

EX-POST EVALUATION OF THE ACTIVITIES CARRIED OUT BY DG
ENTERPRISE AND INDUSTRY UNDER THE SIXTH FRAMEWORK PROGRAMME
FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND DEMONSTRATION
ACTIVITIES

INNOVATION AND SPACE RESEARCH ACTIVITIES

DG ENTERPRISE AND INDUSTRY

EUROPEAN COMMISSION



technopolis_[group]

Final Report

Submitted by GHK and Technopolis within the framework of ENTR/04/093-FC-Lot 1

Specific contract reference: ENTR/D1/04/93/1/07/13

13 November 2008

Contact person for this contract:

James Leather, james.leather@ghkint.com

GHK, Clerkenwell House, 67 Clerkenwell Road, London, EC1R 5BL.

United Kingdom

Tel: +44 (0)20 7611 1100

Fax: +44 (0)20 3368 6900

Document Control

<i>Document</i>	<i>Final Report</i>
<i>Job number</i>	<i>30254727</i>
<i>Prepared by</i>	<i>James Leather; John Clark; Anca Dumitrescu; Effie Pitsaros</i>
<i>Checked by</i>	<i>Nick Bozeat; Paul Simmonds</i>
<i>Date</i>	<i>13/11/2008</i>

CONTENTS

LIST OF ACRONYMS	5
EXECUTIVE SUMMARY	6
This evaluation	6
Overview of innovation and space research activities under the FP6	6
Method of approach.....	7
Results and conclusions: innovation activities	7
Results and conclusions: space research activities	10
Syntheses of key study findings	15
1 INTRODUCTION	17
1.1 This report	17
1.2 The aims and purpose of the study	17
1.3 The Sixth Framework Programme	18
1.3.1 FP6 and innovation	18
1.3.2 FP6 and space research	21
1.4 Innovation and space research: European policy context.....	23
1.4.1 Innovation policy.....	23
1.4.2 Space research policy	26
1.5 Structure of this report.....	27
2 RESEARCH METHODOLOGY	29
2.1 Evaluation tasks and questions.....	29
2.2 The study methodology	30
2.3 Task 0: Inception phase	31
2.4 Tasks 1 to 3: Elaboration of the intervention logics and empirical research	31
2.4.1 Innovation activities	32
2.4.2 Space research activities	35
2.5 Tasks 4 and 5: Evaluation questions and pointers for future policy.....	36
3 EVALUATION RESULTS: INNOVATION	37
3.1 Overview of evaluation methodology: innovation.....	37
3.2 Rationale	37
3.2.1 Need and demand.....	37
3.2.2 Strategic fit.....	39
3.3 Implementation	40
3.3.1 Contracting arrangements.....	40
3.3.2 Project participants	42
3.3.3 Effectiveness of implementation.....	45
3.4 Achievements	53
3.4.1 Results.....	53

3.4.2	Impacts	59
3.4.3	European added value	63
3.4.4	Sustainability	66
3.4.5	Utility	68
4	EVALUATION RESULTS: SPACE RESEARCH	71
4.1	Overview of evaluation methodology: space research.....	71
4.2	Rationale	71
4.2.1	The problem that the initiative was designed to address	71
4.2.2	Strategic fit and relevance.....	72
4.3	Implementation	73
4.3.1	Implementation arrangements.....	73
4.3.2	Activities carried out	73
4.3.3	Effectiveness and efficiency of implementation	80
4.4	Achievements	81
4.4.1	Results and effectiveness	81
4.4.2	European added value and contribution to EU goals.....	86
4.4.3	Sustainability	87
5	CONCLUSIONS AND RECOMMENDATIONS: INNOVATION	88
5.1.1	Rationale	88
5.1.2	Implementation	91
5.1.3	Achievements	93
6	CONCLUSIONS AND RECOMMENDATIONS: SPACE RESEARCH	101
6.1.1	Rationale	101
6.1.2	Implementation	102
6.1.3	Achievements	103

LIST OF ACRONYMS

CA	Coordination Action
CIP	Competitiveness and Innovation Programme
EIP	Entrepreneurship and Innovation Programme
EIS	European Innovation Scoreboard
ERA	European Research Area
ESA	European Space Agency
FP5	Fifth Framework Programme for Research and Technological Development (1998-2002)
FP6	Sixth Framework Programme for Research and Technological Development (2002-2006)
FP7	Seventh Framework Programme for Research and Technological Development (2007-2013)
GMES	Global Monitoring for Environment and Security
HEI	Higher Education Institution
IP	Integrated Project
IPEG	Innovation Policy Expert Group
IPR	Intellectual Property Rights
IRC	Innovation Relay Centre
IRE	Innovating Regions in Europe
NoE	Network of Excellence
RIS	Regional Innovation Strategy
RIS-NAC	Regional Innovation Strategies in Newly Associated Countries
SAV	Strategic Added Value
SSA	Specific Support Action
STREP	Specific Targeted Research Project
TTT	Transnational technology transfer

EXECUTIVE SUMMARY

This evaluation

GHK and Technopolis were commissioned in December 2007 to carry out an ex post evaluation of DG Enterprise and Industry's innovation and space research activities that were funded through the Sixth Framework Programme (FP6). The evaluation focussed on the rationale, implementation and achievements of the innovation and space research activities. The evaluation questions covered: need and demand; strategic fit; implementation arrangements; effectiveness and efficiency; results and impacts; European added value; sustainability; and utility.

The results of the evaluation were expected to contribute towards the overall evaluation of the FP6. It should be noted, however, that there were a number of challenges faced during the evaluation, in particular the fact that many activities were still underway meaning that end-results (results and impacts) could not easily be measured. Furthermore, the particularities in respect of both the innovation and space research activities make comparison with other FP6 research areas problematic. For example, the innovation activities did not undertake any basic research, and thus it was not possible to assess their contribution towards achieving the European Research Area (ERA), the main goal of the FP6 (instead the focus was on achieving the Lisbon goals). Space-related services were a new activity in the FP6 and had not been supported in earlier Framework Programmes.

Overview of innovation and space research activities under the FP6

Innovation

DG Enterprise and Industry was responsible for the majority of the innovation activity supported through the FP6 (alongside DG Research and the Joint Research Centre). The total EU FP6 contribution to the DG Enterprise and Industry-led innovation activity was €200.6 million, split between two work programmes (*Research and innovation* and the *Coherent development of policies*):

- The *Research and innovation* work programme (DG Enterprise and Industry FP6 budget of €197.4 million) supported a range of activities designed to encourage transnational networking, cooperation, programme development, and the delivery of support services to businesses. In terms of the size of their budgets, the five main activities supported through the FP6 were: the IRC Network (€77.4 million); PRO INNO Europe (€35.3 million); Europe INNOVA (€35.2 million); the IRE Network (€27.6 million); and the IPR Helpdesk (€4 million);
- The *Coherent development of policies* work programme (DG Enterprise and Industry FP6 budget of €3.2 million) focussed on research to improve innovation policy-making, only a small part of which was the responsibility of DG Enterprise and Industry.

Space research

EU contributions to the 40 space research projects funded through the FP6 totalled some €125 million, split roughly 75:25 between Global Monitoring for Environment and Security (GMES) and Satellite Communication (Satcom) programmes:

- The *GMES* projects covered five major themes: land cover and vegetation; ocean; atmosphere; risks and emergencies; and security¹. Each of these had a large-scale Integrated Project (IP) devoted to it. Other projects provided supporting activities, some dedicated to a particular theme, others addressing common cross-cutting issues;
- The *Satcoms* projects were concerned with: rural area applications; mobility applications; tele-education and tele-medicine; and with ensuring convergence with GMES.

Method of approach

For the innovation activities, the following research tasks were undertaken:

- Consultation with the Commission officials responsible for the management of each of the activities;
- A desk-based review of existing evaluative evidence;
- A survey of coordinators of 62 of the FP6 projects, of which 30 responded;
- A survey of 'end-users', consisting of 27 members of the Innovation Policy Expert Group (IPEG), and 92 attendees of the INNO-Views workshops;
- An expert review of a set of the outputs generated by projects run through the IRE Network and through INNO-Grips.

For the space research activities, the following research tasks were undertaken:

- Desk research;
- A survey of 655 FP6 Space Research project participants;
- Case studies of six major projects in each of the key thematic areas;
- Formal reports on individual projects contributed by independent assessors.

Results and conclusions: innovation activities

Rationale

The nature of the innovation activities meant that their rationale was framed within the context of the Lisbon strategy, rather than contributing towards the achievement of the ERA. The two FP6 innovation work programmes were closely aligned with the goals of the Lisbon strategy, as presented in the Commission's 2000 Communication *Innovation in a knowledge-driven economy*². Specifically, these goals were to:

- Promote dialogue, good practice exchange and cooperation between Member States (relevant to PRO INNO Europe, Europe INNOVA and the IRE Network);

¹ Calls for Proposals for an IP on a further theme – water resources – were issued, but no contracts were awarded.

² COM (2000) 567 Innovation in a knowledge-driven economy

- Benchmark information on national innovation policy and performance (relevant to PRO INNO Europe and the IRE Network);
- Carry out research into innovation issues (relevant to PRO INNO Europe); and,
- Provide EU innovation services to SMEs (relevant to the IRC Network and the IPR Helpdesk).

With 41 per cent of DG Enterprise and Industry's FP6 innovation funding, it could be argued that the fourth Lisbon goal – EU innovation services – received a disproportionately large share of the total 'pot', possibly to the detriment of the other goals. (Demand for funding exceeded the available resources for many of the innovation Calls for Proposal). However, the rationale behind the balance of FP6 resources vis-à-vis the achievement of the Lisbon goals was not clearly articulated (for instance which were the priority goals, and how much funding was required), making it difficult to assess whether areas of the work programme were underfunded or not.

End-user surveys (of the IPEG members and the INNO-Views workshop attendees), and the work of the expert reviewers (in relation to a selection of the outputs generated through INNO-Grips and the IRE Network) suggests that **there was a strong European rationale for projects, and that it was appropriate for these activities to be funded through the FP6 in the absence of a suitable alternative**. However, the intervention logics underpinning the two FP6 innovation work programmes, and the individual activities, should have been made more explicit. Need and demand – beyond the strategic link to Lisbon – was not always evidenced, making evaluation difficult. Moreover, **the nature of need and demand is not the same throughout the EU, and there was arguably a greater need for the FP6 innovation activities to recognise that Member States and regions are in different positions in terms of innovation performance** (i.e. the differences between leading and lagging regions). Governance arrangements vary (e.g. regional powers/ autonomy), and it is important to avoid the use of a one-size-fits all model in the design of innovation support activities.

Implementation

On balance, the implementation of the FP6 innovation activities by DG Enterprise and Industry was both effective and efficient. A total of 87 per cent of the FP6 innovation funding controlled by DG Enterprise and Industry was distributed through Calls for Proposal. Across the eight Calls for Proposal, the average number of days between the call deadline and the contract signature was 331 days, though this varied from between 177 days and 479 days. All of the major activities were contracted through Calls for Proposal and for the large network initiatives (PRO INNO Europe, Europe INNOVA and aspects of the IRE Network) this would seem to have been the most effective and efficient way in which to implement such activities. However, it is possible that **greater use could have been made of Calls for Tender, particularly where standardised services were being delivered (e.g. the IPR Helpdesk), or where research studies were being commissioned.**

In terms of the support provided by DG Enterprise and Industry, a survey of coordinators for the projects funded through FP6 suggests a high level of satisfaction. 90 per cent of respondents were either 'satisfied' or 'very satisfied' with the support provided during project design and set-up, and 77 per cent were either 'satisfied' or 'very satisfied' in respect of the support provided during project operation. **Coordinators praised the way in which Commission officials adopted a**

collaborative approach to project management, though it was reported by some respondents that there were frequent changes in the Commission official responsible for the management of their project.

Achievements

Assessing the achievements of the DG Enterprise and Industry FP6 innovation activities was challenging given the fact that many projects were still underway at the time of the evaluation, and also that the achievements were generally qualitative and difficult to measure. Quantitative evidence on the achievements of the two EU level innovation services – the IPR Helpdesk and the IRC Network – was available, and the evidence collected suggests that both have provided useful and valued services. In respect of the IPR Helpdesk, a 2005 survey found that 89 per cent of users reported that their understanding of IPR issues had improved, and 81 per cent indicated that they were better able to manage IPR issues on their Framework Programme project. The IRC Network also generated results in terms of transnational technology transfer and cross-border knowledge exchange. **Within their respective areas, therefore, both EU services had achieved the results they were expected to deliver.**

The results collected from the innovation projects focussing on networking would suggest that the most progress was made in terms of ‘early stage’ results. The networks of innovation stakeholders created through Europe INNOVA, PRO INNO Europe and the IRE Network had generated successes in terms of networking, coordination, community-building, information gathering and reporting, and exchanges of ideas and experiences. For many participating regions this was very new and was a significant result, whilst for others the European aspect provided a different dimension to existing national activity.

With many projects still underway, there was less evidence available about the actions and impacts following on from these early stage results. Most projects were still in the process of developing and testing new strategies and policies, and new tools and methods for delivering innovation support to businesses. Until these strategies and tools are disseminated beyond project partners, and rolled-out elsewhere in Europe, the wider impacts of the FP6 innovation activities will be more limited. The experts who reviewed a number of the project outputs generated through PRO INNO Europe and the IRE Network stressed that there are a plethora of innovation toolkits, methods, strategies and policies available to policy-makers in Europe, and that the challenge for the FP6 projects will be in convincing policy-makers and practitioners that their contribution adds value.

The sustainability of the results and impacts achieved by the FP6 innovation activities depends in part on the extent to which projects are able to continue, and indeed whether there have been cultural and attitudinal changes that mean the projects will not be needed in the long term. All of the 30 projects that responded to the survey indicated that they would continue after FP6 funded finished, though around three quarters of these would still require EU funding. There was some evidence of attitudinal change, with surveys of IPEG members and INNO-Views workshop attendees reporting increased awareness of innovation topics and/or a propensity to consider the European ‘angle’ to innovation. However, activities such as workshops or topical research papers are very time-limited and will need to be regularly updated in order to remain relevant.

Recommendations

The recommendations of the study team in respect of the FP6 innovation activities are summarised as follows:

- As is the case under the CIP, **innovation policy should not form part of the research-oriented Framework Programmes** and should instead be framed within the context of competitiveness and growth policy;
- There would be merit in **strengthening the Open Method of Coordination aspects of EU support to innovation** (for instance, Member States reporting on their progress with national innovation strategies);
- There needs to be a **clear statement in respect of the intervention logic underpinning the innovation activities supported by the Commission** in order to improve overall coherence and clarify the roles of individual activities;
- There should be a **more systematic use of metrics** in order to ascertain the impacts of the innovation activities;
- **Greater use of Calls for Tender** – particularly where the activities being commissioned are standardised – would encourage private sector participation and may well deliver better value for money;
- If possible, **the nominated DG Enterprise and Industry official should remain in place throughout the duration of their respective project(s)**;
- Toolkits, methodologies and research papers need to add value above and beyond the wealth of existing material available, and should be more tailored to meet the specific needs of the policy-maker and practitioner communities;
- **Project design and implementation should pay more attention to the issue of implementation and delivery, in particular how to lever in support from national and regional authorities**;
- The results of the activities should not be lost, and **there may be merit in a ‘closing’ event to capture and disseminate information**. Moreover, opportunities to integrate results within PRO INNO Europe should be considered;
- There would be merit in **further research to assess how networks can be optimised** as a mechanism for achieving the Commission’s innovation goals.

Results and conclusions: space research activities

Rationale

The primary objective of the space elements of the FP6 RTD programme was to support the European Strategy for Space³ and the future European Space Policy⁴ with appropriate application-oriented research activities, in collaboration with the European Space Agency (ESA).

The European Strategy for Space is built around three objectives: (1) strengthening the foundation for space activities; (2) enhancing scientific knowledge and understanding;

³ COM(2000)597 Europe and Space: Turning to a new chapter

⁴ Resulting from the Green and White Paper process

and (3) reaping the benefits for markets and society through demand-driven exploitation of the technical capabilities of the space community, requiring continuous engagement with end-users.

The rationale for the FP6 work can thus be seen as incorporating not only direct benefits to the public and private sectors (item (3) above), but also including strategic components, including development of the European Research Area (item 1) and scientific components, including progressing scientific understanding ‘for its own sake’ (item 2). Assessments of the achievements of the work need to take account of all these objectives. In addition, there are other aspects of ‘rationale’ we need to consider, such as the appropriateness of carrying out the work under the auspices of FP6, and more generally the case for supporting the work with public money.

On the appropriateness of FP6 as a vehicle, there are important respects in which the space work differs from much other FP-supported R&D. **By and large, the degree of competitiveness for securing contracts for space projects was considerably lower than that for FP6 work in general, and the degree of technical risk of non-achievement was also relatively low. We have observed a certain tension between the need for ‘R&D’ to justify incorporation of the work under the Framework Programme umbrella, and the rather different GMES goals concerned with the need to deliver services for practical applications, although there is a significant element of risk associated with much of the work. Also, and relatedly, FP6 Space projects often resemble bought-in services, to a degree greater than is typical of Framework Programme contracts. These features are set to become more pronounced within FP7.**

That said, **we fully endorse the stress on user involvement within the general development of GMES (and Satcoms) in general.** Hence, given that Framework Programme was chosen as the funding vehicle, the difference in emphasis from other Framework Programmes is understandable.

Justification for the use of public money in supporting private R&D is often based on the risks inherent in the research, which, valuable as it is expected to be, will only be undertaken if participating companies and institutions are able to share the risks with a public body. With FP6 space work, however, public finance has a role closer to procurement than to risk-sharing – more specifically, to provide a set of pre-operational core services by the end of 2008. **To the extent that this is a valuable service which has to be (or will be) achieved, and which would not have been delivered in the absence of public finance, then the use of public funds is justified.**

At increasing levels of detail, individual themes, projects and work packages within projects have their own increasingly specific objectives, primarily concerning technical delivery rather than, for example, public utility or commercial success. Independent reviewers have considered that original objectives have retained their relevance, although in some cases changes in objectives to keep pace with external developments have been recommended.

Implementation

The implementation process involves calls for proposals (there were three such calls over the FP6 period), assessment of proposals, award of contracts, and administration,

monitoring and evaluation of the contracted work. For most of the major GMES Integrated Projects, each involving between 26 and 61 participants, only one or two proposals were considered. In one case (water) one proposal was received under each of calls 1 and 2, but these were regarded as unsatisfactory and the decision was taken not to proceed with this theme. In areas where two competing proposals were received, differences were mainly in terms of alternative objectives and approaches rather than different consortia compositions, which overlapped considerably, reflecting the limited numbers of large established European players in the areas involved.

Significant time lags, of up to two years, were involved in delivery of a decision on a tender by the Commission, and in finalisation of the contract following notification of a positive decision. These delays were felt by several project participants to have led to administrative problems, for example in planning and maintaining resources. **From the viewpoint of consortia members, bureaucratic procedures and delays represented the least satisfactory aspect by far of participation in FP6.** This finding is neither unusual nor surprising, being typical of responses received in evaluations of FP initiatives and of R&D programmes in general. Nevertheless, **it does appear that severe difficulties were experienced by some organisations, which reduced the effectiveness of their participation, and which might usefully be revisited in the future.**

Some complaints were received regarding ongoing administrative burdens also. However, annual review processes and assessments seem to work well and to be generally accepted.

From assessors' reports, it seems that the operation of consortia has generally been satisfactory, with effective collaboration between participants, no evidence of internal conflicts and, with occasional exceptions, participants 'pulling their weight' and contributing as planned. In one or two cases, integration leaves something to be desired, with some partners tending to work in isolation. From our own survey, participants generally seem to consider that levels of funding and structure of consortia were appropriate for the work programmes.

Achievements

In their overall project assessments, external assessors have generally been positive. Of the ten full project reviews we have obtained, five rate the project as 'good to excellent', with full achievement of objectives and technical goals. Four of the others are rated as 'acceptable', with most of the objectives and technical goals met, with only one rated as 'unsatisfactory'. The latter is now thought to be recovering, with the appointment of a replacement Project Co-ordinator.

Our survey found that some 85 per cent of consortia members considered that objectives were 'completely met' or 'met with minor exceptions'. Several respondents pointed out that their projects are ongoing – some are indeed still at relatively early stages – and that final judgements are therefore premature.

Regarding scientific achievements, we estimate that the projects have so far led to around 1000 scientific publications. Around four-fifths of respondents stated that their projects had resulted in 'new products and service' and 'improved information dissemination', the level of achievement with respect to these outputs being rated as

high in about half the cases involved. About 56 per cent thought that their work had made a major impact on the EU's S&T research capability and leadership.

It terms of individual themes, it appears that best progress has been made in the Marine and Atmosphere areas – these are relatively homogeneous areas with well-established research communities, whereas Land is more disparate, and emergency less well established. Scientific achievements to date include production of higher quality data, harmonisation of data from disparate sources, assimilation of data into modelling environments, validations at test sites, and production and dissemination of 'state of the environment' maps and forecasts. **In the main, exchange of information to date has taken place within the science community itself.**

Uptake of newly available services by users is at an early stage. There seems little doubt that results emerging from the projects *potentially* have very widespread utility – all of the large-scale projects with available external assessments were rated as having 'significant use potential', although assessors' views on the quality of plans for the use and dissemination of results, and on the extent of involvement of potential users *outside the consortia*, were more mixed.

There have clearly been strong efforts to try to ensure user involvement and 'connectedness' from the outset, and that is to be applauded. Involvement of users in consortia, and the formation of User Implementation Groups by the GMES Bureau, are examples of the emphasis that has rightly been placed on the importance of user needs. Demonstrations have been presented to potential users at test sites, which have often been received with great interest, although this is no guarantee of eventual uptake.

In terms of user categories, benefits to date have largely accrued to the science community. Not unnaturally, researchers find it easiest to communicate with their academic and researcher peers. **Potential public users have been strongly associated with the work, commercial users to a lesser extent, and the wider public to a minimal degree.**

Indeed, for the time being at least, **the importance of the FP6 Space work in satisfying demands of *end-users*, and the overall cost-benefit status of the work, remains 'not proven'.** This is partly a result of the lack of time elapsed for the work to show clear operational dividends, but it also derives from an impression that the outputs to date are not sufficiently attractive to 'sell themselves' without a great deal of 'marketing' effort. Initiatives to encourage demand for the developing services seem to involve a degree of struggle.

Whether the FP6 initiatives, and GMES more generally, turn out to be successful in social and/or market terms is as yet an unanswered question. It must be hoped that the order-of-magnitude increase in space expenditure under FP7, which will incorporate follow-on programmes for all the major themes, will pay substantial rewards in terms of development of highly-demanded downstream operational services, which will ultimately prove their worth by becoming self-sustaining.

Recommendations

Insofar as GMES has an important (perhaps overarching) *strategic* objective of providing Europe with an independent global monitoring facility, and given the broad success of most of the initiatives in scientific terms, we can conclude that (through FP6) it is firmly on course for a successful conclusion. However, despite the user involvement, we have time and again, in the course of this evaluation – in interviews, while conducting case studies, and through the participant questionnaire – heard reservations expressed regarding the extent and quality of communication and connectedness with end-users. There is a need for continuing with, and strengthening, such links. The upcoming evaluation of the GMES Bureau provides an opportunity for more detailed investigation of this issue, and implications for future policy.

Relatedly, high-level objectives, for end-use in particular, could be made more specific. There is no clear specification of concepts such as ‘pre-operational’ and ‘European capability’, nor any indications of the types and extent of end-user adoption of new services which would be deemed to represent ‘success’. Without such specifications, the possibility of assessing delivery against objectives is constrained.

More parochially, we suggest that the issue of the (possibly) changing character of Framework Programme (FP7 in particular) in incorporating development work on space-related services close to operations and with lower ‘research’ content, should be explicitly recognised and guidelines for proposal assessment amended as necessary.

Finally, the issue of delays in proposal assessments and contract negotiations is an ongoing cause for concern. Real problems have been encountered by participants as a result of such delays and possibilities for reducing them should be explored – but, crucially, without jeopardising the quality of assessments or of ultimate project work.

Syntheses of key study findings

The key findings of the evaluation of the **innovation** activities are summarised in the following Table.

Key finding (innovation)	Recommendation
The nature of the innovation activities meant that their rationale was framed within the context of the Lisbon strategy, rather than contributing towards the achievement of the ERA. The two FP6 innovation work programmes were closely aligned with the goals of the Lisbon strategy.	Innovation should not form part of the research-oriented Framework Programmes and should instead form part of competitiveness/ growth policy.
The intervention logics of the innovation work programmes and activities should have been made more explicit; need and demand were rarely evidenced making evaluation difficult. The nature of need and demand is not the same throughout the EU and there was arguably a greater need for the FP6 innovation activities to recognise that Member States and regions are in different positions in terms of innovation performance.	There should be a clear statement of the intervention logics underpinning the innovation activities to improve overall coherence and clarify the roles of individual activities.
The implementation of the FP6 innovation activities by DG Enterprise and Industry was both effective and efficient. However, it is possible that greater use could have been made of Calls for Tender, particularly where standardised services were being delivered (e.g. the IPR Helpdesk), or where research studies were being commissioned.	Greater use of Calls for Tender would encourage private sector participation and may well deliver better value for money.
Project coordinators praised the support provided by DG Enterprise and Industry, particularly the collaborative approach to project management. However, some coordinators reported that there were frequent changes in the Commission official responsible for the management of their project.	The nominated DG Enterprise and Industry official should remain in place throughout the duration of their respective project(s).
Assessing the achievements of the innovation activities was challenging since they were generally qualitative and difficult to measure. The evidence available suggests that there had been successes in terms of networking, coordination, community-building, information gathering and reporting, and exchanges of ideas and experiences. For many participating regions this was a new and significant result, and the European aspect provided a different dimension to existing national activity.	There should be a more systematic use of metrics in order to ascertain the impacts of the innovation activities.
There was less evidence available about the actions and impacts following on from early stage results. Until project outputs are rolled-out elsewhere in Europe, the wider impacts of the innovation activities will be more limited. There are a plethora of innovation toolkits, methods, strategies and policies available to policy-makers in Europe, and that the challenge for the FP6 projects will be in convincing policy-makers and practitioners that their contribution adds value.	Toolkits, methodologies and research papers need to add value above and beyond the wealth of existing material available, and should be more tailored to meet the specific needs of the policy-maker and practitioner communities.
The sustainability of the results and impacts achieved by the FP6 innovation activities depends in part on the extent to which projects are able to continue. There was little evidence of projects	The design and implementation of the projects should pay more attention to how to lever in

Key finding (innovation)	Recommendation
levering in support from non-EU sources, and in some cases activities were not aligned with national priorities.	support from national/ regional authorities.

The key findings of the evaluation of the **space research** activities are summarised in the following Table.

Key finding (space research)	Recommendation
There have clearly been strong efforts to try to ensure user involvement and connectedness. However, reservations were expressed regarding the extent and quality of communication and connectedness with end-users.	There is need for continuing with, and strengthening links between project and end-users.
Insofar as GMES has an important <i>strategic</i> objective of providing Europe with an independent global monitoring facility and given the broad success of most of the initiatives in scientific terms we can conclude that (through FP6) it is firmly on course for a successful conclusion. However, there is no clear specification of concepts (e.g. 'pre-operational' and 'European capability'), nor any indications of the types and extent of end-user adoption of new services which would be deemed a sign of 'success'.	High-level objectives, for end use in particular, could be made more specific in order to facilitate assessing delivery against objectives.
We have observed a certain tension between the need for 'R&D' to justify incorporation of the work under the Framework Programme umbrella, and the rather different GMES goals concerned with the need to deliver services for practical applications, although there is a significant element of risk associated with much of the work. Also, and relatedly, FP6 Space projects often resemble bought-in services, to a degree greater than is typical of Framework Programme contracts. These features are set to become more pronounced within FP7.	The issue of the (possibly) changing character of Framework Programme (FP7 in particular) in incorporating development work on space-related services close to operations and with lower 'research' content should be explicitly recognised and guidelines for proposal assessment amended as necessary.
Delays in proposal assessment and contract negotiations led to administrative problems for project consortia and, in some cases, reduced the effectiveness of their participation.	Possibilities for reducing delays should be explored, without, however, jeopardising the quality of assessments or of ultimate project work.

1 INTRODUCTION

1.1 This report

This Final Report is the fourth and final deliverable of the study 'Ex post evaluation the activities carried out by DG Enterprise and Industry under the Sixth Framework Programme for Research Technological Development and Demonstration Activities' (henceforth FP6). The study was commissioned by DG Enterprise and Industry from GHK and Technopolis in December 2007. This Final Report follows on from an Inception Report that was submitted on 1 February 2008, an Interim Report that was submitted on 30 May 2008, and a Draft Final Report that was submitted on 1 August 2008.

