFTA State. This factor shall be calculated, for each budgetary year, on the basis of the most recent statistical data.

The amount of the contribution of the EFTA States shall be additional, both in commitment appropriations and in payment appropriations, to the amounts entered for the Community in the general budget on each line corresponding to the activities concerned.

The contributions to be paid each year by the EFTA States shall be determined on the basis of the payment appropriations.

Commitments entered into by the Community prior to the entry into force, on the basis of this Agreement, of the participation of the EFTA States in the activities in question - as well as the payments which result from this - shall give rise to no contribution on the part of the EFTA States.

The Norwegian contributions as a percentage of the 5FP payment appropriations were until now as follows:

1999: EFTA obligations 1.96% of the 5FP payment appropriations, of which Norway's part was 94.73%,

2000: EFTA obligations 1.83%, of which Norway's part was 94.49%

2001: EFTA obligations 1.88%, of which Norway's part was 94.19%

2002: EFTA obligations 2.13%, of which Norway's part was 94.14%

2003: EFTA obligations 2.13%, of which Norway's part was 94.65%

2004: EFTA obligations 2.19%, of which Norway's part was 94.94%

Based on this information, we may conclude that the Norwegian contribution to the 5FP covers, on average, about 2 per cent of the total payment appropriations in the 5FP. Now, 2 per cent of the 5FP budget - 13700 million Euro (excl. EURATOM) - equals to 274 million Euro. Assuming that one euro is, on average, equal to eight NOK in the period 1998-2007, we estimate that the Norwegian contribution to the entire 5FP will be 2192 million NOK.

Economic return as an indicator

Economic return is an important indicator of Norwegian participation performance. Economic return equal to 0,9 is a good result for Norway. Good economic performance is always a positive message to Norwegian policy makers.

However, and as shown later on (see 4.3.3), Norwegian participants did have high proposal costs in the 5FP. On top of that, there are considerable administration costs related to Norwegian participation, partly due to project management costs covered by the participants and partly due to administration costs related to the management of the Norwegian system for support and counselling as well as costs related to the Norwegian participation in Ministries and other Norwegian authorities. This means that participation in the 5FP represents in real terms an expense. Therefore, the key economic issue is to compare this expense with the direct and indirect benefits from participation. In other words, what is the net added economic value of participation for Norway?

The most important single indicator to be used in order to estimate the potential value of Norwegian participation is the total eligible R&D costs of the Norwegian projects. This cost is about 19 billion NOK. If Norwegian participants are able to extract this economic value, in terms of competence, networks, market contacts and improved economic performance, out of the participation, then, participating in EU's research should be considered as one of the most profitable investments in Norway.

Based on this consideration, the most important issue in this evaluation is not that of economic return, but that of whether and how much of the total value (eligible costs) of the EU-projects Norwegian participants absorb and exploit. In other words, the crucial policy question is related to the *capacity* of the Norwegian innovation system *to absorb* the values created in the Norwegian EU-projects.

A positive economic return gives a signal showing that Norwegian participants are competitive in Europe and are participating in project portfolios of large potential values. The next important question is how much of this value is transferred to the Norwegian innovation system.

