

**Summary Report of the
Capacities Specific Programme of FP7
for the High Level Expert Group.**

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This Summary Report is a specific contribution to the ex-post evaluation of the Seventh Framework Programme of the European Community for research, technological development and demonstration activities for the period 2007 – 2013. The evaluation is carried out by a High-Level Expert Group. That Group is supported by experts, who provide information and their analysis of the respective Specific Programmes – Cooperation, Ideas, People and Capacities. This is the Summary Report concerning FP7 Capacities Specific Programme.

The report has been written during the period of January-April 2015. The summary and analysis is based on several sources of quantitative and qualitative information, policy documents, previous evaluations as well as reports from the respective Commission services. The report is a meta-analysis by its nature, pulling together and synthesising a large amount of empirical data and previously conducted evaluations, complemented with updated data (namely from Commission's CORDA database), and finally reflected into overall conclusions and recommendations.

Evaluation aspect 1 - Rationale

FP7 represented several important changes to the EU research funding compared to FP6. The overall funding volume of FP was significantly increased, the programme structures were completely redesigned and the objectives were shifted more strongly towards the implementation of (the revised) Lisbon Strategy and to the realisation of European Research Area. The key objectives during that time included the further increase of European research and innovation investments to meet the set 3% GDP target, which seemed to be drifting further and further away, as well as further emphasis from research to innovation. Also, the enlargement of the European Union (from EU24 to EU27) was in process and the aspects of engaging and supporting the integration of New Member States into the EU research and innovation framework programmes were high on the agenda. By the time of FP7 design and initiation, there was little awareness of the significance of forthcoming economic crisis (2008 onwards) that was going to have long-lasting consequences to European research and innovation investments, particularly at the Member State and regional levels.

The range of objectives covered by the FP7 was broader than before, and they were grouped into four key categories: Cooperation, Ideas, People and Capacities. For each type of objective, there was a specific programme that corresponds to one of the main areas of EU research policy. Amongst the four specific programmes, Capacities SP was most specifically aimed at building the research capabilities of all types of research performing organisations including SMEs particularly, the more effective use of research infrastructures and more coherent development of research and innovation policies. These objectives were important elements for ensuring the ERA progress, as well as for the wider and more balanced participation of different European actors to the FP itself.

The EU Member States had earmarked an overall budget of € 4 097 million for the Capacities SP for the period of 2007-2013. This represented roughly 8% share of the total FP7 budget, making it the smallest one of the four Specific Programmes (Cooperation 65%, Ideas 16% and People 9% respectively).¹

Each of the Specific Programmes had a particular objective and the Capacities SP was aimed to improve Europe's research infrastructure and the research capacity of SMEs. These were by far the two largest budget allocations of the Capacities SP as well. Capacities also hosted smaller programmes relating to Science in Society, Regions of

¹ See Figures 1 and 2, Annex 2

Knowledge, Research Potential, International Cooperation, and the Coherent Development of Research Policies.²

The aims of Capacities SP were to be achieved through seven activity areas, namely:

1. *Optimising the use and development of research infrastructures, hence called '**Research infrastructures**' (RI), with a budget of € 1 715 million.*
2. *Strengthening innovative capacities of SMEs and their ability to benefit from research, hence called '**Research for the benefit of SMEs**' (RSME), with a budget of € 1 336 million.*
3. *Supporting the development of regional research-driven clusters, hence called '**Regions of Knowledge**' (RoK), with a budget of € 126 million.*
4. *Unlocking the research potential in the EU's convergence and outermost regions, hence called '**Research Potential**' (REGPOT), with a budget of € 340 million.*
5. *Bringing science and society closer together for the harmonious integration of science and technology in European society, hence called '**Science in Society**' (SiS), with a budget of € 330 million.*
6. *Supporting the coherent development of research policies, hence called '**Support for the coherent development of research policies**' (CDRP), with a budget of € 70 million, and*
7. *Actions and measures in support of international cooperation, hence '**Activities of International Cooperation**' (INCO), with a budget of € 180 million.*

The activities of the **Risk-Sharing Finance Facility** (RSFF) were also partially funded from the Capacities budget, and therefore RSFF key aspects are addressed here.

Aside from the above specific aims, the Capacities SP also aimed to complement the Cooperation programme and to find synergies with regional and cohesion policies, the Structural Funds, education and training programmes and with the Competitiveness and Innovation Programme (CIP).

Budget-wise the largest priority of Capacities SP (42%) was allocated to the support of European **Research Infrastructures** (RI). There is a long tradition in the EU Research Framework programmes to support RI already from FP2 in 1989. Over the years, the funding for RI support activities has seen a constant growth, reaching the sum of about € 1.7 million under FP7 for the years 2007-2013.^{3 4}

The launch of FP7 in 2006 coincided with the publication of the *European Strategic Forum for Research Infrastructures* (ESFRI) roadmap.⁵ The roadmap identified 48 new pan-European Research Infrastructures or major up-upgrades to existing ones⁶, reflecting the needs of European research communities in the next 10 to 20 years.

The ESFRI roadmap triggered a major change in the focus and process for EC support to the European Research Infrastructure compared to FP6. It allowed the European Commission to take a more coordinated approach to the funding of existing European networks of research infrastructures and distributed research infrastructures as well as

² Council Decision (2006/974/EC) of 19 December 2006 on the Specific Programme: 'Capacities' implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013).

³ Fotakis, C., *FP7 Interim Evaluation: Analyses of FP7 supported Research Infrastructures initiatives in the context of the European Research Area*, European Commission, 2010.

⁴ See Figure 4, Annex 2.

⁵ ESFRI Roadmap published first in 2006, with updates in 2008 and 2010.

⁶ The roadmap includes also an additional set of 3 projects deriving from the CERN Council strategic roadmap for particle physics.

for the development of new pan-European research infrastructures, in contrast to the bottom-up approach of earlier FPs.

The instrumental role of world-class research infrastructures in achieving the overall ERA objectives has been re-emphasised in several EU documents and strategies such as:

- *Digital Agenda flagship initiative*⁷ (e.g. coordination, pooling of resources of Member States and industry, greater focus on demand- and user-driven partnerships)
- *The Communication on the Innovation Union Flagship initiative*⁸ (e.g. European Science and innovation system, including ERA)
- *The Communication High-Performance Computing: Europe's place in a Global Race*⁹ (e.g. Strategic nature of High Performance Computing)
- *The ERA Council Communication of July 2012*¹⁰

In Capacities SP, the RI activities were structured in three streams:

- *Support to existing infrastructures (integration, more efficient use, synergies via inter-related topics)*
- *Support to new research infrastructures (new concepts, support to construction & implementation)*
- *Support to Policy development and Programme implementation (in the context of ERA, namely follow-up of ESFRI with Roadmaps and European legal framework ERIC for their management)*

Hence, effective investment in and use of RI is one of the key features of *European Research Area (ERA)* strategies. According to the evaluation by EPIRIA, the objectives of the RI supported activities in Capacities SP had a strong alignment with the higher-level policy objectives and ERA.

The second-largest budget priority of the Capacity SP (33%) has been **Research for the benefit of SMEs** (RSME). Stronger attraction and engagement of SMEs into the collaborative research and innovation projects at the European level has been one of a long-lasting and difficult challenge of all EU RTD Framework Programmes. To this end, each successive FP has been larger in scope and ambition than its predecessor.

With FP5 the Commission recognised the limited relevance of the mainstream thematic programmes to the very great majority of Europe's small firms, and elected to double the support available for SME-specific measures available through FP4. It also launched various accompanying measures for the first time, including an SME web portal and a network of SME National Contact Points. FP6 continued the efforts to improve the alignment between the FP and SMEs, with particular focus on the main thematic programmes, with the introduction of an indicative SME-participation target (10%), the creation of SME-specific instruments, the addition of SME dedicated calls for proposals and topics within broader thematic calls.

With FP7, the Commission introduced several changes to further improve the relevance of the overall FP to innovative SMEs, including an *increase in the level of state aid* on offer (up to 75%), *more appropriate rules on intellectual property* and the *simplification of certain administrative procedures*. The introduction of a *15% expenditure target* for SMEs in the Cooperation SP was perhaps the single most important change. This target was not, however set to the much smaller Capacities SP.

⁷ *Communication from the Commission of 19 May 2010 - A Digital Agenda for Europe, COM (2010) 245 final.*

⁸ *Communication from the Commission of 6 June 2010, Europe 2020 Flagship Initiative - Innovation Union, COM (2010) 546 final.*

⁹ *Communication from the Commission of 15 February 2012, High-Performance Computing: Europe's place in a Global Race, COM (2012) 45 final.*

¹⁰ *Communication from the Commission of 17 July 2012, A Reinforced European Research Area partnership for excellence and growth, COM (2012) 392 final.*

The RSME scheme had a budget of € 1,3 billion to strengthen the 'innovation capacity' of SMEs and boost their contribution to the development of new technology-based products and markets. The programme in particular aimed at helping SMEs to outsource research, increase their research efforts, extend their networks, better exploit research results and acquire technological know-how, bridging the gap between research and innovation.

At the end, the SME contribution in the Capacities SP has been relatively high compared to other FP7 activities, with an average of 34,3% participation share (FP7 18,6%) and 34,5% budget share (FP7 14,6%).¹¹

The **Regions of Knowledge Programme** (RoK) was created to strengthen and develop research and innovation excellence in EU regions. With a budget of €126 million, RoK was the second smallest (3%) programme of the Capacities SP. The programme focused on fostering regional growth and competitiveness, on enhancing regional investment in research and innovation, on facilitating transnational cooperation of clusters, and on supporting the emergence of European networks on the global stage. Furthermore, RoK tried to foster the inclusion of more regions into the European Research Area.

These objectives were promoted by encouraging the development of regional, innovative clusters with collaborations that link universities and research centres with enterprises and regional authorities. In a later stage different approaches, such as open innovation and the inclusion of users and civil society organisations, were applied.

The RoK programme aimed at enhancing R&D performance in the regions through fostering of transnational collaboration among research-driven clusters, its predominant focus on a "deepening" and strengthening of participation in the European Research Area, and the identification of themes for the calls reflecting European policy objectives and research focus of the FP7.

Since its launch, the programme intervention logic evolved to a sharper focus while also reflecting the broader objectives of FP7 and the ERA, in particular the support of R&D excellence and transnational cooperation. The focus shifted from supporting the emergence of *regional research-driven clusters* (RRDC)¹², which were not necessarily transnational, to reinforcing of existing RRDC and supporting *Lead Markets*¹³ at the transnational level. From 2009 onwards, *transnational collaboration* was an obligatory feature of the RoK projects: each project was to involve at least three partners from three different countries.

Also thematically the earlier RoK calls reflected Commission policy priorities such as "Bringing the benefits of research to SMEs" and "Enhancing the sustainable use of natural resources", and core S&T fields of FP7, such as ICT, biotechnology, and nanotechnologies, as well as themes related to Lead Markets. After 2009, the RoK programme has been more emphasising objectives related to the collaboration between research and academia and other cluster actors, such as industry and institutions. The scientific and technological domains vary according to the calls.¹⁴

The FP7 **Research Potential Activity** (REGPOT) was set up to reinforce the capacity of the (excellent) existing research institutions located in *Convergence and Outermost Regions* of the EU and permit their full participation in ERA. The rationale was to expand ERA to the entire territory of the EU and make it "more balanced and equilibrated". The priority was to increase the research potential in these regions and improve their

¹¹ Situation at the end of 2013. Source: Seventh Monitoring Report of the FP7, Monitoring Report 2013, DG Research and Innovation A5. 11.3.2015

¹² Regional Research-Driven Clusters (RRDC)

¹³ 'Lead markets' are highly innovative markets that respond to customers' needs, have a strong technological and industrial base in Europe and depend more than other markets on the creation of favourable framework conditions through public policy actions; the European Commission identified a first set of six such 'lead markets', i.e. eHealth, protective textiles, sustainable construction, recycling, bio-based products and renewable energies.

¹⁴ Technopolis, Assessment Report integrated with the data on 2012, 2013, 2014

knowledge and technological processes. REGPOT also aimed on fostering the sustainable socio-economic development of the regions and the EU.

REGPOT had a budget of € 340 million (8% of Capacities SP) aimed at the excellent research entities. REGPOT allowed them to upgrade their RTD capacity with the recruitment of experienced researchers, the acquisition of state-of-the-art equipment and the increase of the visibility. The ultimate aim was the integration of these research entities into ERA, as well as increase of their participation in FP projects.¹⁵

There is a long tradition in the EU FPs to support the better integration of science and society. This objective was also clearly formulated in the Council Decision on Capacities SP¹⁶, and further emphasised in later EU policy documents related to ERA and Innovation Union.^{17 18 19} Behind these statements there is a persistent concern. Similar to the long-lasting challenge of FPs to sufficiently engage SMEs in research, also the integration of society issues has not been properly addressed over the time. Studies had revealed continuing problems across the EU with respect to the science in society issues addressed by FP6, with for example, women accounting for a minority of all research staff even though they accounted for a greater proportion of all graduates.²⁰ The statistics on science education showed on-going challenges with respect to the proportion of young people choosing to study STEM subjects and also variable attainment levels across EU Member States as compared with students in other parts of the world.

The Science and Society (SaS) had already started in 2002 under the FP6, following up to EU policy deliberations in the Lisbon strategy.²¹ It implemented a broad range of activities and developed a European approach for examining societal issues in research and development. With FP7 in 2007, a second phase of mobilisation of civil society actors led to conceptual shift towards the **Science in Society** (SiS). SiS had three lines of action:

1. *Policy-related actions and research supported directly from this theme;*
2. *Cooperation between Member States, identifying common goals, and reinforcing national practices, in the spirit of the open method of coordination;*
3. *Promoting, supporting and monitoring the uptake and impact of SiS issues in other parts of the FP.*

During the two last years of FP7 SiS focused on promoting Responsible Research and Innovation. Following the Interim Evaluation (December 2012), the programme issued a new work programme (2013), which was structured around the following aspects:

- *Engage all societal actors in the research and innovation process.*
- *Ensure a balanced participation of women and men in research and innovation at all levels as well as integrate the Gender in Research content;*
- *Create transparency between societal actors to ensure trust and co-responsibility by providing free access to scientific knowledge;*
- *Build-up a scientifically literate society to allow the participation of societal actors in the research and innovation process;*

¹⁵ Claude, J. et al. Analysis and recommendations for the future of the 'Research Potential' Activity, Expert Group report on Research Potential project portfolio, European Commission 2011

¹⁶ Council Decision 2006/974/EC of 19 December 2006 on the specific programme: 'Capacities' implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013) (OJ L 400, 30.12.2006, p. 299).