1.2 The aims and purpose of the study

According to the Terms of Reference issued by DG Enterprise and Industry, the overall aim of the study is to 'evaluate the rationale, implementation and achievements of the research activities carried out by DG Enterprise and Industry under the FP6'. Broadly, DG Enterprise and Industry was responsible for FP6 activities in the fields of innovation and space research. Specifically, these fell within three separate areas of the FP6:

- Activities in the field of **space research and development** (part of Block 1: *Focusing and integrating European research*);
- Activities funded through the **Research and innovation programme** (part of Block 2: *Structuring the ERA*);
- Activities funded through the **Coherent development of research and innovation policies** programme (part of Block 3: *Strengthening the foundations of the ERA*).

This evaluation of DG Enterprise and Industry activities will ultimately contribute towards the overall *ex post* evaluation of the FP6 that will be carried out by an Expert Group set up by DG Research towards the end of 2008.

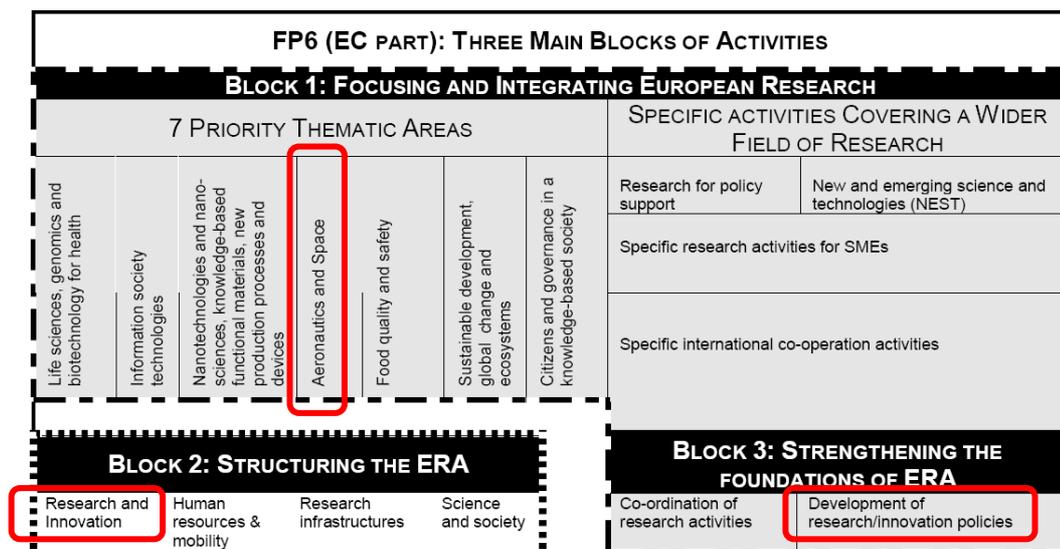
The method of approach employed by the study team is summarised in detail in Section 2, though there a number of pertinent observations that can be made in respect of the study as a whole:

- Many of the activities and projects funded through the FP6 were still underway at the time of the evaluation, meaning that data on the results and medium- and long-term impacts were not available;
- The outputs and results of the innovation activities and projects were usually qualitative rather than quantitative, making the aggregation of results problematic. Furthermore, the nature of the innovation activities meant that they were different to the other research areas supported through the FP6, and arguably not directly comparable (for example, strategically, the innovation activities were more closely related to the goals of the Lisbon strategy, rather than the European Research Area);
- The space research activities were also somewhat different to other research areas of the FP6, and include a certain amount of 'pre-operational' activity.

1.3 The Sixth Framework Programme

FP6 was launched in 2002 and replaced the Fifth Framework Programme (FP5) that ran from 1998-2002. The total budget of FP6 was just over €17 billion, and the overall goal of the programme was to contribute to the creation of the European Research Area (ERA). To achieve this, FP6 was intended to improve the integration and coordination of research in Europe as a whole, the activities supported were required to be transnational. Figure 1.1 shows the structure of FP6, with the three areas covered by this study highlighted by red boxes.

Figure 1.1: The structure of the FP6 (relevant areas highlighted by red boxes)



Source: www.cordis.europa.eu

1.3.1 FP6 and innovation

Innovation has previously formed an important component of the European Framework Programmes (the Fifth Framework Programme, for instance, included a €119 million programme of activity around promoting innovation, and a €200 million programme designed to provide support to innovative SMEs). Within FP6, support for innovation was framed first and foremost within the context of the realisation of the ERA (i.e. innovation as the commercialisation of basic research), but also in terms of the goals of the Lisbon strategy (i.e. innovation as a part of enterprise and competitiveness policy).

Under FP6, activity specifically aimed at improving European innovation performance was organised into two thematic areas⁵ (see also Figure 1.1):

- Research and innovation (part of Block 2: 'Structuring the ERA'); and,
- Support for the coherent development of research and innovation policies (part of Block 3: 'Strengthening the foundations of the ERA').

⁵ The promotion of innovation was also a cross-cutting goal across FP6, with each of the priority research themes (space research etc.) expected to improve the links between scientific research and innovation (by considering the commercialisation of research, for instance).

The €319 million *Research and innovation* theme was the main vehicle for innovation support activity, and was intended to:

'...encourage a more innovation friendly environment throughout the EU, and to stimulate technological innovation and the setting up of innovative technology businesses⁶.

Within this overall goal there were three objectives:

- *'To set up a European innovation system by networking players, promoting cooperation, breaking down barriers and encouraging transnational learning;*
- *To investigate and test new approaches, extract lessons from the experience of FP research projects, and promote entrepreneurial innovation;*
- *To offer services that need to be provided on a European scale.'*

The smaller (€55 million) *Support for the coherent development of research and innovation policies* theme was more focussed on research into innovation and the process of innovation policy-making than the *Research and innovation* theme, and was intended to facilitate the development of:

'...a comprehensive understanding of the structure and evolution of...innovation activities and of the present and future challenges to be addressed by Europe's research and innovation policies'⁷.

At a strategic level, therefore, the innovation activities supported through FP6 matched and were expected to contribute towards the objectives of the Lisbon strategy, as set out in the Commission's 2000 Communication *Innovation in a knowledge-driven economy* (see Section 1.3). FP6 was expected to add value to the innovation support activity undertaken at a Member State level by establishing a transnational innovation system that networked and coordinated innovation actors, carried out benchmarking and research, and providing a small number of European level services.

As the lead Directorate-General for innovation, DG Enterprise and Industry was responsible for the management and delivery of the majority of the innovation activity funded through FP6. Responsibility for the remaining innovation activities⁸ was managed by DG Research and the Joint Research Centre, whilst management of the CORDIS web service was transferred from DG Enterprise and Industry to DG Communication once FP6 had commenced.

For both of the innovation themes of FP6, detailed work programmes were produced at the outset providing a rationale for intervention and setting out the nature of the activity that was to be funded. Work programmes were revised over the course of FP6 (the *Research and innovation* document was updated 16 times), reflecting changing operational priorities and budget allocations. All revisions were made subject to

⁶ European Commission (2006) Work Programme Research and Innovation, sixteenth update

⁷ European Commission (2006) Work Programme Support for the Coherent Development of Policies, 2006 revision

⁸ Primarily the activity contracted through the Stepping up economic and technological intelligence sub-programme of *Research and innovation* (e.g. research to improve SME participation in European research).

agreement by both the Programme Committee and other Commission services (through the Research Inter-service Group – GIR – consultation process).

Both of the work programmes were broken down into ‘sub-programmes’, each with a rationale and a set of proposed activities. The *Research and innovation* work programme had six sub-programmes, five of which were the responsibility of DG Enterprise and Industry (equal to around 62 per cent of the total work programme budget of €319 million). The *Coherent development of policies* work programme had four sub-programmes, one of which was implemented by DG Enterprise and Industry (equal to around 6 per cent of the total work programme budget of €55 million). Table 1.1 provides details of the work programmes and sub-programmes managed by DG Enterprise and Industry.

The FP6 budget programme for the DG Enterprise and Industry supported activity was some €200.6 million. Almost all of this figure (€197.4 million or 98 per cent of the total) fell within the *Research and innovation* work programme, with the remainder (€3.2 million or 2 per cent of the total) falling within the *Coherent development of policies* work programme. Within the *Research and innovation* work programme, the *Putting services into place and consolidating them* sub-programme accounted for the single largest budget allocation (€81.4m or 41 per cent of the DG Enterprise and Industry total). Further information on budgets and implementation arrangements for the innovation activities supported through the FP6 is included in Section 3.4.

Table 1.1: Details of DG Enterprise and Industry supported activity under the work programmes⁹

Work programme	Sub-programme	Objectives	Budget	Relevant activities
Research and innovation	Networking the players and users and encouraging interaction	To ‘inform, assist, mobilise and network’ key stakeholders in the field of innovation through the establishment of suitable platforms, making use of a ‘sector-based approach’ where relevant.	€35.7m	Europe INNOVA Cluster mapping
	Encouraging regional innovation policies and transnational cooperation	To ‘facilitate the transfer of good practices’, and to bring together as a single strategy ‘policy analysis, learning and the further dissemination of good practice’. The ultimate goal was to ‘better integrate innovation into regional and national development strategies and to foster transnational cooperation’.	€23.1m	IRE Network (RIS) PRO INNO Europe (INNO-Views, INNO-Metrics, INNO-Appraisal, and INNO-Policy TrendChart)

⁹ Based on: European Commission (2006) Work Programme Research and Innovation, sixteenth update; European Commission (2006) Work Programme Support for the Coherent Development of Policies, 2006 revision

Work programme	Sub-programme	Objectives	Budget	Relevant activities
	Experimenting with new tools and approaches	Pilot activities to 'test and validate' new ways to promote innovation through 'experimental tools, approaches and services'. These new tools and approaches were expected to 'exchange knowledge and experience...promote technology transfer, provide new services for innovation diffusion...and assist firms'.	€52.7m	IRE Network (benchmarking and RIS-NAC support) PRO INNO Europe (INNO-Views, INNO-Nets, INNO-Actions and INNO-Learning Platform)
	Putting services into place and consolidating them	To create a 'Europe-wide innovation system' through services to 'counterbalance national compartmentalisation in order to contribute to the flow of information...and the diffusion of innovation'.	€81.4m	IRC Network IPR Helpdesk
	Analysing and evaluating innovation in Community Research Projects	A single study of Community innovation activities which was needed in order for the 'extraction of lessons and good practices...with a view to better integration of the innovation dimension in research projects'.	€4.5m	Innovation impact assessment study
Coherent development of policies	Improving the regulatory and administrative environment for research and innovation	'Studies...will be undertaken to collect and analyse information, explore new issues, assess policy options...and disseminate the results of the work to policy-makers and other stakeholders'.	€3.2m	PRO INNO Europe (INNO-Grips) Innovation Policy Studies
Total	-	-	€200.6m	-

1.3.2 FP6 and space research

The DG Enterprise and Industry remit under FP6 is limited to the space component of the Thematic Priority 1.4: Aeronautics and Space, covering Global Monitoring for Environment and Security initiative (GMES) and satellite telecommunications (SatCom), corresponding to a budget of €135m in the FP6 decision. The budget allocated to space-related activities for GMES and SatCom amounted to €100m and €35m, respectively. Table 4.1 (in section 4.3.2) lists GMES and SatCom projects and EU budgetary contribution per project.

For the space theme, work programmes were produced within FP6 outlining the objectives as well as the type and content of the activity to be funded. Over the course

of FP6, these programmes were revised 16 times to accommodate adjustments in priorities and budget allocation.

As specified in the space component of the FP6 work programmes on Aeronautics and Space¹⁰, envisaged activities for GMES and SatCom were described as follows:

GMES

To reach the envisaged pre-operational capabilities for environment and security, the work programme foresees the integration and the pre-operational validation of:

- existing research results obtained through previous initiatives of EC, ESA and national entities;
- planned research and technological development results, as they become available, within the other relevant FP6 thematic priorities, ESA and national entities.

Projects were also required to:

- Take account of existing national or international capabilities to develop synergies and avoid duplication;
- Take account of EU policies, directives and standardisation initiatives;
- Be user driven and take into account their needs concerning information and services;
- Include activities having the goal of increasing public awareness of the results achieved through the use of space technology.

In the long term, these pre-operational capabilities were expected to become appropriately resourced autonomous operational capabilities, providing, in a given GMES priority themes, the relevant information to individuals or user communities. The work programme, for the build-up of pre-operational capabilities, includes the following cross topics:

- Data validation and fusion from multiple sources;
- Data assimilation and data integrity;
- Data delivery processes of observation systems (satellite, in-situ);
- Interoperability and interconnection of the data processing and delivery systems;
- Organisation and system architecture.

The GMES priority themes have been restructured in six application fields in order to bundle together similar topics and avoid dispersion of objectives. Hence projects are expected being built around the following application fields:

- Land Cover and Vegetation;

¹⁰ Drawing on: European Commission (2002), Work Programme 2002-2006 – Thematic Priority 1.4. Aeronautics and Space; European Commission (2004), Work Programme 2002-2006 – Thematic Priority 1.4. Aeronautics and Space, eighth update; and, European Commission (2005), Work Programme 2002-2006 – Thematic Priority 1.4. Aeronautics and Space, sixteenth update.

- Water Resources;
- Ocean and Marine Applications;
- Atmosphere;
- Risk management;
- Security.

SatCom

Three core technological domains were identified for SatCom:

- network and Service interoperability;
- end-to-end satellite telecommunications systems;
- convergence and integration of satellite communications with other Space application domains.

Network and Service interoperability

The aim is the seamless integration of satellite telecommunications infrastructures with terrestrial systems. Those activities take advantage of the emergence of novel networking technologies and systems, such as IPv646, DVB-RCS47, edge caching and networking, MPLS48 or VHE49.

End-to-end satellite telecommunications systems

The aim is the integration and validation of innovative and low-cost satellite communications technologies and systems where satellite communications technologies may have a potential edge over terrestrial infrastructures. Large-scale distributive applications, or applications needing to address remote, isolated or rural areas are typical applications where satellite communication technology may be the most appropriate communication platform to provide connectivity in the fields of transport, education (distance-learning), emergency systems and health (tele-medicine).

Convergence and integration of satellite communications with other Space application domains

The target is the integration of satellite telecommunication capabilities with Galileo and GMES infrastructures and the development of optimised architectures and technologies through the coupling of different satellite services. This is envisioned as providing significant communication and processing capabilities particularly in risk management and security applications where rapid deployment of reliable communications is required.

1.4 Innovation and space research: European policy context

1.4.1 Innovation policy

Innovation policy before the FP6

The origins of a Community innovation policy can be traced to the mid 1990s with the publication in 1995 of an innovation green paper, followed in 1996 by an action plan for innovation in Europe. The momentum behind a European innovation policy increased significantly, however, following the March 2000 Lisbon meeting of the European

Council. The Presidency conclusions from the Lisbon meeting set an ambitious goal for the EU to become '*the most competitive and dynamic knowledge-based economy in the world*', and identified improvements in European innovation performance as a key way in which this target would be achieved¹¹. Under the Lisbon strategy, therefore, innovation became a top strategic priority for the European Union and an essential component of enterprise and competitiveness policy (whereas traditionally it had been framed within the context of research policy). Innovation has also formed an important part of European regional policy with the Structural Funds used to support innovation and research related interventions throughout the 1990s. Following the launch of the Lisbon strategy in 2000, innovation support became an even more important policy area within regional policy and the strategic allocation of Structural Funds support within the regions¹².

In November 2000 the Commission published a Communication that explored the nature of the innovation 'problem' in the EU, and outlined how this would be addressed through the goals of the Lisbon strategy¹³. The problem, it was argued, was manifested in an 'innovation deficit between the EU and its competitors, and also between leading and lagging European regions. There were numerous reasons for these deficits, but the Communication stressed the significance of: reduced capacity within businesses to innovate (e.g. to put new products on the market), limited innovation and technology diffusion (e.g. poorly developed university-business links), insufficient human capital, and a reliance on traditional industries with a poor track record in innovation. To resolve these problems, the Communication emphasised that, although innovation policy is largely developed and implemented at a Member State or sub-national level, the European Union has an important role to play in terms of improving coordination between national and regional innovation activity (coherence), and carrying out activity to promote and improve innovation policy in the Member States (facilitator).

Specifically, the Communication set a number of goals for EU level innovation policy which were to become the theoretical underpinnings of the innovation activities supported through the FP6:

- To promote dialogue between Member States and EU regions in order to share good practice, and to encourage transnational coordination and partnership working;
- To benchmark and disseminate information on Member State innovation policy and national innovation performance;
- To conduct research into issues associated with innovation;
- To provide EU innovation services to SMEs where there is added value in a transnational aspect to the service provided (such as technology transfer).

Also in 2000, the Commission published a Communication setting out proposals for the creation of the European Research Area (ERA), an 'internal market' for science and

¹¹ The Presidency Conclusions (2000) Lisbon European Council, 23-24 March 2000

¹² Technopolis *et al.* (2006) Strategic Evaluation on Innovation and the knowledge based economy in relation to the Structural and Cohesion Funds

¹³ COM (2000) 567 Innovation in a knowledge-driven economy

technology¹⁴. Within the context of the ERA, support for innovation was primarily considered as a means for improving the social and economic return on Community funded research (i.e. the commercialisation of the basic research carried out through the ERA).

Innovation policy since the FP6

Since the FP6 was launched in 2002 there have been a number of significant developments in respect of a European innovation policy. The key milestone in this process was the mid-term review of the Lisbon strategy that was carried out in 2005 and which concluded that insufficient progress had made towards addressing the problem of the innovation deficit described above. Following this review, Lisbon was relaunched as a more focussed strategy for '*Growth and Employment*'¹⁵. Innovation again lay at the heart of this strategy, but arguably the Commission's approach had both broadened (to include regulatory reform), and focussed (encompassing a sectoral and cluster based approach). In 2005 the Communication '*More Research and Innovation: Investing for Growth and Employment*' was published by the Commission to mark the relaunch of the Lisbon strategy¹⁶. In this Communication the Commission outlined 19 steps for the Community and Member States to work towards, grouped under the headings EU policies, EU funding, business and support to national policies. Also in 2005, the *Integrated guidelines for growth and jobs* were issued¹⁷ which provided the Member States with a framework through which to implement policies designed to improve innovation performance (through national reform programmes).

Innovation policy at a European level underwent a further change following the results of the Aho Review of innovation that was published in 2006¹⁸. The review concluded that the innovation deficit between the Europe and its competitors was to a significant extent the result of a weak and fragmented market for innovation in the EU. Whilst progress had been made in respect of the Single Market in goods, the Review argued that with regard to investment in innovation, European businesses still faced an '*obstacle course of multiple levels of regulations and requirements, each of which raises costs and lowers incentives*'. Building on the results and recommendations of the Aho Review, in September 2006 the Commission published its latest Communication on innovation – '*A broad-based innovation strategy for the EU*'¹⁹ – which sought to broaden the extent of innovation policy still further to encompass reform in the fields of education systems, labour markets and the regulatory environment.

After FP6 funding finishes (largely in 2008, though some areas of PRO INNO Europe will continue to receive FP6 funding through till 2010), innovation activities will almost entirely be funded through the Entrepreneurship and Innovation Programme (EIP) within the overall framework of the Competitiveness and Innovation Programme (CIP).

¹⁴ COM (2000) 6 Towards a European Research Area

¹⁵ COM (2005) 330 Common Actions for Growth and Employment: The Community Lisbon Programme

¹⁶ COM (2005) 488 More Research and Innovation – Investing for Growth and Employment: A Common Approach

¹⁷ COM (2005) 141 Integrated guidelines for growth and jobs, 2005-2008

¹⁸ European Commission (2006) Creating an Innovative Europe: Report of the independent expert group on R&D and innovation, appointed following the Hampton Court Summit and chaired by Mr Esko Aho

¹⁹ COM (2006) 502 Putting knowledge into practice: A broad-based innovation strategy for the EU

CIP is scheduled to run from 2007-2013 and is intended to stimulate improvements in the competitiveness of European businesses. The total budget of the EIP is €2.17 billion over the programme period, of which €430 million is allocated to the Eco-innovation activity (focussing on environmental innovation), and some €606 million is allocated to other areas of innovation support (including the Enterprise Europe Network, innovation studies, and continuations of the FP6 funded innovation activities – Europe INNOVA, PRO INNO Europe etc)²⁰.

Alongside the CIP, the Seventh Framework Programme (FP7) is scheduled to run from 2007 to 2013 with a budget of €50.5 billion. With innovation activities funded through the CIP, the FP7 will instead focus almost entirely on research and technological development, thus marking a separation of research and innovation support for the first time in EU programming. The two programmes are expected to complement each other and both are ultimately working towards the achievement of the Lisbon goals. CIP will focus on innovation and the downstream application of the technologies developed through the FP7.

1.4.2 **Space research policy**

A European Strategy for Space was established in 2000, with a joint European Commission and European Space Agency (ESA) communication describing a forward plan – ‘including the political dimension’ - for space in Europe^{21 22}. The strategy, involving a new operational relationship between the EC and ESA, is built around three objectives:

- Strengthening the foundation for space activities: preserving independent and affordable access to space, and ensuring a broad technology base with the industrial capability for designing, manufacturing, and operating satellite systems and the associated ground infrastructure;
- Enhancing scientific knowledge for a better understanding of our planet and its atmosphere, the solar system and the Universe;
- Reaping the benefits for markets and society through a demand-driven exploitation of the technical capabilities of the space community. This requires the involvement of end-users from the planning phase until operational deployment in a constructive dialogue between all parties concerned from the public and the private sector, at the national and at the European level.

Two major initiatives in particular were highlighted: development of a civil satellite navigation and positioning system (Galileo) and building up coherent capacity in Europe for global monitoring for environment and security (GMES – renamed Kopernikus as from September 2008). In addition, research would focus on integration of the space segment and terrestrial networks in the telecommunications sector. For the purposes of this evaluation, given DG Enterprise and Industry’s remit under FP6, the focus is on the GMES and (to a lesser extent) Satcom areas (as Galileo is under

²⁰ <http://ec.europa.eu/cip/questions.htm> indicates that the total budget (2007-2013) for the EIP was €2,166 million, of which €430 million was allocated to Eco-innovation, and €1,130 million to the financial instruments for SMEs (leaving €606 million for innovation activities).

²¹ Europe and Space: Turning a New Chapter , EC Communication COM(2000) 597 final.

²² The political dimension was expressed at the June 2001 Gothenburg summit and in the later Council Resolution as the goal of ‘achieving by 2008 an operational and autonomous European capability’.

the responsibility of DG Energy and Transport). Policy relating to GMES is particularly relevant to the evaluation.

GMES can be seen as a response to the perception that European policies on the environment and security have historically suffered by having to rely on information that is fragmentary and of uneven quality and value. These problems were considered to be due to:

- A lack of sufficient co-ordination between the activities of the many organisations involved in data collection and information production in Europe;
- Inadequacies in the numerous technical infrastructures which produce data and information. These are often incomplete, not comparable from one place to another and over time and are in general difficult to access;
- Inadequate dialogue between information users and the many information providers, leading to inefficiencies in data and information flows.

The challenge for GMES is to gather together existing data and provide innovative, cost-effective, sustainable and user-friendly services that enable decision-makers to better anticipate or mitigate crisis situations and issues relating to the management of the environment and security. To achieve this, GMES needs to make full use of data collected from space-borne, airborne and in-situ observation systems that is then delivered to service providers through an efficient data integration and information management capacity.

GMES Action Plans were produced covering the periods 2001-2003 and 2004-2008. The latter²³ discussed, inter alia, how to establish a GMES capacity by 2008, including a governance structure and funding strategy, and presented an Action Plan for the period 2004-2008. GMES core capacity during 2004-2006 would be funded by a number of thematic priorities of the 6th Framework Programme, including Aeronautics and Space, Information Society Technologies and Research Networking, and the GMES Services Element funds of ESA. For 2007 and beyond, resources were to be conditional on future EU Financial Perspectives.

In 2005, three themes (land, marine, emergency) were identified for 'fast track' treatment, in response to recognition of the need to select 'near-term opportunities...to meet the goal of operational services by 2008'.²⁴

1.5 Structure of this report

The remainder of this report is structured as follows:

- Section 2 presents the evaluation tasks and questions and summarises the method of approach used by the study team;
- Section 3 outlines the results of the evaluation of the FP6 innovation activities;
- Section 4 presents the results of the evaluation of the FP6 space research activities;

²³ COM(2004) 65: Establishing a GMES Capacity by 2008 – Action Plan.

²⁴ COM(2005) 565 final: GMES: From Concept to Reality.

- Section 5 sets out the conclusions and recommendations of the evaluation of the FP6 innovation activities;
- Section 6 presents the conclusions and recommendations of the evaluation of the FP6 space research activities.

The Annexes to this report (provided as a separate document) contain supporting material and copies of the research instruments used in the study. Specifically:

- Annex 1 contains intervention logics for the IRC Network, the IRE Network, the IPR Helpdesk, Europe INNOVA and PRO INNO Europe;
- Annexes 2 to 4 contain the surveys sent to project coordinators, IPEG members and INNO-Views workshop attendees;
- Annex 5 contains the proforma completed by the expert reviewers in respect of the outputs of the IRE Network projects;
- Annex 6 contains details of the individuals consulted in respect of the FP6 innovation activities;
- Annex 7 contains six case studies of the regional implementation of FP6 innovation projects;
- Annex 8 presents the results of the six case studies of FP6 space research projects;
- Annex 9 provides the results of the participant survey carried out in respect of the space research activities;
- Annex 10 contains details of the individuals consulted in respect of the FP6 space research activities.

2 RESEARCH METHODOLOGY

This section of the report presents an outline of the method of approach employed by the study team in order to address the aims and objectives of the *ex post* evaluation (set out in Section 1.2). The section commences with a summary of the evaluation questions set out in the Terms of Reference for the assignment, and then presents a description of the key research tasks undertaken.

2.1 Evaluation tasks and questions

The Terms of Reference issued by DG Enterprise and Industry outlined a set of tasks that the evaluation was expected to carry out:

- To validate and refine the proposed methodological approach to the evaluation work;
- To collect, analyse and present the necessary data to answer the evaluation questions relating to the rationale, implementation and achievements of the research activities carried out under the FP6;
- To present findings and recommendations for the continuation of the activities considered over the course of the evaluation.

The evaluation questions were refined during the inception phase of the study, and approved following the submission of the Inception Report on 1 February 2008. As set out in the Terms of Reference they fall into three categories: rationale; implementation and achievements (Table 2.1).

Table 2.1: The evaluation questions

Category	Questions	Sub-questions
Rationale	Was it appropriate for the FP6 to support this activity?	Were the arguments used to support inclusion in FP6 correct?
	Were the stated objectives correctly specified?	Were objectives sufficiently specific to enable effective management, evaluation etc? Did the objectives reflect the logic between the levels: FP, Specific Programme and Work Programme?
	Was the level of funding appropriate for achieving the stated objectives?	How was the level of funding decided (considerations of, optimum efficiency, absorptive capacity etc)?
Implementation	Was the implementation process efficient?	What were the costs of the administrative arrangements (EC and others)? What was the duration of the contract procedures?

Category	Questions	Sub-questions
	Was the implementation process effective?	Was FP6 information disseminated? Were the best organisations and researchers included in the activities?
	Were monitoring and review procedures effective?	Were Commission staff able to monitor and review the progress of the activities?
Achievements	How effective were the activities?	How effective were the mechanisms used by the activities, relative to alternative methods?
	What results have the activities produced so far?	New products and services? Scientific/ knowledge outputs? Socio-economic effects? Infrastructure capacities? Information sharing and networking?
	What have been the wider impacts of the activities?	On the Lisbon strategic objectives and on the European Research Area? On EU scientific and innovation capacity? On human resources? On EU and national legislation and policy?
	How do these results and impacts relate to the rationale of the activities and the needs that they were supposed to address?	What was the correspondence to the objectives of the activities? Have objectives been met? Were there any unintended results (positive or negative)?
	Are these results and impacts sustainable?	What was the influence on Member States? Were the activities, results and impacts self-supporting?
	Could the utility of the activities be improved?	Could there be any improvements in effectiveness in achieving stated objectives?

