

THE 7TH FRAMEWORK PROGRAMME AND A NEW DEAL
FOR EUROPEAN S&T GOVERNANCE

The final chapter of this book starts out by summarising in Section 1 the analysis of the design of the 7th Framework Programme. In accordance with its impact assessment guidelines, the Commission developed its proposal for the new Framework Programme on the basis of a wide range of inputs.

The focus of Section 2 of this chapter is less on the design of the 7th Framework Programme than on its content, examining its expected impacts and the conditions for its success.

Section 3 offers some reflections on what is needed beyond a successful 7th Framework Programme to arrive at a more effective European research policy. The discussion centres on the concept of the European Research Area. In particular, ways in which the European Research Area can be achieved as originally conceived and proposed will be discussed. At the same time, it seems necessary that the concept is redefined and revitalised into a “New Deal” for an effective European research policy.

1. SUMMARISING THE DESIGN OF THE 7TH FRAMEWORK
PROGRAMME

Chapter 1 explored some of the important challenges Europe is facing, the expectations held by the public of S&T in addressing these challenges, and the role that S&T could potentially play. The 7th Framework Programme was designed against the background of Europeans feeling anxious because the continent is experiencing a number of major economic, social, and environmental challenges – or indeed against the background of a Europe turning from a positive into a negative “exception” at global level. Economic growth is slow. Europe’s competitive position is feeble. There are not enough jobs, and not enough of them are in high-skilled and knowledge-intensive growth industries. Europe is still characterised by significant poverty and regional inequality. An important demographic challenge is emerging. Europeans’ health is affected by serious lifestyle and contagious diseases. And the environment is being degraded. Expectations of S&T have never been higher than they are now. Such expectations held of S&T are partially justified. S&T can indeed play an important role in addressing societal economic, social, and environmental challenges. They are the engine of economic growth and competitiveness. The employment effects of S&T are positive. They can play a major role in addressing the consequences of ageing, and the cohesion, public health, and environmental

challenges. S&T are part and parcel of our lives, be they framed in a Knowledge Society or otherwise, and they are the linchpin of a Knowledge Society's emergence.

Chapter 2 showed that if Europe wants to be able to meet the expectations of S&T held by citizens and governments, it needs to tackle a number of key S&T weaknesses currently preventing Europe from achieving its full S&T potential. It not only needs to spend more on research, but also needs to deploy these scarce resources more efficiently and to greater effect through more cooperation and coordination of S&T policies in the EU. This will require further improvement in the EU system of governance for research policy, as well as closer coordination between research policy and other related policies. Furthermore, the diverse relations between citizens and S&T must be recognized and taken into account if Europe is to advance in certain key fields.

Chapter 3 traced how, while the aforementioned S&T weaknesses are by no means new or sudden, the growing perception that something needed to be done emerged from a new policy context, which put the spotlight on knowledge, research, education, and innovation. The Lisbon European Council of March 2000 and its aftermath created a new European research policy context, within which it was possible to pursue a Framework Programme much more ambitious in scale and scope than any past Framework Programme. At Lisbon, European policy-makers recognised unambiguously that to overcome its societal challenges, Europe would have to turn itself into a knowledge-based society. At the same time, it was acknowledged that putting knowledge at the centre would require more and better investment in the knowledge triangle of research, education, and innovation. The objective to invest more in research centred on the 3 per cent objective, while the objective to invest better in research centred on the concept of the European Research Area. After 2000, however, little progress was made towards the achievement of these objectives. This was mainly due to weaknesses in the governance model initially used to implement the Lisbon strategy. This resulted in 2005 in a reform of the open method of coordination, and in a general revaluation of the role of the Union in the achievement of the Lisbon objectives. This recognition of the relative effectiveness of action through the Union spilled over into the debate on Community funding programmes up for renewal, and opened the way for an ambitious 7th Framework Programme.

Having taken stock of these "exogenous" factors – Europe's challenges and the role S&T can play in addressing them, the weaknesses of Europe's S&T system, and, finally, the new policy context – the next three chapters of the book looked at how the Framework Programme was actually conceived so as to respond to these issues. Chapter 4 took stock of the experience gained through the implementation of past Framework Programmes. The accumulated evidence convincingly shows that the Framework Programme has had a clear positive impact on participants' immediate competitive position, but also on their capabilities, behaviour, and ability to compete. It has improved Europe's scientific, technological, and innovative performance. And it has strengthened Europe's human capital, integrated European research infrastructures, and enhanced the coordination of Member State research policies and actions. It has also generated wider economic, social, and environmental benefits.