¹⁷ Conclusions on the definition of a "2020 Vision for the European Research Area" 2891st Competitiveness (Internal market, Industry and Research) Council meeting Brussels, December 2008

¹⁸ Communication from the Commission of 3 March 2010 - Europe 2020 A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final.

¹⁹ Communication from the Commission of 6 June 2010, Europe 2020 Flagship Initiative - Innovation Union, COM (2010) 546 final.

²⁰ She Figures 2006 - Women and Science, Statistics and Indicators, European Commission, DG RTD 2006

²¹ Commission Working Document 'Science, society and the citizen in Europe', ftp://ftp.cordis.europa.eu/pub/rttd2002/docs/ss_en.pdf . 'Science and Society Action Plan', 2001, http://ec.europa.eu/research/science-society/pdf/ss_ap_en.pdf.

- *Other activities (Monitoring the evolution of economic benefits as concerns RRI; Meta-analysis of SiS projects throughout FP6 and FP7).*

SiS has represented the only significant mechanism for supporting coordination and collaboration in Science in Society research at the European level. It provided a platform through which major pan-European initiatives and networks were established, leading to greater coordination of research efforts, more extensive and diverse collaborative activities and a greater critical mass of effort to address key challenges relating to Science in Society.

There were also well-rooted rationales to **support the coherent development of research policies** (CRDP) in FP7. Altogether €70 million was allocated to CRDP in the Capacities budget (2%), making it the smallest budget priority of Capacities. The CRDP rationales were first (before 2011) mainly linked to supporting the establishment and functioning of ERA, but were later (2011-2013) also linked to the Innovation Union of the EU2020 strategy.²² The Innovation Union has also provided an implementation strategy for CRDP.

For example, the Innovation Union proposed *European Innovation Partnerships* (EIPs) as a new approach to EU innovation by being challenge driven, acting across the whole innovation chain, and streamlining, simplifying and better coordinating existing initiatives. As a new governance structure, the EIPs were able to address major societal challenges through pooling of resources and achieving critical mass. They also aim to address weaknesses in framework conditions which are not innovation-friendly, in particular addressing the challenge that private investment in research and innovation is being held back and ideas prevented from reaching the market by poor availability of finance, costly patenting, market fragmentation, outdated regulations and procedures, slow standard-setting and the failure to use public procurement strategically.

Throughout the FP7, the **International Cooperation** (INCO) dimension has become an increasingly important objective of EU policy, and research cooperation with international partners have been facilitated and supported in a number of ways with the goal of developing the international dimension of the ERA.²³ For the Capacities SP, the emphasis rested upon *horizontal support measures* and actions that were not specifically linked to a thematic focus or interdisciplinary area to support international S&T cooperation, and therefore not covered by the Cooperation or People SP.²⁴ Altogether € 180 million (4%) was allocated to INCO in the Capacities SP.

INCO had two interdependent objectives; to support strategic partnerships with third countries in selected fields; and to address specific problems that third countries face or that have a global character, on the basis of mutual interest and benefit.

Since 2008, a more *strategic approach* to international research cooperation has been a main focus,²⁵ and international research cooperation began to focus more strongly on geographical and thematic dimensions. The strategic international research cooperation was framed in terms of three key goals: 1) *to strengthen the EU's excellence and attractiveness in research and innovation, and enhance its economic and industrial competitiveness*; 2) *to address global societal challenges*; and 3) *to support external policies*. The activities included a) *Policy dialogue*, b) *Capacity building*, c) *Networking and partnership building*, d) *Coordination with Community instruments*, e) *Links with countries and regions*, and f) *Coordination across Commission*.

²² Communication from the Commission of 6 June 2010, *Europe 2020 Flagship Initiative - Innovation Union*, COM (2010) 546 final

²³ European Commission (2007) *A New Approach to International S&T Cooperation in the EU's 7th Framework Programme (2007-2013)*, Brussels, DG, RTD: D2.

²⁴ Work Programmes 2007-2013, FP7 Capacities SP.

²⁵ Communication from the Commission to the Council and the European Parliament of 24 September 2008 - *A Strategic European Framework for International Science and Technology Cooperation*, COM (2008) 588 final.

INCO activities aimed at facilitating the European Union aim of becoming the world's leading research area. The objectives of transnational cooperation, strengthening of research capacities, and ensuring wide dissemination of research to promote a dialogue between science and society set out at the beginning of the programme were increasingly linked to the broad societal challenges (grand challenges) in a global context, to the creation of the European Research Area, and to the emerging agenda of Europe 2020. The annual work programmes of INCO show this gradual clarification and broadening of INCO objectives. The 2011 work programme acknowledged the new policy context set by Europe 2020 strategy. The international dimension of ERA remained a central objective in the work programmes, with the need to establish critical mass and economies of scale through policy coherence and coordination.

The **Risk-Sharing Finance Facility** (RSFF), officially launched in July 2007, was one of the new, innovative funding mechanisms of FP7. It is a debt finance instrument, jointly developed by the Commission and the European Investment Bank (EIB). The RSFF facilitates access to finance by providing loans and guarantees to a wide range of beneficiaries — including SMEs, mid-sized enterprises, larger companies, research institutions, universities and research infrastructures — investing in RDI.

In the Commission's "A Budget for Europe 2020" policy paper²⁶, financial instruments are highlighted as a way of advancing the EU's key policy priorities, thanks to their leveraging of investment. EU-level intervention to improve access to risk finance is justified because of a market failure caused by significant information asymmetries and high transaction costs, exacerbated by the credit crunch associated with the financial crisis and the low supply of Venture Capital (VC) in Europe. For debt financing, EU-level intervention is needed to increase the likelihood that loans are made and guarantees extended to help achieve EU-level R&I policy objectives. The current gap in the market between the demand for and supply of loans and guarantees for risky R&I investments, addressed by the RSFF, is likely to persist, with banks remaining largely absent from higher-risk lending.

EU-level intervention was needed for equity financing to help improve the availability of finance for early and growth-stage investments and to boost the development of the EU's VC market. During the technology transfer and start-up phase, new companies have to bridge the gap between the cessation of public research grants and the possibility of attracting private finance. Public support aiming to leverage seed and start-up funds to fill this gap is too fragmented and intermittent. Also, most VC funds in Europe are too small to support the growth of innovative companies and do not have the critical mass to specialise or operate across borders.

The initial Cooperation Agreement identified only very broad objectives for RSFF, and the objectives are elaborated in various other internal documents over the years of 2005-2013. The RSFF objectives are broken down to Global, Intermediate and Operational Objectives, as shown below.²⁷

Evaluation aspect 2 – Implementation

During its course, the Capacities SP calls received altogether 10 296 proposals, as compared to 135 715 in the whole FP7. This represents 7,6% of the whole FP7. In total 2 005 proposals were retained (representing a success rate of 19%, the same as with the whole FP7), although the average number of applications per proposal was higher (9,0) in Capacities SP compared to the whole FP7 (5,2). The average EC contribution per grant was € 1,87 million, which is close to the overall FP7 average (1,77).²⁸

²⁶ Communication from the Commission on 29 June 2011 – A Budget for Europe 2020, COM (2011) 500., p. 9 and p. 11 of Part I.

²⁷ For more details, see Figure 5, Annex 2.

²⁸ For more information, see Table 1, Annex 2.

The geographical participation was reasonably broad in the Capacities SP. Third Countries accounted for 5,0% of the participations and projects with Third Countries represented 16,6% of the projects (FP7 average 4,2% and 9,4% respectively).

There were altogether 6 316 SME participations in Capacities SP, representing 34,3% (FP7 average 14,6%). This is clearly the highest of all Specific Programmes in FP7. The coverage of gender issues is presented in Annex 4.

The programme efficiency, when measured with the time-to-grant, was close to the average of all FP7 programmes (313 days), being the shortest in INCO (307) and the longest in SiS (385). At the beginning of December 2014, altogether 47% of the Grant Agreement Final Reports had been processed, as compared to FP7 average 41%. In this regard, the least progressed was INCO (38%) and most progressed CRDP (59%).

Due to the nature of its activities, the Capacities SP was largely implemented with collaborative project funding schemes. This was particularly the case for Regions of Knowledge, Research potential, CRDP and INCO projects, which only used collaborative project funding. For Research infrastructures and Research for the benefit of SMEs there were specific funding schemes that covered most of the projects (i.e. 91,5% and 94,6% respectively). Research Infrastructures utilised also collaborative project funding schemes (5,8%).²⁹

The **Research Infrastructures** (RI) programme was implemented along three lines of actions:

1. The optimal performance and use of *existing RIs*, supported through the I3 schemes Integrating Activities and eInfrastructures
2. The development (or major upgrade) of *new RIs* of pan-European interest, supported through design studies, preparatory and implementation phases
3. Specific *coordination and support actions* supported research infrastructures and their communities, in Europe and worldwide, as well as policy-makers at the European and national levels

The programme focused in particular on the first one of the above, namely supporting networks of existing research infrastructures, including the deployment of e-infrastructures. This action line accounted for around 70% of the funding and for half of the total projects.

The EC budget of € 1,525 million³⁰ was distributed over 332 projects with a total of 5205 participations. DG Research and Innovation managed 65% of the budget, distributed over 192 projects and DG CNECT took charge of 140 projects.

The design, construction of new research infrastructures and major upgrade of existing ones accounted for € 347 million (ca. 23 % of the funding and projects). The remaining 5% of the FP7 RI programme budget was allocated to the Policy/RI coordination and support actions, which accounted for 28% of the projects.

The participation of Member states to the RI program accounted for 85% of the total participations (5205) while the Associated countries had a number of participations of around 9% and Third countries of around 6%.

The analysis shows high involvement of the research communities in the programme, which is in line with the primary function of research infrastructures. In contrast, there was little participation by actors in the private sector, suggesting a limited focus on innovation in the RI projects. The RI programme also managed to engage the best of organisations in the different fields. Positive is also the relatively high participation and

²⁹ For more information, see Table 2, Annex 2.

³⁰ In addition, € 200 million was allocated to the RSFF - Risk-Sharing Finance Facility aimed at enhancing access to loans for RTD actions

funding rate of organisations located in smaller EU15 and newer EU member states, setting the base for a strong effect on European cohesion.³¹

A major beneficiary of the RI programme was the research community (84%).³² Research institutes were the most funded actors in this stakeholder category (ca. 45% of the total budget); higher education institutions accounted for approximately 35% of the budget, setting the basis for a potentially considerable knowledge spill over into the educational sector. Public research institutes and agencies received 4%. Altogether public administration participants accounted for 6% and the private sector ca. 10% of the RI funding. Private sector beneficiaries were predominantly SMEs.

The situation was different in the I3-eInfrastructures scheme, where ca. 25% of the budget was allocated to industry. This was predominantly to the benefit of DANTE, the organisation responsible for the GEANT network, which accounted for 17% of the total funding in the e-Infrastructures scheme. Other private sector actors accounted for 8% of the budget.

Under the **Research for the benefit of SMEs** (RSME) in total 771 projects were started up to March 2013, with a EC budget of € 0,9 billion. In 2007 only one project started. In 2008 and 2009 more than hundred projects started each year, increasing to 184 projects in 2012.

By far the largest group of participants were private commercial organisations: they comprise 64% of the number of participants and 83% of the budget allocation. There are two groups of participants for which the share in the financial budget is less than the share in the numbers of participants: Research organisations (4% compared to 17%) and Higher or secondary education institutes (2% compared to 12%).

In the projects that started in the period 2007- February 2013, in total 6 947 participants (not unique) were active amongst which 4 276 SMEs (not unique). This amounts to a participation share of SMEs of 61,6%. Furthermore, in 66% of the projects the coordinator is an SME. Over the period 2007-2013 (measured in March 2013) in total 87,8% of the budget was allocated to SMEs.

In general the success rate of applying for a project in RSME is 18%. Most applicants were active in (1) Manufacturing, (2) Real estate, renting and business activities (incl. ICT research and services), and (3) Other community, social and personal service activities, sectors with a success rate for applicants of 14-16%.

Most applicants were located in one of the 27 EU Member States, followed with a large distance by Associated Countries and Other countries. The success rate for applicants from Associated Countries (20,5%) is somewhat higher than for the EU Member States (17,6%). The success rate of applicants in the other countries is much lower (7,3%).

With a budget of € 126 million over the 2007-14 time period, the **Regions of Knowledge** (RoK) funded 79 projects, out of which 30 were (March 2014) still on-going.³³

The project coordinators and participants assessed positively the efficiency of the RoK programme.³⁴ Also the EC programme management was broadly appreciated, as well as the degree of responsiveness and the availability of the project officers. The RoK application documentation and the time between application and issuing of decision were aspects that could have been enhanced along with the negotiation process. One critique

³¹ Technopolis Group and Empirica: *Evaluation of Pertinence and Impact of Research Infrastructure Activity in FP7 – EPIRIA, Final Report, SMART 2012/0045*. However, the scope of the quantitative analyses in the EPIRIA study was limited to contracts signed in the time period 2006-2012. Contracts signed in 2013 were not included.

³² EPIRIA report, the scope of the analysis in the EPIRIA study is limited to contracts signed up to 2012. Source: eCorda database, 2006-2012

³³ For more details, see Table 3, Annex 2.

³⁴ Technopolis Group. *Assessment of the impact of 'Regions of Knowledge' programme, Final Report, 27 April 2011*

concerns the frequent turnover of project officers, which has had an impact on the running of projects.

A less positive assessment was made of the flexibility related to contract variations. Interviews stated that contract amendments caused increased bureaucracy and delay in project implementation. Also, the time-to-payment was considered to be too long, in particular for SME partners.

The RoK programme was initially launched without clearly defined objectives nor a well-defined approach defining how the objectives can be met, which was translated into the projects' proposals where objectives tend to be very broad and vaguely defined. This poor definition of objectives from the very beginning was regarded as a barrier to an efficient implementation of the projects and makes any monitoring or evaluation difficult. In the first years of the RoK programme, many projects were selected that do not have a particular EU added value, being purely regional.

The specific objectives, the activities and the thematic focus have considerably changed over the years, the programme being gradually clearly steered by the Commission services towards a focus on excellence and existing research-driven clusters rather than including more regions in the ERA. Projects aimed at the enhancement of R&D capabilities within existing regional research-driven clusters (RRDC) are predominant. This can be seen, in part, as an attempt by the Commission to 'focus' resources on strengthening existing leading clusters from an 'ERA-excellence' perspective; but was also a way to differentiate RoK from other EU funding instruments.