2.2 The study methodology

The methodology for the study was first outlined in the Proposal submitted to DG Enterprise and Industry on 1 December 2007, and finalised following a kick-off meeting held between the Steering Committee and core members of the study team on 11 January 2008. The study was divided into five tasks:

- Task 0: Inception phase;
- Task 1: Elaboration of intervention logics;

- Task 2: Empirical research in relation to innovation activities;
- Task 3: Empirical research in relation to space research activities;
- Task 4: Address evaluation questions;
- Task 5: Develop pointers for future policy.

The remainder of this section of the report consists of a review of the research activities undertaken within each of these five study tasks.

2.3 Task 0: Inception phase

Work commenced with a kick-off meeting held between the Steering Committee and core members of the study team, the purpose of which was to validate the method of approach and identify key sources of information (key contacts and existing evaluative material). Following this meeting the study team carried telephone interviews with seven of the individuals from DG Enterprise and Industry responsible for the management of the relevant FP6 activities (see Annex 6), the purpose of which was to map out the extent of the study and identify key issues for closer investigation. During this inception phase the study team also carried out a review of the evaluative and monitoring evidence available in relation to the innovation and space research activities. Upon completion of this work an Inception Report was submitted to the Steering Committee, and approved following a meeting held on 15 February 2008.

2.4 Tasks 1 to 3: Elaboration of the intervention logics and empirical research

The purpose of Tasks 1 to 3 was to carry out empirical research, coupled with a desk-based review of existing evaluative material, in order to provide the evidence required in order to answer the evaluation questions (Task 4). In practice the work was split between empirical research in relation to the innovation activities (carried out by GHK), and in relation to the space research activities (carried out by Technopolis). The different nature of the two sets of activities means that two separate methods of approach were taken (see below), though the overall process was the same:

1. Draft intervention logics were developed for each of the sets of innovation and space activities, drawing on the research carried out as part of Task 0 (documentary review and discussion with Commission officials). The intervention logics acted as the 'theory' against which the actual implementation of the activities could be tested through empirical research, and covered topics such as need, demand, delivery mechanism, outcomes, impacts, and European added value. The intervention logics are included as Annex 1;
2. European Commission officials were consulted regarding the rationale, implementation and achievements of each of the innovation and space research activities. A total of 10 face-to-face interviews were undertaken with individuals from DG Enterprise and Industry for the innovation activities (see Annex 6). For the space research activities a total of five individuals were consulted (see Annex 10);

3. All documentary evidence available was analysed, most notably a study carried out in 2005 that evaluated key aspects of DG Enterprise and Industry's innovation programme²⁵;
4. Primary research was undertaken with the individuals responsible for the coordination and/or delivery of a selection of the projects run through the innovation and space activities;
5. Primary research was undertaken with a selection of the beneficiaries of these projects.

There follows a more detailed review of the primary research undertaken for the innovation and space research activities (i.e. stages 4 and 5 above).

2.4.1 Innovation activities

Five fieldwork activities were undertaken in respect of projects funded through the innovation activities (see Table 2.2 below for a summary):

- A survey of the coordinators of the majority of the innovation projects funded through the FP6²⁶. Surveys were sent to a total of 62 individuals, of which 30 provided responses (equal to a response rate of 48 per cent). A copy of the survey is attached as Annex 2;
- An e-survey was sent to all 27 members of the Innovation Policy Expert Group (IPEG)²⁷ regarding the INNO-Metrics and INNO-Policy TrendChart projects. A total of 13 IPEG members returned the survey, equal to a response rate of 48 per cent. A copy of the survey is attached as Annex 3;
- An e-survey was sent to the 96 individuals who attended one or more of the four INNO-Views workshops held in 2007. A total of 21 workshop attendees returned the survey, equal to a response rate of 22 per cent. A copy of the survey is attached as Annex 4;
- Six case studies were undertaken investigating the regional (and in one case national) delivery of six of the network projects (three through Europe INNOVA, one through the IRE Network's support to the implementation of RIS-NAC activities, and one each through INNO-Nets and INNO-Actions). Projects were selected randomly, whilst the case study regions were selected in order to achieve a good mix of new and old Member States. In terms of the representativeness of these case studies, six regions from six projects is a very small proportion of all of the EU regions involved in the FP6 innovation support programme. Whilst there is no reason to assume that the results will be anomalous (the projects are all 'typical' in terms of their method of operation and there is a good balance of types of region and projects drawn from across

²⁵ The European Evaluation Consortium – TEEC (2005) Evaluation of DG Enterprise and Industry activities in the field of innovation

²⁶ In consultation with DG Enterprise and Industry it was decided not to survey coordinators from the 70 Innovation Relay Centre projects or the 33 new Regional Innovation Strategy projects, since both activities had been subject to recent evaluations and thus there was already sufficient evaluative evidence available.

²⁷ The Innovation Policy Expert Group – IPEG – replaced the Group of Senior Officials (GSO) and consists of representatives from all 27 Member States, generally drawn from national government ministries for the economy, innovation, technology etc. The IPEG advises the Commission on the implementation of the PRO INNO Europe Policy TrendChart and the European Innovation Scoreboard (part of PRO INNO Europe Metrics).

different FP6 activities), these should be seen as case studies rather than as a sample of the FP6 innovation projects, and the results should not be scaled-up and applied across all activities. The six case study regions and projects were:

- Lower Austria (the CEE Cluster Network run through INNO-Nets);
- North Denmark (the ENFFI project run through the Europe INNOVA finance networks);
- France (the STAND-INN project run through the Europe INNOVA standards networks);
- The West Region of Romania (the BeLCAR project run through the Europe INNOVA cluster network);
- The South Great Plain of Hungary (the Tech SME Partnering project run through INNO-Actions);
- The Ljubljana Urban Region (the 5Schemes project run through the IRE Network support to the implementation of RIS-NAC programme).

Each of the case studies involved face-to-face interviews with regional stakeholders (representatives from the project partner organisation plus any other participant or beneficiary organisation). A list of consultees is included in Annex 6 and the case studies are attached as Annex 7;

- Expert reviewers analysed the outputs generated by a sample of the projects designed to develop innovation toolkits and guides for use by policy-makers and practitioners. One set of reviewers consisted of three regional innovation policy experts who reviewed the outputs developed by two of the IRE Network projects that developed and tested new approaches for benchmarking the impact of RISs. Projects were selected on the basis of where outputs were finalised, publicly available, and suitable for such analysis. Another reviewer analysed the outputs generated by two of the INNO-Grips mini-studies. Mini-studies were selected on the basis that they were finalised and had also been used to inform the INNO-Views workshops. Details of the expert reviewers are shown in Annex 6, whilst the proforma that the experts used to evaluate the outputs of the IRE Network projects is attached as Annex 5.

Table 2.2: Fieldwork activities undertaken in respect of innovation activities

Activity	Project(s)	Coordinator survey	IPEG survey	Workshop survey	Regional case studies	Expert reviews
IRE Network	Benchmarking and Impact assessment	X				X
	RIS implementation	X			X	
IPR Helpdesk	IPR Helpdesk	X				
Europe INNOVA	Innovation watch	X				
	Cluster networks	X			X	
	Finance networks	X			X	
	Standards networks	X			X	

Activity	Project(s)	Coordinator survey	IPEG survey	Workshop survey	Regional case studies	Expert reviews
	Innovation management	X				
PRO INNO Europe	INNO-Metrics	X	X			
	INNO-Policy TrendChart	X	X			
	INNO-Grips	X				X
	INNO-Appraisal	X				
	INNO-Learning Platform	X				
	INNO-Views	X		X		X
	INNO-Nets	X			X	
	INNO-Actions	X			X	

Much of the information collected as part of the fieldwork was qualitative (e.g. coordinators' assessments of the results of their activities and the expert reviewers' assessment of the project outputs). In order to provide a comparable measurement of this qualitative information, a scoring system was used as part of most of the fieldwork tasks described above. This scoring system required respondents to rate their response on a scale of 1 to 5, where 1 was the lowest score (e.g. equivalent to 'not at all') and 5 was the highest score (e.g. equivalent to 'to a significant extent'). Examples are provided in the surveys included in Annexes 2 to 5. During analysis the scores provided by respondents were averaged in order to provide a single result, again using the scale of 1 to 5. The results of the analysis are presented in Section 3.

A further point regarding the methodology employed during the fieldwork regards the approach used to assess the results and impacts of the FP6 innovation activities. In practice most of the results were 'soft' and strategic (in the sense that they were often intended to influence policy and strategy development, and to increase the profile of innovation as an area for intervention). In order to quantify and evaluate these soft outcomes and impacts, the study team made use of the strategic added value (SAV) model. SAV models and measures these soft results, including:

- *Networking and coordination* – whether the activities have improved the coordination of key actors, and thus whether they have generated a common 'sense of purpose' amongst stakeholders;
- *Good practice sharing* – whether the activities have facilitated good practice sharing, and whether they have disseminated this good practice more widely beyond the immediate project team;
- *Research and information gathering* – whether activities have improved the knowledge base in respect of entrepreneurial innovation (practice and policy), and whether this information has been disseminated;
- *Strategy and policy development* – whether activities have generated new strategies and policies for entrepreneurial innovation at a national or regional level, and whether these have been disseminated and/or adopted;

- *Funding leverage* – whether activities have been able to lever in additional funding and support for entrepreneurial innovation;
- *Development and demonstration of new approaches and tools* – whether projects have developed, piloted and demonstrated any new approaches, tools and methodologies that would improve innovation performance in the EU.

In order to quantify the scale of these effects at a project and a programme level a scoring system was used, as explained above. An example is provided in the survey completed by project coordinators (Annex 2).

2.4.2 Space research activities

The following methods of investigation were undertaken in the course of the evaluation of space activities:

- *Desk research*, including study of available documentation, appraisal of websites offering FP6 space outputs intended for users, and analysis of 10 assessors' reports (where available) with independent evaluations of individual projects;
- An *e-survey* of project participants. Around 650 participants were surveyed, and 192 replies were received. This response rate of about 30 per cent is considered good, bearing in mind that some e-mail addresses were out of date and failed to reach their intended recipient, and that the survey was voluntary. Participants were sent a reminder shortly before the deadline, and a further request was sent later to non-responding project co-ordinators, who information and views were of particular interest.

Table 2.3 shows numbers of responses by project area or theme, compared with numbers of projects and participants. This shows that, compared with participants surveyed, the risk area was relatively unrepresented in the survey responses, while remaining areas showed roughly proportionate coverage.

Table 2.3: Responses to participant survey compared with FP6 participation

Topic	No. of projects	No. of partners	No. of responses to survey	EC contribution (€m)
Atmosphere	2	36	11	13.6
Land	3	69	22	11.3
Marine	7	86	23	19.3
Risk	3	73	13	16.6
Security	3	81	24	19.0
Satcom	10	143	34	34.2
Cross-cutting	14	167	61	28.4
Total	42	655	188	142.4

The questionnaire contained a combination of closed 'tick-box' questions and open-ended questions where participants were invited to respond in free format. Annex 9 contains the full questionnaire, with summaries of percentage responses received to

the closed questions. Answers to particular questions are described and discussed at appropriate points in the main text.

- Six *case studies* were carried out, covering the work undertaken in each of six major Integrated Projects, namely:
 - GEMS (atmosphere);
 - MERSEA (Ocean);
 - GEOLAND (Land surface);
 - PREVIEW (Risks and emergencies);
 - LIMES (Security);
 - BOSS4GMES, an overarching project with components representing the three Fast Track services (Land, Ocean, Risks/Emergency), and core delivery services including development of business models and communication strategies.

These case studies are described in Annex 8, with key findings again covered in the main text.

- *Interviews* with various stakeholders (24 in total), partly in connection with the case studies but also to seek more general information. A list of interviewees is presented in Annex 10. They include five project officers, five project coordinators, other project participants, members of the GMES Bureau and associated Implementation Groups.

2.5 **Tasks 4 and 5: Evaluation questions and pointers for future policy**

The final two study tasks were undertaken simultaneously, and involved drawing together the evaluation results in order to answer the three sets of evaluation questions (relevance, implementation and achievements) and identify recommendations for future innovation and space research policy developments. The results of this work have been presented in this Final Report.

3 EVALUATION RESULTS: INNOVATION

This section of the report presents the results of the evaluation of the innovation activities carried out by DG Enterprise and Industry under the FP6. The results have been organised around the three sets of evaluation questions, covering rationale, implementation and achievements. Results have been presented separately for innovation activities and space research activities.

3.1 Overview of evaluation methodology: innovation

Section 2 outlined the method of approach taken by the study team in respect of the evaluation of the innovation activities, of which the key steps were:

- Analysis of existing evaluative evidence (primarily in respect of the IPR Helpdesk and the IRC Network);
- Consultation with the desk officials from DG Enterprise and Industry who were responsible for each of the innovation activities/ sub-activities;
- Surveys that were sent to: the coordinators of the innovation projects (62 individuals in total, excluding the IRC Network and the RIS projects); the 27 members of the IPEG; and the 96 individuals who had attended an INNO-Views workshop in 2007;
- Regional case studies of the delivery of six of the innovation projects (three through Europe INNOVA, one through the IRE Network's support to the implementation of RIS-NAC activities, and one each through INNO-Nets and INNO-Actions);
- Expert reviews of the outputs generated by two of the IRE Network projects that developed and tested new approaches for benchmarking the impact of RISs, and the outputs generated by two of the INNO-Grips mini-studies.

3.2 Rationale

There are two important considerations in terms of the rationale of the innovation activities supported through the FP6 – the extent to which they addressed a problem (need and demand), and their overall strategic fit (particularly in relation to the extent to which they contributed towards the goals of the Lisbon strategy). The European dimension to need and demand is also important; that is, whether there is a need for EU level activity (e.g. where innovation performance is reduced due to 'friction' costs and barriers generated by national borders), and whether there is demand (e.g. whether stakeholders wish to use an EU level service).

3.2.1 *Need and demand*

An assessment of need and demand is usually made on the basis of primary fieldwork with the end-users of a programme or project. It has not been possible given the breadth of the activities included in this study to systematically undertake fieldwork with end-users, and so in most cases evidence is based on existing evaluations or the assessments made by the coordinators for the projects.

The IPR Helpdesk

The rationale for EU-level intervention in respect of assistance to businesses with IPR was to reduce the costs to businesses of collecting and understanding IPR issues across the EU. The 2005 evaluation of DG Enterprise and Industry's innovation activities analysed the need and demand for the IPR Helpdesk. The study concluded that though there was a significant need and demand for the service, the support provided by the Helpdesk was not always relevant to this need and demand. Of the Helpdesk users who responded to the 2005 survey and expressed an opinion, 83 per cent reported that the service was suitably designed to meet their needs (75 per cent regarding meeting the specific needs of SMEs). The survey also found that demand amongst users was strongest for IPR information specific to the EU Framework Programmes (mentioned by 65 per cent of survey respondents), followed by more general information on IPR issues (59 per cent of respondents), then general research on IPR and the EU (37 per cent of respondents).

The IRC Network

The 2005 study also provided some information on the need and demand for the services provided by the IRC Network. Of a survey of 38 individuals responsible for running IRCs, 75 per cent felt that their IRC service was 'very relevant' to the needs of SMEs, since small businesses would be unlikely to have the time or the capacity to venture into TTT agreements without support. The survey grouped together universities and research institutes as other stakeholders, for whom 42 per cent of survey respondents felt that their IRC was 'very relevant' to the needs of the group. Arguably, however, the need for support with TTT is as great for universities as it is for businesses since the same 'frictional' problems with cross-border flows of innovations and technologies apply (particularly where there is less of a culture of university-business links).

The regional case studies

The case studies of the regional application of a selection of FP6 projects explored the issue of need and demand in more detail. In the more market-oriented projects, a key need for local businesses was a strengthening of networking capabilities and cooperation with venture capitalists (the Europe INNOVA ENFFI project), or international innovative companies (the INNO-Action Tech SME Partnering project). In Lower Austria, the Ljubljana region (Slovenia) and Romania West region, there was a clearly identified need amongst public authorities to acquire expertise in cluster policy and cluster management (as was delivered through the CEE Network Cluster, 5Schemes and BeLCAR projects). The rationale for intervention in this case was to address the barriers to institutional learning and to improve the extent to which knowledge could flow across national borders.

Overall, the demand for the project outputs was stronger in the case of the cluster related projects than in the other surveyed projects (the Europe INNOVA ENFFI project and the INNO-Action Tech SME Partnering). Cluster literature and cluster methodologies were deemed extremely valuable by the project partners (public authorities) and local stakeholders. Here there is evidence that the projects adequately responded to the original needs. In the ENFFI and SME Tech Partnering projects, it is not yet clear to what extent the project outputs have usefully fulfilled businesses' needs. For instance, participation of local businesses in the events organised by the Hungarian partner of the SME Tech Partnering project was relatively

low²⁸, whilst the ultimate objective of the project was to increase the level of networking, cooperation and internationalisation of local SMEs. The relatively low involvement of Hungarian businesses in the events organised within the framework of the SME Tech Partnering project points out to a weak demand from Hungarian SMEs.

The expert reviewers

Expert reviewers were asked to comment on the need, demand and relevance of the project outputs that were analysed. With respect to the two IRE Network projects, the experts concluded that there was both a strong need and demand for the two outputs, with average scores of 4 out of 5 across all experts for both need and demand. However, experts stressed that the need for the benchmarking service varies across the EU, with some regions well advanced in terms of measuring and assessing innovation performance. Moreover, it is in the Member States where such information gathering is weak that the availability of data may not be sufficient to enable policy-makers to use the two tools. In general experts reported that the support tools for the implementation of regional innovation policy were needed, and that there was demand, but that the extent to which the outputs met this demand was unproven (and should have been made more explicit by the toolkits). For instance, with regard to MERIPA, one expert argued that most regions now recognise the need for innovation strategies, but that what should have been developed was more practical guidance on programmes and initiatives through which these strategies could be implemented.

With regard to the outputs of the INNO-Grips project (mini-studies regarding gazelles – high growth businesses – and skills for innovation), the expert reviewer concluded that there was a strong need and demand for the two outputs. Both of the topics chosen for study were deemed to be of significant importance within the context of innovation policy-making. Furthermore, it was suggested that there is also a gap in the available literature in terms of an overview of the latest academic theory and research into the topics covered by the mini-studies. Across both outputs, the average score awarded by the expert reviewer with regard to the mini-studies was 4 out of 5 in respect of need, and 4.5 out of 5 in respect of demand (i.e. that both need and demand for the outputs were high). In respect of the extent to which the outputs actually met this need and demand, the average score awarded by the expert reviewer was 4 out of 5, indicating that the mini-studies were seen to provide a necessary service to innovation policy-makers and practitioners.

3.2.2 Strategic fit

The innovation activities supported through the FP6 were intended to contribute directly towards meeting the goals of the Lisbon strategy. As outlined in Section 1.3, according to a 2000 Communication from the European Commission (i.e. the closest policy statement to the launch of the FP6 innovation activities) there were four key goals for EU level innovation policy under the Lisbon strategy. Table 3.1 shows each of these four goals, which of the FP6 activities and sub-activities contribute towards these goals, and on the basis of this, an estimate as to how the €200.6 million FP6 innovation budget was split between the goals. It is estimated that the bulk of the FP6 resources were focussed on the first and fourth Lisbon goals – to promote dialogue

²⁸ This applies to events organised outside the South Great Plain region.

between Member States and to provide EU innovation services to SMEs²⁹. The extent to which projects actually achieved their intended results – and met the strategic goals of the Lisbon strategy – is discussed further in Section 3.5.

Table 3.1: Strategic fit between the FP6 innovation activities and the Lisbon strategy

Lisbon strategy goal (2000)	Relevant FP6 activities	Total budget of activities	Share of total FP6 innovation budget
To promote dialogue between Member States in order to share good practice and encourage transnational coordination and partnership working	INNO-Actions; INNO-Nets; Europe INNOVA; IRE Network RIS; IRE Network RIS-NAC implementation	€76.8m	38%
To benchmark and disseminate information on Member State innovation policy and national innovation performance	INNO-Metrics; INNO-Policy TrendChart; INNO-Views; INNO-Appraisal; IRE Network Impact Assessment	€15m	7%
To conduct research into issues associated with innovation	INNO-Grips; INNO-Learning Platform; Other research studies	€17m	8%
To provide EU innovation services to SMEs	IRC Network; IPR Helpdesk	€81.4m	41%
-	Other activities	€10.5m	5%

3.3 Implementation

The implementation of the FP6 innovation activities is considered in terms of the contracting arrangements through which activities and projects were commissioned by DG Enterprise and Industry, an overview of the participants and beneficiaries of the activities, and finally the effectiveness of the implementation arrangements.

3.3.1 Contracting arrangements

The majority of the FP6 innovation activities managed by DG Enterprise and Industry were contracted through Calls for Proposal. Across the two FP6 innovation work programmes (*Research and innovation* and the *Coherent Development of Policies*), 87 per cent of funding was distributed in this way, including all of the major innovation activities. The remainder of the funds were distributed through a series of individual Calls for Tender, a contracting model generally used to commission service contracts (a series of innovation policy studies and a study on assessing the impact of innovation programmes) or secretariat roles for other activities (the IRC and IRE Network Secretariats).

²⁹ For example, Europe INNOVA projects addressed all four Lisbon goals, though as a whole the programme primarily concerns dialogue between Member States. Other activities included a similar mixture of Lisbon goals.

Eight separate FP6 Calls for Proposal were issued by DG Enterprise and Industry between 2003 and 2006 (Table 3.2)³⁰. Each of the Calls for Proposal approximately corresponded to one of the major FP6 activities, though the larger initiatives – Europe INNOVA and PRO INNO Europe – were both contracted through two separate Calls. The deadline for the first Call (for the IRC Network) was July 2003, whilst the deadline for the last Call (aspects of the PRO INNO Europe initiative) was June 2006. Overall the first activities to be commissioned through the FP6 were those that were already operational (i.e. the IRC Network, the IPR Helpdesk, and to some extent the IRE Network). It was only towards the end of the FP6 period that the two major new initiatives – Europe INNOVA and PRO INNO Europe – were launched.

A study published in 2007 evaluated the implementation arrangements for each of the eight Calls for Proposal (Table 3.2)³¹. In terms of the time to contract (i.e. the time elapsed between the call deadline and the contract signature), the study reported that the average across all eight of the Calls for Proposal was 331 days (compared to a benchmark of 369 days for FP6 projects (though it was not made clear which areas of FP6 this figure applied to). The longest average time to contract was in relation to Call for Proposal FP6-2005-INNOV-8 (aspects of Europe INNOVA) which recorded a figure of 479 days.

Table 3.2: Implementation arrangements for DG Enterprise and Industry FP6 innovation activities

	FP6 budget		Call deadline	Average days to contract	Example of activity
	(€m)	% of total			
Calls for Proposal (FP6-)	€175.5m	87%	-	331	-
2003-INNOV-2	€73.5m	37%	July 2003	363	IRC Network
2004-INNOV-3	€4m	2%	June 2004	190	IPR Helpdesk
2004-INNOV-4	€23m	11%	June 2004	467	IRE Network
2004-INNOV-6	€24m	12%	January 2005	295	Europe INNOVA
2005-INNOV-7	€10.5m	5%	June 2005	415	Technology transfer
2005-INNOV-8	€5.5m	3%	July 2005	479	Europe INNOVA
2005-INNOV-9	€29.3m	15%	January 2006	264	PRO INNO Europe
2006-INNOV-10	€5.8m	3%	June 2006	177	PRO INNO Europe
Calls for Tender	€25.1m	13%	-	-	IRE/ IRC Secretariats
All	€200.6m	100%	-	-	-

Source: Calculations based on Work Programmes and Calls for Proposal

³⁰ Two further Calls for Proposal under the *Research and innovation* work programme were launched by DG Research – FP6-2003-INNOV-1 and FP6-2005-INNOV-5.

³¹ New Frontier Services – NFS (2007) FP6 Monitoring Assignment – Research & Innovation Programme

Whilst Calls for Tender were 100 per cent funded using FP6 resources, a number of the Calls for Proposal were co-funded by the organisations responsible for implementation. Table 3.3 shows FP6 and co-funding budgets for the majority of the innovation activities and projects contracted through a Call for Proposal. For most of the projects, FP6 resources generally provided between 93 per cent and 100 per cent of the total. The largest FP6 budget commitment was for the IRC Network, which was co-funded and levered in some €82.2 million of resources from elsewhere (FP6 funds made up 47 per cent of the total activity budget). INNO-Actions networks also secured a large amount of co-funding (€14.2 million or 51 per cent of the total budget for the activity).

Table 3.3: FP6 funding and co-funding for selected FP6 activities and projects

Activity	Project(s)	Total FP6 budget	Total co-funding	FP6 budget as % of total
IRC Network		€73.7m	€82.2m	47%
IPR Helpdesk		€4m	€0.2m	96%
IRE Network	RIS	€11.3m	€3.9m	74%
	Benchmarking	€7.2m	€5.5m	56%
	Implementation	€4.5m	€0.4m	93%
Europe INNOVA	Cluster networks	€10m	€0.4m	96%
	Finance networks	€10.1m	€0.5m	95%
	Standards networks	€5.8m	€0	100%
PRO INNO Europe	INNO-Actions	€13.9m	€14.2m	49%
	Others ³²	€10.1m	€0	100%

Source: CORDIS

3.3.2 Project participants

Most of the projects run through the FP6 activities were delivered by transnational consortia of organisations. A 2007 report³³ analysed participants across all of the Calls for Proposal funded through the *Research and innovation* work programme, though in some cases information was patchy, preventing a rigorous analysis of the profile of project partners (note also that this analysis included activity run by DG Research). Of the 998 participating organisations, 69 per cent came from the EU-15, led by Germany (11 per cent) and France (10 per cent). Another 20 per cent of the organisations came from the EU-10 (led by Poland with 8 per cent of total participants), whilst 3 per cent came from the EU-2. Information on the type of organisations was limited due to a large number of unclassified organisations. 174 SMEs participated in the Calls for Proposal (17 per cent of the total).

³² INNO-Views, INNO-Appraisal, INNO-Policy TrendChart, INNO-Learning Platform and INNO-Grips. Information was not available on CORDIS for INNO-Nets or INNO-Metrics.

³³ NFS (2007) *op cit*.

PRO INNO Europe, Europe INNOVA and the IRE Network

In addition to this information, as part of the survey of coordinators of Europe INNOVA projects, certain IRE Network projects and PRO INNO Europe projects, respondents were asked to provide information on the nature of the organisations running the projects. Across these three activities, the average consortium size was nine organisations, ranging from 3 to 19 organisations for individual consortia. Consortia delivering PRO INNO Europe projects were the largest (average size 11 organisations), whilst consortia delivering IRE Network projects were the smallest (average size 6 organisations).

Table 3.4 summarises the representation of different types of organisation on the consortia delivering the projects that responded to the survey. Across the 30 projects, the most common organisations to be included in the consortia were academic institutions or research facilities and private sector providers of innovation support (both included on 70 per cent of consortia), followed by regional or local governments (included on 63 per cent of consortia). 33 per cent of coordinators reported that their consortia included businesses, as end-users rather than as deliverers of innovation support.

Table 3.4 also shows there was variation between the three activities. Almost all Europe INNOVA project consortia included academic institutions or research facilities (93 per cent of consortia), but were also disproportionately likely to include private sector representatives – both providers of innovation support and also businesses as end-users. Europe INNOVA was the more market-oriented of the three activities, whilst PRO INNO Europe and the IRE Network were more geared towards public sector policy-makers. As Table 3.4 shows this is reflected in the fact that the IRE Network projects included a large number of regional or local government organisations (present on 83 per cent of the consortia), whilst PRO INNO Europe projects included a large number of national government organisations (present on 38 per cent of the consortia).

Table 3.4: Presence of different types of organisation on FP6 project consortia

	Proportion of project consortia including at least one of the types of organisation					
	Academic institutions / research facilities	Private sector innovation support	Regional/ local government	Public sector innovation support	Businesses (end users)	National government
Europe INNOVA	93%	80%	53%	53%	53%	0%
IRE Network	29%	71%	86%	57%	0%	29%
PRO INNO Europe	63%	50%	63%	50%	25%	38%
All	70%	70%	63%	53%	33%	17%

Base=30 projects

Coordinators were also asked to provide information on their past experience of working on European transnational cooperation projects, in order to ascertain whether the FP6 innovation activities managed to encourage new organisations to participate. The data suggest that FP6 innovation projects were generally led by organisations with previous experience such responsibilities – just 10 per cent of survey respondents had never worked on European transnational projects.