Appendix 9: Glossary of terms and acronyms

AC	Additional Cost model - replaced by ACF in 6FP Assistant Contractor designation - only in 5FP
Accompanying Measure	An activity contributing to the implementation of the program or to the preparation of future activities of the program
ACTS	Advanced Communications Technologies and Services (4FP Program)
Allowable costs	See Eligible Costs
Article 169	New instrument for 6FP relating to complementary funding for Member States national R&D programs
Associated State	Means a State which is party to an international agreement with the Community, under the terms or on the basis of which it makes a financial contribution to all or part of the 5FP
Call for Proposals	As published in the Official Journal. Opens parts of the Workprogram for proposals, indicating what types of actions (RTD projects, Accompanying measures etc.) are required. A provisional timetable for such Calls is included in the Workprogram
Candidate Countries	Those NAS countries that are in process of becoming members of the EU
CEC	Commission of the European Communities
CERN	European Organisation for Nuclear Research
Cluster	A group of RTD projects and/or other cost-shared actions and/or accompanying measures that address a common theme or area of interest.
Commissioner	This is a member of the Commission. They are appointed by the member countries and are similar to Government Ministers in that they head different Directorate Generals.
Concertation	This is a process by which representatives of various projects in a similar technical area meet together to discuss results and common problems.
Coordination Activity	Type of action supported by the Program. Funds a group of related projects to undertake some common activity or setting up a network of interested parties around a theme.
Consortium	Means all the contractors participating in the project covered by this contract.
Consortium	Means an agreement that contractors conclude amongst

Appendix 9: Glossary of terms and acronyms

Agreement	themselves for the implementation of this contract. Such an agreement shall not affect the contractors' obligations to the Community and to one another arising from this contract
Continuously Open Call	One having no fixed closure date, but with a periodic evaluation of received proposals.
Contract	A grant agreement between the Community and the participants concerning the performance of an indirect action establishing rights and obligations between the Community and the participants on the one hand, and between the participants in that indirect action on the other
Contractor	A project participant who has a wide-ranging role in the project throughout its lifetime Means a signatory to the contract (and the JRC when it participates in the contract via an administrative agreement), other than the Community
Co-operative research project (for SMEs)	An SME special measure. Projects enabling at least three mutually independent SMEs from at least two Member States or one Member State and an Associated State to jointly Commission research carried out by a third party.
Co-ordinator (Co-ordinating contractor)	Lead or Prime contractor in a Community action, delegated by the consortium for the role of co-ordination with the Commission. Means the contractor identified in this contract who, in addition to its obligations as a contractor, is obliged to carry out the specific co-ordination tasks provided for in the contract on behalf of the consortium
CORDIS	This is an externally funded activity that maintains the central R & D database on behalf of the Framework Program.
COST	European Cupertino in the field of Scientific and Technical Research (www.belspo.be/cost/)
CPA or CPC or CPT	Cross-program Action or Cluster or Theme (in IST Program)
CRAFT	See Co-operative research project (for SMEs)
Critical Mass	New criterion for 6FP instruments - see detailed description in the text for each instrument
Demonstration Project	Projects designed to prove the viability of new technologies offering potential economic advantage but which cannot be commercialised directly. Has a special meaning in that it impacts the funding level.
DG	Director(ate) General

Appendix 9: Glossary of terms and acronyms

Direct action	An RTD activity undertaken by the JRC in the execution of the tasks assigned to it under the sixth Framework Program
Dissemination	This is the active and/or passive distribution of information about a project - it is mandatory to different extents in every project. Can also be seen as a surreptitious way of marketing. The disclosure of knowledge by any appropriate means other than publication resulting from the formalities for protecting knowledge
Dissemination plan	A plan of how to carry out the above
EC	European Commission
eContent	A EU funded program outside of the Framework Program
EEA	See European Economic Area
Eligible costs	Costs that are reimbursable in full or in part by the Commission, under the terms of the Contract that is the basis for the project.
ERA	See European Research Area
ESF	European Science Foundation
ESPRIT	FP1, 2, 3 and 4 Program – European Strategic Program for R&D in IT
ETSI	European Telecommunications Standards Institute
EU	European Union
EUREKA	A Europe-wide Network for Industrial R&D
European Economic Area	This now consists of Iceland, Liechtenstein and Norway and has a regulated member-relationship with the EU.
European Research Area (ERA)	Denotes the possible synergistic cohesion of the various R&D programs both national and multinational within the EU.
Evaluation	The process by which proposals are retained with a view to selection as projects, or are not retained. Evaluation procedures are fully transparent and published in the Evaluation Manual.
FC	Full Cost with calculated overhead
FCF	New cost basis in 6FP, replacing FF which essentially provides a fixed overhead of 20% to costs excluding subcontracts
Fellowship	Marie Curie fellowships are either fellowships, where individual researchers apply directly to the Commission, or host fellowships, where institutions apply to host a number of researchers
FET	Future and Emerging Technologies
FF	Full Cost with fixed overhead of 80%- Only in 5FP
FP	Framework Program