The responses of applicants to **Research Potential** (REGPOT) calls have been numerous. With a total budget of € 340 million for the whole duration of the EU FP7 programme, more than 1500 applicants from the Convergence and Outermost Regions of the EU responded and submitted proposals to the calls. To date 193 proposals have been funded, out of which 114 projects are finished and there are currently 79 projects that are still on-going. The average budgets per projects ranges from approximately 1 million Euros for the calls of 2007 and 2008 to around € 3,5 million for the calls of 2009, 2010 and 2011. The grants provided were used for the purchase of new and often expensive equipment for research, the recruitment of highly qualified and experienced researchers, and the improvement of the beneficiary's visibility and network with strong players in ERA.

There was an excellent geographical spread of the funded proposals: all 20 'eligible' EU Member States and 6 Associated Countries (AC) were represented. Furthermore, an important number of the funded projects were perceived to be of a very high quality (scored 14 and above out of 15) showing the efforts made by the applicants to prepare the project proposals. Links with partnering organisations were also ensured. On average there were 7 partnering organisations per funded project; they came from all over the EU or AC and were highly competent. In the last call of 2011 the requirement to have strong links with partnering organisations was strengthened.

The 86 projects funded during 2007 - 2010 were analysed by the Expert Group in 2011. With reference to the perception of the beneficiaries the activity and its requirements seemed to be well understood by the applicants (demonstrated by the very low ineligibility rate of less than 1%). It was a highly appreciated activity and the EC received a large number of proposals for each call - despite its known budget-related oversubscription problem. The ratio of selected versus submitted proposals was lower than 7%.

According to the Impact assessment of the "Research Potential" Activity for the period 2007-2010, the programme provided support for actions formulated by the applicants, which addressed in a coherent and complementary structure the following activities:

- *Trans-national two-way secondments of research staff in the convergence regions;*
- *The acquisition and development of research equipment in selected centres;*

- *The organisation of workshops and conferences to facilitate knowledge transfer;*
- *'Evaluation facilities' for research centres in the 'Convergence regions' to obtain an international independent expert evaluation of their research quality and infrastructures.*

Research groups, departments or research centres were financed to increase their role in the European Research Area by carrying out the following actions:

- *Attracting experienced researchers*
- *Improving the research quality*
- *Facilitating cooperation with the private sector*
- *Serving as a basis to obtain additional support from regional or national authorities.*

Expert Group analysis of REGPOT projects showed good evidence that the abovementioned actions and goals had been achieved.

The **Science in Society** (SiS) programme had a budget of € 330 million across the whole FP7. From 2007 until November 2013, the programme supported 183 projects, involving 1811 participating organisations and € 288 million in EC funding.

The SiS interim evaluation looked at 122 (€ 143 million, 782 participating organisations) of the 126 projects where the grant agreements had been signed up to December 2011. The latest eCorda data show that a further 36 SiS projects were launched in 2012 (16), 2013 (19) and 2014 (1), with a combined EU contribution of around € 100 million. There were also a series of important commissioned activities, including support for various pan-EU networks promoting SiS issues (e.g. on ethics), monitoring services and evaluations that were only partially covered and may warrant further consideration.

The objectives of the programme were found to be coherent and well understood by applicants and participants,³⁵ although they were not described in specific or measurable terms and no quantifiable targets were set. As part of its evolution from FP6 SaS, the FP7 SiS programme adopted a strategy of supporting larger and more strategic actions. The annual work programmes (2007-2011) defined 71 research themes calls and projects have been supported within 56 of these.³⁶

The average number of partners involved in FP7 SiS projects is 40% greater than the average number involved in FP6 SaS projects; also the average EC financial contribution is more than double.

The **Coherent development of research policies** (CRDP) has been emphasised in the preparation of FP7 annual work programmes. In 2007, FP7 work programmes placed increasing emphasis on activities such as prototyping, testing, demonstration and knowledge transfer. FP7 has also introduced new forms of support to collaborative research, in particular to industry-driven R&D through four PPPs (since 2009, for a total amount of ca. € 3,5 billion) and five JTIs (since 2007, for ca. € 3,1 billion). The 2012 work programme further strengthened many aspects of innovation, targeting Innovation Union objectives. The 2013 work programme worked to provide for a smooth transition towards Horizon 2020.

Since 2012, the broader approach to innovation, including *social innovation*, continues to be supported under the social sciences and humanities research, but also under the CDRP with a new action to scale up social innovation, and in other parts of the thematic priorities.

³⁵ *Science in Society, Interim evaluation – survey / Contribution by DG RTD-B.7 to Ex-post Evaluation of the FP7 on Science in Society. DG Research and Innovation, 15.10.2014.*

³⁶ *Science in Society, Interim evaluation / Contribution by DG RTD-B.7 to Ex-post Evaluation of the FP7 on Science in Society. DG Research and Innovation, 15.10.2014*

The FP7 and CIP programmes have provided financial support also to *innovation procurement* since 2009 where they invited proposals to create networks of procurers to raise awareness, share knowledge and debate common public service needs. In 2011 the support was extended to offer co-financing for procurers to jointly implement innovation procurement. In 2011-12, FP7 and CIP supported innovation procurement with € 43 million. In 2013, FP7 and CIP calls allocated nearly € 100 million to innovation procurement.

Progress in Europe and Member State's *innovation performance has been monitored* in the framework of the integrated economic coordination ('European Semester'), through the Innovation Union Scoreboard and the Innovation Union Competitiveness Report. The first monitoring report of the *Innovation Union*, the State of the Innovation Union came out in 2011 and the second report, which was a Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, entitled the State of the Innovation Union 2012, Accelerating change.³⁷

The *European Innovation Partnerships* (EIPs) presented a new approach to EU research and innovation. Within a relatively short period, five EIPs have mobilised substantial commitments and established themselves in the European research and innovation landscape, covering: a) active and healthy ageing, b) water, c) raw materials, d) agricultural productivity and sustainability, and d) smart cities and communities. They were each conceived to have first measurable outcomes within 1-3 years and headline targets to be achieved within 5-8 years (2020). EIP Invitations for Commitments have gathered more than 1000 actions so far, involving over 7000 partners.

The focus of the CDRP activities has changed over time to match the evolution in EU R&I priorities. In this respect, most of the activities have been designed to contribute to the improvement of the coherence and impact of the EU policies and initiatives, and have included, for example, ERAWATCH activities (providing data regarding the state of play of the ERA in Member States) and reports published by the permanent expert groups (EFFLA, ERIAB, I4G and K4G).

The **International Cooperation** (INCO) activity issued a total of nineteen calls across the ten activities, with the first INCONET call issued already during the final year of FP6. Two more INCONET calls were issued during the period, and there were five BILAT calls. The ERANET/ERANET PLUS activity had three calls, and the INCO-NCP and ERAWIDE activities issued two calls for proposals. The remaining four activities each issued one call (ACCESS4EU, INCO-LAB, INCO-HOUSE, H2020).³⁸

The total EC financial contribution to the above INCO activities was € 168,7 million, covering altogether 1326 partners.³⁹

The general trend has been towards enhanced INCO activity among participants that had already engaged with the programme. For those participants that faced a steep learning curve, the evidence points towards a willingness to maintain international cooperation, deepening existing links or establishing new partnerships, and there were instances of projects being renewed for a further period, or continuing in a modified partnership.

The composition of INCO project participants has become more diversified across the ten activities. ACCESS4EU consortia have at least one partner from the target third country. The first BILAT call opened in 2007 without any requirement in terms of partner profile, while subsequent calls became more specific with regard to the profile of the partners. INCONET projects include a large number of countries and project partners.

The collaboration motives also vary across different INCO activities, ranging from access to research excellence to information exchange, mutual learning and funding of research.

³⁷ Communication from the Commission of 21 March 2013 – Accelerating change, COM (2013) 149

³⁸ For more information on the calls and their domains, see Table 4, Annex 2.

³⁹ For more information on geographical distribution of INCO calls, see Table 5, Annex 2.

Since its launch in 2007, the **Risk-Sharing Finance Facility** (RSFF) was divided into two "Windows", the EU Window and the EIB Window. This division was due to differences in eligibility criteria: the EU Window could only finance research and development activities as its eligibility criteria were drawn from FP7's Cooperation and Capacities themes and the EIB Window could finance research, development and innovation activities as its eligibility criteria draw on the Bank's Knowledge Economy lending priority.

The capital contribution increased from € 2 billion (as per the original RSFF Cooperation Agreement) to € 2,420 billion⁴⁰. The EIB has drawn on this contribution to cover the additional risk taken by the EIB while accepting to lend to promoters to finance below investment-grade operations. However, sharing the risk of such loans only occurs under the EU Window, as the EIB Window draws exclusively on the Bank's own capital resources.

Until December 2011, the risk of each RSFF loan was assessed on an operation-by-operation basis following the EIB's standard Credit Risk Policy Guidelines. By mid-2010, the RSFF Steering Committee recognised that this approach had led to an imbalance in the allocation of RSFF Operations since the EIB Window was nearly fully exhausted, whereas the EU Window was largely under-utilised. Therefore the Mid-Term Evaluation report recommended using the remaining EU contribution as a First Loss Piece (FLP) to cover up a pre-defined percentage of potential losses for a portfolio of loans provided to a specific target group. This led to the adoption of Amendment No.4 in December 2011 according to which projects financed under the EU Window were from then on subject to a FLP approach involving the bundling of loans into a portfolio.

Two tranches were then differentiated within the EU Window:

- *The junior debt tranche, which absorbs the first losses incurred by the portfolio up to a pre-defined percentage of potential losses.*
- *The senior debt tranche (or Residual Risk Tranche), which, once the first tranche is exhausted, absorbs any further losses.*

The second tranche benefits from a credit enhancement effect (corresponds to the x5 leverage effect).

Evaluation aspect 3 – Direct Achievements

The Capacities SP was designed particularly to enhance research and innovative capacities throughout Europe and to unlock the full research potential of European regions. In this sense, its objectives of Capacities SP were strongly *policy-oriented*, first and foremost linked to enhancing the research and innovation *cohesion* and resource & performance *optimisation* aspects of the European Research and Innovation Area. Against that background, the achievements and impacts of the Capacities SP should not be measured merely against the scientific outputs it helped to deliver (e.g. Capacities SP had on average 5,9 publications per project, as compared to Cooperation SP 12,4), but particularly against its ability to engage, extend and deepen the participation of the new and specifically targeted research and innovation actors in the FP.

Focus of the **Research Infrastructures** (RI) programme responded to the needs in the various scientific fields that the RIs serve. This included the high focus on integrating activities in areas where research communities are still rather fragmented or where interdisciplinary research is key (e.g. social sciences & humanities and life sciences), as well as the support for research infrastructures in areas that are facing the big data challenge or where access to global data is mandatory (e.g. energy, earth & environmental sciences).

⁴⁰ RSFF Co-operation Agreement post-Amendment No.6

According to the evaluation of RI, *improved flow of knowledge* was considered important, in particular for users located in the newer EU Member States, along with closer collaborations between scientists and ICT developers (e.g. in the energy, earth & environmental sciences). Industry participants stressed the importance of research-industry collaboration.⁴¹

The distribution of the funding over the thematic areas indicated a strong focus on support for research in scientific fields that are key for the tackling of the Grand Challenges. Particular focus was set on RI supporting research in the field of Earth & environmental sciences and Life sciences (accounting respectively for 19% and 18% of the programme budget). Horizontal e-infrastructure services include projects funded in the field of e-sciences. E-science projects performing activities aimed at a specific sector are included in the relevant thematic areas.⁴²

The relatively high level of support to RI in the physical sciences & astronomy thematic area is to be noted, in particular in the number of projects supporting the design and construction of new RI.

Funding was also allocated for support to research in the Social sciences, a field that provides strategic information for policy making on more general societal challenges and where significant new opportunities arise from the Big Data phenomenon. Funding for RI in the social sciences and humanities thematic area accounted for 5,5% of the budget.

Analysis of the users benefitting from transnational access in the framework of the IA projects was carried out of end 2012. Around 77% of the visits were made by users based in the EU15, ca. 16% by users from the newer EU Member States. Relative to the size of countries (i.e. in relation to the number of researchers), it appears that smaller and newer member states have benefitted the most from the EC support for transnational access to RI.

The RI programme also contributed with € 200 million to the Risk-Sharing Finance Facility (RSFF) for the development of RIs. To this end, EIB has signed long-term loans of over € 1 billion to fund research infrastructure projects such as ESO-E-ELT⁴³ and Sincrotrone Trieste for the completion and launching of the new FERMI@Elettra light source.

According to the final evaluation of **Regions of Knowledge** (RoK)⁴⁴, 76% of the project coordinators consider that both the RoK programme and its projects have achieved the intended goals and 85% assess that both the RoK programme and their projects have been 'effective' or 'highly effective' towards intended objectives. Areas of activity, in which RoK has had a substantial impact include *networking and collaboration* particularly with other institutions, as well as participation in FP7 projects and in EU level research activities.

Most potential network and collaboration effects of RoK are at the European level. Especially partnerships with EU-level public research institutes, universities and public authorities are perceived as potential collaborators. The final evaluation shows that in all the addressed areas, with the exception of a few regions, there has been an increase in the establishment of new relationships and/or R&D partnerships – especially at a European level. The relationships with public authorities, universities and public research institutes are those, which have increased the most. The final evaluation indicates *a wish for a higher involvement of SMEs and the private sector* (SMEs represent 29,7% of RoK participations and 26% of budget).

The most important impacts of RoK include:

⁴¹ Technopolis Group and Empirica: *Evaluation of Pertinence and Impact of Research Infrastructure Activity in FP7 – EPIRIA, Final Report, SMART 2012/0045*

⁴² For more information on the thematic distribution of RI projects, see Figures 6 and 7, Annex 2.

⁴³ European Extremely Large Telescope for Optical Astronomy

⁴⁴ Final Evaluation of the Regions of Knowledge Programme 2007-2013, COWI 2014

- Enhanced knowledge of R&D needs in the sector of the cluster
- Strategic inputs to regional policy-making
- Establishment of a critical mass between RoK partners for R&D projects
- Enhanced reputation and image of participation organisations within their regions
- Enhanced public awareness on the benefits of research-driven clusters in the regions

The Final Evaluation⁴⁵ concludes that **Research Potential** (REGPOT) has helped to overcome *financial barriers* such as a lack of national and in particular regional funding for specialised state-of-the-art research equipment, as well as for the hiring of high-level staff. The evaluation also suggests that REGPOT has been efficient to *fill the financial gap* to unlock and develop existing and emergence research excellence in the EU's Convergence and Outermost regions.