The survey also asked coordinators to provide information on other organisations that actively participated in the project (by taking part in consultation or information gathering, attending events or trialling new tools or methodologies). Table 3.5 shows the results. Participation in FP6 funded projects was most likely to be from regional/local government or public sector providers of innovation support (in both cases 37 per cent of projects reported that these organisations participated in their project. There were differences between the different activities; IRE Network projects were the most likely to involve participation from regional/local government, whilst Europe INNOVA projects were most likely to involve participation from businesses (again reflecting their market focus).

Table 3.5: Participation of different types of organisation in FP6 projects

	Proportion of project consortia including at least one of the types of organisation					
	Regional/ local government	Public sector innovation support	Private sector innovation support	Businesses (end users)	National government	Academic institutions / research facilities
Europe INNOVA	27%	33%	27%	53%	13%	13%
IRE Network	57%	43%	29%	14%	29%	29%
PRO INNO Europe	38%	38%	50%	13%	50%	50%
All	37%	37%	33%	33%	27%	27%

Base=30 projects

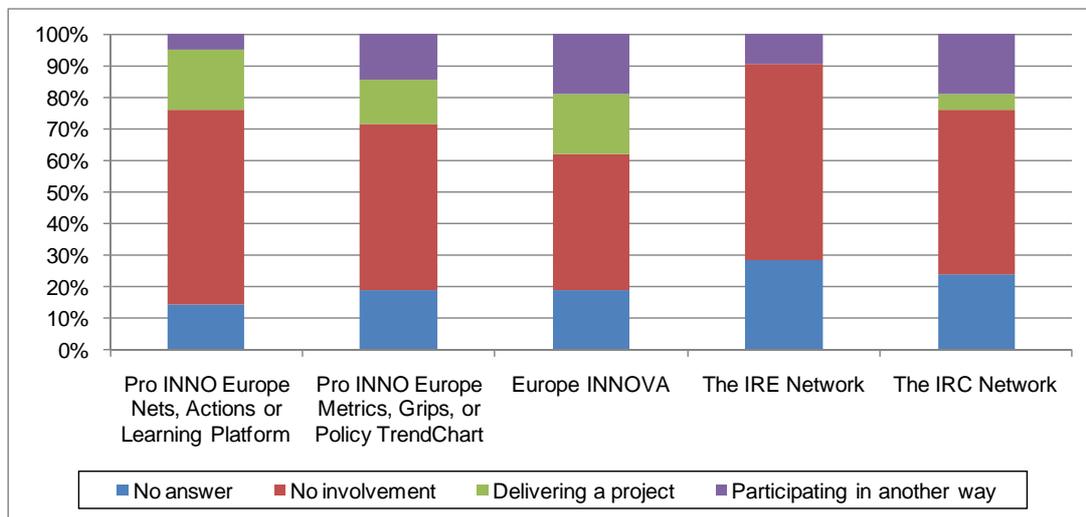
INNO-Views workshops

The survey of attendees of the INNO-Views workshops also asked respondents to provide information on their background. The workshops were not targeted at any particular group, and were intended to provide policy-makers and practitioners with information about innovation issues. Of the 21 respondents, the single largest proportion were from the academic community (33 per cent of all respondents), followed by national governments (24 per cent of respondents), then public sector providers of innovation support (19 per cent).

A significant proportion of workshop attendees were involved in some way in other FP6 funded innovation activities (Figure 3.1). The proportion of respondents who were either delivering a project or participating in another way was 38 per cent for Europe INNOVA, 29 per cent for INNO-Metrics, INNO-Grips, or INNO-Policy TrendChart, and 24 per cent for INNO-Nets, INNO-Actions or INNO-Learning Platform. This points

towards a degree of interaction between the different FP6 supported innovation activities.

Figure 3.1: Attendees of the INNO-Views workshops who were also participating in other FP6 funded activities



Base=21 workshop attendees

3.3.3 Effectiveness of implementation

Effectiveness concerns the way in which the activities and projects funded through the FP6 were implemented, and the extent to which they were well run, useful for participants, and the optimum way in which to achieve the required results. The primary source of information on effectiveness comes from the end-users of the FP6 activities, including businesses, policy-makers and practitioners.

The IPR Helpdesk

Evidence concerning the effectiveness of the IPR Helpdesk is available from the 2005 evaluation of DG Enterprise and Industry's innovation activities³⁴, and from a survey sent to the IPR Helpdesk team as part of this evaluation. The 2005 evaluation of the IPR Helpdesk reported that there was a high level of satisfaction amongst beneficiaries with the quality of the service provided. 93 per cent of businesses felt that the Helpdesk service provided comprehensible information about IPR issues and 89 per cent felt that the Helpdesk was 'crucial' for the development of EU research and technological development projects. Regarding the components of the Helpdesk, 79 per cent of respondents felt that they were able to find the information that they were looking for on the website, and 87 per cent indicated that the helpline service had quickly provided the answer to their request for information or advice.

The 2005 evaluation of the IPR Helpdesk concluded that, overall, the service provided was being implemented effectively, and that satisfaction rates amongst participants were high. However, the study did indicate that referral arrangements were not operating effectively (though 76 per cent of survey respondents agreed that the Helpdesk had pointed them towards other relevant services). Following the 2005

³⁴ TEEC (2005) *op cit.*

evaluation, the Helpdesk set up a specific cooperation scheme with the IRC Network and national patent offices, and the project officer from DG Enterprise and Industry reported satisfaction with the quality of the arrangements.

The effectiveness of the IPR Helpdesk was also investigated as part of this evaluation through a survey sent to the coordinator. According to their response, the overall satisfaction rate amongst helpline users was 93 per cent, whilst the satisfaction rate amongst helpline users in relation to the response time for queries was 92 per cent. These results are similar to those reported as part of the 2005 evaluation, and indicate that the service is still well regarded by beneficiaries.

The IRC Network

Regarding the effectiveness of the IRC Network, the 2005 evaluation did not include any assessment by end-users of the value of the service. The organisations running the IRCs were generally positive about the effectiveness of the service provided, with 27 per cent of survey respondents indicating that the IRCs had met end users' expectations to a 'significant extent' and 62 per cent indicating that expectations had been met 'to some extent'. Amongst organisations running IRCs there was, however, acceptance that the service offer could be improved, with 34 per cent of survey respondents indicating that there was 'significant scope' to improve the delivery of support to end-users. In particular the evaluation concluded that the IRCs should offer a wider range of complementary services beyond transnational technology transfer. From 2008 this recommendation will be implemented as the IRC Network is combined with the Euro Info Centres Network to form the Enterprise Europe Network.

PRO INNO Europe, Europe INNOVA and the IRE Network

Collecting evidence regarding the effectiveness of the three remaining FP6 innovation activities was problematic given the lack of systematic access to end-users. As part of the survey of projects, coordinators were asked whether they had encountered any obstacles that had affected the effectiveness of their activities. Table 3.6 shows the proportion of coordinators who rated a selection of obstacles as either a 'medium problem' or a 'large problem'. As can be seen, the most problematic obstacles were a lack of demand amongst businesses for project outputs, and a lack of resources available in Member States for implementation (both rated as a medium or large problem by 33 per cent of respondents), followed by a lack of a common source of data across partners' Member States.

There were variations in the obstacles encountered depending on the FP6 activity through which the project was run. IRE Network projects reported particular problems with a lack of a common source of data across partners' Member States (rated as a medium or large problem by 57 per cent of respondents), and differences in institutional contexts between partners' Member States (a medium or large problem for 43 per cent of respondents). The more market-oriented Europe INNOVA projects reported a problem with persuading businesses to make use of the innovation support services developed: 40 per cent of respondents found a lack of demand amongst businesses to be a medium or large problem.

More detail on the obstacles faced by projects, and how they were overcome, is as follows:

'[A lack of a common source of data] is the main obstacle faced...there is a limited amount of comparable regional data. The issue is particularly critical for qualitative indicators';

'[A lack of demand from policy-makers] is a key issue, but also the focus of concrete project actions. The main barrier is lack of knowledge of benefits';

'The most needy nations have the least resources to change their situation';

'Innovation policies are not directly transferable from one regions to another one, given the different contexts and objectives characterising them';

'The good practices have been used just as basis for tailoring measures sustainable in the benefiting region, taking into account the difference in institutional contexts';

'At times there has been a lack of common understanding of the common goals [between project partners] and how to reach them...numerous brainstorming audio-conferences [were carried out] to align different positions';

'There is a lack of innovation culture [amongst businesses]. [To generate this demand there needs to be] a strong dissemination strategy amongst end-users, investors, policy makers, stakeholders, and relevant actors'.

Table 3.6: Proportion of coordinators rating obstacles as either a 'medium' or 'large' problem for their project

	Proportion of projects			
	Europe INNOVA	IRE Network	PRO INNO Europe	All
Lack of demand amongst businesses for project outputs	40%	29%	25%	33%
Lack of resources available in Member States for implementation	40%	29%	25%	33%
Lack of a common source of data across partners' Member States	27%	57%	13%	30%
Lack of common understanding amongst partners of the issues in question	20%	14%	38%	23%
Lack of demand amongst policy-makers and practitioners for project outputs	27%	29%	13%	23%
Differences in institutional contexts between partners' Member States	7%	43%	13%	17%

Base=30 projects

Regional case studies

The case studies of the regional operation of a selection of the FP6 innovation networks also provide evidence as to the effectiveness of the projects, and the obstacles that were encountered. With regard to project management and

coordination, a few coordination problems were reported by case study partners. These were often due to the fact that the consortia were seen to comprise too many partners to be fully functional (STAND-INN gathered 27 partners), and because coordination tasks were dealt with by several persons within the lead institution (as in the case of the INNO-Action Tech SME Partnering project).

For most projects aiming at gathering knowledge and transferring good practice, the support provided by the projects proved a good way to achieve the expected results. In the case of Europe Innova ENFFI and STAND-INN, although additional resources would have been welcomed to further disseminate and 'market' the outputs, timing and funds were considered sufficient.

For projects with more ambitious objectives such as the formulation of cluster policies and cluster development, resources and timing were not entirely adequate (IRE 5Schemes, INNO-Nets CEE ClusterNetwork and Europe INNOVA BeLCAR). Developing fully-fledged and successful clusters normally requires a long-term commitment and resources need to be allocated at several levels (policy and political level, business level, university/ research level). Considering the limited length of projects versus the long term objectives defined in the project, effective implementation could only be achieved at most for the easiest target (knowledge fostering, exchange of good practices but not implementation of cluster policy). It should also be emphasised that the lack of clear and strong support policies at national level has not been conducive to effective project implementation. This is the case of the IRE RIS-NAC 5Schemes, where the abandonment of cluster support policies by the new Slovenian government has jeopardized the very implementation of the project and its future chances of success.

IPEG members

Evidence of the effectiveness of the FP6 projects can also be drawn from the views of end-users. First, IPEG members were surveyed to ascertain their views on the usefulness to innovation policy-makers of the outputs of INNO-Metrics (the EIS and the Innobarometer) and INNO-Policy TrendChart. A scoring system was used ranging from 1 to 5 (where 1 was equivalent to 'not at all useful' and 5 was equivalent to 'very useful'). Table 3.7 shows the results. IPEG members rated the EIS as the most useful resource for innovation policy-makers (average score 4.08), and the TrendChart as the least useful (average score 3.25). Comments on the three projects included the following:

'For experts this information is a great help in their work [the Innobarometer]';

'[TrendChart] Information is...quite unaccessible. Reports [country pages] should focus only upon real innovative policy instruments and important policy changes [the Policy TrendChart]';

'The comparative nature although at times subjective gives a good bird's eye view of the situation [the EIS]';

*'Provides good input for strategic papers [the EIS]'.
'*

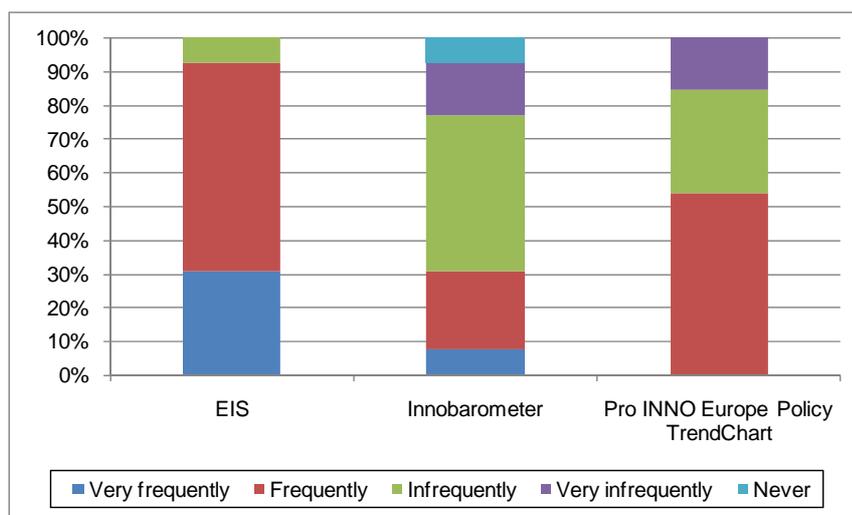
Table 3.7: IPEG members' scores regarding the usefulness of INNO-Metrics and INNO-Policy TrendChart to innovation policy-makers

Project	Average score (1-5)
European Innovation Scoreboard	4.08
Innobarometer	3.27
INNO-Policy TrendChart	3.25

Base=13 IPEG members

IPEG members were also asked whether they themselves used the outputs generated through INNO-Metrics and INNO-Policy TrendChart (Figure 3.2). The EIS was the most frequently used resource, with 31 per cent of respondents indicating that they used the outputs 'very frequently', and 62 per cent indicating that they used the outputs 'frequently'. The TrendChart was used 'frequently' by 54 per cent of respondents, whilst the Innobarometer was used less frequently (46 per cent of respondents indicated that they used the service 'infrequently').

Figure 3.2: Frequency of usage of the outputs of INNO-Metrics and INNO-Policy TrendChart by IPEG members



Base=13 IPEG members

INNO-Views workshops

INNO-Views workshop attendees were also surveyed regarding their satisfaction with various aspects of the workshops (again using the 1 to 5 scale). Table 3.8 shows the results. Satisfaction was high almost across all of the categories considered. The highest scores were recorded for the number of participants at the workshops (average score 4.45), the type of organisations that attended (average score 4.14), and the quality and depth of the workshop presentations (average score 4). Satisfaction was lowest in respect of the quality and depth of the workshop discussions (score 3.57). A selection of the positive comments from attendees was as follows:

'I found the presentations very interesting and presenters very professional';

'Given the time one has to prepare for a workshop the input reports were very useful';

'The number [of participants] allowed good debates';

'Good mix of organisations with different insights'.

A selection of the negative comments from attendees was as follows:

'More time for strategy discussion and exchange of experiences could be helpful';

'Could have been discussion in smaller groups. Long introductions from commentators could have been skipped';

'Too many topics, too little depth';

'Maybe there should be more people from private sector'.

Table 3.8: Workshop attendees' scores regarding satisfaction with aspects of the INNO-Views workshops

Aspect of workshop	Average score (1-5)
The number of participants	4.45
The type of organisations	4.14
The quality and depth of the workshop presentations	4.00
The topics covered in the workshops	3.90
The quality and depth of the workshop input reports	3.90
The number workshops held in 2007 (four)	3.83
The quality and depth of the workshop discussions	3.57

Base=21 workshop attendees

The expert reviewers

The expert reviewers also considered the effectiveness of the IRE Network and INNO-Grips outputs that were reviewed. Effectiveness was considered in terms of the extent to which the outputs were well designed, credible and rigorous as sources of information, and ultimately useful to policy-makers and practitioners. Box 3.1 summarises the results.

Box 3.1: Experts' review of the effectiveness of outputs

IMPACTSCAN and MERIPA

Design and presentation (average score 3.3 out of 5):

- *Strong points:* use of graphics to illustrate key points; testimony of users; general design and layout good.
- *Weak points:* toolkits are both too long; lack of an executive summary.

Quality, rigour and credibility of content (average score 3 out of 5):

- *Strong points:* tested in regions and proven to work; the involvement of

practitioners in the design of the tools; wide reference to other studies and tools.

- *Weak points:* choice of indicators poorly explained; MERIPA relies too much on primary fieldwork with stakeholders who may be hard to engage with; implementation phase of MERIPA is more about economic development than innovation.

Usefulness to policy-makers and practitioners (average score 3 out of 5):

- *Strong points:* useful for regional policy-makers seeking to understand their regions; results can both be used for inter-regional comparison to benchmark progress.
- *Weak points:* focus on indicators and analysis which most regions will be doing anyhow; studies will have been most useful to those engaged in developing the toolkits.

INNO-Grips Gazelles and Skills mini-studies

Design and presentation (average score 2.5 out of 5):

- *Strong points:* overall structure is clear (particularly the questions and answers' approach of the Gazelles study).
- *Weak points:* lack of an executive summary; both outputs very 'dense' and difficult to read and process quickly.

Quality, rigour and credibility of content (average score 4.5 out of 5):

- *Strong points:* rigour of academic review very high; evidence base well understood.
- *Weak points:* clarity of analysis could be better; focus is often on referencing studies rather than exemplifying the arguments made.

Usefulness to policy-makers and practitioners (average score 3 out of 5):

- *Strong points:* succinct summary of the issues (e.g. provision of typologies).
- *Weak points:* often very dense and theoretical for use by policy-makers; design could be easier to use (e.g. executive summaries); lack of diagrams, data and 'hooks' for the reader.

Satisfaction with DG Enterprise and Industry

Finally, an important consideration within the effectiveness of the implementation of the FP6 innovation activities is the role played by DG Enterprise and Industry. Through the survey, coordinators from the projects were asked how satisfied they were with the management and support provided by Commission officials whilst their project was being set up, and during its operation. Figure 3.3 shows the results. The majority of project coordinators were happy with the support provided by DG Enterprise and Industry; overall 90 per cent of respondents were either 'satisfied' or 'very satisfied' with the support provided during project design and set-up. Levels of satisfaction were slightly lower – though still high – in respect of the support provided during project operation, with 77 per cent of respondents either 'satisfied' or 'very satisfied' with the support provided. There was very little variation in responses between the three FP6 activities. Positive comments received from respondents included the following:

'Especially during the contract negotiation the project officer provided excellent feedback to fine tune the proposal';

'DG Enterprise and Industry provided proper support, answering questions and doubts that arose both in the financial /contractual and in the operational area with a short time of reaction';

'Efficient commitment, quick unbureaucratic solution of upcoming matters/needs/ changes';

'We feel that the project is progressing well because of this support and encouragement from the Commission representatives' side'.

A number respondents reported changes in the nominated project officer within DG Enterprise and Industry which was seen to cause disruption and delay whilst the new official familiarised themselves with the project. A selection of the negative comments received from coordinators was as follows:

'There were three different EU officers during the project and this brought to waste of time to provide the same information many times';

'A significant change was introduced during kick-off meeting, invalidating partially the work done before';

'A new project officer took over and the services dropped to next to nothing – it was difficult to get a response even to the simplest of questions';

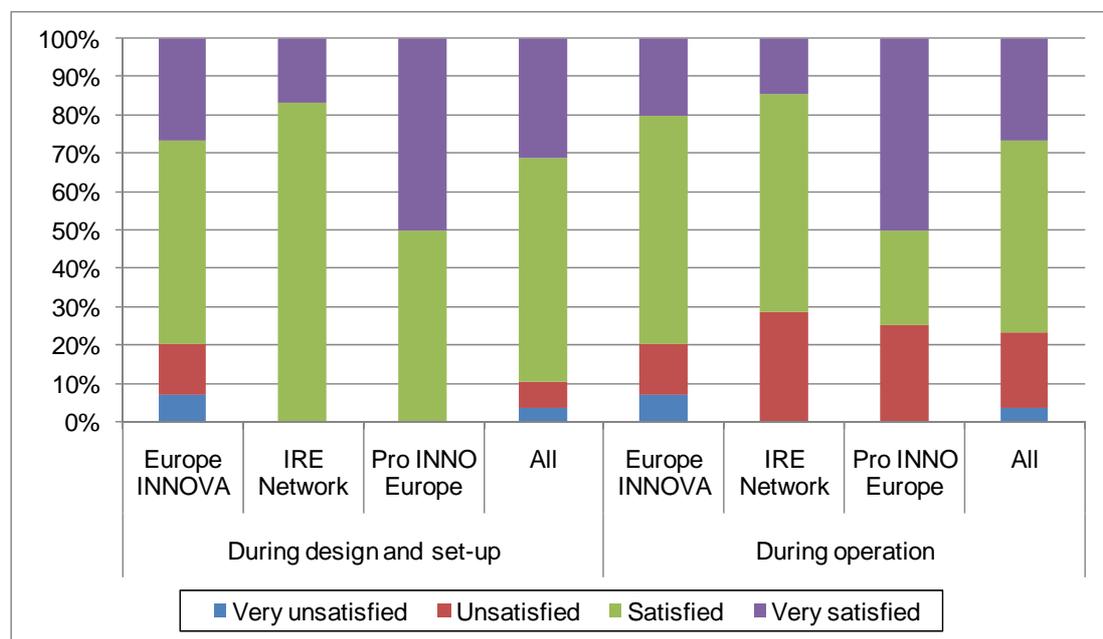
'Slow feedback from EC financial staff that led to delays in delivering the financial transfers to all partners';

'We received very late instructions on how to report [and] wrong reporting was not signalled until months after delivering the reports. The delivery instructions are not always very clear for partners that do not have a long history in working in EU projects. The Commission could follow the project more closely in order not to just fix on deliverables but also experience 'live' what the project partners are working on';

'Not enough feedback to our requests (telephonic, mails, formal letters, etc.) by the project officer [and] evasive answers from project officer, not sufficient to clarify expectations from EC for several requests';

'The support was weaker as far as the global strategic coordination of the projects'.

Figure 3.3: Project coordinators' satisfaction with the support provided by DG Enterprise and Industry



Base=30 projects

3.4 Achievements

As an *ex post* evaluation, the identification and analysis of the achievements of the projects funded through the FP6 was a key task for this study. There were, however, a number of challenges in this respect, primarily due to the fact that few projects had finished at the time of the evaluation and thus achievements, particularly long-term achievements, were not evident. Measuring achievements was further complicated by the nature of the projects which almost entirely consisted of activities designed to generate softer results (networking etc), rather than measurable effects such as new products entering the market.

There follows a review of the achievements of the FP6 projects, drawing on the evidence collected from the projects (via the survey and case studies), and from end-users and experts (via the IPEG and workshop attendees surveys, and the experts' review). Achievements are considered in terms of: results; impacts; European added value; sustainability; and utility.

3.4.1 Results

Identifying and measuring where possible the results achieved by the projects funded through the FP6 was a key task for this study. However, the nature of most of the projects meant that the results were almost always qualitative, typically involving capacity building and improvements in participants' knowledge and understanding of innovation policy-making.

The IPR Helpdesk

In 2005 a survey was undertaken looking at the results of the services provided through the IPR Helpdesk³⁵. Overall there was a consensus that the helpdesk did result in improvements to firms' understanding of IPR issues. Across the 170 businesses that had made use of the helpline and expressed an opinion, 89 per cent indicated that the service had enabled them to better understand IPR issues in their project, and 81 per cent reported that they were better able to manage IPR issues in their project. Similar proportions of businesses reported positive outcomes in respect of the website service provided by the IPR Helpdesk.

The IRC Network

The most important result of the services provided through the IRC Network was the transnational technology transfer (TTT) arrangements that the IRCs brokered. TTTs typically involved exchanges of innovative technologies between companies or between companies and research institutions or universities. A small number of TTTs were joint ventures or licensing or franchising agreements. It is understood that there were a total of 2,250 such TTTs recorded by the IRC Network over the course of the FP6 funding period (April 2004 to March 2008). The 2005 evaluation of the IRC Network included a survey of IRCs³⁶. The majority of the IRCs (i.e. not businesses using the service) felt that the TTTs were either successful or very successful in achieving their expected results (94 per cent of respondents). 81 per cent of the IRCs that responded to the survey felt that the service contributed 'significantly' towards promoting TTT amongst European SMEs, though the proportion reporting a 'significant' contribution to promoting TTT amongst universities and larger business was much lower (30 per cent and 3 per cent of respondents respectively).

PRO INNO Europe, Europe INNOVA and the IRE Network

The nature of the activities carried out by the remaining projects – Europe INNOVA, PRO INNO Europe and the IRE Network – meant that the results are best considered within the framework provided by the SAV model outlined in Section 2.4. As the intervention logics for the innovation activities made clear, the theory underpinning the FP6 innovation activities was that it was through these softer outcomes that the innovation policy-making and practitioner environment in the EU will be improved, ultimately having a positive impact on entrepreneurial innovation in businesses.

First, in order to map the expected results of the projects across the five activities included in the study, as part of the project survey coordinators were asked to score the extent to which their project was expected to achieve a series of SAV results, and to evidence this where possible. Table 3.9 shows the results for projects run through Europe INNOVA, PRO INNO Europe, and the IRE Network. As previously, scores ranged from 1 (equivalent in this case to 'not at all') through to 5 (equivalent to 'to a significant extent').

Overall, the highest scoring result across all of the projects was in respect of the networking and coordination of stakeholders (average score 4.07 out of 5). Following this, coordinators gave good practice sharing and adoption an average score of 3.76

³⁵ TEEC (2005) *op cit.*

³⁶ *Ibid*

out of 5, then research and information gathering (average score 3.65 out of 5). The leverage of funding was the lowest ranked of the six groups of results (average score 2.67 out of 5). In general these patterns applied across the each of the three FP6 activities, though higher scores were recorded where an activity focussed on delivering a particular result. For instance, the IRE Network projects scored the development of strategies and policies 3.75 out of 5 (compared to 3.47 out of 5 for all projects), reflecting the fact that the implementation of Regional Innovation Strategies was a key aim of IRE Network projects.

The responses to the survey of projects funded through the FP6 suggests that, even though they spanned a number of different activities, the anticipated end results were often very similar. The most frequent results were typical of EU interventions and focussed on activities designed to bring together stakeholders, partly to share information, but also more generally to network and generate a common sense of purpose amongst innovation policy-makers and practitioners.

Table 3.9: Coordinators' scores regarding the extent to which their project was expected to achieve certain results

	Average score (1-5)					
	Networking/ coordination	Good practice sharing/ adoption	Research/ information gathering	Strategy and policy development	Development of tools/ instruments/ methods	Funding leverage
Europe INNOVA	4.00	3.79	3.79	3.53	3.40	2.93
IRE Network	4.19	3.83	3.29	3.75	3.96	2.50
PRO INNO Europe	4.08	3.67	3.63	3.10	3.06	2.25
All	4.07	3.76	3.65	3.47	3.44	2.67

Base=30 projects

Of course, what projects *intend* to achieve and what they *actually* achieve can be very different. As part of the survey, coordinators were asked to provide examples of the results that their projects had already achieved, based on the six SAV headings used above. It should be stressed that these are interim results, since many projects – those funded through Europe INNOVA and PRO INNO Europe especially – are still ongoing.

Networking and coordination: Since FP6 innovation projects were required to operate as networks it is not surprising that improved networking was cited as the main result of the projects. Coordinators stressed that FP6 projects had brought organisations together from different countries where previously they had been working in isolation (see also Section 3.5.3 below). Aside from the exchange of information through the networks, a number of survey respondents also indicated that projects had successfully generated a common sense of purpose amongst stakeholders. This was seen as particularly important in respect of cluster policy; the Europe INNOVA project

ABC Network, for instance, reported that the development of a transnational 'cluster consciousness' was key to the success of the initiative. In terms of the extent to which networking had built up stakeholder capacity (i.e. their ability to operate effectively) there was less of a consensus, with a significant number of survey respondents indicating that not enough time had passed for networking to improve the performance of participating organisations. The four IRE Network projects charged with assisting RIS-NAC countries with the implementation of their RIS were the notable exception, since experienced stakeholders worked with less experienced organisations in order to build up their capacity to run regional innovation programmes (see Box 3.2 for details of an example).

Good practice sharing, dissemination and adoption: Most projects reported that they had brought together stakeholders in order to exchange good practice, and disseminated this good practice beyond immediate project participants (through websites, publications and regional events). In a small number of cases (for instance the CASTLE project run through Europe INNOVA regarding satellite navigation applications), projects stressed that their respective industries were still at a relatively embryonic stage, and thus there was little in the way of good practice to exchange (the focus was instead on developing new approaches). Importantly, coordinators were less positive about the extent to which projects had led to the adoption of good practice. Only one respondent provided an actual example: the Europe INNOVA NICE project working with the ICT industry reported that an IT apprenticeship scheme had been implemented in the Ostrava region of the Czech Republic on the basis of good practice guidance received from regional authorities in Berne in Switzerland. Generally, however, coordinators argued that it was too early to identify examples of the transnational application of good practice.