Chapter 5 explained how in the development of the Commission's 7th Framework Programme proposal, account was taken of the views of outside stakeholders. The extensive stakeholder consultations launched by the Commission were a valuable tool for capturing opinions from a wide range of actors. The resulting stock of information helped to design the proposal around key areas of consensus and to make it responsive to the practical concerns of actors on the ground. For the Commission, the consultations proved how challenging it is to balance the different, often opposing views and to formulate a proposal acceptable to the vast majority of stakeholders.

The focus of Chapter 6 was on European added value, by which all actions included in the 7th Framework Programme have to be characterised, and on the analysis of policy options. It was ensured that all actions proposed for inclusion in the 7th Framework Programme pursued objectives best pursued at European rather than at national/regional level such as (1) pooling and leveraging resources; (2) fostering human capacity and excellence in S&T; and (3) better integration of European R&D. Different policy options were analysed with regard to three issues: the maximisation of the Framework Programme's macro-economic impacts, overcoming the fragmentation of European basic research, and raising the competitiveness of European industry through research and innovation. The analysis pointed out that a much larger Framework Programme would have the largest macro-economic impacts, and that the establishment of a European Research Council and Joint Technology Initiatives constituted the best means to overcome the fragmentation of European basic research and to raise the competitiveness of European industry through research and innovation.

On the basis of all of these inputs, the Commission formulated its 7th Framework Programme proposal, centring on four Specific Programmes. Chapter 7 looked in detail at the inter-institutional legislative process: namely, what happened to the proposal in Council and Parliament after it was adopted by the Commission. In particular, it described how the European decision-making machinery responded to this proposal, and how the Financial Perspectives and other issues influenced the eventual outcome of this process. At this stage, after the first reading, the institutional players appear to share in broad terms the Commission's analysis of the weaknesses of European S&T. In both Council and Parliament, there has been a large measure of agreement on the broad lines of the structure of the 7th Framework Programme, and on its S&T objectives and content. With regard to particular problems, the agreement is less unanimous. The negotiations on the Union's overall budget confirm the ambivalence of current European R&D policy: the funding for the 7th Framework Programme will be 30 per cent less than that initially proposed by the Commission, although representing an increase in average terms vis-à-vis that of the previous Framework Programme of approximately 40 per cent. Regarding the fragmentation and dispersion of research efforts in Europe and the proposed solutions, the institutional actors are positive, at least as far as the classical activities proposed are concerned. However, when it comes to new activities to move beyond mere cooperation towards a true supra-nationalism, the problems are obvious. While

there was strong support for the creation of an ERC, it is no surprise that it was in the discussions on its implementation that the tensions about the organisation of future European S&T became clearest. But with the acceptance of the idea to establish an ERC an important first step has been taken towards a new model of European S&T governance.

2. PERSPECTIVES ON THE 7TH FRAMEWORK PROGRAMME – ITS IMPACTS AND THE CONDITIONS FOR ITS SUCCESS

2.1. The expected impacts of the 7th Framework Programme

The expected impacts of the 7th Framework Programme, though smaller than those of the Commission proposal, are substantially larger than those of a business-as-usual Framework Programme.¹ A good insight into those expected impacts can be obtained by extrapolating on the basis of the actual impacts of past Framework Programmes, and through econometric modelling.

The substantially larger budget for collaborative research will accommodate many more participations by firms, universities, and public-sector research institutes from a wide variety of regions and Member States in a significantly larger number of tightly integrated collaborative research networks and projects of “critical mass”. High quality research that otherwise would not be carried out will be supported under a number of predefined thematic priorities, while sufficient flexibility is retained to respond to emerging scientific trends and societal emergencies. This will strengthen participants’ research capabilities by enhancing their knowledge base, and improving the skills of their staff, while also permanently changing their behaviour (e.g., networking and collaboration) resulting in a better ability to compete. The 7th Framework Programme will also have a large impact on Europe’s scientific, technological, and innovative performance. The extension of the knowledge base will be codified and made explicit through large numbers of high-quality, and mainly intra-European, collaborative scientific publications. The programme will enhance the development and use of new tools and techniques; the design and testing of models and simulations; the production of prototypes, demonstrators, and pilots; and other forms of technological development. The collaborative research projects funded by the 7th Framework Programme will also generate a large number of patents. As a result of their participation in such research projects, firms will be able to realise increased turnover and profitability, enhanced productivity, improved market shares, access to new markets, reorientation of a company’s

¹ Although the co-decision process on the Framework Programme is not yet completed at the time of writing, there was already agreement on its budget following the deal on the Financial Perspectives of April 2006. Cfr. European Commission, *Modified Proposal for a Decision of the European Parliament and of the Council Concerning the Seventh Framework Programme of the European Community for Research, Technological Development and Demonstration Activities (2007 to 2013)*, COM(2005) 119/3 24 May 2005.

commercial strategy, enhanced competitiveness, enhanced reputation and image, and reduced commercial risks.