In 2011, an Expert Group⁴⁶ assessed 86 REGPOT projects and concluded that the projects had a vast geographical coverage and an important role in developing, bridging and integrating between research and innovation capacities in less-developed regions and the research institutions in developed regions by supporting *networking and cooperation*. Capacity building activities have included the acquisition of equipment, human resource development through recruitment of excellent researchers, and knowledge transfer to researchers on the spot through secondment activities.

The Final Evaluation also suggest that REGPOT has contributed to releasing research potentials and led to improved research capacities. It has in particular contributed to the *employment of highly-qualified and experienced researchers*, which is much in line with the REGPOT aim of reducing brain drain in the EU's Convergence and Outermost regions. The final evaluation concludes that REGPOT has achieved its objectives and that the REGPOT-supported projects to a large extent have achieved their intended results.

Science in Society (SiS) activity sought to engage *policy makers* and other *societal stakeholders* to a greater extent than earlier FPs and other FP7 programmes. The number of public bodies participating is significantly higher than in FP6, they are involved in a larger proportion of the projects and they account for a larger share of the participations and EC funding. These two groups together accounted for almost one quarter (23%) of participations in FP7 SiS, as compared to 8% respectively within FP7 as a whole. SiS also made a significant progress in increasing participation and network centrality of New Member States and Associated Countries in comparison with FP6.⁴⁷

The programme had a more limited success in engaging non-academic stakeholders. While non-researchers participation in FP7 SiS is significantly higher than across FP7, their share of projects and funding have fallen since FP6 (excluding industry, that grew from 2% to 11%).

On the basis of CORDA data, the SiS projects *have been successful* in achieving their objectives. Basically all SiS projects have achieved their objectives (66% fully and 34% mostly, 0% failed), as compared to the whole Capacities SP (39%, 58% and 2% respectively) and to the whole FP7 (46%, 53%, 2% respectively).⁴⁸ These figures are very much in line with the positive results of the mid-term evaluation of SiS (i.e. 93% of projects achieved their goals to a large extent).⁴⁹

The **INCO Activity** provided a framework for coordination and support actions to foster cooperation between participants in the ten activities. Many of the activities undertaken by the projects could be classified as networking and capacity-building. The projects have

⁴⁵ Final Evaluation of REGPOT, COWI 2014

⁴⁶ Expert Group on Assessment of Research Potential, 2011

⁴⁷ New Member States accounted for 15% of participations in the FP7 SiS programme, while 8% of the FP7 as a whole.

⁴⁸ CORDA data

⁴⁹ Technopolis Group & FhG ISI. Interim Evaluation & Assessment of Future Options for Science in Society Actions, Final Report 2012

undertaken a rich and diverse set of activities, ranging from dissemination to information production and training.

Across the INCO activity, altogether in 156 projects there were 1326 partners involved in international cooperation, of which 61% (813) from the MS/ACs and 39% (513) from third countries. Based on these numbers, it appears that a *critical mass in international participation has been achieved* and, with the linkages established through other FP7 programmes (the funded research projects with international partners) there has been a good basis for the opening of H2020.⁵⁰

The INCO projects, however, *did not guarantee access to the bigger projects in the FP7 thematic programmes* where prior experience and strong relations in research activities were key factors in participation. This highlights the importance of involving the thematic DGs and DEVCO (for developing countries) very early in the process.

Due to the broad geographical scope of the individual INCONET projects, for practical reasons it was necessary to limit the number of partners to one or two from each participating country. However, it would have been advantageous to include additional relevant partners (eg. industry representatives, policy makers in the area of societal challenges) especially in the later projects where innovation and societal challenges were addressed.

The priority-setting exercises undertaken in the INCONET and BILAT projects yielded good results, but in most cases great difficulty was encountered in the *utilisation of such results*. The European Commission Directorate General RTD thematic directorates were generally reluctant to make use of identified priority areas, preferring to use their internal mechanisms to establish topics for thematic international cooperation calls. This approach undermined the value of the project activities somewhat, and caused frustration among both European as well as third country partners.

The ACCESS4EU projects faced a major difficulties since in many cases the targeted third country offered few if any opportunities for European researchers to participate in their research programmes. Yet promoting such opportunities was a key objective of the projects. The *concept of reciprocity was not straightforward*, and there was a need for more transparent definition of activity objectives and better communication of mutual expectations in bilateral agreements.

The coordinated calls on specific topics in the geographical ERANETS had a rather narrow approach, and were *resource and time-consuming* in relation to the levels of funding. In these coordinated calls, where one call is made by the European Commission according to European rules and the other call by the target country under its national rules, with proposals evaluated by EU experts and by the third country experts separately, the funding requirements stipulate the joint coordination of activities to establish common objectives and tasks, work-sharing and exchanges of researchers.

By the end of 2013, altogether 127 **Risk-Sharing Finance Facility** (RSFF) operations had been approved by the EIB, with a total loan volume of € 16,2 billion, and the Bank had signed loan agreements with 114 R&I promoters, with a total loan volume (active loans) of € 11,3 billion. The sector diversification was broad, and the instrument had been implemented in 25 countries. The RSI had been implemented in 14 countries via 23 financial intermediaries for a total guarantee amount of € 1,2 billion with a total loan volume of € 2,4 billion. The number of final beneficiaries, 578, will continue to increase, under the terms of the pilot facility, until the end of 2016.

The findings of the first RSFF interim evaluation were largely positive.⁵¹ The RSFF had been successfully introduced into the EU's research funding scheme within FP7 and

⁵⁰ CORDA

⁵¹ *Mid-Term Evaluation of the Risk-Sharing Finance Facility (RSFF), Final Draft of the Group of Independent Experts, July 2010.*

should be further developed and strengthened. Some target groups, however (SMEs, research infrastructures) needed more focused support.

Subsequent amendments to the contract between the EU and the EIB changed the risk-sharing mechanism from a project-by-project to a portfolio first-loss-piece (PFLP)⁵² approach, with the EU assuming a higher risk. It was anticipated that this would optimise the leverage effect of EU funds and enhance the EIB's capacity to finance loans, especially to SMEs and research infrastructures. Three compartments were created: 1) primarily corporate finance and project finance transactions; 2) the RSI (SME and small midcaps guarantee facility run by the EIF); and 3) research infrastructures. Changes were also made to facilitate lending to universities and public research institutions, and also loans to medium and large midcaps. In addition, a counter-guarantee mechanism for the RSI was introduced.

The findings of the second interim evaluation of the RSFF⁵³ were also largely positive. The RSFF had proved to be attractive to RDI companies and had met or exceeded its loan volume targets, improved its geographic coverage, and enabled EIB to increase the bank's capacity to make riskier loans. The demand-driven approach of implementing RSFF was supported, and the Commission's and EIB Group's ability to quickly adapt the design of the instrument to changing circumstances was appreciated. The group also called for close interconnection between COSME, Horizon 2020 and shared management programmes using European Structural & Investment Funds (ESIF).

Evaluation aspect 4 – Longer-term and wider economic, social and environmental impacts

Here we should pay particular emphasis on the impact of Capacities SP to the enhancement of research and innovation capacities in Europe (in collaboration with its international partners), to its impact on a more coherent and strategic development of research policies, to the development of knowledge capacity and to the better access and more efficient use of current and planned research infrastructures. Much of these impacts develop and materialise in the long-term, while clear direction and progress should be visible already now.

The range of **Research Infrastructures** (RI) that was supported in the FP7 RI programme was very diverse, and reflects also the opportunities that digital, and communication technologies offer for research. The programme contributed to the cohesion of the European RI landscape and on the breadth and quality of the RI services. This was achieved particularly through the combined efforts of activities and policy mix.

Cohesion was enhanced particularly by interlinking of research facilities and support to the harmonisation, standardisation and interoperability as well as transnational accessibility. RI services were enhanced with innovative tools and methodologies for the collection, processing and analysis of the resources, visualisation and simulation techniques, scientific instruments etc. Virtual Research Communities (VRCs) aimed at bridging the gaps amongst different sub-disciplines of a research field by providing a common, standardised, interoperable and multidisciplinary infrastructure. The work in the RI projects has helped creating and strengthening research communities in various scientific fields as well as across disciplines. It has led to the shared development of research strategies, investment and cooperation in experimentation.

The RI programme had a more limited impact in the economy and to the creation of industrial innovation. Also the involvement of industry in the programme was limited to

⁵² In the PFLP approach, the EU contribution is used first to cover any losses in a portfolio of loans, but only up to a pre-defined percentage of losses (the so-called 'first-loss piece' or cushion). If losses exceed the EU contribution, the EIB covers all further losses.

⁵³ Second Interim Evaluation of the RSFF, Independent Expert Group, Final Report June 2013.

10% in terms of funding and of participations. The effort to enhance skills in RI management was also limited.

RI programme's impact on society at large is anticipated to be high in areas such as environment and health. Close to 20% of the RI funding was allocated to the environmental sciences and the programme fed into e.g. the Intergovernmental Panel on Climate Change process. In the sphere of health the programme supported the development of the European *life sciences ecosystem* of facilities and resources. The action in the field of social sciences and humanities, despite its limited extend, was also considered of high societal importance.

Studies⁵⁴ show that employment growth amongst SMEs participating in FP7 Cooperation and **Research for the benefit of SMEs** is significantly higher compared to those SMEs not participating. Four years after the start of FP7, SMEs in FP7 have grown on average by 37%, while employment in the non-participant control group has decreased with 1%. These results may imply that SMEs participating in FP7 are generally better performing due to their participation in FP7, or were performing better even before their participation and more successful in applications. Similar results are also found for SMEs participating in FP6. In the interim evaluation of RSME, 32% of SMEs report impacts on turnover, for employment 30% and exports 27%. Firms reported on average 16% higher turnover, employment and exports.⁵⁵

According to the evaluations, the **Regions of Knowledge** (RoK) impacts include:

- *Enhanced knowledge of R&D needs in clusters*
- *Strategic inputs to regional policy-making*
- *Establishment of a critical mass between RoK partners for R&D projects*
- *Enhanced reputation and image of participation organisations within their regions*
- *Enhanced public awareness on the benefits of research-driven clusters in the regions*

A noticeable result of the improved intra-regional communication as well as of the strategic focus of the RoK activities has been an improved articulation between on the one hand the clusters initiatives, R&D capabilities in the region and industry needs and, on the other hand, regional innovation strategies.

Research Potential (REGPOT) has been an entrance gate for many research entities and researchers to other FP7 projects. Impact assessment of the activity for the period 2007-2010⁵⁶ listed following expected and achieved impacts of the projects:

- *Better integration of the funded research entities in the European Research Area.*
- *Upgraded RTD capacity and capability in several areas: growth of human potential, improvement of scientific experiments and measurements, as well as the increase of the quality of research carried out in. This impact was observed in all analysed projects.*
- *Increased contribution to economic and social development at regional level.*
- *Increased visibility in the region and the entire ERA.*
- *Improved participation of the research entities in EU FP7 projects.*

Although the Final Evaluation of REGPOT⁵⁷ points towards a certain degree of success regarding achieving sustainable impacts, there appears to be risks to sustainability. Several REGPOT-supported research actors seem to have difficulties to find sufficient funding to maintain their established research capacities.

⁵⁴ Panteia, Technopolis, KMU, IKEI, Tepav: Performance of SMEs within FP7 – An Interim Evaluation of FP7 Components, Volume I, 2014

⁵⁵ Panteia, Technopolis, KMU, IKEI, Tepav: Performance of SMEs within FP7 – An Interim Evaluation of FP7 Components, Volume I, 2014

⁵⁶ Claude, J. et al. Analysis and recommendations for the future of the 'Research Potential' Activity, Expert Group report on Research Potential project portfolio, European Commission 2011.

⁵⁷ Final Evaluation of Research Potential, 2014

The **Science in Society** (SiS) programme has enhanced the general understanding of the nature of the problems and the barriers to change in many key areas, such as in the role of women in science, in the science education and in the public engagement to science.

The greatest impact of the SiS programme however, has been to raise the political importance of science in society at the European level, and thereby raise awareness of the problems and the need for all actors to work together to resolve them. On the other hand, policymakers including national officials have found it difficult to engage with the large volume of work carried out, and general awareness of the key achievements of the programme remains low.

FP7 project coordinators have been well aware of the obligation to include SiS aspects in their activities; requirements were generally considered to be clear, meaningful, legitimate and sufficiently flexible. This obligation has directed extra consideration to communication issues and aspects relating to science education, training and careers.

SiS projects tend to be larger, more inclusive and more coordinated than similar projects at national level. Their impacts include, among others:

- *Most gender projects are short-term pilot actions with fragmented impacts across a small number of organisations. Following a shift in gender equality policy, recent projects sought to implement structural and tangible changes, targeting research organisations' systems and not only individuals.*
- *Science education projects contributed significantly to the development and dissemination of Inquiry-based learning techniques and materials, the projects also reached hundreds of teachers and children through their 'multiplier' models for dissemination, as well as sparked smaller initiatives.*
- *The Open Access Pilot looks very successful; around 60% of all FP7 publications were published in open access journals or repositories.*
- *However, the take up of the reimbursement of open access publishing fees was extremely low.*

At a political level, the **international cooperation activities** (INCO) helped to project an image of the EU as a united force, and to the wider visibility to the national institutions participating in the projects. The activities have also contributed to EU science diplomacy, helping to bring down barriers and to build trust between European member states and third countries. The INCO projects have also contributed to the development of mutual understanding between EU member states regarding their national initiatives, providing an opportunity for member states to learn from each other in the context of internationalising the European Research Area and to develop good international collaborative research practice.

INCO projects performed a broad array of activities aimed at dissemination and raising awareness about FP7 and H2020 in third countries, paving the way for the future development of joint research activities between the EU and third countries. In this regard, the goals of the INCO programme were both broad and ambitious, and this was reflected in a wide range of activities across the instruments, producing a dilution of effort and weakening the effectiveness of the programme. The limited coordination between the European Commission and the member states in the determination of international cooperation strategy and research priorities was evident, something which the Strategic Forum for International Cooperation is seeking to address.

The lack of focus on third country research institutions impacted negatively on the INCO programme results, and limited the effectiveness of project activities. Given the large number of participations across the ten INCO instruments, the small resource allocation has had to be stretched to cover an ambitious agenda of activities spread over a wide geographic area. The INCO activity's limited budgetary resources constrained the delivery of substantive outcomes.