Research and information gathering: Research and information gathering was a common project activity as partners sought to develop a common understanding of the challenges and opportunities in their respective areas. The INVESaT project run through Europe INNOVA, for instance, carried out research into the barriers faced by businesses in accessing finance for innovation in the satellite applications industry. Results were usually disseminated through websites, publications (newsletters etc) and events, though no information was available on whether the results of the research were used other than by project partners. In terms of the results of the research, a small number of projects were able to identify ways in which improved understanding of the issues had had a positive impact. The EUROMIND project reported that their research had led to an acceptance within industry of the need for standards in the maritime sector.

Strategy and policy development, dissemination and adoption: Most projects were still in the process of finalising strategies and policies for their respective areas of activity (for instance transnational cluster strategies). The IRE Network projects had made the most progress with developing and implementing new strategies, mainly the four projects that were assisting RIS-NAC countries with the implementation of the RIS. The Innovation Coach project, for instance, reported that measures developed through the project had been included in regional Action Plans, whilst the INTRO project indicated that programmes that were developed had been implemented in a number of the participating Member States. Generally, however, FP6 innovation projects did not seem to have translated networking and good practice exchange into workable strategies and policies, at least not at the point in time at which this evaluation was carried out.

Development and application of new tools, instruments and methods: Many of the projects had developed and piloted new tools for working with businesses: the ARISE project funded through the IRE Network, for instance, had developed a tool to assess the impact of Regional Innovation Strategies. However, very few projects had reached the stage where their new tool(s) could be disseminated or applied by other policy-makers or practitioners. There were some projects that had reached a wider audience: the EUROMIND project, for instance, worked on developing standards in the maritime industry, and will present the results at the World Standards Day in October 2008. The EIFN project funded through Europe INNOVA reported that the tool that had been developed had been applied in 13 regions across the EU in order to improve the way in which firms in the energy sector could obtain funding for innovation.

Funding leverage: Though very few projects had managed to lever in innovation funding from the public sector, there were some exceptions. A number of the IRE Network projects had secured regional support for innovation programmes, whilst the Tech SME partnering project within the INNO-Actions module had levered in funding for innovation from the Flanders and North Portugal regions. Very few projects had managed to lever funding from businesses for innovation, though there were exceptions, most notably the Europe INNOVA projects which were arguably more commercially-focussed than many of the other projects. The BUILD-NOVA project, for instance, reported that a number of large construction firms had increased their R&D and innovation budgets following their involvement in the project.

Regional case studies

The issue of the results achieved by the projects was explored in more detail as part of the regional case studies. Box 3.2 summarises the results for three projects run through three of the FP6 supported activities.

Box 3.2: Examples of project results

Europe INNOVA Standards (STAND-INN): Research and information gathering was a substantial part of the project. By combining two activities which traditionally do not communicate well (construction and the sustainable development industry), the report identified and analysed practices and processes in the building sector in a new and original perspective. STAND-INN activities also brought together and networked stakeholders from the construction sector and sustainable development practitioners. The community of sustainable development practitioners around the French Environment and Energy Management Agency has increased its contacts with their counterparts from the construction sector. Finally, the French project partner has launched a new research programme in line with the STAND-INN rationale. The development of *Elodie* (a tool compatible with Industry Foundation Class technologies) will help assess the environmental impact of buildings.

IRE Network (5Schemes): A considerable amount of knowledge on cluster policy has been gained by the local and regional actors. A study covering the stakeholders' needs was undertaken (company managers, technology poles and automotive clusters were surveyed) to map existing trends and dynamics. By increasing the awareness of cluster development policy amongst politicians, policy-makers, businesses and public authorities, the project has facilitated communication between relevant stakeholders involved in innovation policy. Networking has been enhanced between the 25 agencies involved in developing the cluster strategy (public authorities, universities,

enterprise associations, chambers of commerce, employers and employees federations, and regional development agencies). Best practices from other EU regions as well as lessons learnt from previous and unsuccessful cluster initiatives in Slovenia were analysed and integrated into a comprehensive strategy for cluster development. The strategy covers all aspects ranging from a needs analysis to an action plan and marketing/promotion activities.

INNO-Nets (CEE ClusterNetwork): Better knowledge of the process of cluster creation and cluster development has been gained, as well as a comprehensive mapping of the regional cluster potential. Cluster Advisory Boards comprising entrepreneurs, researchers and public actors have been established in order to enable the exchange of good practice. Similarly, examples of good practice in cluster management were discussed during a 3-day training organised by the Lower Austria region. In the future, Lower Austria plans to establish an inter-regional training structure to further support the dissemination and adoption of good practice.

Alongside the evidence provided by the projects, the results of a selection of the projects supported through the FP6 activities were tested with the expert reviewers and with end-users (via the surveys sent to IPEG members and INNO-Views workshop attendees). Again, the SAV framework was used in order to measure the soft results achieved by the projects.

IPEG members

Starting with the IPEG members, the survey asked respondents to score a set of results associated with two aspects of the PRO INNO Europe initiative – INNO-Policy TrendChart and INNO-Metrics (consisting of the European Innovation Scoreboard and the Innobarometer). The former was primarily intended to act as a platform through which good practices in innovation policy could be shared, whilst the latter was intended to be a source of information and data about national innovation performance and innovation issues. The overall results of both, therefore, were expected to be an uplift in the standard of innovation policy-making within Europe.

Table 3.10 shows IPEG members' average scores for the INNO-Policy TrendChart and INNO-Metrics services (again measured on a scale of 1 to 5 where 1 was equivalent to 'not at all' and 5 was equivalent to 'to a significant extent'). Overall IPEG members saw the biggest result of the INNO-Policy TrendChart as being an improvement in the exchange of good practice, in line with the core objective of the project (the average score was 3.54 out of 5). However IPEG members were less sure of the wider results of the TrendChart, particularly the extent to which the project had coordinated stakeholders or ultimately improved the standard of innovation policy-making in Europe. IPEG members were arguably slightly more positive about the INNO-Metrics service, scoring the project 4 out of 5 on average in respect of the extent to which it had improved the innovation evidence base. There was also agreement that the project had raised the standard of policy-making in Europe (average score 3.46 out of 5).

Table 3.10: IPEG members' scores regarding the results of the INNO-Policy TrendChart and INNO-Metrics services

Project	Result of the projects	Average score (1-5)
INNO-Policy TrendChart	Improved exchange of good practice	3.54
	Raised profile of innovation policy	3.38
	Improved networking between policy-makers	3.00
	Raised standard of policy-making	2.85
	Improved coordination of policy-makers	2.62
INNO-Metrics	Improved innovation evidence base	4.00
	Raised profile of innovation policy	3.46
	Raised standard of policy-making	2.92

Base=13 IPEG members

INNO-Views workshops

Attendees of the INNO-Views workshops were also asked to score a series of statements designed to measure the SAV results of the workshops. Table 3.11 shows the results. Overall, participants were generally positive about the results achieved as a result of their attendance of the workshop(s). Improved networking between innovation policy-makers scored the highest of all of the results (average score 3.95 out of 5), followed closely by the improved innovation evidence base (average score 3.83 out of 5). Echoing the views of the IPEG members (Table 3.10), the lowest scores were recorded in respect of raising the standard of policy-making (3.12 out of 5) and improving the coordination of policy-makers (2.82 out of 5).

Table 3.11: Workshop attendees' scores regarding the results of the INNO-Views workshops

Result of the workshop(s)	Average score (1-5)
Improved networking between policy-makers	3.95
Improved innovation evidence base	3.83
Improved exchange of good practice	3.41
Raised profile of innovation policy	3.39
Raised standard of policy-making	3.12
Improved coordination of policy-makers	2.82

Base=21 workshop attendees

3.4.2 Impacts

Impacts are the longer-term aggregate effects of the project results discussed above in Section 3.5.1. The qualitative nature of most of these results makes it very hard to assess impacts, particularly since the projects finished comparatively recently (or are still ongoing) and seek to affect relatively long-term changes. Reliable impact data were not available for any of the projects included in the study. The IRC Network

collected some information on the effects of intervention on company turnover and employment, but we were advised that this data was only collected for a small number of firms, and would not be representative across all beneficiaries.

PRO INNO Europe, Europe INNOVA and the IRE Network

In order to obtain a qualitative picture of the impact of the FP6 projects, coordinators were surveyed and asked to indicate how their activities would impact on entrepreneurial innovation in Europe. Survey respondents stressed that the primary impact of their activities would be on innovation policy-makers and practitioners; businesses would benefit at a later stage from improvements in the design and delivery of innovation support. However, as noted above these improvements take time, and as yet there is no evidence available as regards the impact that the FP6 funded projects have had on the standard of innovation policy-making. A number of projects emphasised that their activities had improved the *process* of policy-making (by developing indicator-driven methodologies for devising policy, or by developing consultative decision-making processes). In other cases respondents stressed that their projects had raised awareness amongst the policy-making community about future challenges and opportunities, and models for framing and developing innovation policy (clusters, for instance). Without more information it is difficult to assess the extent to which improvements in process have actually led to improvement in policy.

Some projects (typically those run through Europe INNOVA and INNO-Actions) were more closely involved with businesses, and were thus able to describe some direct impacts on entrepreneurial innovation. A number of coordinators indicated that their projects would ultimately generate innovations in products and processes, though stressed that it was too early to record any hard outcomes. The Europe INNOVA NICE project, for example, reported that their activities had brought together ICT businesses from participating regions within the context of a project intended to jointly develop new products. Such direct involvement was, however, rare, and projects instead tended to focus on a broader aim to improve the environment for business innovation by addressing the barriers faced by firms. Access to finance and the development of universal standards were common areas of activity for projects, though again no project coordinators could identify and provide evidence for any hard impacts – achieved or predicted.

Regional case studies

The impacts of the projects were also subject to consideration as part of the regional case studies. Examples of the results are presented in Box 3.3.

Box 3.3: Examples of project impacts

Europe INNOVA Clusters (BeLCAR): Although it is difficult to identify impacts for this project, it is clear that it has triggered nascent dynamics, which could pave the way for more systematic impacts at a regional and national level. The project was used by the Romanian Regional Development Agency West in conjunction with other existing initiatives at regional and local level in order to generate synergies between cluster initiatives and key stakeholders. Taking as a starting point the BeLCAR cluster methodology, the agency managed to gather strategic support from local authorities (Timisoara and Arad City Halls, local chambers of commerce) and subsequently launched the first regional automotive cluster. At a policy level, the dynamic based on BeLCAR and the automotive cluster has reinforced local authorities' commitment for

cluster support policies. More broadly, local authorities view the creation of the automotive cluster as a pioneering initiative, which, it is hoped, will become a new model at national level and will be emulated by other Romanian regions. Although the initiative is still at an early stage, it could generate systematic impacts (emergence of other clusters in the West region and beyond), should the cluster be successful. However, the extent of the project impact will very much depend on the continued commitment of regional authorities and on the existence of a conducive policy framework at a national level (cluster policy is not yet a priority for national policy-makers).

IRE Network (5Schemes): The Slovenian case study highlights how the 5Schemes project was used in parallel with other European projects in order to create synergies which would go well beyond the project itself. By pooling resources together to maximise the impact, the City of Ljubljana managed to develop two clusters (fashion and social enterprise sectors) and identified two embryonic clusters (tourism and the creativity sector). It also developed crucial skills amongst stakeholders (training of public officials and managers, training capacities, etc...) with a view to 'entrench' cluster practices. However, if these elements may contribute to creating substantial impacts, they also look extremely fragile in the new political context. Cluster policy has recently ceased to be a national priority, thus leaving projects such as 5Schemes in a policy limbo. Suffice to say that without national policy support, the nascent spillover effects are most likely to disappear, without inducing systematic changes.

IPEG members

Research with end-user groups and external experts provides further evidence as to the impact of the FP6 innovation activities. Members of the IPEG were asked to indicate whether INNO-Metrics (the EIS and the Innobarometer) or INNO-Policy TrendChart had ever resulted in changes to their Member State's approach to innovation policy. 62 per cent of respondents indicated that the EIS had had an impact on national innovation policy, compared to 39 per cent for the TrendChart, and 30 per cent for the Innobarometer (though this is primarily used internally by the European Commission to formulate policy). One of the main uses of the EIS, it would appear, was as a tool to assist innovation ministries within national governments for lobbying purposes in order to obtain greater funding for innovation policy, as these comments from IPEG members indicate:

'[The] EIS result helped as grounds to increase financing for innovation support';

'This document [the EIS] is used as one of the arguments to promote the development of innovation schemes'.

Comments from IPEG members indicate that both the INNO-Policy TrendChart and the Innobarometer were seen more as sources of information regarding innovation policy that would contribute towards internal debates and identify broad areas of interest (rather than as direct sources of new policy initiatives). Of course, this only relates to a selection of members of the IPEG and is not representative of innovation policy-makers across the EU. Relevant comments from IPEG members were as follows:

'[There were] no immediate changes however the information used does influence the formulation of and advise on innovation policy';

[The Innobarometer was] mostly used in discussions concerning the national level of initiatives needed for promoting innovation’;

[The TrendChart contributed to the] establishment of national guidelines for public procurement supportive for innovation’.

INNO-Views workshops

Similar findings regarding impact were obtained through the survey of participants of the INNO-Views workshops held in 2007. 26 per cent of the survey respondents reported that their attendance had resulted in a ‘direct’ change to their organisation’s innovation policy-making and support activities, though none gave specific examples. More likely was an ‘indirect’ change (60 per cent of respondents), whereby attendance stimulated new internal debate, or influenced their thinking in a broader, non-specific way. Comments from respondents in this respect included the following:

[The workshop gave me] ideas for new European media innovation strategies’;

‘I have got food for thought and this has influenced my thinking’;

‘Informal discussions with several workshop participants lead to new information which has been used in a research project’.

These findings correspond to those of an earlier evaluation of the TrendChart policy workshops that were run in 2001 and 2002³⁷. This report found that impacts were both direct (where new policies had been launched on the basis of information obtained at the workshop), and indirect (where participants obtained new knowledge that fed into internal discussions and debates, or opened up new avenues of investigation). However, the evaluation concluded that it is hard to ascertain cause and effect in respect of the impacts associated with the workshops. The evaluation of innovation activities carried out in 2005 (which included the TrendChart workshops) also concluded that *‘the impact on specific issues is not yet possible to measure’*, primarily due to a lack of hard evidence³⁸.

The expert reviewers

Finally, the expert reviewers were asked to assess the likely impact of the outputs of the selected IRE Network projects and the two INNO-Grips mini-studies. Using the 1 to 5 scale used throughout the study, the average score regarding wider impacts across all four of the outputs was 2.5 out of 5. In respect of the IRE Network projects, it was stressed that the tools developed would only have an impact if they were widely adopted by innovation policy-makers, but that neither output made a strong enough case for its usage. It was suggested that the IMPACTSCAN project, for instance, would have some impact on the quality of regional policy-making (by enabling stakeholders to obtain a ‘structured view’ on innovation policy in their region), but that inter-regional comparisons would be problematic given the region-specific nature of some of the data required. With regard to the two INNO-Grips mini-studies, the experts concluded that the key to achieving a wider impact was the progress made towards consideration of the implications of the output for policy-makers. Whereas the skills study was seen to have made some progress in this area, the gazelles study was considered too ‘academic’ to have a wider impact as it stood at publication (though the

³⁷ European Commission (July 2003) Evaluation of the TrendChart policy benchmarking workshops, 2001-2002

³⁸ TEEC (2005) *op cit*.

utility of the mini-study may have been improved by its use as the subject of an INNO-Views workshop).

3.4.3 **European added value**

It is important that the activities funded through the FP6 include a dimension of European added value; that is, by their nature the fact that they are carried out transnationally means that they achieve more than if they were carried out by Member States acting in isolation.

PRO INNO Europe, Europe INNOVA and the IRE Network

As part of the survey, coordinators were asked to assess the extent to which the transnational operation of their project brought added value beyond similar activity that takes place at a national level (Table 3.12). The scores across all of the project activities were consistently high (ranging from an average of 4.31 out of 5 for networking and coordination to 4.11 out of 5 for strategy and policy development), indicating that coordinators saw considerable European added value in their projects. Project coordinators almost always stressed that the broadening of the knowledge base to encompass a range of experiences from different countries considerably improved the operation of their project. Examples given were as follows:

'The project enabled access to EU experiences involving about 50 practitioners from old member states and accelerated the resolution of practical problems for policy implementation';

'It has been an interesting experience to see how the European dimension in culture, language, business operations etc. brought different angles to the problems discovered';

'The combination of international actors allowed to have a more complete overview on the sector and allowed to develop different points of view';

'Although European regions are applying the cluster approach for some year transnational cross-clustering is rather rare'.

A number of project coordinators rated certain aspects of their activities as having a lower European added value, most commonly where knowledge proved to be non-transferable across national boundaries:

'Most of our tools and methods could well have been developed by individual partners';

'What is good practice in one region is often useless in another, sharing only sometimes works perfectly'.

Table 3.12: Coordinators' scores regarding the European added value of project activities

	Average score (1-5)				
	Networking/ coordination	Research/ information gathering	Development of tools/ instruments/ methods	Good practice sharing	Strategy/ policy development
Europe INNOVA	4.43	4.21	4.00	3.86	4.07
IRE Network	4.57	4.00	4.86	4.71	4.17
PRO INNO Europe	3.88	4.63	4.25	4.38	4.13
All	4.31	4.30	4.27	4.21	4.11

Base=30 projects

Regional case studies

All of the project partners interviewed during the six case studies emphasised the added value of European projects. There was a clear consensus that European projects bring a transnational component which could not have been achieved within a national context. Most of the case study projects implemented in the new Member States cited the lack of adequate local funding and support as the main reason for their involvement in EU schemes. Innovation funding at local and regional level is insufficient or patchy³⁹ and EU funding constituted the only way to pursue the intended objectives in the West region (Romania), the South Great Plain Region (Hungary) and the Ljubljana region (Slovenia). To a lesser extent, the region of Lower Austria cited a similar reason. For regions in the new Member States (and Lower Austria), the presence of EU funding can help increase national politicians' awareness and gives the much needed legitimacy and credibility to these initiatives implemented at regional level.

Another common feature for regions located in the new Member States is the need to benefit from 'leaders' and more innovative economies. Innovation performance in many of the new Member States is relatively poor (and seen to be relatively poor), such that participation in EU projects is thought to bring valuable exposure to successful examples. The added value of EU consortia is clearly about the 'import' of knowledge from the leading EU regions.

For regions located in the old Member States, there was less of a financial need and innovation support policies do not seem to be an issue. For North Denmark (ENFFI) and South East France (STAND-INN) the added value could be found mainly in the exchange and transfer of knowledge. These regions sought to gain access to expertise and specialist knowledge which were not necessarily available at national

³⁹ Local funds were insufficient in the Slovenian case study, whilst national funding for international projects (SME Tech Partnering) or the automotive industry (BeLCAR) were non-existent

level. Again, these regions also utilised the European framework of the project to 'import' successful practices.

IPEG members

IPEG members were asked to score the European added value of INNO-Metrics (the EIS and the Innobarometer) and INNO-Policy TrendChart. Overall IPEG members saw considerable European added value in the service provided by the EIS (average score 4), but less added value in the Innobarometer (average score 3.6) and the INNO-Policy TrendChart (average score 3.09). By way of an explanation for the low score given to the TrendChart, one IPEG member suggested that '*we generally know which countries have high standards in innovation policy from which we can learn*', and thus the authorities have established their own bilateral contacts. Other comments made by IPEG members in respect of the three projects were as follows:

'There is no national equivalent [the EIS and the Innobarometer]';

'It is a fast way to compare the basic indicators and scores and their evolution among the various countries [the EIS]';

*'It is practical to discover in a fast way how our country is performing compared to other countries as well as finding out about the different policy measures and related budgets [the Policy TrendChart]'.
'*

INNO-Views workshops

Attendees of the INNO-Views workshops were also asked to rate the extent to which the workshops bring added value above and beyond the activity undertaken at a national level. The average score (on a scale of 1 to 5) awarded by respondents was 3.57, suggesting that participants did feel that the workshops provided a service that could not be undertaken by the Member States acting alone. A number of comments were provided, a selection of which were as follows:

'Transnational events give a feeling of the EU...and act as a start of many fruitful collaborations in the future';

'It's important to share methodologies, often similar, and see how they're applied in different backgrounds';

'Since the national discussions on innovative policy making are normally well known...methods and projects from other European countries which aren't known at all (yet) where very interesting to get to know';

'[The added value] would be higher if more national policymakers and practitioners participated'.

The expert reviewers

Finally, the expert reviewers were asked to rate the European added value of the project outputs that were reviewed. Across all four outputs (IRE Network and INNO-Grips), the average score awarded in respect of European added value was 3 out of 5. The added value was highest for the two Grips mini-studies (both 4 out of 5) and the IMPACTSCAN study (3.3 out of 5). With respect to the two IRE Network projects, experts regarded the inter-regional comparison and benchmarking aspect of the outputs as having a high European added value, 'building bridges between EU policies and regional policies' and 'using the same methods and benchmarking EU regions'. The caveat was that this was dependent upon the extent to which either tool was

widely adopted, and that without better dissemination this added value would not be realised. The added value of the two INNO-Grips studies was more straightforward in that the outputs provided a valuable opportunity to collect together all relevant literature from across the EU into one document.

3.4.4 Sustainability

The sustainability of the innovation activities supported through the FP6 is an important issue since many are intended to engineer long-term changes in policy-making where there is no 'quick fix'. The results and impacts achieved, therefore, (the networks etc.) need to be sustainable and able to 'persist' even after the FP6 has drawn to a close. Sustainability also relates to the projects themselves since levering in public – and indeed private – sector support was a key aim in a number of cases, in order to ensure that projects could continue once European funding had ceased.

PRO INNO Europe, Europe INNOVA and the IRE Network

Through the project survey, coordinators were asked whether, once FP6 funding had finished, their project could continue and if so, from where alternative funding would be obtained. Table 3.13 shows the results. All of the 30 project coordinators who replied to the survey indicated that their project could continue after FP6 support finished, indicating a high degree of sustainability. Overall, 43 per cent of projects would continue, but at a reduced level (the proportion was a lot higher for IRE Network projects – 71 per cent). However, the majority of the projects surveyed (56 per cent) would be able to continue running at the same or at a greater level once funding finished. 23 per cent of projects – almost a quarter – expected to continue using non-EU funding (i.e. national or regional resources), though for PRO INNO Europe projects this figure was 38 per cent. Overall, whilst a number of projects were thus able to secure non-EU funding, the majority (53 per cent) would still require EU support in order to continue (the FP7 and Structural Funds were cited as common sources of assistance. Comments received from coordinators in respect of project sustainability were as follows:

'The benefiting regions...showed interest for additional support in the future using the same model of intervention...[which could be] achieved using Structural Funds in the framework of DG Regio';

'The handbook developed for the project will gather more and more interest...if policy makers push enterprises to use standards there could be some interest from enterprises to receive consultancy in order to manage their data using the standards';

'The online toolbox will remain publicly accessible and some partners will disseminate it under their daily business activities';

'Several of the [project] partners are planning future events that are spin-offs'.

Table 3.13: Coordinators' opinions as to how projects could continue after FP6 funding finishes

Future of project after FP6 funding ceases	Europe INNOVA	IRE Network	PRO INNO Europe	All
Cannot be continued	0%	0%	0%	0%
Continuation at a reduced level using non-EU funding	27%	14%	13%	20%
Continuation at a reduced level using an alternative source of EU funding	13%	57%	13%	23%
Continuation at the present or greater level using non-EU funding	27%	0%	38%	23%
Continuation at the present or greater level using an alternative source of EU funding	33%	29%	38%	33%
Total	100%	100%	100%	100%

Base=30 projects

Project coordinators were asked if they had prepared exit strategies in order to ensure a seamless transition from FP6 support through to whatever model the project was intending to follow afterwards. 60 per cent of respondents indicated that they had prepared an exit strategy. Though this constituted a majority, a large number of projects have not seriously considered how they will operate once FP6 funding finishes, despite all projects indicating that they did plan to continue.

Regional case studies

Regarding sustainability in the regional case studies, there were two key factors: the extent to which project partners secured financial leverage, and the overall level of support for the project objectives from relevant stakeholders in the region and beyond. The funding leverage of some regions such as North Denmark (ENFFI), the French PACA region (STAND-INN) and the Hungarian South Great Plain region (SME Tech Partnering) has been limited. However, this does not seem to be an issue as such. Indeed, similar initiatives are under way in other French regions which will multiply the project results (STAND-INN).

Limited support from local businesses will most likely impede the continuation of the SME Tech Partnering project in the South Great Plain region. In the Slovenian case study (5Schemes), the sustainability of the project is questionable. Although the project has generated funding leverage and has the full support of regional and local actors, the fact that cluster policy is not a priority for the new Slovenian government could well bring to an end the initiative. This means that the most sustainable projects are likely to be those which ensure both the development of an adequate follow-up strategy, and an 'integration' of the project objectives within the national policy strategic framework.

3.4.5 *Utility*

Utility concerns the extent to which the innovation activities funded through the FP6 addressed the problems that they were designed to address (i.e. need and demand). Strategically this issue has been discussed above (Section 3.2); there follows a review of the primary evidence collected from projects, end-users and external experts regarding the utility of the FP6 activities and how this might have been improved.

IPR Helpdesk

The 2005 evaluation of DG Enterprise and Industry's innovation activities included a number of recommendations for improving the service provided through the IPR Helpdesk which were subsequently addressed by the consortium that ran the project. The key recommendation regarded the brokerage role of the IPR Helpdesk which was suggested in order to improve the extent to which the service could point businesses towards an alternative source of information where the Helpdesk was unable to address their query. Following this, the Helpdesk delivery team set up a specific cooperation scheme with the IRC Network and with national patent offices in the Member States. The team also ran awareness raising events with FP6 project participants in order to improve levels of usage of the IPR Helpdesk service. The coordinator for the Helpdesk highlighted the high level of satisfaction with the service as an example of the effect that these changes had had on the utility of the service.

IRC Network

With regard to the utility of the IRC Network, the 2005 evaluation of DG Enterprise and Industry's innovation activities concluded that some changes were needed to the service offer provided by the IRCs in order to improve the extent to which they addressed the problem that they were introduced to resolve. Primarily this included the re-instatement of the IRCs' remit to provide advice to SMEs in respect of access to EU funding, but also included direct funding for commercialisation and market research. It is understood that there were no major changes introduced to the IRC Network immediately following the publication of the report (i.e. during the FP6 funding period), but that from 2008 onwards the IRC Network will be merged with the Euro Info Centres Network to form the Enterprise Europe Network, which will provide a much broader range of support services to businesses.

PRO INNO Europe, Europe INNOVA and the IRE Network

As part of the survey, coordinators were asked whether their projects could have been improved in any way (Figure 3.14). Overall, 73 per cent of respondents indicated that improvements could have been made, whilst another 23 per cent felt that no improvements were necessary. There were some differences between the activities, with all projects under PRO INNO Europe reporting that there was room for improvement, whilst 43 per cent of projects run through the IRE Network felt that no improvements could have been made. Most of the improvements suggested by respondents were technical and specific to the project in question, and respondents were keen to stress that their projects were subject to ongoing self-evaluation, with any problems being identified and resolved whilst the project was underway. Some more general observations made by respondents were relevant across the FP6 funded activities:

'The project could have benefit of a website of its own that could have been used to reach more effectively policy-makers using the languages of the different regions';

'Better communication between the partners would have been preferred';

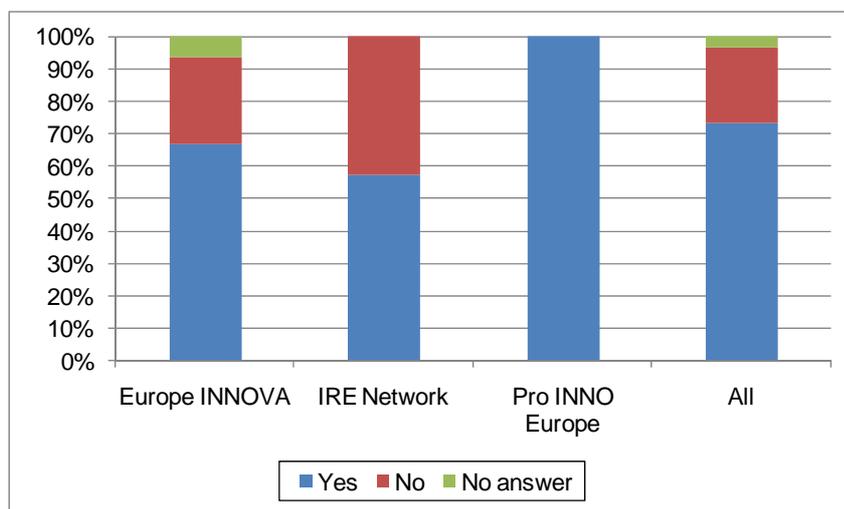
'Improving dissemination tools and methods; specific funding...for dissemination actions';

'Speed of administrative issues, involvement of exploitation related departments';

'The limited availability of data at an EU level, and the time and resources necessary to carry on qualitative surveys at European level in the project time span and given budget framework';

'The budget was rather limited [and] more partners would have been beneficial'.