Similar to the case of collaborative research, the budget will also be boosted to an important extent for human resources actions. Thus many more researchers will be able to participate in top trans-national teams and high-level projects, and benefit from training and knowledge sharing. This will ultimately lead to better R&D, and have a positive impact on the attractiveness of the EU as a place to pursue a scientific career for European and third-country researchers. The actions will provide more researchers than before with an (first) international academic or industrial experience they would not get otherwise. They will gain international research experience, have dedicated time to carry out research, develop research skills, produce scientific publications and patents, and contribute to the development of new technologies. They will generally return home to more responsible positions, taking with them the networks established and reinforced through their fellowship.

Research infrastructure actions will benefit from more resources as well under the 7th Framework Programme. This will provide more researchers with access to unique or outstanding infrastructures in a broad range of disciplines – access they would not have otherwise – and thus contribute to the production of high-quality research. It will also help develop interdisciplinary approaches between several areas, and cooperation between European researchers, while giving a European dimension to several national facilities and, in several cases, organising more efficiently their networking. The programme will also contribute to improving the technical performance of several categories of infrastructures, and thus to enhancing European scientific competitiveness in several fields.

The 7th Framework Programme will also generate wider economic, social, and environmental impacts. Limiting the discussion here to macro-economic impacts, for instance, the 7th Framework Programme can be expected to increase GDP growth, create research and other jobs, raise exports and reduce imports, and increase Europe's R&D intensity (Table C.1).

Beyond the 7th Framework Programme's substantial direct and sometimes quantifiable impacts discussed in the previous paragraphs, it is important to point

Table C.1. 7th Framework Programme macro-economic impacts (deviation from business-as-usual scenario)

	2010	2015	2020	2025	2030
GDP	0.01%	0.05%	0.12%	0.23%	0.37%
Total employment	21.7	57.5	90.7	159.8	285.4
Research employment	14.9	35.8	55.1	80.0	111.6
Extra-EU exports	0.00%	0.04%	0.18%	0.42%	0.72%
Extra-EU imports	0.01%	0.00%	-0.09%	-0.25%	-0.42%
R&D intensity	2.06	2.15	2.24	2.35	2.46

Source: DG Research

Note: For instance, in the year 2030, total GDP will be 0.37 per cent larger when the 7th Framework Programme is implemented than when a business-as-usual Framework Programme is implemented.

also to its considerable indirect and hardly if ever quantifiable effects. In spite of its being a relatively small player in the European research system in monetary terms, the Framework Programme has a large restructuring effect on the European research system, for instance, via its acting as a point of reference for and thus guiding the reorientation of public and private research agendas. A similar restructuring effect can be expected from new Framework Programme initiatives such as the European Research Council and the Joint Technology Initiatives.

2.2. The conditions for the success of the 7th Framework Programme

The various impacts estimated are the impacts that can be achieved if the new Framework Programme is implemented successfully. Yet, its full success is not guaranteed. In order for the 7th Framework Programme to tap its full potential, a number of conditions have to be met.

First and foremost, the partnership and commitment of all actors involved is needed. Of course, the Commission plays an important role when it comes to managing the Framework Programme and implementing the ongoing simplification efforts. But it is not only the Commission which will determine whether the new Framework Programme will achieve the maximum impacts. Its success will also depend on the research community itself – on its readiness to master the fundamental legal requirements for Framework Programme participation; on the industry – on its awareness of the opportunities offered by the Framework Programme; and finally, on the national and regional authorities which collaborate with the Commission to construct conducive framework conditions.

Second, the ongoing initiatives for simplification of Framework Programme application and participation administrative requirements have to be carried through. This will reduce Framework Programme barriers-to-entry, especially for small and medium enterprises and for participants from the new Member States. It will bring into the Framework Programme new capabilities and ideas, and reduce the concentration of Framework Programme participation and the stability across calls and Framework Programmes of networks. It will have a positive impact on dissemination. And it will reverse the alienation of a sizeable share of the scientific community who participated in past Framework Programmes. A first 7th Framework Programme mid-term evaluation is planned for the year 2009. A key issue that will be looked into at that time is programme implementation. Simplification will have to show results by that time.