As a general rule, the INCO had only limited success in interfacing with other Community instruments.⁵⁸ Although a number of projects did include activities aimed at contributing to EU foreign policy objectives, in general the effort dedicated to this objective was somewhat limited and this was reflected in the more general nature of the outputs and activities.

The valuable body of *knowledge* compiled by the projects was made publicly available through the International Learning Network (ILN) centralised repository.⁵⁹ However, it appears that this repository is not well known and it is not clear to what extent this information has been used. Also the participation of *industry* in many of the projects was rather limited, although the R2I-ENP projects, which are more industry-focused, have yet to be evaluated since these projects are still at an early stage.

The assessments support the view that **Risk-Sharing Finance Facility** (RSFF) is well on its way to realising longer-term objectives and wider achievements. The European Court of Auditors' special report on the implementation of FP7 found⁶⁰ that the RSFF has enhanced the research-funding landscape and that beneficiaries had found it useful, with Commission and EIB promotional events the main method by which they had become aware of the instrument. The availability of debt financing for riskier R&I projects had been particularly valuable in times of financial crisis, as the RSFF had been one of the few financial instruments remaining available for companies to help maintain their R&I activities.

The Court also found that the Commission had not sufficiently demonstrated that RSFF funding had led to investments above the level that beneficiaries would have undertaken without public money. The survey of RSFF beneficiaries showed that access to finance was not a major barrier to beneficiaries investing in R&I. It recommended a better focus to those beneficiaries with limited access to finance and to those unable to secure loan financing from other lenders. The survey also indicated that the RSFF could have had a crowding-out effect.

Evaluation aspect 5 – European added value

European Added Value was an inherent part of the overall **Research Infrastructures** (RI) programme objectives, as it had its focus on activities and benefits that would not otherwise be easily achievable by individual Member States alone.

The programme increased the cohesiveness of the European RI landscape by interlinking research facilities and data infrastructures, the harmonisation, standardisation and interoperability of methodologies and tools, the delivery of transnational access, increasing connectivity and ease of access. The shift to a more service oriented approach in the e-infrastructure ecosystem was a particularly important contribution.

The RI has fostered the creation and increase of critical mass in research. The programme has also been increasing the value of research infrastructure as a tool for Science. Funding for transnational access was important for small and newer Member States.

The RI programme made an important contribution to increasing international collaboration in Research Infrastructure and opening up of the European RIs to the world, to the mutual benefit of the European and international research communities. The programme addressed the fragmentation of RI policies at national and European level

⁵⁸ Such as the European Neighbourhood and Partnership Instrument (ENPI), the Development Cooperation Instrument (DCI), the Instrument for Cooperation with Industrialised and other high-income countries and territories (ICI), Asia and Latin America (ALA), the European Regional Development Fund (ERDF) and the European Development Fund (EDF)

⁵⁹ <http://www.ilnworld.eu/>

⁶⁰ Has the Commission ensured efficient implementation of the Seventh Framework Programme for research?, Special Report No. 2, European Court of Auditors (2013).

and was successful in improving coherence of RI policy making based on the ESFRI roadmap and projects.

Three types of European Added Value was distinguished for **Research for the benefit of SMEs** (RSME) in the 48 cases studied by Panteia et al: a) technological added value; b) economic added value; and c) the European funding compensation for the lack of alternative funding.⁶¹

Amongst the SMEs, European Added Value was the highest for lack of alternative funding and technological knowledge. SMEs strongly benefited of European funding, as there is a lack of alternative funding opportunities. SMEs also profited largely from access to specialised knowledge or equipment in international partnerships.

RSME funding has also complemented national and regional funding, and through that, contributed to the scale and scope of projects. Complementarities with national funding programs are referred to when it comes to follow up projects, and as necessary funding of projects that prepare the ground for successful FP7 projects.

In many countries public and private R&D funding has become scarcer because of the economic crisis and RSME funding has been able to compensate the lack of national and regional R&D funding. This was particularly the case in many Association Countries. Also, the added value of association projects is that they have been able to address topics relevant to an international industry, such as shipping, and thus compensate for a lack of national interest in supporting an international industry. The scope, the budget and networks of association projects are also typically larger than in nationally funded projects.

The **Regions of Knowledge** (RoK) has supported transnational cooperation of clusters as well as the integration of cluster's actors in ERA, which are typically not the kind of activities funded by Member States and regions. The cooperation among clusters not only contributed to tackling pan-European challenges but also in deploying new technologies, services and products, which respond to European societal and economic challenges. International cluster cooperation can contribute significantly to pooling of resources (achieving critical mass; economies of scale and scope), to reduction of risk and to EU scale of dissemination of research results.

The Final Evaluation⁶² indicates that **Research Potential** (REGPOT) has allowed to build connections with the European scientific community, and to move focus from project-based research to a more strategy-based research.

An important objective of REGPOT has been to address the lack of national and regional access to funds amongst the targeted research actors. According to the evaluation, there was often little equivalent national or regional funding aside from REGPOT. The economic crisis has put further pressure on national R&I funding sources, and the typical barriers include a lack of funding for specialised state-of-the-art research equipment as well as for the hiring of high-level staff.

REGPOT has also helped alleviate the financial constraints of younger researchers by increasing their mobility within the twinning arrangements between project partners. For some research actors, REGPOT has allowed the employment of Intellectual Property (IP) managers and experts with experience in international project applications.

The greatest impact of the Science and Society Action Plan has been to raise the political importance of **Science in Society** (SiS) at the European level, and to raise awareness of the problems and the need for all actors to work together.

However, national policymakers have found it difficult to engage with the large volume of work carried out. While the SiS programme has a relatively limited budget, it is seen as one of the main vehicles for accelerating research efforts at the national level. Funding is

⁶¹ Panteia et al. 2013; analysis of 48 case studies in Research for SMEs

⁶² Final Evaluation of Research Potential, 2014

the most attractive aspect of the programme from a national perspective because of the lack of alternatives, but as a result it suffers from high levels of competition and low success rates and has difficulties in involving less well-established groups.

The SiS programme has helped to achieve; a structuring effect on the size, shape and focus of SiS communities and activities nationally; a networking effect between different countries, dispersed communities and stakeholders; a shift in attitudes as to the importance of SiS issues, pushing it up the political agenda and creating debate; plus some more limited and isolated impacts on policy. The international focus of the programme has improved in quantitative terms from FP6 to FP7.

Yet, there is limited knowledge and understanding at the national level of the full spectrum of activities being funded through the programme and the impacts flowing from the individual projects are generally low at this stage. SiS is generally regarded as important, both as a research topic and as a part of wider research activities, and national representatives are keen that the momentum and progress achieved so far is not lost.

The key areas of European Added Value in **INCO** were those where joint action becomes more efficient, when a wider geographical reach can be achieved, a policy dialogue can be started or where standards need to be set. It is not so evident in domains close to market and in competitiveness activities.⁶³

Network building and establishing a cooperation framework are the major reasons and (expected) benefits for international cooperation in European and joint EU-MS STI cooperation actions. EU and joint EU-MS actions can provide easier access to networks, better connections with leading minds and a certain scale and scope compared to national actions. For third countries, cooperation at the EU level may have various advantages over national actions. It likely increases the geographic scope and allows outreach to an increased number of countries. This can lead not only to greater networking opportunities but also a higher visibility for the third country, greater market access, and easier (or quicker) access to European research and technology.

The evaluations suggest there is a limited impact of INCO in terms of integration between national and regional agendas until the latter phase of the INCO programme when the H2020 themes and priorities were beginning to emerge. Despite the significant effort to identify common research priorities, such activities had questionable impact at a national level for many European member states unless they already had significant participation in INCO activities.

The **Risk-Sharing Finance Facility** (RSFF) has often been showcased as an example of how EU resources can leverage private funding for a larger impact in achieving EU objectives. The European added value of the Risk-Sharing Finance Facility is essentially built upon several aspects:

- Addressing *market failures* that lead to insufficient funding being available from market sources.
- *Easing fund-raising* for cross-border projects particularly in the R&I domains to be covered by Horizon 2020.
- *Demonstration and catalytic effects* (such as knowledge transfer) in the targeted markets and across frontiers
- Generating *economies of scale* due to the enhanced capacity of the EU to mobilise public and private resources from the full range of Member States.
- EU-level financial instruments can multiply the effect of the EU budget by attracting other public and private financing along (such as EIB), financial intermediaries (such as banks) and final beneficiaries.

⁶³ Technopolis Group and Empirica Gesellschaft für Kommunikations- und Technologieforschung mbH. European Added Value of EU Science, Technology and Innovation actions and EU-Member State Partnership in international cooperation. Main report. DG INCO, 2014.

- National and local institutions can benefit from EU-level entrusted entities' *knowhow* about the design of financial products which otherwise would not have been available to them.

Evaluation aspect 6 – Conclusions and recommendations

Conclusions

The Capacities SP was designed particularly to improve Europe's research infrastructure and the research capacity of SMEs. These were by far the two largest budget allocations of the Capacities SP as well. The ESFRI roadmap triggered a major change in the focus and process for EC support to the European Research Infrastructure compared to FP6. The FP7 Research Infrastructures programme was an instrumental part of the overall development of ERA and the aim was to harness the existing infra more efficiently and more widely for the benefit of research and innovation.

The **Research Infrastructures** programme enhanced the optimal performance and use of existing RIs, the development (or major upgrade) of new RIs of pan-European interest, and provided specific coordination and support actions for research infrastructures and their communities in Europe and worldwide. The programme focused in particular on the first one. Due to its scientific nature, there was a high involvement of the research communities in the programme, and less participation by actors in the private sector. The e-Infra activities were more relevant to industry and SMEs.

European commitment to ESFRI provides the overall framework for the RI effort and the Innovation Union set a joint commitment that at least 60% of the ESFRI roadmap projects are reached by 2015. Until today, however the progress has not been very fast to that end.

A diverse range of RI projects was financed. There was a relatively high level of support to RI in the physical sciences & astronomy thematic area, in particular in the number of projects supporting the design and construction of new RI. Such a bias however, is typical to RI investments in general. Based on the participation data, it appears that smaller and newer member states have benefitted the most from the EC support for transnational access to RI. The RI programme also contributed with € 200 million to the Risk-Sharing Finance Facility to finance RI investments.

Overall, the RI programme contributed to the cohesion of the European RI landscape and on the breadth and quality of the RI services. This was achieved particularly through the combined efforts of activities and policy mix. European Added Value was an inherent part of the overall Research Infrastructures programme objectives, as it had its focus on activities and benefits that would not otherwise be easily achievable by individual Member States alone.

The second-largest budget priority has been **Research for the benefit of SMEs**. Stronger attraction and engagement of SMEs into the collaborative research and innovation projects at the European level has been one of a long-lasting and difficult challenge of all EU RTD Framework Programmes. Each successive FP has been larger in scope and ambition than its predecessor. Capacities SP was not the only, nor the largest programme to support SME research, but it was one of its key functions. Yet, the 15% SME target similar to Cooperation SP was not set to Capacities SP. At the end, the SME participation was rather high in the Capacities SP.

There is a wide array of SME support instruments in the Member States, but three types of particular European Added Value was distinguished for FP7 RSME a) technological added value; b) economic added value; and c) the European funding compensation for the lack of alternative funding. Amongst these, the particularly the provision of alternative funding and technological knowledge were important. SMEs strongly benefited of European funding, as there is a lack of alternative funding opportunities. SMEs also profited largely from access to specialised knowledge or equipment in international partnerships.

The **Regions of Knowledge** Programme was created to strengthen and develop research and innovation excellence in EU regions. It was a rather small programme (3%), even within the Capacities SP. During the course of FP7, the RoK intervention logic evolved to a sharper focus while also reflecting the broader objectives of FP7 and the ERA, in particular the support of R&D excellence and transnational cooperation. This was considered positively, as many projects during the first years had vaguely-defined objectives and were not considered to have much European Added Value.

At the end, RoK programme funded altogether 79 projects and according to the evaluations, the RoK programme and its projects have in general, achieved well their intended goals and been effectively implemented. Its key achievements are linked to enhanced networking and collaboration at the European level.

The RoK has in particular supported transnational cooperation of clusters as well as the integration of cluster's actors in ERA, which are typically not the kind of activities funded by Member States and regions. The cooperation among clusters not only contributed to tackling pan-European challenges but also in deploying new technologies, services and products, which respond to European societal and economic challenges.

The **Research Potential** Activity was set up to reinforce the capacity of the existing research institutions located in Convergence and Outermost Regions of the EU and permit their full participation in ERA. Hence, the REGPOT has been considered as an entrance gate for research entities and researchers to other FP7 projects. It has, according to evaluations, addressed and helped to overcome *financial barriers* such as a lack of national and in particular regional funding for specialised state-of-the-art research equipment, as well as for the hiring of high-level staff in the Convergence and Outermost regions. Although the Final Evaluation of REGPOT indicates a certain degree of success regarding achieving sustainable impacts, there are some concerns regarding to the sustainability of impact after project funding.

Overall, the REGPOT has allowed its participants to build connections with the European scientific community, and to move focus from project-based research to a more strategy-based research.

The sufficient integration of society aspects in scientific research has been a long-lasting challenge. **Science in Society** represented the only significant mechanism in FP7 for supporting coordination and collaboration in Science in Society research at the European level. It provided a platform through which major pan-European initiatives and networks were established. As part of its evolution from FP6, the SiS programme adopted a strategy of supporting larger and more strategic actions.

The SiS sought and managed to engage policy makers and other societal stakeholders to a greater extent than earlier FPs and other FP7 programmes, but had less success in engaging non-academic stakeholders. According to data and evaluations, the SiS projects have been successful in achieving their objectives.

The greatest impact of the SiS has been to raise the political importance of Science in Society at the European level, and to raise awareness of the problems and the need for all actors to work together. However, national policymakers have found it difficult to engage with the large volume of work carried out. While the SiS programme has a relatively limited budget, it is seen as one of the main vehicles for accelerating research efforts at the national level.

There were well-rooted rationales to support the **coherent development of research policies** under the FP7. In terms of budget, it was however the smallest activity under Capacities SP.

The CRDP has been emphasised in the preparation of FP7 annual work programmes, placing more emphasis on activities such as prototyping, testing, demonstration and knowledge transfer. Themes focused under CRDP have included, among others, social innovation, innovation procurement, monitoring of innovation performance (European

Semester), monitoring of the Innovation Union, the European Innovation Partnerships, and ERAWATCH.

Throughout the FP7, the **International Cooperation** dimension has become an increasingly important objective of EU policy, and research cooperation with international partners have been facilitated and supported in a number of ways. At the same time, the focus of INCO has shifted from horizontal to more strategic activities.