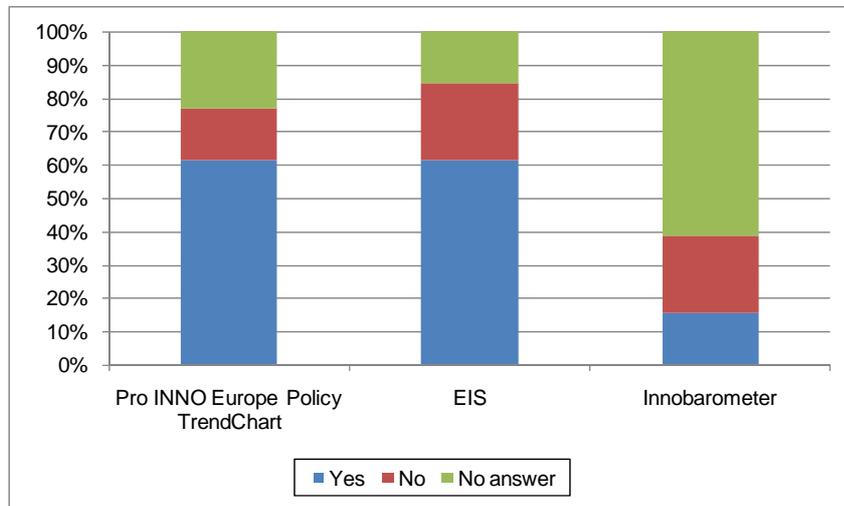
Figure 3.14: Coordinators' assessment of whether their projects could have been improved



Base=30 projects

IPEG members were asked to indicate whether they felt that the EIS, Innobarometer or INNO-Policy TrendChart could be improved in order to make them more useful. Figure 3.15 shows the results. Amongst IPEG members there was a consensus that both the EIS and TrendChart could be improved, with 62 per cent of respondents in both cases arguing that changes should be made. With regard to the Innobarometer the large number of instances of 'no answer' (62 per cent of respondents) suggests that many IPEG members were not familiar enough with the service to express an opinion.

Figure 3.15: IPEG members' assessment as to whether the EIS, Innobarometer or INNO-Policy TrendChart could have been improved



Base=13 IPEG members

4 EVALUATION RESULTS: SPACE RESEARCH

The following section of the report presents the results of the evaluation of the space research activities supported through the FP6. As above these results have been organised thematically around the headings of rationale, implementation, and achievements.

4.1 Overview of evaluation methodology: space research

Section 2 outlined the method of approach taken by the study team in respect of the evaluation; there follows a summary of the key empirical research tasks undertaken with regard to the space research activities, the results of which are presented below:

- Desk research including a review of documentation, websites, and assessors' reports;
- An e-survey of 655 project participants, spread across 42 FP6 Space Research projects;
- Case studies of six Integrated Projects;
- Interviews with stakeholders including project officers from the European Commission, project coordinators, project participants, members of the GMES Bureau and associated Implementation Groups.

4.2 Rationale

4.2.1 *The problem that the initiative was designed to address*

The GMES (and SatCom) initiatives being addressed under FP6 are central features of the European Strategy for Space⁴⁰. As indicated earlier, this strategy seeks to address three objectives:

- Strengthening the foundation for space activities. A 2005 communication from the Commission⁴¹ stressed the *strategic* importance of Earth Observation. There was perceived to be a need for a comprehensive earth observing system, using space-borne and in-situ techniques, providing Europe with an *independent* capability for monitoring for environment and security;
- Enhancing scientific knowledge and understanding. GMES obviously relates to the 'domestic' component (our planet and its atmosphere) of this objective, rather than wider scientific space interests (the solar system and the Universe) which is also covered by the Strategy;
- To bring benefits for markets and society. The emphasis for the GMES component of FP6 is, initially at least, on public-sector applications (particularly in support of EU policies, such as environmental commitments, European Security and Defence Policy, and other policy areas such as agriculture, fisheries and transport). SatCom components of FP6 have a stronger relationship to economic and commercial considerations.

⁴⁰ COM(2000)597 Europe and Space: Turning to a New Chapter

⁴¹ COM(2005) 565 final: GMES: From Concept to Reality

For all these objectives, technical limitations, incomplete coverage, and failures in co-ordination of systems, were felt to limit the utility of pre-existing monitoring services. GMES has the remit to address these problems, aiming to produce services of guaranteed validity and to ensure their future continuity. A specific objective is to achieve, by 2008, 'an operational and autonomous European capability [for global monitoring of environment and security]' (emphases as in original document, COM(2005) 565 final).

Under that overarching objective, targets of increasing specificity have been laid down for individual FP6 themes, projects, and work packages within projects, designed to address issues constraining services available in particular operational areas. These are discussed, for the major thematic areas, in the context of our case studies (see Annex 8).

4.2.2 Strategic fit and relevance

A major commitment for FP6 relates to 'integrating and strengthening the European Research Area', and to the Lisbon goals of developing the competitiveness and wider social and economic welfare of inhabitants of the EU.

The FP6 Work Programme refers to the development of 'pre-operational services', while the GMES Programme is working towards 'establishing by 2008 a European capacity for global monitoring of environment and security'. FP6 (and the ESA GMES Element funds) were seen in the GMES Action Plan 2004-2008 as helping data and service delivery in the 2004-2006 timeframe.

In the absence of funding sources more targeted towards operational activities, FP6 can be seen as the obvious funding instrument. However, we have observed that there is a certain tension between the need for 'R&D' to justify incorporation of the work under the umbrella of the Framework Programme, and the need to provide services for practical applications. The FP6 GMES projects, in their aim to deliver 'pre-operational' services, have focused on R&D activities such as the integration of existing research, some new research, the development of new predictive models, the assimilation of new data into existing and new models, data integration from a wide range of sources plus the conversion of these R&D activities into actual pre-operational demonstration or 'pilot' services on the ground that will be (or have been) tested with real end-users. As such the projects are appropriate to be funded under the Framework Programme, but development of services closer to a commercial reality may diverge from 'traditional' Framework Programme objectives.

Importantly, there is also a significant element of risk associated with much of the project work – indeed, it has frequently turned out to be more challenging than expected (both technically and structurally in terms of the degree of European coordination of research and actors required), leading to some delays in delivery and the need to provide further stimuli to progress. To this extent, the risk implies a market failure where public support to share the risk is appropriate and justified.

Annual reports of external assessors (for the larger FP6 space projects) address the issue of the relevance of objectives, and whether they alter over time. In all cases, major thematic objectives were considered to remain relevant throughout project lifetimes. No major changes in objectives were recommended, although there were suggestions for changes in emphasis in a few cases, broadly along the lines of greater

focus on user needs and better understanding of the service delivery chain to aid appropriate design of services.

Our survey results suggest a high degree of satisfaction among project participants with the adequacy and specificity of project objectives. Only 2 per cent considered these to be 'largely inadequate' or 'totally inadequate'. Objectives were generally considered to be concrete and correlated with the overall GMES schedule, with one comment on a lack of adequate consideration of user needs. Respondents also generally felt that the Framework Programme was an appropriate vehicle for supporting their work, providing opportunities for collaboration not accessible by other means.

4.3 Implementation

4.3.1 Implementation arrangements

There were three calls for proposals in the space component of FP6 (2002-2006). The Commission procedures, following the submission of proposals and the deadline for a call, involve:

- Acknowledgement of receipt;
- An eligibility check, where the Commission verify that proposals meet the eligibility criteria of the call;
- Proposal evaluation by the Commission, assisted by independent experts;
- Notification to the proposer of the evaluation outcome;
- Contract negotiation, whereby the conclusions and recommendations from the proposal evaluation as well as legal and financial issues are discussed and incorporated – to the extent possible – in the actual work plan of the project;
- Issuing and signature of the contract.

Each FP6 project is assigned a Project Officer within the Commission, responsible for administration prior to commencement of the work and during the course of it. Regular project reviews are held while the work is proceeding – in the case of the large IPs, these consist of annual meetings followed by production of a report (in standard format) by (normally three) external independent experts. Progress on smaller projects is reviewed periodically by the Project Officer.

4.3.2 Activities carried out

For the large FP6 space projects, only one or two proposals were received for each thematic area, and where there were competing proposals the differences tended to be between proposed work programmes rather than between mutually exclusive consortia. This reflects the relatively well-established structure of the space community in Europe, dominated particularly by a small number of large companies and research organisations.

Following the three Calls for proposals, contracts were awarded for 42 projects, 32 under GMES and 10 under SatCom⁴². Table 4.1 lists the projects, together with their type, EC contribution in euros, finish date, topic, and number of partner organisations

⁴² This excludes a project jointly funded with ESA to exploit an opportunity arising from the Russian launcher in Kourou.

in each project consortium. The total EC contribution to these projects is about €142m, with a total of 655 partners. One third (14) of the projects are still on-going at end July 2008.

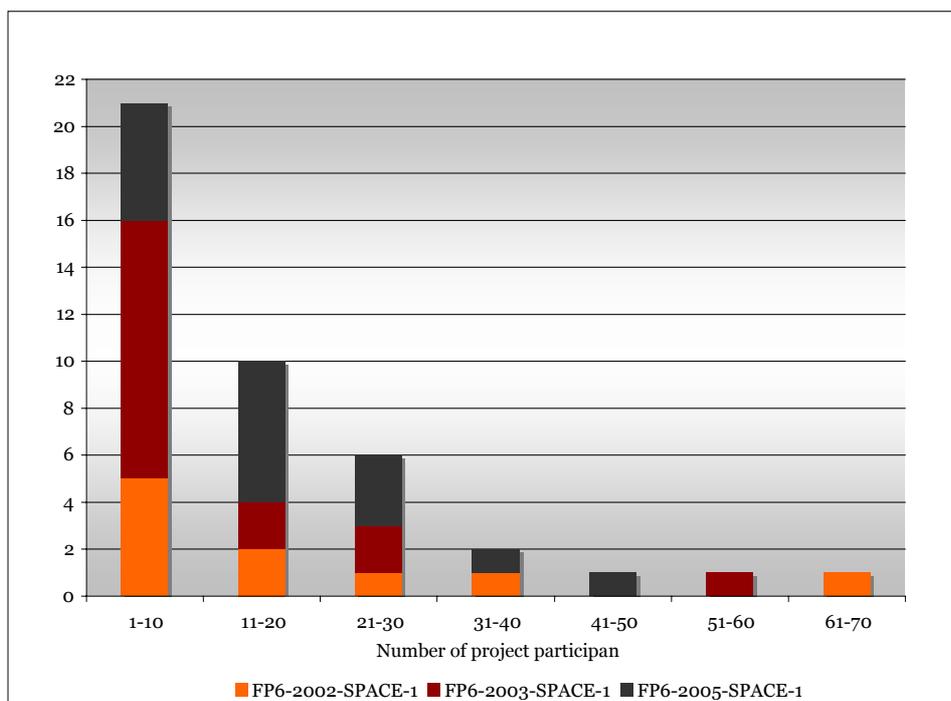
Table 4.1: FP6 Space research projects

Type	Name	EC contribution (€)	Finish date	Topic	Number of partners
SSA	AFSAGA	281,825	29-Feb-08	Satcom	2
STP	AMFIC	1,132,978	28-Aug-09	Atmosphere	10
STREP	ASSIST	1,113,722	31-May-07	Risk	7
STREP	AWARE	1,292,750	30-Jun-08	Marine	8
STREP	BASE 2	1,339,337	29-Feb-08	Satcom	9
IP	BOSS4GMES	11,846,212	1-Mar-09	Cross-cutting	37
SSA	CASCADOSS	606,220	22-Apr-09	Cross-cutting	4
SSA	DRAGONESS	500,542	28-Aug-10	Marine	13
STREP	EAGLE	787,614	31-Jul-07	Land	5
IP	GEMS	12,453,901	28-Feb-09	Atmosphere	26
SSA	GENACS	580,000	30-Nov-07	Support	2
IP	GEOLAND	9,990,988	31-Dec-06	Land	61
SSA	GMES-Poland	10,200	31-Dec-05	Cross-cutting	1
NOE	GMOSS	6,000,000	29-Feb-08	Security	24
CA	GNU	1,099,467	1-Oct-10	Cross-cutting	22
SSA	GOCINO	535,800	31-Dec-08	Marine	4
SSA	GOSIS	24,377	31-Jan-06	Cross-cutting	1
SSA	HALO	900,000	31-Jan-07	Cross-cutting	5
STREP	HAWKEYE	971,120	31-Jul-08	Security	8
IP	HEALTHWARE	3,703,400	30-Apr-08	Satcom	19
IP	HUMBOLDT	7,927,630	30-Sep-10	Cross-cutting	27
STREP	INSEA	1,383,371	31-Dec-08	Marine	9
STREP	INTEGRAL	1,121,148	31-Mar-07	Cross-cutting	9
IP	LIMES	11,980,618	31-May-10	Security	49
IP	MERSEA	14,047,799	31-Mar-08	Marine	38
STP	MONRUK	632,314	27-Jun-09	Marine	7
SSA	MOTIIVE	760,190	31-Aug-07	Cross-cutting	9
IP	MOWGLY	6,605,130	31-Dec-06	Satcom	16
SSA	NAVOBS	736,216	31-Oct-05	Cross-cutting	19
SSA	NAVOBS PLUS	845,672	31-Dec-08	Cross-cutting	15
STP	NET-ADDED	1,899,643	31-Mar-09	Satcom	12
STREP	PEARL	890,000	31-Dec-08	Marine	7
IP	PREVIEW	14,334,259	31-Dec-08	Risk	55
SSA	RISE	1,129,070	31-Aug-07	Cross-cutting	5
IP	RURAL WINGS	5,400,000	31-Dec-09	Satcom	24

Type	Name	EC contribution (€)	Finish date	Topic	Number of partners
SSA	SATMAC	499,935	31-May-07	Satcom	5
STP	SCHEMA	1,193,236	31-Jul-10	Risk	11
CA	SEOS	774,885	1-Jul-09	Cross-cutting	11
IP	SISTER	5,375,632	31-Oct-09	Satcom	19
IP	TANGO	4,995,473	31-Oct-09	Satcom	24
IP	TWISTER	4,114,903	30-Jan-07	Satcom	13
SSA	VGT 4 AFRICA	562,201	31-Dec-07	Land	3

The theme receiving the greatest EC funding is Marine (€19.3m), followed by Security (€19.0m) and Risk (€16.6m). Sizes of consortia vary from one or two to 61 partners, with about half of the projects having twenty or more participants – Figure 4.1 shows numbers of projects involving consortia of various sizes.

Figure 4.1: FP6 space research projects consortium size



Tables 4.2 and 4.3 show the thematic breakdown of proposals received under the three calls, and whether they were successful (yes – Y, or no – N).

Table 4.2: Overview of call content (GMES)

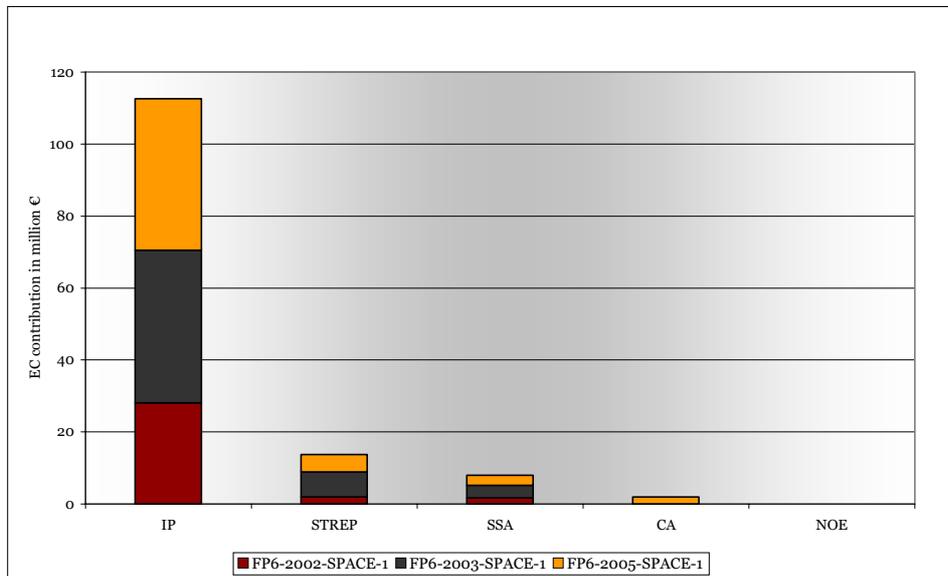
GMES	Themes for which proposals received					
Call 1	Ocean and Marine (Y)	Landcover (Y)	Security (NoE) (Y)	Risk Management (N)		
Call 2	Atmosphere (Y)	Risk Management (Y)	Data Harmonisation (Y)	Water Resources (N)		
Call 3	Security (Y)	Data Harmonisation (Y)	Sustainability of GMES (Y)	Water Resources (N)		

Table 4.3: Overview of call content (SatCom)

SatCom	Themes for which proposals received					
Call 1	Transport applications (N)	Rural area applications (Y)	Tele-education (N)	Tele-medicine (N)		
Call 2	Mobility applications (Y)	Convergence with GMES (N)	Convergence with Galileo (N)	Tele-education (Y)	Tele-medicine (Y)	
Call 3	Convergence with GMES (Y)	Convergence with Galileo (Y)				

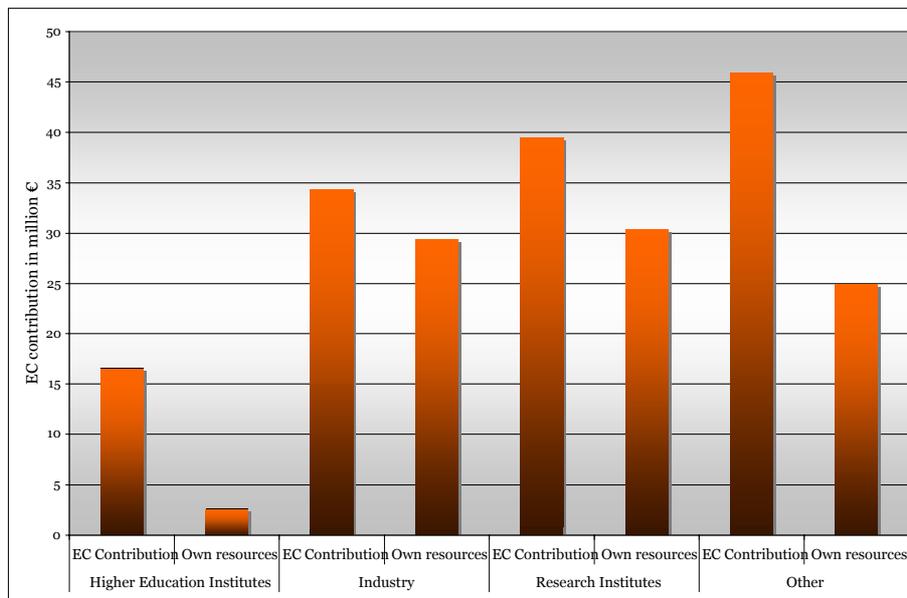
Figure 4.2 shows EC contribution by project type and by call, showing the overwhelming dominance of Integrated Projects (IPs) in volume of finance (about 85%). IPs are followed by Specific Targeted Research Projects (STREPs) and Specific Support Actions (SSAs), with very small contributions from Coordination Actions (CAs) and Networks of Excellence (NOEs) in overall funding. Funding for each of the second and third calls was slightly greater than that for the first.

Figure 4.2: EC contribution by project type and by call



Recipients of funding can be divided into industrial organisations, research institutes, higher education institutes and 'other'. Figure 4.3 shows volumes of funding received by each of these categories from the EC and also their own contributions. EC contributions average out at rather more than 50 per cent of total funding, with Higher Education Institutions (HEIs) in particular providing very little self-financing.

Figure 4.3: EC contribution and own resources by activity type (type of institution)



Further evidence of the structure of the projects was provided by the survey of participants. Only one-fifth of survey respondents had not previously worked with any of their project partners. One-quarter had worked with about half, or more, of their

current partners. Most (nearly two-thirds of participants) had become aware of the FP6 call for proposals to which they responded by being referred or approached by a third party, such as other project participants; of the remainder, 22 per cent had requested or sought an invitation to tender on their own initiative, while 8 per cent had received a direct approach from the Commission.

The relatively low level of competitiveness between rival bidders did not, however, imply automatic acceptance of proposals, which are subject to quality assessment. In particular, proposals on the theme of water were turned down in successive calls. Similarly, no contracts were awarded for projects on Transport Applications in SatCom.

Variations in funding received by country are shown in Figure 4.4. France stands out as by far the most active participating country, with FP6 space expenditure almost double that of the second most active nation (the UK). The UK is followed by Italy and Germany, which show similar activity levels. Other nations receiving above-average EC funding are Belgium, Spain, Greece, the Netherlands, and Austria. Funding received by new member states is very low.

Figure 4.4: Receipts of EC contributions to FP6 projects, by country

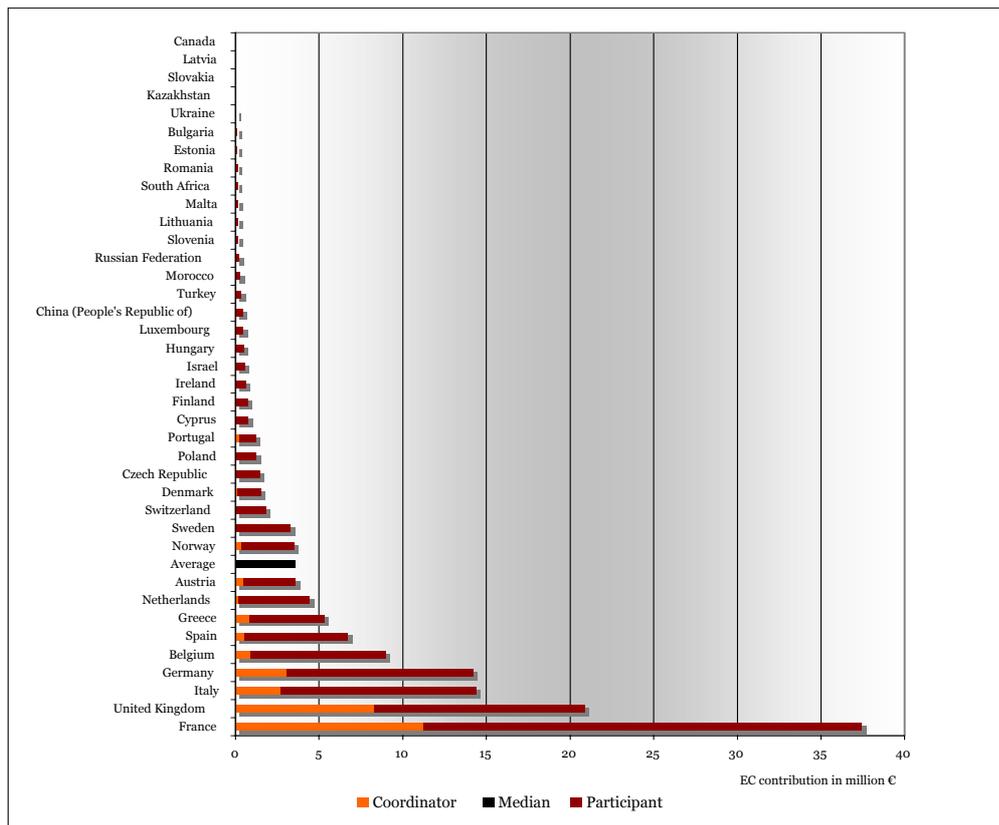


Figure 4.5 shows numbers of participations by country, i.e. the number of times an organisation from a country contributes as a member of a consortium (this is larger than the number of participant organisations, since many contribute to more than one project). The pattern is similar to that of Figure 4.4, the main difference being that the UK is relegated to fourth place, behind Italy and Germany, implying that funding per participant is relatively high for the UK, reflecting a prevalence of larger participants

from that country. The UK also contributes a higher proportion of project co-ordinators compared with other major participants.

Figure 4.5: Number of participations in FP6 space projects, by country

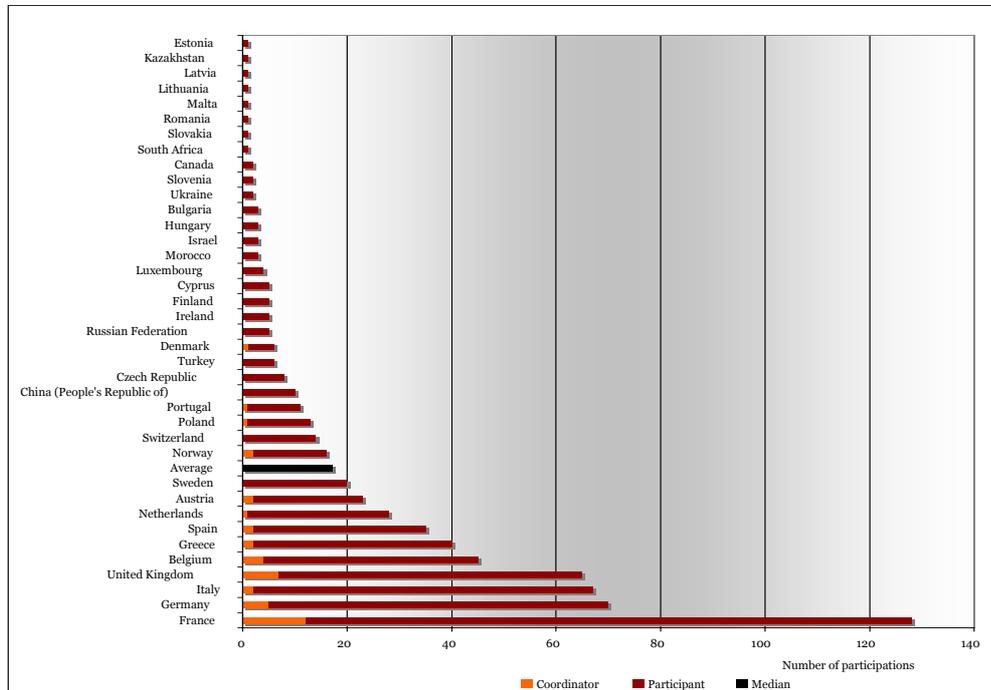
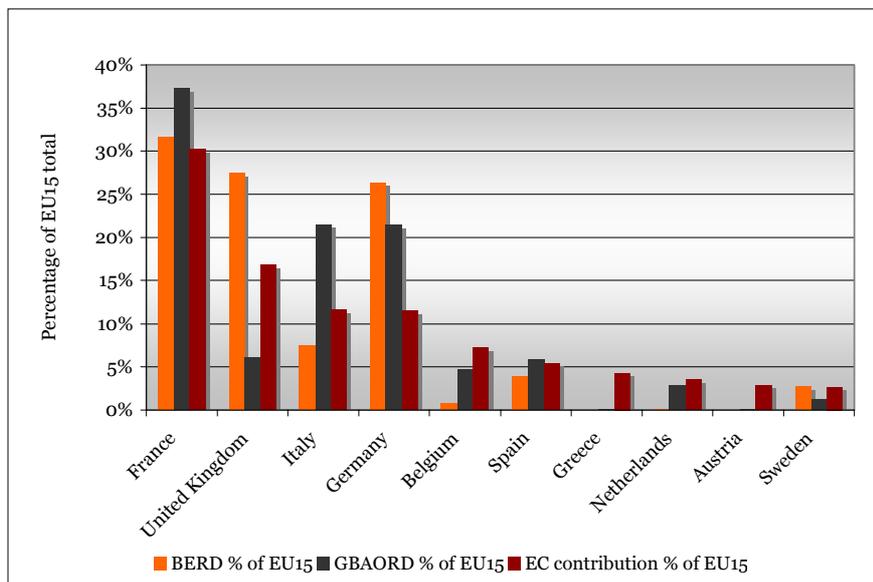


Figure 4.6 compares proportions of EC funding received by the most active countries with their proportions of total EU-15 private space R&D funding (Business Expenditure on R&D, BERD) and publicly-funded space R&D (Government Budget Appropriations or Outlays for R&D, GBAORD). French national expenditure on space R&D overall is much greater than that of other countries, and its shares of EU-15 public and private space expenditure are both over 30 per cent. At about 27 per cent, the UK's private share is only slightly less than that of France, but its share of national *public* funding is only about 5 per cent of the EU-15 total. Italy and Germany are the other major spenders.