A third condition concerns programme management. The various management arrangements proposed for the 7th Framework Programme have to deliver. The Commission has successfully managed past Framework Programmes, but it has never had to manage a Framework Programme of such a scale and such a scope. The management of the European Research Council will be externalised. The challenge here is to build up a new executing agency from scratch – with all that it entails in terms of locating premises, hiring staff, establishing procedures, and so on – and at the same time meet the high expectations of the European scientific community by delivering professional results quickly. The scientific management of other Framework Programme components will be kept in-house. The challenge here

is how to safeguard the widely appreciated high quality of scientific management given a much larger budget and a less than proportionate increase in the number of project officers. The partial or complete externalisation of back-office functions under review may help meet this challenge.

A fourth condition concerns the programme's output and impact orientation. The efforts being made to further strengthen this programme dimension have to be carried through. The existence of research and technological uncertainty means that the outcome of research projects cannot be predicted, and that some research projects will not succeed in generating new knowledge. But given the right incentives, the search for new knowledge will be perceived as more urgent and productive by research project participants. Increased efforts will be made to disseminate new knowledge and valorise it by converting it into and capitalising upon scientific and technological outputs. At the same time, actions have to have critical mass, and feedback effects between projects have to be supported. In the end, the concern is with the programme's impact, and time and experience will tell what the most appropriate degree of externalisation is to achieve maximum programme impact.

A fifth condition concerns the programme's responsiveness and the adaptability of the programme's scientific content. The 7th Framework Programme will run over seven years, a very long period of time in the world of S&T. New societal challenges may emerge, and so may new scientific disciplines, thematic priorities, and topics. Content-related flexibility is built into the Framework Programme. But being able to make the correct choices at the most appropriate moments will depend on having at one's fingertips the required strategic intelligence. That means investing in the establishment and maintenance of linkages with the scientific community and society at large, but that also means developing a strong internal monitoring and analytical capability.

A sixth condition concerns horizontal policy coordination. As discussed in Chapter 3, direct support programmes in the field of research should be coordinated with policy initiatives concerning research framework conditions. Research policy should be coordinated with education and innovation policies, that is, with the other "knowledge triangle" policies. And knowledge triangle policies should be coordinated with other, for example structural, policies. The main challenge in the case of the 7th Framework Programme concerns the coordination with innovation policy and that with non-knowledge triangle policies. The Framework Programme used to contain its own innovation activities. That will no longer be the case under the 7th Framework Programme. Innovation activities are now part of a newly developed Competitiveness and Innovation Programme to be managed by the Commission's Enterprise Directorate-General. The Research Directorate-General was involved in the conceptualisation of the new programme. But effective coordination should be ensured during the policy implementation stage too. This is not self-evident, and will have to be ensured in a proactive manner. Even more of a challenge will be the coordination between knowledge and other policies. As we have discussed in the third chapter, the horizontal policy coordination arrangements originally put in place by Lisbon were quite weak. A serious effort is now being made to strengthen these arrangements. Their effectiveness still remains to be seen, however.

A key role in the mitigation of implementation risk can be played by the Framework Programme monitoring system. In view of the implementation of the 7th Framework Programme, this is being revised. First, a renewed effort will be made towards the better collection of data on Framework Programme applicants and participants, and on Framework Programme proposals and projects. Second, the annual monitoring exercise, which used to be carried out by external experts often far removed from the reality of the Framework Programme will be internalised and carried out by high-level Commission officials.

The success of the 7th Framework Programme will have to be judged on the basis of a thorough evaluation. This requires an ambitious and strong Framework Programme evaluation system matching the ambition of the Framework Programme itself. Initiatives being taken in this regard have to be achieved. At the same time a methodological reflection is required to avoid the risk of undervaluation.²

3. PERSPECTIVES BEYOND THE 7TH FRAMEWORK PROGRAMME – TOWARDS A NEW DEAL FOR AN EFFECTIVE EUROPEAN RESEARCH POLICY

If the 7th Framework Programme is a success, a significant contribution will have been made towards remedying the European scientific and technological weaknesses discussed in Chapter 2, that is, the lack of R&D investment, the S&T fragmentation and dispersion, and the lack of horizontal policy coordination. This will put European S&T in a substantially better position to meet the economic, social, and environmental challenges analysed in Chapter 1.