INCO was able to reach and engage a large set of actors for international cooperation, but this did not result much in bigger projects under FP7 thematic programmes. At the same time, INCO's broad and ambitious objectives towards raising awareness, were reflected in the range of activities as well. The projects included a rich and diverse set of activities, ranging from dissemination to information production and training.

According to evaluations, the INCO suffered from various difficulties in project implementation, influencing the overall effectiveness of the activity as well. There was limited coordination within the Commission services or with Member States. The lack of focus on third country research institutions also impacted negatively. At the end, INCO had limited success in interfacing with other Community instruments.

The key areas of European Added Value in INCO were those where joint action becomes more efficient, when a wider geographical reach can be achieved, a policy dialogue can be started or where standards need to be set. At a political level, the INCO helped to project an image of the EU as a united force, and contributed to the wider visibility to the national institutions participating in the projects. The activities also contributed to EU science diplomacy between European member states and third countries. INCO activities created a valuable body of knowledge, but this knowledge neither well known nor much utilised.

The **Risk-Sharing Finance Facility** was one of the new, innovative funding mechanisms of FP7. Such EU-level intervention was needed for equity financing to help improve the availability of finance for early and growth-stage investments and to boost the development of the EU's VC market.

The RSFF was successfully introduced into the EU's research funding scheme within FP7 and has since then been further developed and strengthened. It has proved to be an attractive and well-working instrument, and the Commission and EIB have been able to adapt its focus and strategy to the changing needs as well.

RSFF has been an important addition to European research funding landscape, with a positive impact on the availability of risk financing and in the scale investments made. The availability of debt financing for riskier R&I projects had been particularly valuable in times of financial crisis. However, according to evaluations access to finance was not a major barrier to beneficiaries investing in R&I, and RSFF could also have had a crowding-out effect.

Recommendations

The evaluation reports have raised the following issues as recommendations for further developing activities conducted under the Capacities SP of FP7:

A. Recommendations regarding completion of FP7 and swift transition to Horizon 2020

Ensure the continuity and proper completion of FP7 activities. A substantial part of the FP7 Capacities SP project portfolio is still running, but will soon conclude. This presents a risk to the programme's ultimate value as officials and the active participants switch focus to the Horizon 2020. This transition is likely to cause some temporary loss of momentum with the on-going activities.

It is recommended that DG RTD / the Research Executive Agency (REA) seeks to ensure an active 'client' interest in this long tail of FP7 projects, pushing for high quality deliverables, end-of-project events and exploring opportunities for follow-on advice or financial support to strengthen commercialisation.

B. Recommendations for ensuring sufficient participation of SMEs

Develop overall SME support strategy with clear distinctions between different SME target groups. There remains a question about the extent to which the Commission's efforts are effective in reaching the full extent of potential SME participants. A specific SME strategy should be developed making a distinction between different target groups of SMEs, which acknowledges the differences of specific SME target groups and the contributions they can make.

Collect more information to properly assess type of SME and improve monitoring. The Commission should register various characteristics of participating SMEs that are relevant for future R&D and Innovation support measures such as size, innovation and export performance (as well as growth of these) right from the application phase to assure that the proper target groups are reached.

Set up support structure for SME associations. To address the generally limited capacity and capability of SME associations to actually manage RTD projects and to handle Intellectual Property Rights (IPR) issues, specific support should be provided in future projects that are similar to RSME projects.

C. Recommendations regarding monitoring and evaluation

Ensure programme objectives are more SMART (i.e. Specific, Measurable, Attainable, Relevant and Time-based). Some of activities of Capacities SP had difficulties in achieving good and measurable results due to vaguely set objectives and targets. Clear and concrete ideas should be developed with regard to what constitutes a success or failure of a each activity, regardless of type. SMART objectives should be carefully developed in accordance with these ideas so all stakeholders are clear on what is to be achieved by the programme and agree on it.

Stronger project implementation and monitoring. Current EU policy, with the emphasis on innovation, is predicated on a general broadening of the scope of activities, project partners and target audiences of international cooperation support actions to adequately address the innovation element. This requires strengthened project implementation and monitoring. Consideration should be given to the provision of training to project coordinators who are unfamiliar with the programme regulations.

D. Recommendations regarding dissemination and utilisation of research results

More instruments for commercialisation of project results. For SMEs return-on-investment is crucial for their economic well-being and also for European R&D and Innovation support measures commercial aspects are highly relevant. Therefore the need to support the exploitation of results obtained, especially by SMEs is apparent and should be encouraged in future R&D and Innovation support measures of the Commission.

Developing pathways from capacity-building to research participation. In order to facilitate the progression from capacity-building to participation in research projects/programmes, activities should encompass targeted pathways, such as specific research-project management training, proposal writing, etc., in addition to the more traditional networking activities.

More systematic and effective dissemination of accumulated knowledge. Further dissemination efforts should be made to promote the utilization of the valuable information created through projects. Individual cooperation projects should be encouraged to adopt coordinated dissemination strategies, liaising with other projects and programmes to promote and facilitate international cooperation.

E. Recommendations regarding enhanced international cooperation

Better coordination of EC international cooperation activities. There is a need for stronger coordination between DG RTD and other relevant EC Directorates (DEVCO, EEAS) to agree objectives and mechanisms whereby international scientific cooperation activities can contribute to EU Foreign Policy. Such objectives and mechanisms must be incorporated into the DG RTD international cooperation work programmes and calls so as to provide suitable guidance for those preparing project proposals and subsequently managing projects selected for funding. In the same vein, coordinators of international cooperation projects should be encouraged to liaise with other European projects (EuropeAid, INCO, Thematic DGs, MS-supported) to identify and exploit opportunities for synergies between the projects and activities.

Better leveraging the diplomatic framework for the purpose of ERA. Horizon 2020 will require concerted and coordinated efforts to promote the European Research Area to the world. The diplomatic framework now in place with the network of EU delegations run by the European External Action Service (EEAS) should be leveraged to support this objective. In the case of countries and regions where roadmaps for scientific cooperation have been concluded, international cooperation support actions should actively contribute to the implementation of the relevant roadmaps. Where such roadmaps have not yet been finalized, the projects should focus on providing support to the policy dialogue process

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Annex 1 - Accompanying note by the author

The Summary Report is a synthesis of several evaluation documents and self-evaluations prepared by the Commission services. The below remarks are intended to complement the Summary Report, with the personal views of the author (K. Halme).

The overall rationale of Capacities SP was very strong and well-rooted to European policies. Research and innovation systems differ greatly across EU Member States and regions with respect to their size, relative funding volumes, thematic focus or ability to compete for the research excellence, but equally with respect to their research funding and performing organisations and operating practices. The anticipations of the more research-advanced Member States and regions are naturally often more inclined towards driving the research excellence through FPs, while for the less advanced countries or regional the participation objectives are typically more related to building and enhancing their research capacities and access to research. In that light, there are equally many views to objectives and success of FPs as there are participants to it.

One overarching set of objectives for the FP7 has been the introduction of ERA. Against the overall objective of building ERA in particular, the FPs have been bridging the gaps of the national and regional systems, facilitating collaboration across countries as well as building synergy and the efficient use of resources and infrastructures. This has been particularly the objective of Capacities SP in the FP7. In this respect, one key question has been, to which extent has the Capacities SP overall, been successful in facilitating the ERA progress.

Facilitating such a process and development takes time and is not without challenges. There is a certain amount of inertia in Member State research and innovation systems, which must be taken into account. Hence, it is not only the EU FPs alone that determine the success of FPs. It is equally the Member states and all participating organisations to it. For example, when FP7 was introduced, it took a while for the key coordinating organisations to adjust to the new funding rules. Introduction of new programmes and changes of rules tend to cause delays and can even have a negative initial impact for the implementation, unless they are carefully and early introduced to the target groups.

The Capacities SP was designed particularly to enhance research and innovative capacities throughout Europe and to unlock the full research potential of European regions. In this sense, its objectives of Capacities SP were strongly policy-oriented, first and foremost linked to enhancing the research and innovation cohesion, and resource and performance optimisation aspects of the European Research and Innovation Area. Against that background, the achievements and impacts of the Capacities SP should not be measured merely against the scientific outputs it helped to deliver, but particularly against its ability to engage, extend and deepen the participation of the new and specifically targeted research and innovation actors in the FP. For the most parts, it appears the activities of Capacities SP were implemented very efficiently.

There have been significant changes in the European research and innovation agenda during the course of FP7, which have influenced the objectives of the Capacities SP implementation, and to a large extent, further emphasised the important role of the Capacities SP, particularly in respect to making ERA happen.

Perhaps the most significant and largely unforeseen development in the European research and innovation agenda was the economic crisis and its consequences to EU research and innovation collaboration. The question is, to which extent and how has the financial crisis impacted the implementation and success of FP7 Capacities SP, and to which extent was Capacities SP flexible, agile and responsive to take into account these contextual changes. Should Capacities SP have had a specific role within FP7 to this end? To some extent it did have, in building and enhancing the capacity for research collaboration amongst European and external partners.

The European financial crisis put increased emphasis, and a stronger rationale, for example for smartly-designed funding instruments that leverage complementary funding

sources at the EU –level and to bridge the gaps of regional and national funding. This is at least what the experience of RSFF would suggest. In a similar manner, it appears that many Member States have difficulties, if not a temporary reluctance, to engage their national budgets in the current financial situation to new significant RI –investments.

At the same time, there remains a number of pertinent challenges that sustain and carry over to from one FP to another – such as the better engagement and involvement of SMEs in European research projects, the better addressing societal aspects in sciences, or more efficiently turning research knowledge into tangible economic and societal benefits, not to mention the challenge of better monitoring of the progress and impacts of FPs. Some of these challenges were specifically assigned to the Capacities SP to address.

With the general trends of globalisation and particularly with the quick economic and scientific progress of BRICs and other emerging economies, internationalisation of research and innovation policies has become an important issue and area of expectation towards the FPs as well. INCO has responded to only part of these expectations. How well has INCO been interlinked to Commission's other international research and innovation collaboration activities? It appears that not so well. International cooperation in the field of research and innovation remains to be an important European objective and there are lessons to be learnt from the INCO activity.

It can be easily concluded that the Capacities SP had indeed a very strong rationale overall. The question in hindsight is, whether the different activities under Capacities SP were in the right balance. Within this smallest of the four Specific Programmes of FP7, the main focus (i.e. 75% of budget) was put on two activities – RI and RSME. Against the current ERA progress, one could assume that more emphasis (larger budget, more actions) could have been assigned to CRDP –type of objectives, for example.

With respect to better engaging European SMEs into research, the RSME was indeed able to reach many good results. Could there have been even better results with increased activity? A constant challenge to this end is the fit and complementarity of EU –level actions against the multitude of SME targeted support activities in Member States and regions. Perhaps mere increase of budget would not have automatically brought better results.

The success of Capacities SP is also related to its contribution to other EC activities, in particular its feeding into the thematic projects of FP7. For example, at the end INCO was not very successful in generating new participants to the thematic project. An important question with regard to RoK is, to which extent has it complemented and brought additionality to the generally much larger regional innovation and smart specialisation strategies that were supported by DG Regio.

During the course of FP7, several of the Capacities SP activities went through an evolution with regard to their strategic focus, as a response to the updated EU ERA strategies. Towards the end of the FP7 and in the latest annual work programmes, the emphasis was already in facilitating the way to the Horizon 2020.

Annex 2 – Figures and tables referred in the text

Figures

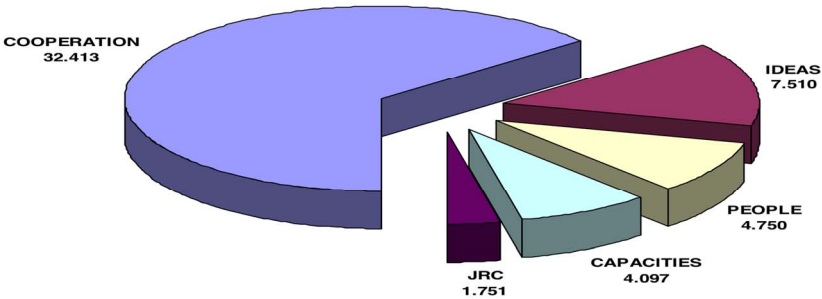


Figure 1. FP7 budget breakdown in million euros (FP7 EURATOM budget of € 2,7 billion over 5 years not included).⁶⁴

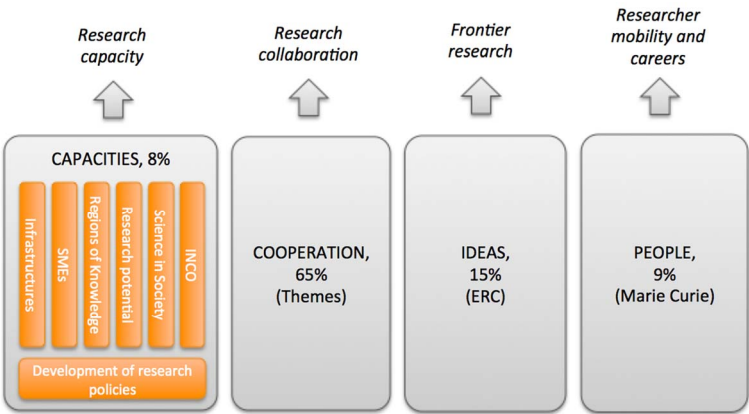


Figure 2. Focus of Capacities SP amongst the four FP7 Specific Programmes

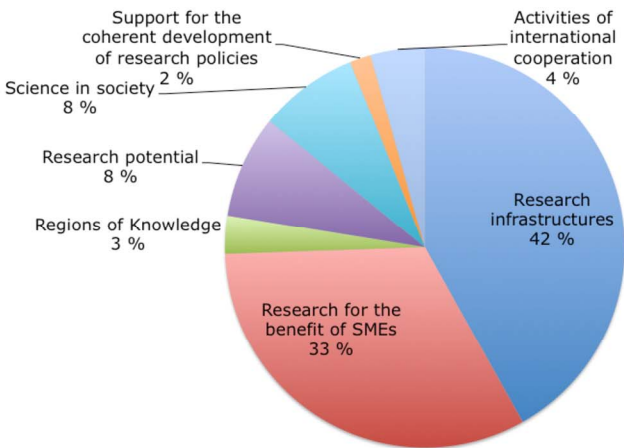


Figure 3. Budget allocation of the Capacities SP activity areas for the period of 2007-2013.