Overall between-country shares of FP6 space support are broadly in line with their domestic (private plus public) national expenditures (Germany's share of space FP6 finance is somewhat below its relative domestic expenditure). Thus most FP6 support goes to countries with large internal infrastructures, rather than to those with smaller, emerging companies and institutes.

Figure 4.6: Aerospace research indicators and FP6 Space programme share for the top ten EU15 countries⁴³



Source: OECD, *Main Science and Technology Indicators*, October 2007

4.3.3 Effectiveness and efficiency of implementation

The results of the space research participant survey (see Annex 9) suggest that the structures of the consortia were generally regarded favourably by participants, with less than 5 per cent regarding the composition of their consortium as inappropriate. Three respondents (<1 per cent) regarded their groups as too large and unwieldy, leading to ineffective co-operation and bureaucratic difficulties. One would have liked greater SME involvement, but in contrast several commented on the success of efforts to involve SMEs.

Independent assessors' reviews also broadly consider consortium arrangements to have been satisfactory, with little or no evidence of underperformance or of conflicts, and with generally high levels of effectiveness in collaborations.

The implementation issue, which did cause considerable disquiet among participants, was that of the time taken for the proposal evaluation and contract awarding process to be completed, according to the results of the participant survey (Annex 9). Overall, the average elapsed time between the deadline for the submission of proposals and the notification to the proposer of the proposal evaluation outcome by the Commission was estimated at 30 weeks, with periods ranging from four weeks to up to two years. The average time between the notification of the evaluation outcome and the signing of the contract was about 35 weeks.

⁴³ Figure notes: BERD performed in the aerospace industry (million current PPP \$); Civil GBAORD (Government Budget Appropriations or Outlays for R&D) for Space programmes (million current PPP\$); BERD data set for the year 2002 for each country except Greece, where the available data is for 2005. Data unavailable for Austria; GBAORD data set for the year 2002 for each country except Italy, where the available data is for 2005; The total EU contribution for the EU15 countries which was the base for calculating the ratio is € 124m.

It is appreciated that contract negotiations can become protracted with large, complex projects, but perceptions were that these delays were perceived to have caused 'significant' or 'severe' difficulties by about one-quarter of participants. Comments on the difficulties encountered included the following:

- Activities frequently forced to begin before contract signature. One participant reported that some work packages were already over before contract signature;
- Negative impacts on staffing (with, for example, difficulties with staff retention, and some people scheduled to work on projects taking alternative employment in the meantime);
- Negative impacts on timing of deliverables, sometimes linked to other activities in which partners were involved;
- Need for extensive and expensive project reorganisation, sometimes because of policy or research developments such as progress elsewhere on GMES.

Some respondents commented that the excessive delays were typical of those associated with EU projects. However, respondents were broadly content with the advice and support they received from the Commission during the project proposal and implementation phases – over half were either 'highly satisfied' or 'rather satisfied', with less than 10 per cent being either 'rather dissatisfied' or 'highly dissatisfied'. The latter group complained mainly about bureaucratic aspects of their interactions with the Commission rather than about the quality of the advice and support received.

Overall, project participants reported considerable administrative burdens during project proposal and project execution phases. On average, 3-4 person months were reported as being required for pre-project work such as proposal writings meetings and discussions, and an average of 14 per cent of total project costs was estimated to have been accounted for by administrative work while the project was being carried out.

4.4 Achievements

4.4.1 Results and effectiveness

In this section, we discuss 'results' under three subheadings in turn:

- The extent to which project objectives were satisfactorily realised;
- The nature of outputs achieved, with quantification where appropriate;
- The actual or expected utility of outputs from the viewpoint of users.

Realisation of objectives

Independent assessors were generally content that objectives for relevant reporting periods had been achieved. There is one notable exception, involving a project only at the end of its first year, which was criticised quite heavily but was considered to be improving. For completed projects, assessments in this respect were also generally favourable.

Project participants were also generally positive on this issue, with 85 per cent considering that objectives had either been 'completely met' or 'met with minor exceptions'. Some important objectives were regarded as unmet in 14 per cent of cases. Many respondents pointed out that their projects were still ongoing, with some

still at comparatively early stages, and that they therefore felt unable to give a meaningful view.

Tables 4.4 and 4.5 summarise how the extent of achievement of objectives was rated respectively by independent assessors and by project participants. The ratings by independent assessors are on a 1-3 scale, depending on whether objectives are considered to have been achieved (1 in the table), partially achieved (2 in the table), or not achieved (3). The participants' ratings are derived from a weighted average of survey replies within particular projects - responses stating 'objectives completely met' are rated 1, 'objectives met with minor exceptions' rated 2, 'some important objectives not met' rated 3, and 'overall failure to meet objectives' rated 4. Thus 1 is the best possible score, 4 the worst.

Table 4.4: Achievement of objectives (GMES)

<i>GMES</i>	Period of Assessment	Status of project at review point	Independent Assessors' views on achievement of objectives		Participants' rating
			<i>Rating</i>	<i>Comments</i>	
BOSS4GMES	Dec. 2006 to Nov. 2007	Early stages – first year	2	Project 'has failed to achieve a number of critical objectives', [reflecting] 'the lack of an overall framework which presents how B4G intends to link present and future fast-track services together...'	2.1
GEMS	1 Mar. 2007 to 29 Feb. 2008	Later stages – three-quarters through	2	'There are delays and modifications in core project areas, for example in two out of the three re-analysis streams, possibly affecting the validation activities'	1.2
GEOLAND	Jan. 2006 to 9 Feb. 2007	Complete	1	Geoland [has] 'achieved globally in a very professional way objectives fixed three years ago'. However, 'several areas..[previously pointed out by reviewers] were not addressed or not fully solved: Intellectual Property Rights, data policy, validation process, quality assurance and quality information, cost assessment, price policy'	2.3
GMOSS	Sept. 2006 to Mar. 2007	Later stages – three-quarters through	1	'...objectives for the network have been achieved...'	2.3
HUMBOLDT	Oct. 2006 to 30 Sept. 2007	Early stages – first year	1	Most objectives achieved. Some adjustments recommended for	1.9

<i>GMES</i>	Period of Assessment	Status of project at review point	Independent Assessors' views on achievement of objectives		Participants' rating
			Rating	Comments	
				greater user involvement	
LIMES	Dec. 2006 to Nov 2007	Early stages – first year	2	All deliverable documents received, but with some delay	2.4
MERSEA	Apr. 2006 to Apr.2007	Later stages – three-quarters through	1	Objectives met with one minor reservation related to a delay, not considered as crucial	1.7
PREVIEW	Apr. 2007 to Sept. 2007	Two-thirds complete	Not completed	Project 'well on target to meet its objectives for last 18 months...provided that the action plan is fulfilled totally'	1.8

Table 4.5: Achievement of objectives (*SatCom*)

<i>SatCom</i>	Period of Assessment	Status of project at review point	Independent Assessors' views on achievement of objectives		Participants' rating
			Rating	Comments	
BASE2	Month 13 to 24	Two-thirds through period	1	'The project has achieved its objectives...delays with some deliverables have been justified...and don't seem to have affected progress'	1.5
MOWGLY	Feb. 2006 to Mar. 2007	Complete	1	'The Consortium has achieved the objectives for the reporting period and for the project'	2.3
RURAL WINGS	Jan. 2007 to Jan. 2008	Half-way through period	1	Project '...more or less on time, some installations were very late, and there was important slippage with the evaluation and processing of evaluation results'	2.4

As can be seen, the correlation between the assessors' quantitative verdicts and those of participants is not close. However, the scale used by the assessors is coarse, and there seems to be a certain lack of consistency between assessors in awarding their scores, with some giving the top grade while later expressing significant reservations. Consideration of assessors' qualitative statements suggests a closer alignment of views between them and the participants.

Among the major GMES IPs, MERSEA, PREVIEW and GEMS seem to have come closest to fully achieving their objectives, whereas LIMES and GEOLAND are some

way behind. BOSS4GMES seems to have most work to do, but that project is in its early stages, and is deemed by the independent assessors to be improving.

Within completed projects, comments by participants regarding 'some important objectives not met' included:

- Non-completion of model development;
- Lack of clarity of meaning of 'operational readiness level';
- GMES requirement for operational services financed by an R&D budget with industrial co-financing represents a dilemma;
- Needs of users not met in all areas.

Outputs achieved

Participants were asked to specify numbers of publications and spin-off firms (if any) arising from their projects, and to indicate whether there had been, or would be, any follow-up research proposals. There are some uncertainties in the figures, resulting from the non-comprehensive coverage of survey returns, and from possibilities of double-counting – there will be cases of inclusion of the same publication, for example, in the totals of different members of the same consortium.

The total number of publications given by responding co-ordinators was 622, with 379 reported by other participants, some from the same projects as co-ordinators. Responses were not received from co-ordinators of two major IPs; the resulting underestimate will be offset to a greater or lesser degree by the presence of double counting. Overall, a reasonable assumption is that FP6 projects to date have produced of the order of 1000 publications. Given publication delays and a number of on-going projects, the final total is certain to significantly exceed this figure. Just one spin-off company has been identified by responding project co-ordinators, other respondents citing a further three.

Participants were also asked whether their projects had produced each of a number of outputs, and, if so, to rate the level of achievement. In summary, answers were as follows for each of the specified categories of output (Table 4.6).

Table 4.6: Outputs produced

Output	Prevalence	Level of achievement where output produced
Patents/other forms of IPR	13%	Low
Online tools and instruments	67%	high/medium
New products and services	83%	high/medium
Improved data collection	66%	high/medium
Improved information assimilation	80%	high/medium
Improved information dissemination	84%	high/medium
Platform for changed standards	43%	Medium
Human resources: enhanced skills	85%	high/medium

Involvement of PhD students and young researchers	65%	High
New workplaces created	34%	medium/low
New/extended networks created	82%	high/medium

New products and services, and improved information assimilation and dissemination, are each scored as achieved outputs by over 80 per cent of respondents, and most regard the degree of attainment as high or medium. Creation of new and extended networks scores similarly. There is, so far at least, little evidence of significant levels of commercial outputs (through patents or other IP, or spin-out companies) or employment generation. In broad, qualitative terms, the key outputs, achieved or expected, are the delivery of improved, harmonised, validated, accessible core services for users. Results achieved from these perspectives are discussed for particular areas in the case studies (Annex 8).

In summary, we can say that important scientific outputs have been made, with significant dissemination of results to some groups of users, particularly members of the science community. There is little evidence as yet of widespread adoption of new services for societal, economic or commercial benefit.

The actual or expected utility of outputs

Assessors' reports include ratings of four issues under the general heading 'Use and dissemination of knowledge', as follows:

- *Does the project have significant use potential?* All projects received the top ranking in this category, with very little qualifying comment;
- *Is the plan for the use and dissemination of knowledge developing in a satisfactory manner?* Here the picture is more mixed, with some feelings of concern regarding lack of development of 'concrete services for prospective users', and expressions of expectations for developments in the future for ongoing projects. Exhortations for improvements and developments of plans for knowledge dissemination and communication are quite widespread;
- *Have the contractors disseminated project results and information as foreseen by the contract and the plan for dissemination and use of knowledge (publications, conferences...)?* Widespread activity in terms of publications, conferences, meetings, workshops, newspaper articles etc. is acknowledged, with encouragement for further activity;
- *Are potential users and other stakeholders (outside the consortium) suitably involved?* One reviewer has pointed out the need for service upgrades to be directly traced back to documented requirements of users, ie legally mandated organisations at international, national, regional or local level whose operations have a need for environmental or security information – by implication, a process not always observed. Difficulties in managing user engagement are also noted.

In our survey, participants were also asked their views on the extent to which they expected the results of their projects to be disseminated among various target groups. This was expected to be highest among other FP6/GMES participants and the Science Community, with just 2 per cent and 10 per cent of respondents expecting not to contribute to these groups. Least dissemination was expected to occur among the

public and commercial organisations, less than 10 per cent of respondents expecting to make large contributions here. Policy-making bodies outside FP6/GMES and other public sector users formed an intermediate group.

A similar pattern relates to the degree of service improvements expected to become available to these groups of users as a result of FP6 space work. This is again greatest for other FP6/GMES participants and lowest for the public and commercial organisations. For none of the user groups was 'radical' improvement in service availability expected by more than 4 per cent of participants.

The degree of additionality – the extent to which FP6 space funding enabled work to be done which would otherwise not have been carried out – appears to be high. Only 10 per cent of participants felt that more than one-quarter of the work would have gone ahead without FP6 support.

Consortia members were asked in the survey for suggestions of measures that could be taken to improve take-up and application of their project. These included the following:

- Several calls for improved communication, including more dissemination to member states and local policymakers, including workshops and training sessions;
- Greater involvement of schools;
- Greater provision of information for the public;
- Textbook of major project results;
- Targeting to develop funded derived downstream services;
- Increased feedback between R&D activities and pre-operational needs and requirements;
- More support for operational activities.

4.4.2 European added value and contribution to EU goals

Participants' views were sought on the contribution of their projects to a number of EU-level goals, as follows:

- *Contribution to Lisbon objectives*, i.e. to enterprise and competition policy, especially on growth and jobs. About half of participants expected a minor contribution here, the other half being evenly split between 'major contribution' and 'no contribution'. The eventual impact is extremely uncertain at this stage, and certainly in the short to medium term the impact seems likely to be low. The nature of GMES services as largely public goods, and the emphasis on strategic objectives, is relevant here.
- *Impacts on European policy and regulation*. Around one-third of respondents anticipate a major contribution here, while two-thirds expected a 'minor contribution' or 'no contribution', despite the EU policy objectives of GMES;
- *Impacts on the EU's scientific and technological research capacity and leadership* was expected to be 'major' by more than half of respondents, suggesting a strong contribution to the strategic goals of GMES;

- Contributions to the *European Research Area* were thought to be 'major' by well over half of respondents, suggesting strong development of transnational networks and successful co-operation and co-ordination in research;
- *Impacts on environmental change* were expected to be 'major' by only about 30 per cent of respondents, perhaps surprising given the goals of GMES.

4.4.3 Sustainability

FP6 space project participants were asked to give views on the extent to which achievements and impacts would be sustainable following project completion. Just 5 per cent considered outcomes to be 'largely' or 'totally' unsustainable; about one-half opted for 'largely sustainable' and one-third for 'partly sustainable'. Factors felt to be important in actually or potentially reducing sustainability included lack of continuity of funding, and the appropriateness of FP7 funding. One participant stressed the importance of funding for, and user interest in, downstream services still to be developed – currently an uncertain issue.

On a related issue, 98 per cent had plans to undertake further projects with at least some of their FP6 consortium partners, with 60 per cent expecting to work again with half or more of them. Two-thirds of respondents had developed a strategy for continuation of the work after the cessation of FP6.

5 CONCLUSIONS AND RECOMMENDATIONS: INNOVATION

This section of the report draws together the results of the evaluation of DG Enterprise and Industry innovation activities funded through FP6 that was presented in Sections 1 and 3 in order to address each of the evaluation questions set out in Section 2.2. The breadth and depth of the innovation activities has meant that it has not been possible to evaluate each and every project funded through the FP6; instead the study has focussed on particular activities and particular projects, using these as exemplars from which to draw conclusions.

5.1.1 *Rationale*

Was it appropriate for the Framework Programme to support these activities?

The primary purpose of the FP6 was to contribute towards the development of the European Research Area (ERA). It is, however, arguable that the innovation activities funded through the FP6 generally did not meet this goal since the ERA aims to create a single market for *research*⁴⁴. However, alongside support for research, the Framework Programmes have traditionally funded activities intended to improve European innovation performance. When the FP6 was being developed in the early 2000s, European innovation policy was framed within the context of research and technological development policy (focussing on the commercialisation of research). As Section 1.3 discussed, it is only more recently that innovation has shifted towards competitiveness policy (focussing on innovation as a driver of the knowledge economy).

It is thus more relevant to assess the appropriateness of the FP6 innovation activities within the context of the Lisbon strategy. Section 3.3.2 concluded that **there was a close strategic alignment between the FP6 innovation activities and the goals of the Lisbon strategy** (as set out in the 2000 Communication from the Commission), though a clearer statement regarding the problem that the activities were intended to address (the innovation deficit) would have improved the clarity of the FP6 innovation programme as a whole.

As to the 'location' of the innovation activities, at the time of the launch of the FP6 it is difficult to identify where else they could have been positioned other than within the Framework Programme. The Structural Funds have always supported innovation activity – though more so now than in the early 2000s – but their focus has been regional and would thus not have been suitable for most of the innovation activities funded by FP6 (though the IRE Network projects could perhaps have been run through the Structural Funds). The inclusion of innovation into the new CIP has contributed to clarify the situation. However, in the future there would be merit in the inclusion of a much clearer statement as to the reason for the inclusion of the innovation activities within one programme rather than another. The CIP, for instance, continues to support regional innovation activity (through Europe INNOVA and through INNO-Nets and INNO-Actions) and there needs to be a clear statement as to how this

⁴⁴ COM (2007) 161 Green Paper: The European Research Area: New Perspectives detailed six 'axes' for the ERA: a single labour market for researchers; developing research infrastructures; strengthening research institutions; sharing knowledge; coordinating national research programmes and priorities; and international cooperation.

activity differs and adds value to the regional activities funded through the Structural Funds convergence programmes (the transnational collaboration element is an obvious example).

Whilst there is evidence as to the general need and demand for the innovation projects funded through the FP6, **in many cases there could have been a clearer statement, supported by evidence, of need and demand at a project level, and in particular how this related to the problem that the activities were intended to address. Broadly, the projects reviewed fitted within the typology of the Lisbon strategy goals** set out in Table 1.1. Regarding the provision of EU-level services, for example, evidence suggests that there was both a need and a demand for a transnational, EU-level support service. The 2000 Communication from the Commission – *Innovation in a knowledge-driven economy*⁴⁵ – argued that two of the key causes of the innovation deficit were the low level of technology diffusion (particularly between countries), and the costs of IPR protection for innovation given the fragmented system in place across the EU. The take-up of the two services by businesses (particularly the IPR Helpdesk) indicates there was latent demand for these EU level services.

The expert reviewers concluded that all of the outputs reviewed met a need and would be used by policy-makers and practitioners. The IPEG members needed and to varying degrees made use of the INNO-Metrics and INNO-Policy TrendChart services. The INNO-Views workshops were well attended and the topics covered were seen to be of relevance to the policy-making community. Project participation data from the coordinators of the projects indicates that a broad range of types of organisation have been involved in each of the activities, though what proportion of the target population has participated is not known.

Whilst it is reasonable to conclude that it was appropriate for FP6 resources to be used to support the innovation activities included in this study, in the future **there needs to be a much clearer statement, backed up with evidence, as to the need and demand for the innovation activities, and how they relate to the problem that the interventions are intended to address.** This information can then form part of an intervention logic which clearly articulates where the results and impacts of the activity supported will fit within the broader innovation goals of the EU (such as how they address the aims of the re-launched Lisbon strategy).

Need and demand should also not be considered as uniform across the EU. There was arguably a greater need for the innovation activities supported through the FP6 to recognise that regions and Member States of the EU are at very different positions in terms of innovation performance, and thus need different forms of support. **It is important that there is a balance between innovation activities designed to bring 'lagging' regions up to the EU average, and activities designed to push forward innovation performance in the leading regions of the EU (i.e. the innovation deficit *within* the EU as much as *between* the EU and its competitors.** There are also significant differences in governance systems between countries, for instance where regional scope to implement innovation policy varies. It is important to avoid the use of a one-size-fits-all model in the design of innovation support activities.

Were the stated objectives correctly specified?

⁴⁵ COM (2000) *op cit.*

The innovation activities were split between two FP6 themes: *Research and innovation* and *Coherent development of innovation policies*. The overall goal of the *Research and innovation* theme was to work towards the creation of a European innovation system, whilst the *Coherent development of innovation policies* theme was intended to improve the process of innovation policy-making through research into innovation issues and challenges. In practice the distinction between the two themes was unclear, and a significant amount of funding for policy-making and evidence gathering was distributed through the *Research and innovation* theme (for instance INNO-Metrics and the cluster mapping activity under Europe INNOVA). **Structurally, therefore, it may have made sense to organise all innovation activities under a single theme, focussing on services in support of transnational innovation policy development and delivery.**

The work programmes for the two themes divided activity into sub-themes (six for the *Research and innovation* theme and four for the *Coherent development of innovation policies* theme). Overall the intervention logic linking the objectives of each of these sub-themes with the overall goal of the innovation activities could have been expressed more clearly, and the distinction between the sub-themes was not always clear. **Most importantly, the objectives for each of the sub-themes would have benefited from the inclusion of quantified targets that would demonstrate how they would contribute towards solving the overall problem that the innovation activities was intended to address** (i.e. the European innovation deficit discussed in Section 1.3, though again this was not made clear in supporting programme documentation). Though this would have been difficult given the softer nature of the objectives (e.g. 'to create a European innovation system'), **an explicit statement as to the scale of the task would have made the design, monitoring and evaluation of activities and projects a much simpler task.** Objectives were generally clearer at the level of the innovation activities and projects, though they tended to cut across the sub-themes, encompassing a mixture of networking, cooperation, experimentation with new tools and the provision of services.

Whilst it can be useful to have activities and projects contributing to different objectives, the danger is that the 'programme' of activities as a whole lacks coherence, and that it is difficult to assess the extent to which objectives are being addressed. The FP6 innovation activities were a mixture of legacy activities (the IPR Helpdesk and the IRE and IRC Networks) and new activities (PRO INNO Europe and Europe INNOVA), and there is a risk that the objectives of the activities overlap and duplicate (for instance the research elements of the IRE Network could perhaps have been included with the policy learning modules of PRO INNO Europe, even though the latter was focussed on national level activity). Under the CIP there has been a partial rationalisation of the innovation activities in order to reduce the danger of overlap (most notably the end to support for the IRE Network).

Was the level of funding appropriate for achieving the stated objectives?

The scale of the problem that the FP6 innovation activities were intended to solve was never defined, and thus it was not possible to set targets for the objectives discussed above. Without a measured assessment of what needed to be achieved it is difficult to evaluate whether the level of funding allocated was appropriate. **For future innovation activity there would be merit in seeking to quantify programme objectives in order to facilitate a more comprehensive assessment of the optimum balance for the allocation of EU resources.**

Table 1.1 showed the breakdown of FP6 innovation funding between the sub-themes of the programme. The single largest allocation – €81 million or 41 per cent of the total – went towards the delivery of EU-level services (the IRC Network and the IPR Helpdesk). Whilst EU-level services were an important part of the FP6 innovation activities, such a large resource allocation – most of which went to one service, the IRC Network – may well have been to the detriment of the other strategic objectives (particularly the objective to network innovation actors and encourage interaction – an expensive process – that received €33 million or 17 per cent of the total). However, **without a clearer statement as to the relative importance of the strategic objectives of the FP6 innovation programme, as well as a measure of its overall target, it is hard to evaluate whether the level and spread of funding was appropriate or not.**

On balance, given the scale of the objectives for the FP6 innovation activities, the €200 million worth of investment (even with co-funding) would seem to be somewhat low, especially since around 40 per cent of this total was allocated to a single activity (the IRC Network). By way of a comparison, the budget for innovation (excluding Eco-innovation) under the EIP for 2007-2013 is around €600 million. Innovation activity received just 1 per cent of total FP6 resources between 2002-2006, highlighting the observation made above that the Framework Programmes are primarily about research and technological development. **Innovation is a broad topic and spreading resources too thinly across too broad a set of objectives risks diluting the impact of the programme and creating disillusionment amongst participants who perceive that they have been under-funded.** It is understood that demand for funding exceeded the level of resources available and thus that bids were rejected as part of most of the innovation activities, but a systematic analysis of unmet demand for projects has not been possible within the scope of this evaluation.

At a project level, by their nature the FP6 activities were transnational, and often involved a degree of innovation in of themselves. In a couple of instances, coordinators for projects noted that a large proportion of their expenditure went on travel and research and development work, and that larger budgets would have enabled them to spend more time and resources on dissemination and implementation.

5.1.2 *Implementation*

Were the implementation processes efficient?

An assessment of the efficiency of the innovation activities – and their respective implementation processes – requires comparable information on their outputs, outcomes and impacts. Projects were required to collect monitoring information, but this varied depending on the activities undertaken and thus does not enable meaningful comparable analysis that would identify possible variations in efficiency. Outcome and impact data was not available at the time of this evaluation and will be made available during the final reporting process.

Overall, **one noticeable feature of the FP6 activities has been the fact that the majority were contracted through Calls for Proposal** (87 per cent of DG Enterprise and Industry controlled resources were distributed in this way). From an effectiveness perspective (see below), in many instances this was a good way in which to run projects. However, **from an efficiency perspective, Calls for Proposal can increase the costs associated with project implementation.** For example, it was

suggested by some expert reviewers that research studies with a fixed objective could have been carried out at a lower cost – and thus more efficiently – if they had been contracted through a Call for Tender. The IRE Network benchmarking and impact assessment projects, for example, were contracted through a Call for Proposal worth a total of €7.2 million. There were eight such projects and it is possible that the same results could have been achieved through a smaller number of projects, commissioned through a Call for Tender. Without comparable benchmark data, however, it is impossible to test this contention.

Were the implementation processes effective?

As noted above, the majority of the activities were implemented through Calls for Proposal. Such an approach is most useful where transnational networks of organisations are required, where it is intended that there will be innovation in terms of the approaches taken, and where delivery needs to be tailored to meet conditions ‘on the ground’ (e.g. where legal systems vary between countries). Many of the FP6 innovation activities fall into this category, and it is difficult to see how else the networks set up through Europe INNOVA or through INNO-Nets or INNO-Actions could have been implemented.

It is the opinion of the study team that Calls for Proposal are less effective as a delivery model where project outputs are simpler or more clearly defined. Research projects, for instance, can be more effectively carried out by smaller teams working to a Call for Tender where the Commission has specified what is required; there is no reason why this approach should not lead to innovative approaches to research methodologies. As noted above, **it is possible that more of the research studies commissioned through the FP6 could have been commissioned through a Call for Tender. It is also arguable that projects that need to provide a standardised service to businesses could also have been implemented through a Call for Tender.** The IPR Helpdesk, for instance, whilst needing to take account of differences in legal systems between Member States, is ultimately delivering the same end-result to firms; again, any required innovations or variations in the method could easily be built in to any tendering process.

Were the monitoring and review procedures effective?

Consultation with representatives from DG Enterprise and Industry indicated that monitoring and review procedures were seen to be effective, and that no significant problems were reported. The survey of coordinators for the projects would seem to reinforce this view, with **a generally high level of satisfaction with the support provided by DG Enterprise and Industry, including the process through which problems were identified and dealt with.** In particular, respondents praised the way in which Commission officials adopted a collaborative approach to project management. **No major issues were identified by respondents in respect of the administrative burdens associated with participation in the innovation activities.**

Monitoring systems were seen by officials from DG Enterprise and Industry to be adequate. The Calls for Proposal for many of the innovation activities stipulated that bidders had to propose an appropriate set of performance indicators for monitoring progress and assessing the overall impact of the activity. Details of progress against these indicators was often provided in periodic reports, whilst more detailed ‘results’ information will be included in final reports. Since these final reports were not available

at the time of this evaluation it has not been possible to assess the extent to which performance indicators enabled effective monitoring.

As an observation, however, the softer outputs and outcomes associated with the FP6 innovation activities are often harder to measure (this study adopted a SAV approach in order to obtain this information), and in order to improve understanding in this area **there would be merit in conducting research into how to measure the effects of networking, coordination, good practice exchange etc.** The final report submissions from the projects might provide examples of such methodologies where innovative approaches have been used.

5.1.3 **Achievements**

How effective were the activities?