However, even a successful 7th Framework Programme will still only represent a small fraction of Europe's overall public research efforts, and will not by itself eliminate all Europe's S&T weaknesses. To achieve this, a more coherent and effective European research policy is required, encompassing all government efforts across the EU, be they at national, regional, or EU level.

But what is the best way to arrive at a more effective European research policy? The Commission gave an answer to this question in 2000 with the launching of a European Research Area. This visionary concept had two key dimensions: first, its focus on integration, and, next, its emphasis on excellence. Greater coordination

² At an April 2006 conference on the evaluation of research, Luke Georghiou referred to "the risk of undervaluation". He argued that present research evaluation techniques have a tendency to undervalue the contribution of R&D, and that the failure of research ex-post evaluators to appreciate the full extent of both the private and the social returns to R&D is a key reason for the international decline in government investment in research. He even raised the possibility that industry itself may underestimate its own benefits from R&D, particularly under shareholder pressure to show short-term profits. Georghiou's concern was mainly with research evaluation techniques. He argued that present techniques, and particularly surveys (often used in the case of ex-post evaluations of the Framework Programme too), focus on predictable and linear effects while missing or recording only perfunctorily a series of other effects which may be of equal or greater value. He also argued that even where effects are properly identified and/or calculated there is a tendency to underestimate the contribution of public intervention.

and cooperation had to be achieved throughout Europe. More links had to be established between the different players (public authorities, firms, universities, research institutes) at all policy levels (regional, national, Community, inter-governmental) in the European research system. In addition, excellence was supposed to become the core principle on the basis of which all these players would operate and research funds would be allocated.³

Furthermore, the European Research Area initiative identified a list of specific actions required to promote the integration of European S&T and improve its performance. Private research investment had to become more dynamic. The environment for private research investment, R&D partnerships, and high technology start-ups had to be improved by using tax policies, venture capital, and EIB support. Effective tools had to be developed to protect intellectual property, so that innovation and ideas would be adequately rewarded within the new knowledge-based economy. Greater mobility of researchers had to be achieved in Europe. Obstacles to the mobility of researchers had to be removed, and a European dimension introduced into scientific careers. A greater place and role for women in research had to be achieved, and the young had to be given a taste for research and careers in science. Europe had to offer attractive prospects to the best brains, so that high-quality research talent would be retained and attracted. European S&T centres of excellence had to be networked, and virtual ones created. A European approach had to be defined to research facilities. Regions had to play a more important role in the European research effort. And the scientific communities of Western and Eastern Europe had to be better integrated.

Seven years after the launch of the European Research Area, we recognise that progress has been made in terms of the two key dimensions (coordination and excellence). But much remains to be done. Some steps forward were indeed taken towards the integration of European S&T via the Open Method of Coordination, the mutual opening up of national research programmes, and Framework Programme instruments such Networks of Excellence and ERA-Nets. Excellence was indeed accepted as the core principle on the basis of which to work. But the efforts made so far to promote greater coordination and cooperation between S&T players are just a start, and the excellence principle still has to be applied more widely and more rigorously.

While the original European Research Area objectives remain valid today, taking stock of the current situation, a more fundamental observation can be made. As originally conceived, the European Research Area was a rather static concept concerning mainly the S&T input side. It essentially accepted the existing architecture of the European S&T system – the established public authorities and institutions, each with their own roles and responsibilities – and simply focussed on building links between them and funding excellent S&T players, under the assumption that this

³ For instance, in the evaluation of FP proposals, a larger weight was assigned to scientific excellence as an evaluation criterion.

would lead to a higher societal impact of research than under a situation of complete S&T fragmentation and dispersion.

Yet the urgency of realising the Lisbon Agenda is greater than ever. This calls not for a piecemeal raising of effectiveness and impact, but for making effectiveness and impact the key priorities. As a key precondition this means that action should be taken where most effective. This means a reallocation of responsibilities and assumes going beyond the existing structure of the European research system and redesigning, even reinventing, it. A more dynamic approach is needed towards the realisation of the European Research Area.

This calls for a frank and thorough exploration of subsidiarity issues, and of the notion of “added value”. It is important to determine clearly what kind of action is best taken at Community level, and what kind of action is best at regional, national, or intergovernmental level. The debate so far has been confined to European added value. In other words, so far it has been the Union which – confronted with Member States striving to retain their national powers unless given a compelling reason to do otherwise – has had to demonstrate that it is better to implement some actions at Community level than at other policy levels. In order to spend our scarce R&D resources more effectively, there is an urgent need to broaden this debate. The burden of proof needs to be more evenly divided. In addition to European added value, an honest discussion is needed on regional added value, national added value, and intergovernmental added value. In fact, the discussion of different kinds of added value is systemically linked. One cannot hope to really understand European added value if one does not have a clear insight into the added value of other policy levels, the one being the flipside of the other.