⁶⁴ Seventh Monitoring Report of the FP7, Monitoring Report 2013, DG Research and Innovation. 11.3.2015

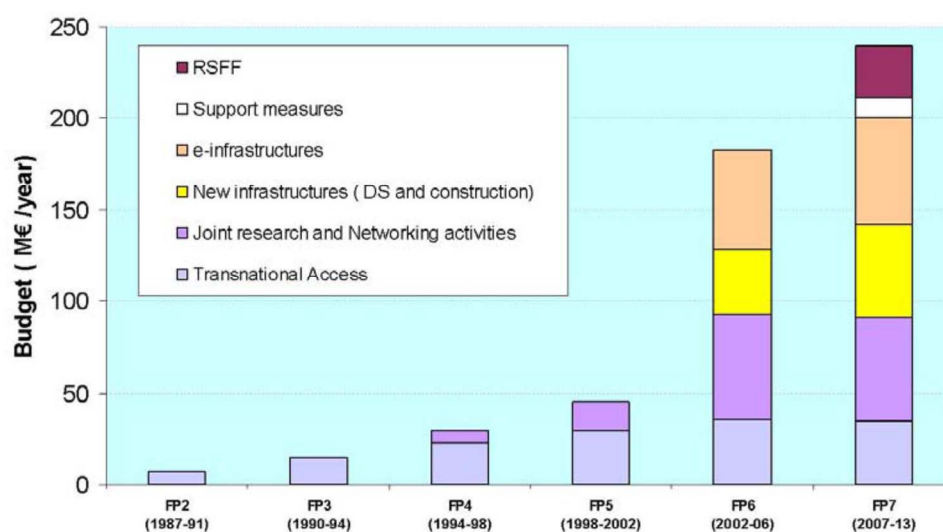


Figure 4: Breakdown of RI budget allocation by support schemes (FP2-FP7)

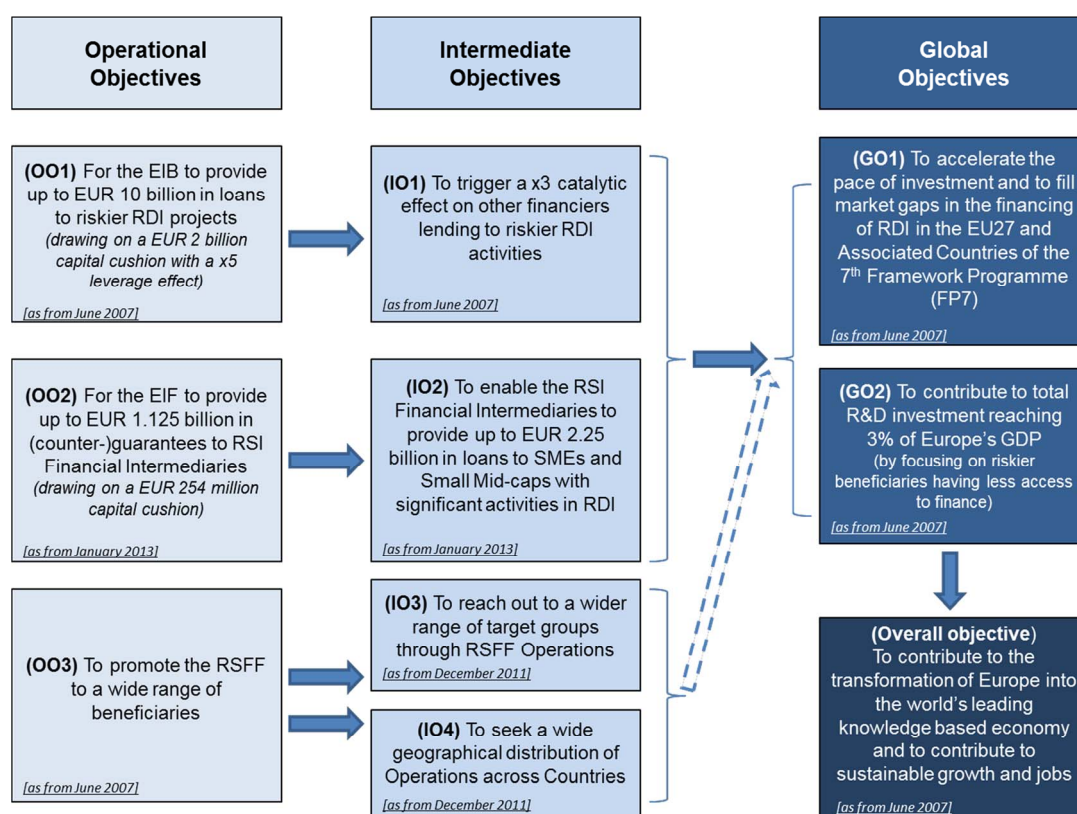


Figure 5. Hierarchy of RSFF objectives

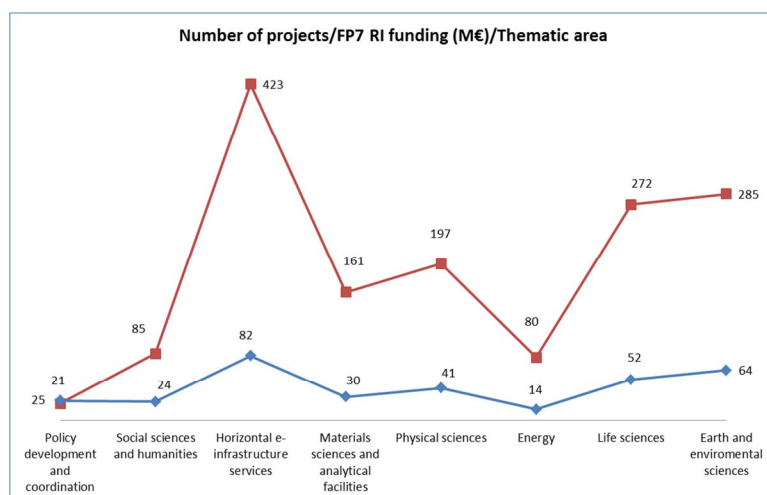


Figure 6. FP7 RI breakdown by thematic areas. Source Corda data

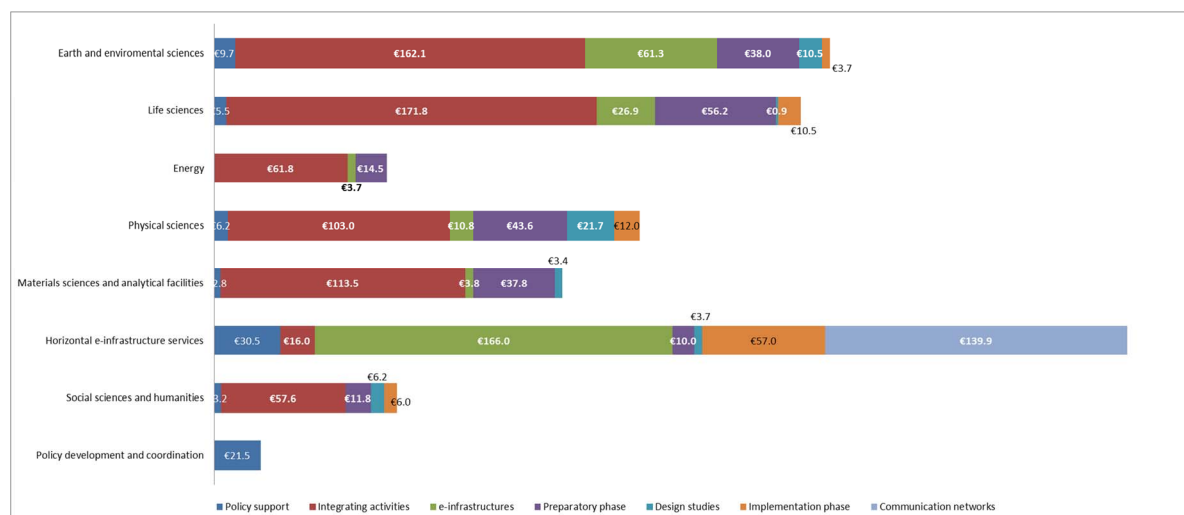


Figure 7. FP7 RI funding by thematic area/funding schemes (€ million). Source Corda data

Tables

Table 1. Participation statistics of Capacities SP compared to FP7. Source CORDA.

Participation 2007-2013	Capacities	FP7
Proposals	10 296	135 716
Retained proposals	2 005	25 127
Number of applications per proposals	9,0	5,2
Success rate (%) of proposals	19	19
Signed grants	2 009	25 053
EC contribution per grant (million euro)	1,87	1,77

Table 2. Utilisation of funding schemes in Capacities SP. Share (%) of projects per funding scheme. Source CORDA (REF, 'Nedeltcheva', 2015)

Funding scheme	RI	SME	RoK	REGPO T	SIS	CRDP	INCO
Collaborative projects	5,8%	1,1%	100%	100%	82,4%	100%	100%
Infrastructure	91,5%						
SME research projects					13,6%		
Research for the benefit of specific groups (SMEs)		94,6%					

Table 3. Themes and budgets of RoK calls 2007-2013

Year	Calls & budgets	Thematic priorities	Projects
2007	€ 8.8 million € 0.2 million € 0.4 million	Research for SMEs involved in 'knowledge-intensive' products or processes; Research and rural economies, including economies undergoing structural changes; <i>TRANSREG NCP specific call</i>	11 + 5 projects + TRANSREG-NCP
2008	€ 9.3 million € 0.8 million	Reducing contributions to the reduction of CO2 emissions combined with a horizontal focused theme: maximising the benefits of research infrastructures for regional economic development.	12 + 4 projects
2009	€ 16.1 million	Economic competitiveness and the emergence of 'lead markets' in: Enhancing the sustainable use of natural resources and of the natural and man-made environment.	9 projects
2010	€ 16.95 million	Economic development, including through supporting the emergence of the e-health lead market as defined by the Lead Market Initiative, by boosting the competitiveness of health-related economy.	7 projects

2011	€ 18.66 million	Sustainable economic development, including through supporting green transport systems as defined by the Lead Market Initiative, by boosting the competitiveness of transport-related economy.	8 projects
2012-2013	€ 18 million € 25 million	Transnational co-operation of clusters that are active in a) RTD and innovation aspects of EU digital agenda and b) Development of technologies and services relevant for the implementation of a 'resource efficient Europe	9 + 13 projects

Table 4. *INCO instruments and their domains*

Instrument	Domain
INCO-NET	Bi-regional cooperation
BILAT	Support for 3rd countries to participate in EU/MS
ERA-NET	European critical mass to access 3rd countries
ERA-WIDE	Twinning with ENP in defined priority areas
R2I-ENP	Promoting R&I in the ENP countries
INCO-LAB	Opening facilities and joint projects with 3rd countries
ACCESS4EU	EU access to 3rd countries
INCO-NCP	Transnational between NCPs
INCO-H2020	Promoting H2020 in 3rd countries
INCO-HOUSE	Joint STI with 3rd countries, co-funding

Table 5. *Funding of different INCO activities*

Instrument	EC Financial Contribution				
	Total € million	MS/AC € million	TC € million	MS/AC %	TC %
INCO-NET	54.44	35.09	19.36	64%	36%
BILAT	31.46	17.24	14.21	55%	45%
ERA-NET	25.66	18.70	6.96	73%	27%
ERA-WIDE	23.55	13.13	10.42	56%	44%
R2I-ENP	12.51	8.19	4.32	65%	35%
INCO-LAB	11.94	8.32	3.62	69%	31%
ACCESS4EU	5.30	3.53	1.77	66%	34%
INCO-NCP	2.36	1.75	0.61	74%	26%
INCO-H2020	0.99	0.60	0.40	60%	40%
INCO-HOUSE	0.48	0.43	0.05	90%	10%
Total	168.69	106.98	61.71		

Annex 3 – General data on programme budget and allocation of funds

Table: Numbers of signed grant agreements, participants and EU contribution (in € million) for concluded FP7 calls with closure dates in the period 2007-2013 by each specific programme.⁶⁵

SPECIFIC PROGRAMME	GRANTS	GRANT HOLDERS	EU CONTRIBUTION (€ Million)	AVERAGE EU CONTRIBUTION PER GRANT (€ Million)	TOTAL COST (€ Million)	EU CONTRIBUTION in % of total PROJECT COST (in signed grant agreement)
COOPERATION	7,834	87,623	28,336	3.62	44,342	63.90%
IDEAS	4,525	5,405	7,673	1.70	7,677	99.95%
PEOPLE	10,716	19,515	4,778	0.45	5,600	85.32%
CAPACITIES	2,025	19,047	3,772	1.86	5,227	72.16%
EURATOM	138	2,025	358	2.59	662	54.09%
TOTAL	25,238	133,615	44,917	1.78	63,508	70.73%

The differences in the EU –contribution between the various specific programs is due to the different funding schemes; Cooperation, Capacities and Euratom projects are usually agreed on a shared cost basis, whereas Ideas and People in general provide full project funding by the EU contribution.