Appendix 9: Glossary of terms and acronyms

ICT	Information and communications technologies
Independence	Independence is defined as - 1. Two legal entities shall be independent of one another where there is no controlling relationship between them. A controlling relationship shall exist where one legal entity directly or indirectly controls the other or one legal entity is under the same direct or indirect control as the other. Control may result in particular from: (a) direct or indirect holding of more than 50% of the nominal value of the issued share capital in a legal entity, or of a majority of voting rights of the shareholders or associates of that entity; (b) direct or indirect holding in fact or in law of decision-making powers in a legal entity. 2. Direct or indirect holding of more than 50% of the nominal value of the issued share capital in a legal entity or a majority of voting rights of the shareholders or associates of the said entity by public investment corporations, institutional investors or venture-capital companies and funds shall not in itself constitute a controlling relationship. 3. Ownership or supervision of legal entities by the same public body shall not in itself give rise to a controlling relationship between them."
Integrated Project	A new type of project in 6FP that comprises a coherent set of component actions which may vary in size and structure according to the tasks to be carried out, each dealing with different aspects of the research needed to achieve common overall objectives, and forming a coherent whole and implemented in close coordination
Integration	Application of synergy, by which different fields of endeavour are brought together to yield results of far greater significance than would have been possible through individual and independent actions.
International organisation	Any legal entity arising from the association of States, other than the Community, established on the basis of a treaty or similar act, having common institutions and an international legal personality distinct from that of its Member States.
IP	See Integrated Project
IPR	Intellectual Property Rights
Irregularity	Any infringement of a provision of Community law or any breach of a contractual obligation resulting from an act or omission by a contractor which has, or would have, the effect of prejudicing the general budget of the Communities or budgets managed by them through unjustified expenditure.
ISERD	Israel Europe Research and Development - Israel Directorate for Framework Program
ISO	International Standards Organisation
ISTAG	Information Society Technologies Advisory Group
Joint Research Centre	The Joint Research Centre of the European Commission.
JRC	See Joint Research Centre
KA	See Key Action

Appendix 9: Glossary of terms and acronyms

Key Action	In 5FP Each Specific Program was divided into Key Actions, each covering a broad technical domain
Knowledge	The results, including information, whether or not they can be protected, arising from the project governed by the contract, as well as copyrights or rights pertaining to such information following proposals for, or the issue of patents, designs, plant varieties, supplementary protection certificates or similar forms of protection.
Legitimate interest	A contractor's interest of any kind, particularly a commercial interest, that may be claimed in the cases provided for in the contract. To this end the contractor must prove that failure to take account of its interest would result in its suffering disproportionately great harm.
Leonardo da Vinci	A EU funded program outside of the Framework Program
Marie Curie	See Fellowship
Member	An optional designation used in 5FP for organisations joining a Network or Accompanying Measure
Memorandum of Understanding	A legal agreement suggested for signature by individual organisations while building a consortium to make a proposal.
NAS	New Associated State - States of Eastern and Central Europe that have become associated to the Framework Program.
Network of Excellence	New type of 6FP project to foster co-operation between centres of excellence in universities, research centres, enterprises, including SMEs, and science and technology organisations. The activities concerned will be generally targeted towards long-term, multidisciplinary objectives, rather than predefined results in terms of products, processes or services
NIS	Newly Independent State. Refers to those countries, now independent that formally were part of the Soviet Union - generally now excluding those regarded as NAS . New Israel Shekel - current Israeli currency
NoE	See Network of Excellence
Official Journal	Legal journal of the EU where notices are publication
Pre-existing know-how	The information which is held by contractors prior to the conclusion of the contract, or acquired in parallel with the duration of the contract it, as well as copyrights or rights pertaining to such information following applications for, or the issue of, patents, designs, plant varieties, supplementary protection certificates or similar forms of protection. Also referred to as Background.