This debate on which kind of action to implement at which level, that is, the systematic exploration of the added value, must be evidence-based and must be based on solid data. More generally, the evidence-based approach to policy-making, which has already been embraced by the Union through the implementation of its Better Regulation Action Plan and the application of *ex ante* impact assessment to major legislative initiatives, could be usefully extended to other policy levels.

In order to explore added value and achieve a clear division of labour and true complementarity between different policy levels, it is important to have a clear insight into what is presently being done at each level. At present, however, there is no complete overview of research measures in Europe. While Community research policies are well known in the Member States, and often analysed and assessed there, more complete and consolidated information is needed on the S&T policies implemented by regional and national authorities, which still account for over 90 per cent of Europe’s public R&D expenditure. Some useful initiatives have been taken in this regard (e.g., TrendChart),⁴ but this still gives only a partial picture, and a more exhaustive inventory is needed.

⁴ The European TrendChart on Innovation, a product of the European Commission, measures innovation performances across the European Union. It includes, for example, annual country reports, information on national policy measures and government decisions.

Next, comparative information is needed on the effectiveness of policies at different policy levels. But how to measure this? Existing S&T indicators and datasets cannot provide this kind of information. Within the framework of the S&T benchmarking initiatives launched within the context of the Open Method of Coordination, a wealth of S&T information has been collected over the past few years. New (e.g., composite) S&T indicators have been developed. A serious effort has been made to collect comparable data at the regional, national, and aggregate European levels for both existing and newly developed indicators. And a great multitude of S&T indicator reports have been published at regional, national, and Community levels. However, the purpose of these indicators has been mainly to track progress in terms of S&T inputs or performance. They do not provide us with information on the relative efficiency and effectiveness of implementing an action at one policy level versus another.

That means that a completely new data effort is needed. The first step in this new-generation data effort should consist of the development of new and improved ex-post evaluation methodologies. These should seek to link a particular public research support input with all possible S&T and societal outputs and impacts.⁵ This can only be done if rapid progress is made towards addressing long-standing methodological challenges in the field of ex-post evaluation concerning, for instance, additionality and crowding-in/crowding-out, and attribution. These new evaluation methodologies have to be action-specific. For example, ex-post evaluation methodologies for research infrastructure actions would differ from those for human resources actions. Efforts towards the development of new evaluation methodologies should also be broad-based, involving the Member States as well as the Community so that the results obtained will be credible, legitimate, and broadly supported.

The next step has to consist of both the Member States and the Community systematically applying the newly developed ex-post evaluation methodologies to their complete project portfolios, and then capturing, via a common set of indicators, the relative effectiveness and efficiency of project implementation. By facilitating for the first time a comparison of information across policy levels, this evidence-base would provide a solid foundation for an improved distribution of effort between the different levels.

If successful, this approach would turn research evaluation from an all-too-often bureaucratic exercise of ex-post justification into a real strategic planning tool. Two things are needed to make this a reality. The first is the integration of the European research ex-post evaluation community. A "European evaluation area" has to be achieved, in which both Member States and Community try to make real methodological progress in the field of research ex-post evaluation, and to arrive at broadly supported evaluation approaches. In addition, a further revision is needed of the policy cycle. The role of ex-post evaluation has to be strengthened and its link with policy development tightened.

⁵ For instance, tracing to a particular research project all its scientific and technological outputs and wider impacts.

What is needed is a pan-European knowledge community, not only in the area of ex-post evaluation, but also in socio-economic and scientific and technical foresight. One cannot hope to restructure the European research system and achieve a true European Research Area if there is no common vision of how major societal and S&T challenges will evolve, how scientific disciplines will develop, and how the research system as such will progress. Europe has a long history of activity in this field and a large community of excellent players has built up a wealth of experience and knowledge on these issues. But European foresight suffers from some of the same problems as the European research system. Foresight efforts are fragmented and dispersed, and there is substantial overlap among national initiatives and between national and Community projects. Tackling this requires more effectively linking the different players in this field, and perhaps creating a common institution.

Once pan-European evaluation and foresight communities have been established, and a credible evidence base has been built up, it will be possible to draw solid conclusions, and take bold and courageous political decisions – as indeed Europe has always done at key junctures over the last fifty years.