A qualitative assessment of effectiveness can be based on the information received from projects. The survey of coordinators identified a number of obstacles faced by projects that affected their overall effectiveness. **A frequently mentioned problem involved a lack of resources from Member States or from regions to support implementation, a particular problem where projects were intended to stimulate activity outside of the project and lever in resources** (i.e. the RIS projects and the four IRE Network projects intended to provide support to RIS-NAC implementation). On a related note, IRE Network projects also reported that their effectiveness was limited where institutional and governance contexts varied between regions (such that in some countries – particularly in the new accession states – regions did not have the power or resources to implement innovation strategies or programmes). The case study of the application of the IRE Network 5Schemes project in Slovenia, for example, demonstrated that effectiveness can be affected where regional strategic priorities differ from national priorities (in this case approaches to clustering). Without resources to support their cluster policy the region in question was unable to pursue the implementation of their policy goals.

Effectiveness can also be assessed using information obtained from end-users of the services run through the FP6 projects. Where such evidence was available, **satisfaction with the way in which the FP6 projects were carried out, and thus their overall usefulness, was generally good.** Satisfaction rates amongst users of the IPR Helpdesk, for instance were very high, and the service was generally seen to provide the information needed in order to address their problems. Elsewhere evidence from policy-makers and practitioners (regarding the INNO-Views, INNO-Metrics and INNO-Policy TrendChart) services indicates reasonably high levels of satisfaction with the way in which the projects delivered support. The workshops, for instance, were well attended and participants gave positive feedback as regards the information provided and the discussions carried out. IPEG members were particularly happy with the service provided by the EIS, with over 90 per cent using it either 'very frequently' or 'frequently'.

The expert reviewers analysed a selection of the outputs of the IRE Network projects and the INNO-Grips project concluded that all were generally of use to innovation policy-makers and practitioners, though in each case there was a general criticism about the format used for the outputs. The mini-studies in particular were seen to be somewhat inaccessible to users. **To ensure effectiveness, in the future it is important that the outputs of research studies are tailored to meet the needs of**

the target audience, and are able to 'sell' themselves given the large amount of other research materials available.

What results have the activities produced so far?

The results achieved by the activities funded through the FP6 have consisted of a mixture of harder outputs and outcomes and softer SAV results. The former were mostly generated through the EU-level services provided through the IPR Helpdesk and the IRC Network (i.e. where the projects actually delivered support direct to businesses, rather than assisted intermediaries). Evidence suggests that both have provided valuable and appreciated services. In respect of the IPR Helpdesk, a 2005 survey found that 89 per cent of users reported that their understanding of IPR issues had improved, and 81 per cent indicated that they were better able to manage IPR issues on their Framework Programme project. The IRC Network also generated results in terms of transnational technology transfer and cross-border knowledge exchange. **Within their respective areas, therefore, both EU services had achieved the results they were expected to deliver.**

In most cases, however, the results of the FP6 innovation activities were softer and related more to process improvements in the workings of the policy-making and/or practitioner environment. Indeed, these were classic EU-type interventions, focussing on assisting intermediaries so that they in turn delivered a more effective support service to businesses. Information collected from the FP6 network projects (i.e. PRO INNO Europe, Europe INNOVA and the IRE Network) indicated that **the most progress had been made in terms of 'early stage' results: networking, coordination, community-building, information gathering and reporting, and exchanges of ideas and experiences.** For many regions this was very new and was a significant result (for instance the new methods for measuring the impact of regional innovation activity designed through the IRE Network). In other cases these networks already existed within countries, but the European aspect of the activity was new. Coordinators from the networks scored the European added value of their activities highly, indicating that the transnational element of networking, information gathering and good practice exchange was a significant and innovative result.

There was less evidence available in respect of the actions following on from these early stage results. At the time of the evaluation, most projects were still in the process of developing and testing new strategies and policies, and new tools and methods for delivering innovation support to businesses. Until these strategies and tools are disseminated beyond project partners, and rolled-out elsewhere in Europe, the results will be more limited. In many respects this latter result is the hardest to achieve. The expert reviewers stressed that there are a plethora of innovation toolkits, methods, strategies and policies available to policy-makers in Europe, and that **the challenge for the FP6 projects will be in convincing policy-makers and practitioners that their contribution adds value.** A notable result from the survey of network coordinators was that the least progress had been made in terms of leveraging public and/ or private sector resources, suggesting that **projects still had work to do in terms of winning wider support for their activities.**

As discussed above, whilst projects were usually required to collect performance data regarding the results of their activities, these were to be included in the final reports, and were thus not available for this evaluation. More generally, however, **there would be merit in investigating ways in which the systematic collection of metrics for**

analysing softer project results could be built into future innovation activities.

As part of this study a limited amount of primary data collection was undertaken with end-users in order to measure the results achieved. The evidence collected from the surveys of IPEG members and INNO-Views workshop attendees indicated that these services were generally seen to provide a useful resource that, again, brought together stakeholders and provided them with information that improved their understanding of innovation (early stage results). This was particularly true of the EIS, the results of which were used by innovation policy-makers as part of their work within their respective Member States. Again, there was limited evidence available about the actions that followed on from these results (for instance the launch of new national innovation strategies).

Overall, the information available on the results of the FP6 activities tended to be anecdotal, was provided by the project coordinators, and was generally unproven. This is not to say that it is inaccurate, but that, as a consequence, building an aggregate picture of the results of the FP6 innovation activities has not been possible. **There were, however, plenty of ‘success stories’ provided by the projects, particularly through the regional case studies.** The STAND-INN project in France, for instance, brought together stakeholders from the construction and sustainable development communities and created networks and relationships where there had previously been none. Such networks can drive forward innovation where ideas and knowledge are exchanged and applied to new areas – in this case the development of a new tool to measure the environmental impact of buildings. Elsewhere the CEE Cluster Network created through the INNO-Actions module in Lower Austria carried out extensive research into clusters, established cluster advisory boards bringing together stakeholders from across the public and private sectors, and is ultimately working towards the creation of an inter-regional training platform in order to formalise a system for the dissemination and adoption of cluster good practice.

What have been the wider impacts of the activities?

When asked about the impacts of their activities, most projects stressed that it is too early to provide an answer. Most of the FP6 funded projects have not yet finished, or finished only recently. This was particularly true of the network projects included in the evaluation (i.e. PRO INNO Europe, Europe INNOVA and the IRE Network). Moreover, **the majority of the results, by their nature, will themselves be realised over the medium-term, and thus the impacts that derive from these results will also be much longer-term.** For example, many projects were still trialling toolkits for delivering innovation support to businesses. The result of this activity will be the wider application of these new toolkits; the impacts will be the effects of these toolkits on innovation in businesses. Since many toolkits were intended to change attitudes and build awareness amongst businesses as to the importance of innovation, the impacts – increased investment in innovation etc. – would most likely be seen over the next 5-10 years.

The main impact of the activities funded through the FP6 is likely to be in terms of the process through which innovation policy is developed and implemented. In some Member States and regions **there will be a significant improvement in the process of policy-making** (for instance through the support provided through the IRE Network projects, or the information made available through the PRO INNO Europe policy learning activities (INNO-Grips, INNO-Views, INNO-Appraisal etc). In others **the most significant impact will most likely be an increasingly European focus to**

innovation policy-making and delivery. The emphasis placed by project coordinators on increased networking, information sharing and good practice exchange will be likely to lead towards an increasingly European outlook. IPEG members, for instance, reported that the EIS has become part of the policy-making process in many countries as national governments seek to benchmark themselves against other European countries, rather than acting in isolation.

The exchange of good practice is another notable area where the FP6 activities would be likely to have an impact on the policy-making and the delivery of innovation support. The exchange of ideas and experiences formed a key part of many of the networks funded through Europe INNOVA and INNO-Nets and INNO-Actions. In addition, services such as the INNO-Views workshops and the Policy TrendChart were geared towards providing a source of information on what other European countries have achieved. Survey work with the users of these services suggested that direct impacts were rare: stakeholders tended not to transfer good practice direct from another country. Instead, **indirect impacts were more common as the services informed internal debates and highlighted the policy spheres where countries or regions were most active.** Other FP6 projects including INNO-Grips and INNO-Learning Platform provided a similar service. Again, assessing the aggregate impact of these indirect transfers of knowledge is impossible – at the time of the evaluation there are no metrics available and causality would be difficult to ascertain – but **there is anecdotal evidence that suggests that stakeholders value the information exchange platforms created through the FP6.**

How do these results and impacts relate to the rationale of the activities, and the needs that they were supposed to address?

Systematically quantifying the extent to which the activities addressed their rationale (and thus the needs they were to address) is problematic. As discussed above, **the need and demand for the activities – though generally well researched and understood – could have been stated more clearly, and could have been accompanied by quantified targets.** At the level of the activities, in future there would be merit in a clear statement in the overall goal of the activity and how this will be measured. This might include, for example, the number of policy-makers that needed to be involved and/ or the number of businesses that needed to be supported within, for instance a sector. These targets then need to be related to the overall population (i.e. the total number of innovation policy-makers). At a project level it is understood that the collection of indicators has taken place more systematically, though results and impacts will be published as part of the final reporting process and thus were not available for this study.

A qualitative assessment of the extent to which results and impacts addressed need and rationale can be made. The 2000 Communication from the European Commission regarding the implementation of the goals of the Lisbon strategy made it clear that in order to improve overall European innovation performance there would need to be a much greater degree of transnational collaboration and cooperation. Table 3.1 outlined four elements to this, including cooperation and good practice exchange, European performance benchmarking, the provision of EU level services, and improved research and information gathering. **The evidence collected suggests that the projects have been successful in respect of addressing all four of these goals.**

As discussed previously, however, **European innovation policy has arguably become more nuanced since the initial launch of the Lisbon strategy, and there is recognition of the need for more far-reaching activities in order to drive forward European innovation performance.** For example, the network projects themselves sought to achieve more than general networking and good practice exchange, with most working on the joint development and implementation of policies and programmes and the joint development of tools and methodologies for delivering innovation support to businesses. Since the FP6 innovation activities were launched there has also been a shift at EU and national level towards new models of innovation policy (particularly the importance of clusters; again this has been recognised in the activities of the projects (e.g. Europe INNOVA) but does not necessarily translate directly to the original goals of the FP6.

Are the results and impacts sustainable?

There are two aspects to sustainability that need to be considered. First, the sustainability of the projects themselves. Of the 30 projects that responded to the survey of coordinators, all indicated that their project could continue after FP6 funding finished. Around a quarter suggested that they would be able to do so using non-EU funding (typically national or regional government resources), but the majority felt that EU resources – CIP, Structural Funds or the FP7 – would be needed in the future. **This result ties in to reports from projects that they had not been particularly successful in leveraging in financial support for their activities from either the public or the private sectors. Where projects cannot continue, or must do so at a reduced level, there is a danger that the progress made will be lost.** A number of coordinators reported that their projects had been delayed by initial problems in developing a common understanding of the issues and collecting the necessary information on the 'problem' that they were addressing. Consequently many projects have only recently begun developing end-products (tools, strategies etc.), and the loss of funding will affect the extent to which they can roll-out and disseminate the results. As the case study of Slovenia indicated, the sustainability of projects can also be adversely affected where their activities are not aligned with the strategic priorities of national governance and funding bodies.

The IRE Network included a set of projects focussing on assisting with implementation and there would be merit in exploring the wider applicability of this approach within the context of the FP6 innovation activities. Upon completion of the projects there will be a large number of toolkits, studies, strategies etc. which may also have relevance beyond their immediate sphere of activity and which need to attract funding in order to maximise their potential (through dissemination and support for wider implementation).

Sustainability also relates to the extent to which the results and impacts achieved are self-perpetuating; that is, attitudes and cultures have changed such that projects are no longer needed. Given the lack of data from the end-users of the FP6 innovation activities this is much harder to measure. The surveys of IPEG and INNO-Views workshops suggests that these activities did have indirect impacts in terms of increased awareness of certain innovation topics and the experts' review of the INNO-Grips mini-studies concluded that the results would inform readers of the latest research developments in their respective fields. There is a danger, however, that these results are very time-limited; that is, end-users receive benefits that are only relevant in the short-term. Innovation is a fast-changing policy area (as the INNO-

Learning Platform has made clear), and stakeholders need to be continually updated as to the latest developments (thus requiring new mini-studies, workshops etc).

The results and impacts that are most likely to be sustainable are arguably those centred upon increased awareness of the role that Europe has to play in national innovation policy-making and support delivery. The networks and transnational relationships created through the FP6 innovation activities – reported by the projects to be the most important result of their operations – may well outlast the FP6 support in many cases. One project coordinator stressed that the European angle was invaluable as it introduced new ideas and approaches, and that as a learning model this would be continued in the future. Attendees of the INNO-Views workshops reported that they had helped identify relevant European regions and policy areas that could be followed up at a later date. There would be merit in research designed to measure the extent to which policy-makers and practitioners in the Member States are becoming more aware of the opportunities presented by transnational cooperation (and indeed whether this awareness has led to action, including the development of innovation strategies and programmes), since this will demonstrate how sustainable the work supported through the FP6 has really been.

Could the utility of the activities be improved?

Evidence of the extent to which the utility of the projects could be improved was firstly obtained from the projects themselves. The majority – 73 per cent – of the coordinators who responded to the project survey reported that improvements could have been made. Elsewhere, surveys of end-users also indicated that the utility of some of the FP6 activities could have been improved. 62 per cent of IPEG members felt that the INNO-Metrics (EIS) and INNO-Policy TrendChart services could have been improved. Section 3.5.5 of this report presented a selection of the suggestions made by stakeholders in respect of improving the utility of these two projects.

In order to improve the utility of the FP6 activities, in particular where they are scheduled to continue under future EU funding programmes (mainly the CIP), the following recommendations are made:

- **Going forward the Commission's innovation policy should not be included within the Research Framework Programmes and instead needs to sit within a dedicated programme** (as is the case with the CIP). Innovation is not an off-shoot of research policy and should be framed within the context of competitiveness and growth policy (and thus integrated with enterprise, entrepreneurship and skills policy);
- **There would be merit in strengthening the 'Open Method of Coordination' aspects of the EU support to innovation.** This could for example include: Member States reporting on the status of national (and regional) innovation strategies; the further development of benchmarks and if appropriate targets for innovation activities; the further development of peer learning activities building on the successful models within the FP6; the establishment of working groups focussed on issues and constraints affecting innovation; the establishment of dynamic knowledge systems embodying the results and outputs of FP6 projects and enabling effective dissemination; and putting in place appropriate institutional arrangements building on the CIP management structures;
- **There needs to be a clear statement as to the intervention logic underpinning the innovation activities supported by the Commission** (not

just for the individual programmes and projects), in order to improve overall coherence and clarify the role of each of the individual programmes within the context of 'the problem'. This overall intervention logic should be clear as to the rationale for EU innovation activity, be it to fill gaps, bring 'lagging' regions and Member States up to the EU average, or drive forward innovation in leading areas. Ideally this should be reinforced by an improved evidence base regarding the nature of the need and demand for EU-level innovation activity;

- Under the CIP the structure of the Commission's innovation activities is more logical than under the FP6, which included a mixture of legacy and new programmes. Going forward, however, **there needs to be clarity about the distinction between INNO-Actions and Europe INNOVA**. Overall the PRO INNO Europe initiative targets policy-makers and is thus distinct from Europe INNOVA. The INNO-Actions module involves the design and delivery of activities to businesses, and thus may overlap to some extent with Europe INNOVA;
- **There is a need for a greater use of metrics within EU-level innovation activity, particularly in respect of the overall objectives**. Robust metrics for innovation are known to be hard to develop and collect (though through the EIS and the IRE Network benchmarking and impact assessment projects the Commission has made significant progress in this area), but without such data it is very hard to monitor and evaluate the impacts of the innovation activities;
- **There would be merit in collecting more detailed information on the outcomes and impacts of the Commission-funded innovation activities**. In some cases this is relatively simple: after each INNO-Views workshop attendees could be asked to complete a feedback form; projects providing downloadable information (e.g. INNO-Grips, INNO-Metrics, INNO-Policy TrendChart, the IRE Network and Europe INNOVA) could make use of an online/ emailed feedback form for each individual who accessed the information. The data collected needs to be much richer than standard output information and could be based on the SAV framework for results and impact that was used in this study;
- In terms of the implementation procedures used to deliver the innovation activities, **there should be a greater use of Calls for Tender in order to contract standardised activities**. This is particularly true of research studies where the Commission is very clear about the required outputs, and where there is perhaps less of a need for a transnational delivery team. The co-funding element of the Calls for Proposal can act as a barrier for participation for private sector companies, resulting in a profile of programme participants that is skewed towards public sector research organisations and thus may not capture the breadth of experience available;
- Though there was generally a high level of satisfaction with the way in which DG Enterprise and Industry managed the innovation activities, **there would be merit in ensuring – as far as possible – that the nominated official within the Commission remains the same throughout the duration of the project**. Furthermore, there may be a need to reduce the workload per official, and to ensure that management is more proactive and focussed on quality control rather than the monitoring of deliverable deadlines;
- The development of toolkits, methodologies, research papers and other outputs designed to improve the process of policy-making is a congested field of activity, with a number of other public and private sector organisations already

performing these services. Whilst the transnational approach taken by the FP6 innovation services was different, in order to ensure that the outputs of PRO INNO Europe, Europe INNOVA and the IRE Network are able to 'compete' in this field there needs to be added value. Moreover, **outputs need to be better tailored to meet the needs of the policy-making and practitioner community** (i.e. practical, concise, and accessible). The PRO INNO Europe website provides a suitable portal for some of this information and there would be merit in ensuring that there is more direct access to other outputs (such as those generated through the IRE Network);

- Generating backing for their innovation activities within their respective Member States – important in securing support for implementation and ensuring the continuity and/ or sustainability of projects after European resources have finished – was identified by a number of projects as a problem (this issue is not specific to FP6). To address this issue it is recommended that awareness and demonstration of alignment with national/ regional strategic innovation priorities forms a key part of the design of EU funded innovation projects (where relevant), thus encouraging projects to consider and if possible develop solutions to the problem at the outset. It would also be useful to encourage projects to liaise with national/ regional authorities over the course of the project lifetime, and to include dedicated funding for dissemination within their expenditure plans;
- **The FP6 funded activities have generated a significant body of evidence regarding innovation and it is important that this is not lost as projects finish.** Moreover, it is arguable that in many cases the main beneficiaries of the projects have been those directly involved in the activity; that is, knowledge has accumulated internally. Though dissemination activity has taken place (through newsletters and events), there is a need to ensure that, as projects draw to a close and the outputs are finished (i.e. closing reports, online toolkits), momentum is not lost and lessons learned are captured. There may be demand, for instance, for an FP6 'closing' event for stakeholders in order to share results between activities, alternatively there would be merit in exploring ways in which project results can be integrated into the PRO INNO Europe resource (e.g. whether the results of the IRE Network benchmarking and impact assessment studies could be integrated into INNO-Metrics and/or INNO-Appraisal);
- **There would be merit in assessing how networks can be optimised as a method for achieving the Commission's innovation goals and generating the required results and impacts.** Transnational networks face a number of obstacles (not least the time spent developing a common understanding amongst partners), and it would be useful to understand how internal factors (such as the make-up of the consortia and the relative contributions from different partners) affects the functioning of the project, and thus the results achieved.

6 CONCLUSIONS AND RECOMMENDATIONS: SPACE RESEARCH

Section 4 presented an overview of the results of the evaluation of the space research activities funded through the FP6. Here we summarise the main conclusions arising from our analysis and discussions presented previously.

6.1.1 *Rationale*

Was it appropriate for the Framework Programme to support this activity?

Yes, but with some caveats relating to differences between the FP6 space work and most other work undertaken within the Framework Programme. In particular, we would highlight the following:

- **The relative lack of competition between alternative proposals in the project selection process might have reduced 'options' and weakened performance incentives;**
- **The not wholly congruent objectives of GMES and FP6, where GMES is pursuing its objectives through both short term and longer term strategies. Presently, GMES must give most different weight to the early implementation of a suite of core *operational* services that ought to have been coming in to use from 2008, where FP6 (and FP7) are perhaps more naturally aligned with the longer term extension of those core services and their enhancement and further integration;**
- **The nature of the activities themselves, which frequently have the character more of contract-development work rather than high-risk R&D.**

GMES should be about the development of applications as well as core services, and that user involvement should be paramount. The question is whether these activities form an ideal fit with the Framework Programme as a funding instrument. There is a potential conflict – not only within the Framework Programme but also in the context of any publicly supported research activity – between the desire to ensure that outputs are ultimately widely adopted and applied, and the need to justify public funding of research, much of which is of potential benefit to the private sector. The former implies the need to stimulate user interest and involvement, while the latter suggests that the development work should retain a certain distance from direct applicability. Compared with Framework Programme activity in general, the trade-off in the case of Space work appears to lean more towards the objective of applicability rather than that of providing pre-competitive generic R&D outputs.

We recognise that the Framework Programme itself generally is concerned with, and places emphasis on not only technological developments, but also (albeit to a lesser extent) pre-operational services/pilot applications with end-user participation. Additionally, many prospective end-users are in the public domain rather than in the private sector. Also, we appreciate that **no vehicle other than the Framework Programme was appropriate/available for financing the development and demonstration of GMES 'pre-operational' services.** Nevertheless, we consider that, **if the tendencies specified above become more pronounced as one moves into**

FP7, as is expected, that the issue of the (possibly) changing character of the Framework Programme in incorporating more development work on space-related nearly-operational services should be explicitly acknowledged in Framework Programme documentation and calls and guidelines for proposal assessment amended as required.

Were the stated objectives correctly specified?

There is **broad acceptance across project participants that the given project objectives were consistent with overall GMES objectives and suitably specified.** Independent evaluators also felt that objectives were initially relevant and retained their relevance as projects proceeded.

Detailed scientific objectives at sub-project level tend to be specific, and outcomes can be unambiguously assessed against them. At the broader level, however, objectives such as ‘delivery of pre-operational services by 2008’ or ‘delivery of an operational and autonomous European capability’ are non-specific and open to wide interpretation. Assessment of achievements against such criteria is difficult.

Was the level of funding appropriate for achieving the stated objectives?

We have not encountered any widespread dissatisfaction with levels of funding, or evidence that funding issues have severely constrained planned activities. Most project participants have expressed satisfaction on this issue, and negative comments relate to administrative issues (timing and distribution of funding – see Section 6.1.2 ‘implementation’, below) rather than to the extent of financing.

6.1.2 Implementation

Was the implementation process efficient?

There was **widespread dissatisfaction among project participants regarding time delays and bureaucratic procedures undertaken between submission of a proposal and signature of the contract**, allowing work to begin. The **delays**, which averaged about 65 weeks, **caused considerable difficulties, especially in terms of requiring project reorganisation and in recruitment retention of staff, problems that were both disruptive and costly.**

Such complaints are not unusual or unexpected in the administration of complex projects, and other evaluations of Framework Programme routinely point to participants’ widespread dissatisfaction with administrative procedures. Expenditures of large quantities of public money rightly demand high standards of scrutiny and care, particularly, as is the case here, when it involves multiple member states and large numbers of actors, and contract negotiations can become protracted. However the **timing problems encountered do seem excessive in some cases and to have produced consequential difficulties for the projects affected.**

Was the implementation process effective?

The **processes of assembly of the consortia, preparation of proposals and their evaluation, and advice and support offered by the Commission** during project proposal and implementation phases, **seem to have proceeded effectively.** Structures of consortia were generally appropriate, so as to promote **effectiveness in project execution**, and **consortia were effectively managed internally.**

Were monitoring and review procedures effective?

Monitoring and review procedures have in general been effective. External assessors have on the whole been quite thorough and prepared to be critical where appropriate. Where important criticisms have been made, these have normally been accepted and acted upon by consortium leaders. There is **some evidence, however, of inconsistencies between assessors in their marking policies**, and this was highlighted by the comparison with the self-assessments made by participants through our online survey. There is also **some concern at the extent to which the programme management team had been able to consolidate project level monitoring and evaluation in order to maintain a view of programme level performance.**

6.1.3 **Achievements**

How effective were the activities?

In terms of scientific activities, the level of effectiveness has been high. Numerous targets have slipped somewhat, but not generally to the extent of involving severe disruption of overall project effort.

In terms of user involvement and applicability, achievements have been less effective. The role of users both inside and outside consortia has certainly not been neglected, but the extent to which the activities do, or will lead to, widely adopted new services remains unclear. There is also some **small concern, arising from our analysis of the geographical distribution of FP6 funds, that the programme has favoured Europe's leading space nations**, those with the vast majority of total EU space manufacturing and technical capacity, **and that lead users might have been crowded out somewhat by these established relationships and preferences.**

What results have the activities produced so far?

Results can be categorised as:

- *Scientific outputs*, such as publications and patents. **Publication numbers vary substantially between projects** – some show impressive records in this regard, while others are more limited. **Few patents seem to have been filed to date;**
- **Demonstrations of potential applications**, several of which have been carried out at test sites across Europe, generally **with positive reactions from the small numbers of potential users engaged** with these undertakings, but with **uncertain levels as to eventual take-up;**
- *Other communication activities*, such as **maps** on websites showing environmental data (relating to atmosphere, land, and oceans) of **higher quality, higher resolution and/or more frequent updating than was available previously. Meetings, workshops and seminars** for various target audiences have also been **widespread.**

What have been the wider impacts of the activities?

We have not identified any wider impacts in terms of significant improvements in environmental protection, improvements in national or international security, benefits to the European economy (through, for example, economic growth or employment creation), or benefits to society or quality of life generally. Such wider

impacts necessarily take time to develop and the lack of evidence of such effects is unsurprising at this stage.

How do these results and impacts relate to the rationale of the activities, and the needs that they were supposed to address?

There is a high level of attainment of scientific objectives – objectives were considered to have been met (with at most minor exceptions) by 85 per cent of consortia members. This self-assessment by participants is in line with the independent assessments of one of the few large-scale IPs to be completed, where 85 per cent of products were considered to be scientifically and technically sound.

The overall goal of achieving ‘pre-operational services by the end of 2008’ requires a generous interpretation of the meaning of ‘pre-operational’. It can be said to have been **achieved in several areas** – the ocean theme has perhaps shown the strongest development – albeit the **results arising from the demonstration** of those pre-operational services have been **somewhat mixed**. The same and more might be said regarding the GMES goal of an ‘operational and autonomous European capability for global monitoring and security’ by end-2008. GMES will by no means be fully operational at this time, however **positive steps towards generating that Europe-wide autonomous capability will certainly have been taken**.

The objective of bringing benefits to markets and society has not yet begun to be fulfilled. Promise has been shown in some areas but the realisation of social and economic gains remains uncertain and seemingly many years in the future. **Lead user involvement in the consortia**, while necessary and valuable, **is insufficient in itself**. To quote from an assessor report from a recently completed IP, ‘without firm long-term commitments of the main concerned stakeholders (national and regional institutions), which is quite different from short-term involvement as a user partner in a project, GMES will not meet its objective of improving on a long-term basis the quality of life of European citizens in terms of environment and security’.

Are the results and impacts sustainable?

Additional funding under FP7 for the main project areas ensures that research and development work towards realisation of operational service provision will be continued. **Provision of an independent European monitoring system, together with continued scientific contributions, should be sustainable if those objectives can be realised**.

The situation regarding benefits to the economy and society is again less clear. Privately supplied services will need to be self-sustaining in terms of attracting private finance, and derived public services will have to justify the use of taxpayers’ money in cost-benefit terms. Neither of these situations has yet come to pass. In the meantime, it is right that **efforts should be made** (through the GMES Bureau and other initiatives) **to ensure that stakeholders are appraised of the actual and potential value to them of newly available services, but ultimately the services will need to ‘sell themselves’ without continuing external support**.

There is a **continuing need for user ‘connectedness’**, stressing non-scientific users with whom communication in non-technical language might not come naturally to many participants.

Could the utility of the activities be improved?

The recommendations of the study team with regard to improving the utility of the space research activities are as follows:

- **Despite widespread user involvement in projects**, we have repeatedly encountered **reservations expressed regarding the extent and quality of communication and connectedness with end-users**. There is a **need for continuing with, and strengthening, such links**. The upcoming evaluation of the GMES Bureau provides an opportunity for more detailed investigation of this issue, and implications for future policy;
- **In future, high-level objectives for FP-sponsored space work could be more specific and targeted**. For example, terms such as 'pre-operational', and 'capability' could be more rigorously defined. **We also suggest that clear targets for expected extent of user take-up of services could be specified, to more readily enable outputs to be assessed against objectives**;
- The **scope of Framework Programme work could be monitored closely to ensure relevance and appropriateness, and changes in direction explicitly recognised**. FP7 is to become the main EU funding source for GMES over the next few years, despite FP not traditionally being designed for work involving full-scale trials and incubation of operational services;
- The **delays encountered in the assessment and contracting procedures for FP6 projects seem excessive, and investigation should be carried out into the causes with a view to improving matters in the future, without compromising the quality of assessments**.