⁶⁵ Source: E-CORDA / Seventh Monitoring Report of the FP7, Monitoring Report 2013, DG Research and Innovation A5. 11.3.2015

Annex 4 – General data on programme participations

Table: *Proposals, applicants, EU contribution success rates by Specific Programme for FP7 calls concluded in 2013 and in 2007 – 2013*

		Period	COOP	CAPAC	PEOPLE	IDEAS	Euratom	Total FP7	Total FP7 (excl. IDEAS)	Total FP7 & (excl. IDEAS & PEOPLE)
Submitted proposals	Number of proposals	Total	40.158	10.296	49.639	35.335	288	135.716	100.381	50.742
		2013	5.321	235	10.857	4.321	5	20.739	16.418	5.561
	Number of applicants	Total	376.519	75.483	103.700	41.970	3.352	601.024	559.054	455.354
		2013	47.905	1.247	14.717	5.371	8	69.248	63.877	49.160
	Requested EC funding (EUR million)	Total	132.974	16.899	87	66.870	771	217.600	150.730	150.644
		2013	17.825	469	17	10.109	1	28.422	18.313	18.296
	Nb of applicants per submitted proposal	Total	9,4	7,3	2,1	1,2	11,6	4,4	5,6	9,0
		2013	9,0	5,3	1,4	1,2	1,6	3,3	3,9	8,8
	EC contribution per proposal (EUR million)	Total	3,31	1,64	-	1,89	2,68	1,6	1,5	2,97
		2013	3,35	2,00	-	2,34	0,30	1,37	1,12	3,29
	EC contribution per applicant (EUR million)	Total	0,35	0,22	-	1,59	0,23	0,36	0,27	0,33
		2013	0,37	0,38	-	1,88	0,19	0,41	0,29	0,37
Retained proposals	Number of proposals	Total	7.942	2.005	10.838	4.210	132	25.127	20.917	10079
		2013	1.031	132	1.557	368	5	3.093	2.725	1168
	Number of applicants	Total	84.330	18.079	21.916	4.646	1.830	130.801	126.155	104239
		2013	9.857	517	2.591	419	8	13.392	12.973	10382
	Requested EC funding (EUR million)	Total	29.442	4.043	53	7.721	401	41.659	33.938	33886
		2013	3.758	243	11	717	1	4.731	4.014	4003
	Nb of applicants per submitted proposal	Total	10,6	9,0	2,0	1,1	13,9	5,2	6,0	10,3
		2013	9,6	3,9	1,7	1,1	1,6	4,3	4,8	8,9
	EC contribution per proposal (EUR million)	Total	3,71	2,02	-	1,83	3,03	1,66	1,62	3,36
		2013	3,65	1,84	-	1,95	0,30	1,53	1,47	3,43
	EC contribution per applicant (EUR million)	Total	0,35	0,22	-	1,66	0,22	0,32	0,27	0,33
		2013	0,38	0,47	-	1,71	0,19	0,35	0,31	0,39
Success rate	Success rate (proposals)	Total	20%	19%	22%	12%	46%	19%	21%	20%
		2013	19%	56%	14%	9%	100%	15%	17%	21%
	Success rate (applicants)	Total	22%	24%	21%	11%	55%	22%	23%	23%
		2013	21%	41%	18%	8%	100%	19%	20%	21%
	Success rate (EC funding)	Total	22%	24%	-	12%	52%	19%	23%	22%
		2013	21%	52%	-	7%	100%	17%	22%	22%
Signed grants	Number of signed grant agreements	Total	7.779	2.009	10.683	4.445	137	25.053	20.608	9.925
		2013	1.392	324	1.853	882	20	4.471	3.589	1.736
	Number of grant holders	Total	86.854	18.853	19.438	5.245	2.002	132.392	127.147	107.709
		2013	15.130	2.951	3.615	1.001	374	23.071	22.070	18.455
	Granted EC funding (EUR million)	Total	28.078	3.753	4.758	7.418	357	44.364	36.946	32.188
		2013	5.531	627	1.054	1.676	60	8.947	7.272	6.218
	Nb of participants per grant	Total	11,2	9,4	1,8	1,2	14,6	5,3	6,2	10,9
		2013	10,9	9,1	2,0	1,1	18,7	5,2	6,1	10,6
	EC contribution per grant (EUR million)	Total	3,61	1,87	0,45	1,67	2,61	1,77	1,79	3,24
		2013	3,97	1,93	0,57	1,90	3,00	2,00	2,03	3,58
	EC contribution per grant holder (EUR million)	Total	0,32	0,20	0,24	1,41	0,18	0,34	0,29	0,30
		2013	0,37	0,21	0,29	1,67	0,16	0,39	0,33	0,34

Table: Third Country involvement in Specific Programmes, eCORDA, May 2013

Specific Programme	# of projects	# of projects with Third Country participants	%	# of Third Countries	# of participants	# of Third Country participants	%	# of participants in projects with Third Country participants
SP1 COOPERATION	5,646	1,281	22.7%	105	64,448	3,345	5.2%	17,670
SP2 IDEAS	3,297	16	0.5%	15	3,776	19	0.5%	50
SP3 PEOPLE	7,815	147	1.9%	33	14,525	156	1.1%	519
SP4 CAPACITIES	1,627	270	16.6%	76	15,223	762	5.0%	3,148
SP5 Euratom	117	31	26.5%	11	1,593	48	3.0%	573
Other	4	-	-	-	60	-	-	-
Total	18,506	1,745	9.4%	108	99,625	4,330	4.3%	21,960

Table: Number of participations in Specific Programmes by country grouping, eCORDA, May 2013

Specific Programme	EU27 countries	EFTA/Enlargement countries/European Neighbourhood Policy	Industrialised countries/emerging economies	Developing countries	Other	Total
SP1 COOPERATION	56,284	5,226	2,204	706	28	64,448
SP2 IDEAS	3,273	484	11	8	0	3,776
SP3 PEOPLE	12,735	1,659	115	16	0	14,525
SP4 CAPACITIES	13,045	1,630	407	128	13	15,223
SP5 Euratom	1,475	77	40	1	0	1,593
Other	0	0	0	0	60	60
Total	86,812	9,076	2,777	859	101	99,625
% of total	87.1%	9.1%	2.8%	0.9%	0.1%	100%

The SME contribution in the Capacities SP has been relatively high compared to other FP7 activities, with an average of 34,3% participation share (FP7 18,6%) and 34,5% budget share (FP7 14,6%).

Table: SME participation in FP7 (situation at the end of 2013).

Specific Programme Description	Nr of SME participations	% of SME participations	EU contribution to SME's (in Euros)	% of the budget going to SME's
SP1 - Cooperation	16.246	19,1%	4.606.114.738	16,8%
<i>Thematic priorities</i>	15.223	19,1%	4.347.746.582	16,9%
<i>Other (e.g. Joint Technology Initiatives)</i>	1.023	20,1%	258.368.156	15,6%
SP2 - Ideas	21	0,4%	15.271.362	0,2%
SP3 - People	1.107	6,1%	276.614.782	6,3%
SP4 - Capacities	6.316	34,3%	1.264.772.863	34,5%
SP5 - Euratom	124	6,3%	19.252.332	5,5%
FP7 - OVERALL	23.814	18,6%	6.182.026.077	14,6%

Following the evolution of FP7 monitoring and the implementation of the SESAM Research Performance and Impact Reporting tool (RESPIR), indicators on **gender** aspects have been gathered through the final reports of projects of the Cooperation and Capacities Programmes. Gender aspects have been split into two major categories. The first focuses on Gender Equality Actions, while the second relates to the gender dimension in the research content. Of the 878 completed Capacities projects, the Gender aspects section of the Final report was filled in for 876 projects.

Out of the 871 completed Capacities projects with a gender aspects report, 177 (20%) declared having undertaken Gender Equality actions. Actions most frequently undertaken were aimed at designing and implementing equal opportunity policies and at setting targets and measures to improve work life balance. Project coordinators declared that they were effective in most of the cases

Table: Completed projects in Cooperation and Capacities programmes (by December 2014) that reported gender aspects and with Specific Gender Equality Actions and Gender Action Types.⁶⁶

Priority Area		Projects with a gender aspects report	Projects with Gender Equality Actions	Gender Action Types					
				Design and implement an equal opportunity policy		Set targets to achieve a gender balance in the workforce		Actions to improve work-life balance	
				Effective	Not Eff.	Effective	Not Eff.	Effective	Not Eff.
COOPERATION	HEALTH	398	136	122	10	99	12	78	8
	KBBE	185	53	41	4	35	5	33	4
	NMP	348	107	84	9	57	19	59	4
	ENERGY	105	20	12	2	9	2	11	1
	ENV	210	58	37	2	34	5	31	4
	Transport	280	36	23	8	23	7	19	7
	SSH	129	41	26		34	2	26	1
	Space	111	25	16	2	13	5	11	4
	Security	79	14	13	1	10	1	7	
Total: COOPERATION		1.845	490	374	38	314	58	275	33
CAPACITIES	Infrastructures	87	23	17	3	15	2	11	1
	SME	470	73	63	14	46	18	60	12
	REGIONS	46	2	2		4		2	
	Research Potential	107	37	35	8	32	6	23	5
	Science in Society	90	26	20	1	20	2	13	
	Support for policies	16	2			1			
	International Coop.	60	14	7	2	10	3	8	2
Total: CAPACITIES		876	177	144	28	128	31	117	20
Total		2.721	667	518	66	442	89	392	53

⁶⁶ Source: E-CORDA / Seventh Monitoring Report of the FP7, Monitoring Report 2013, DG Research and Innovation A5. 11.3.2015

Annex 5 – General data on programme efficiency

Time-to-grant

Table. Minimum, average, and maximum Time-to-Grant (in days) for FP7 grant agreements signed in 2007 - 2013 by thematic area (December 2014)⁶⁷

SP	Priority Area	Signed Grants	Average TTG	Minimum TTG	Maximum TTG
COOPERATION	Health	967	351	142	804
	Food, Agriculture and Fisheries, and Biotechnology	509	366	204	650
	Information and Communication Technologies	2.316	259	141	629
	Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	793	329	146	755
	Energy	336	346	142	1.206
	Environment (including Climate Change)	483	373	185	651
	Transport (including Aeronautics)	609	409	154	1.997
	Socio-economic sciences and Humanities	243	394	223	748
	Space	240	399	281	724
	Security	294	527	228	914
	General Activities	20	341	112	493
IDEAS	ERC	4.175	358	7	785
PEOPLE	Marie-Curie Actions	10.089	271	107	671
CAPACITIES	Research Infrastructures	321	341	200	641
	Research for the benefit of SMEs	954	371	202	809
	Regions of Knowledge	64	317	229	589
	Research Potential	176	326	239	473
	Science in Society	153	385	210	696
	Support for the coherent development of research policies	12	308	180	538
	Activities of International Cooperation	150	307	227	717
Eura-tom	Fusion Energy	3	414	409	422
	Nuclear Fission and Radiation Protection	122	315	167	638
Total		23.029	313	7	1.997

⁶⁷ Source: E-CORDA / Seventh Monitoring Report of the FP7, Monitoring Report 2013, DG Research and Innovation A5. 11.3.2015

Processing of final reports

Table. Processed Final Reports in FP7 Grant Agreements by Priority Area and Funding Scheme by December 1, 2014.

Priority Area		Number of Signed Grant Agreements	Processed Final Reports	
			Number	%
COOPERATION	Health	1.008	400	40%
	Food, Agriculture and Fisheries, and Biotechnology	516	185	36%
	Nanosciences, Nanotechnologies, Materials and new Production Technologies	804	350	44%
	Energy	239	105	44%
	Environment (including Climate Change)	494	216	44%
	Transport (including Aeronautics)	589	280	48%
	Socio-economic sciences and Humanities	253	131	52%
	Space	267	111	42%
	Security	319	79	25%
	General Activities	25	11	44%
	Joint Technology Initiatives (609	121	20%
Total : COOPERATION		5.123	1.989	39%
	Marie-Curie Actions	10.715	4.361	41%
Total : PEOPLE		10.715	4.361	41%
CAPACITIES	Research Infrastructures	198	88	44%
	Research for the benefit of SMEs	1.030	471	46%
	Regions of Knowledge	84	46	55%
	Research Potential	206	107	52%
	Science in Society	183	90	49%
	Support for development of research policies	27	16	59%
	Activities of International Cooperation	157	60	38%
Total : CAPACITIES		1.885	878	47%
	Fusion Energy	4	3	75%
	Nuclear Fission and Radiation Protection	134	57	43%
Total : EURATOM		138	60	43%
Total		17.861	7.288	41%

Annex 6 – General data on programme outputs

Scientific outcomes. (High figures for research infra!)

Table. *Reported publication in Scientific Articles in Peer Reviewed Journals, related to the FP7 Projects by Priority Area*

Priority Area		Number of Grant Agreements	Projects with at least one publication	Total publications	Publications in High Impact Peer Reviewed Journals	Average publications per Project
COOPERATION	Health	400	344	11.662	6.620	29,16
	Food, Agriculture and Fisheries, and Biotechnology	185	150	2.836	1.220	15,33
	Nanosciences, Nanotechnologies, Materials and new Production Technologies	350	252	4.046	1.982	11,56
	Energy	105	71	791	339	7,53
	Environment (including Climate Change)	216	151	2.896	1.273	13,41
	Transport (including Aeronautics)	280	108	549	166	1,96
	Socio-economic sciences and Humanities	131	86	688	161	5,25
	Space	111	60	693	221	6,24
	Security	79	35	244	39	3,09
	General Activities	11	1	252	57	22,91
	Joint Technology Initiatives	121	15	49	22	0,4
Total : COOPERATION		1.989	1.273	24.706	12.100	12,42
	Marie-Curie Actions	4.361	2.824	12.892	6.219	2,96
Total : PEOPLE		4.361	2.824	12.892	6.219	2,96
CAPACITIES	Research Infrastructures	88	52	3.024	1.303	34,36
	Research for the benefit of SMEs	471	127	352	89	0,75
	Regions of Knowledge	46	8	13	4	0,28
	Research Potential	107	81	1.489	470	13,92
	Science in Society	90	35	169	40	1,88
	Support for the coherent development of research policies	16	1	10	2	0,63
	Activities of International Cooperation	60	10	125	17	2,08
Total : CAPACITIES		878	314	5.182	1.925	5,9
	Fusion Energy	3	2	136	15	45,33
	Nuclear Fission and Radiation Protection	57	35	472	102	8,28
Total : EURATOM		60	37	608	117	10,13
Total		7.288	4.448	43.388	20.361	5,95

Table. Intellectual Property Rights reported in the FP7 Projects by Priority Area

Priority Area		Final Reports	No. of projects with at least one IPR reported	No. of reported Intellectual Property Rights	IPR reported as a Patent Application	
					No.	%
COOPERATION	Health	400	98	284	254	89%
	Food, Agriculture and Fisheries, and Biotechnology	185	34	89	76	85%
	Nanosciences, Nanotechnologies, Materials and new Production Technologies	350	139	368	296	80%
	Energy	105	33	92	89	97%
	Environment (including Climate Change)	216	15	21	17	81%
	Transport (including Aeronautics)	280	32	75	55	73%
	Socio-economic sciences and Humanities	131	0	0		-
	Space	111	7	20	11	55%
	Security	79	9	21	11	52%
	General Activities	11	1	3	3	100%
	Joint Technology Initiatives (Annex IV-SP1)	121	8	12	10	83%
Total : COOPERATION		1.989	376	985	822	83%
	Marie-Curie Actions	4.361	156	268	227	85%
Total : PEOPLE		4.361	156	268	227	85%
CAPACITIES	Research Infrastructures	88	7	34	30	88%
	Research for the benefit of SMEs	471	105	232	152	66%
	Regions of Knowledge	46	0	0		-
	Research Potential	107	12	49	46	94%
	Science in Society	90	0	0		-
	Support for the coherent development of research policies	16	0	0		-
	Activities of International Cooperation	60	1	4		-
Total : CAPACITIES		878	125	319	228	71%
	Fusion Energy - Fusion	3	0	0		-
	Nuclear Fission and Radiation Protection - Fission	57	7	14	14	100%
Total : EURATOM		60	7	14	14	100%
Total		7.288	664	1.586	1.291	81%