These are the foundations for a “New Deal” between the Member States and the Community. Its aim is to develop a more coherent and effective European research policy which can have a greater societal impact, and help Europe to tackle the many existing and emerging challenges it is facing. This “New Deal” would involve a more ambitious approach towards the realisation of the European Research Area. It builds upon the solid foundation of the European Research Area concept launched in 2000, and shares its concern about the fragmentation and dispersion of European S&T. But it seeks to go much further by re-designing the architecture of the European research system. Unlike the original ERA initiative, it does not simply promote the establishment of links between existing European S&T players, each with their own existing roles and responsibilities. Instead it proposes a more dynamic and impact-oriented approach towards the completion of the European Research Area. It puts on the agenda the redesign, even the reinvention, of the European research system. It opens the possibility of a significant reallocation of research policy responsibilities between policy levels should available evidence point into that direction. Within this context, it calls for an in-depth debate by the Community and the Member States on the issues of subsidiarity and added value based on solid evidence of relative policy effectiveness and a common vision for the future. It is, above all, important to keep an open mind about the outcome of this debate and inquiry. It could mean an expansion of national or regional activities in some areas. It could lead to an increase in EU-level actions in others. It may even result in a need to build new, common European S&T institutions, whether supranational (in the vein of the ERC) or intergovernmental (in the vein of CERN). The New Deal would mean preparing these decisions together based on solid, shared evidence, and bravely facing the facts about what may need to change. Europe has risen to such challenges in the past. Its ability to do so again could herald a new phase in European S&T.

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GLOSSARY

Absorptive (absorption) capacity: Absorptive capacity is the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends. Absorptive capacity is a function of the firm's prior knowledge. The accumulation of prior knowledge enhances the ability to acquire new knowledge; the diversity of prior knowledge facilitates novel associations and linkages and helps deal with uncertainty. The effect of absorptive capacity is cumulative since it enhances the firm's ability to assimilate and exploit new knowledge and to evaluate the importance of new technological advances. The term was first introduced by Cohen and Levinthal in their 1990 article entitled "Absorptive capacity: A new perspective on learning and innovation" (In: *Administrative Science Quarterly*, Vol. 35, Issue 1, pp. 128–152).

Applied research: Original investigation undertaken in order to acquire new knowledge. Contrary to *basic research*, it is directed primarily towards a specific practical aim. The results of applied research are intended to be valid for a single or limited number of products. The knowledge or information derived from it is often patented but may also be kept secret. (Definition based on Frascati manual, Source: Eurostat)

Article 169 (TEC): It enables the Community to participate in research programmes undertaken jointly by several Member States. The "European and Developing Countries Clinical Trials Partnership" is the first case of application of article 169.

Article 171 (TEC): It allows the Community to set up joint undertakings or any other structure necessary for the efficient execution of Community RTD programmes. Article 171 was applied for the first and only time for the GALILEO Joint Undertaking.

Associated country: A country which has an international agreement with the Community on the basis of which it makes a financial contribution to all or a part of the Framework Programme. In exchange, its institutions participate and get funding on similar conditions as organizations from Member States. Currently the following countries are associated: five Candidate Countries (Bulgaria, Romania, Turkey, Croatia, and Former Yugoslav Republic of Macedonia), as well as Iceland, Israel, Liechtenstein, Norway, and Switzerland. (http://europa.eu/abc/eurojargon/index_en.htm)

Basic research: Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view (contrary to *applied research*). The results of basic research are not generally sold but are usually published in scientific journals. Basic research can be split into two categories: 1) Pure basic research, which is carried out for the advancement of knowledge, with no positive efforts being made to apply the results to practical problems. 2) Oriented basic research, which is carried out with the expectation that it will produce a broad base of knowledge likely to form the background to the solution of recognised or expected current or future problems or possibilities. (Definition based on Frascati manual, Source: Eurostat)

Business enterprise sector: It includes all firms, organisations, and institutions the primary activity of which is the market production of goods or services (other than higher education) for sale, and the private non-profit institutes mainly serving them. The core of the sector is made up of private enterprises. Among these may be found some firms for which R&D is the main activity (commercial R&D institutes and laboratories). It also includes non-profit institutions which are market producers of goods and services other than higher education. (Definition based on Frascati manual, Source: Eurostat)

BRIC-countries: Brazil, Russia, India, and China.