Appendix 9: Glossary of terms and acronyms

Pre – Registration	Procedure by which proposers notify the Commission of their intention to submit a proposal
Project	All the work referred to in Annex I of a contract.
Protocol	A tool in 5FP to assist in proposal submittal
Public body	A public sector body or a legal entity governed by private law with a public-service mission providing adequate financial guarantees
RACE	A part of the 2FP and 3FP which dealt with broadband networking.
Research Infrastructures	Facilities necessary for conducting research or for supporting the researchers. These may include research institutes, laboratories, test beds and other specialised research equipment, communications networks dedicated to research (including the Internet), libraries, learned bodies and other sources of knowledge.
Research Network	A method of funding a network of researchers, enabling them to meet on a specific theme. Did not fund the research itself. Not available in the 6FP.
Research Training Networks	Promote training through research especially of researchers at pre-doctoral and at post-doctoral level
RN	See Research Network
Roadmap	Part of the Workprogram indicating which Technical topics are opened in each Call for Proposals , and at which time. The roadmap provides a means of focusing attention on areas or sub-areas of the Program in any specific Call , thereby optimising opportunities for launching collaborative projects and establishing thematic networks.
Roadmap project	Late in 5FP several IST areas launched such projects in preparation for 6FP. Most of them plan to metamorphose into proposals to 6FP. If one or more exist in an area, interested parties should contact them.
RTD	Research and Technology Development. RTD is also used to indicate one of the “types of actions addressed” in the Technical topics description. It then refers to R&D, Demonstration or Combined projects as defined in the Guide for Proposers.
SME	Small or Medium sized Enterprise <ul style="list-style-type: none"> - has fewer than 250 employees (full time equivalents); - has either an annual turnover not exceeding EUR 40 million, or an annual balance sheet total not exceeding EUR 27 million; and - conforms to the criterion of independence. (See Independence)

Appendix 9: Glossary of terms and acronyms

SME Exploratory Award	Given to an SME to support the exploratory phase of a project (for up to 12 months). Supported by the Program of Innovation and Special Measures for SMEs. Does not exist in 6FP.
Socrates	A EU funded program outside of the Framework program
Specific Support Action	This is an action that contributes to the implementation of the IST program or the preparation of future activities of the Program.
Specific Targeted Research Project	This is the name given in 6FP to what was formally known as RTD project.
SSA	See Specific Support Action
STREP	See Specific Targeted Research Project
Subcontract	An agreement to provide services, supplies or goods concluded between a contractor and one or more subcontractors for the specific needs of the project.
Subcontractor	For specific tasks of a fixed duration, a proposal / project may include sub-contractors, who do not participate in the project and do not benefit from the intellectual property rights acquired through achievements of the project. Third party carrying out minor tasks related to the project, by means of a subcontract with one or more of the contractors
Proposal Date	Equivalent to the closure date of a Call . The precise date and time by when proposals need to have been received by the Commission Services.
Take-up measures	Measures stimulating diffusion and utilisation of technologies developed under RTD projects. A specific form of Accompanying Measure . In 6FP can only exist within STREPs or IPs
Telematics	One of the high level programs under 3FP and 4FP, merged into IST in 5FP
Thematic Network	Type of project discontinued in 6FP and replaced by Concerted Action.
TN	See Thematic Network
Third country	A countries that is not a member of the EU and is not associated with the Framework Program
Work package	The activities to be undertaken by each project should be broken down into work packages. These can be further divided into Tasks.
Workprogram	Each specific program within the Framework Program is defined in its Workprogram which is normally updated annually. It defines the content of the calls for proposal to be issued.