Call for proposals: A legal text calling interested parties to submit proposals for Community-funded projects. The text defines the necessary specifications to prepare and submit a proposal, that is, thematic priorities, *instruments* used, address and other technical means for submission, deadlines, and so on. Calls are published in the *Official Journal* of the EU in all Community languages.

Candidate countries: Romania, Croatia, Bulgaria, Turkey, and Former Yugoslav Republic of Macedonia.

“Capacities” Specific Programme: It elaborates in detail the part of the 7th Research Framework Programme which will enhance research and innovation capacities throughout Europe and ensure their optimal use. This aim will be achieved through optimising the use and development of research infrastructures, supporting the development of regional research-driven clusters, horizontal actions and measures in support of international co-operation, and so on.

Co-decision procedure (article 251 TEC): Introduced by the Treaty of Maastricht for the adoption of the EC Framework Programme, it gives the European Parliament equal power with the Council of Ministers in the legislative process. The procedure comprises one, two, or three readings. (http://europa.eu/scadplus/glossary/index_en.htm)

Collaborative Projects: Support to Framework Programme-funded research projects carried out by consortia with *participants* from different countries. The size, scope, and internal organisation of projects can vary from field to field and from topic to topic. Projects can range from small- or medium-scale focused research actions to larger integrating projects which mobilise a significant volume or resources for achieving a defined objective. (http://cordis.europa.eu/fetch?ACTION=D&SESSION=&DOC=1&TBL=EN_DOCS&RCN=6797&CALLER=FP7_LIB)

Consortium: All the *participants* in the same project. The majority of FP6 projects are multi-partner projects requiring a minimum number of participants from different *Member States* or *Associated Countries*.

Consortium agreement: An agreement that *participants* conclude amongst themselves for the implementation of a research activity. It allows the participants to determine the detailed administrative and management provisions necessary to carry out their research project but it cannot negate the provisions established by the EC contract or the *rules for participation*.

Constant prices: Values that are expressed in such a way as to enable comparisons to be made across a period of years. To measure real national income, economists value total production in each year at a constant set of prices that applied in a chosen base year. (Source: <http://www.bized.ac.uk/cgi-bin/glossarydb/search.pl>)

“Cooperation” Specific Programme: It elaborates in detail the part of the 7th Research Framework Programme which will support transnational cooperation on policy-defined themes. It will provide support to cooperation at every scale across the European Union and beyond, in a number of thematic areas corresponding to major fields of the progress of knowledge and technology.

Co-operative research projects (CRAFT): Framework Programme-funded projects whereby a number of Small or Medium-Sized Enterprises (SMEs) assign scientific and technological research activities to RTD performers (e.g. to research centres or universities). These activities may also be carried out by innovative and high-tech SMEs in cooperation with research centres and universities. The SMEs retain ownership of the results.

Coordination Actions: One of the *instruments* to implement Framework Programme-funded projects. They are intended to promote and support the networking and coordination of research and innovation activities. They will cover the definition, organisation, and management of joint or common initiatives as well as activities such as the organisation of conferences, meetings, the performance of studies, exchange of personnel, the exchange and dissemination of good practices, setting up common information systems and expert groups.

Coordinator: One *participant* appointed by all participants of a *consortium* and accepted by the Commission, having specific additional obligations arising out of the contract, such as distributing Community funds to other participants, reporting to the Commission, and so on.

CORDIS: The Community Research and Development Information System (CORDIS) (<http://www.cordis.lu>) is a huge Internet information system comprising information on past and ongoing projects, current calls for proposals, partner search facilities, an electronic proposal submission system (EPSS), and many more features.

COST: An intergovernmental framework for European cooperation in the field of S&T (<http://cost.cordis.lu/src/home.cfm>), allowing the coordination of nationally funded research on a European level. COST actions cover basic and pre-competitive research as well as activities of public utility.

CREST: The Scientific and Technical Research Committee (CREST), composed of representatives of Member States, is a high-level advisory board to the Commission and the Council in the field of RTD.

Coreper: The French acronym for the Permanent Representatives Committee. Within the Council of Ministers, it is the forum of the Member States' Ambassadors to the European Union ("Permanent Representatives"). It is responsible for preparing the decision-making of Ministers themselves. Research items are dealt with by Coreper I, which consists of the Deputy Permanent Representatives. Coreper II is composed by the Permanent Representatives themselves. (http://europa.eu/scadplus/glossary/index_en.htm)

Current prices: Values that are expressed in the prices that exist at present. (Source: <http://www.bized.ac.uk/cgi-bin/glossarydb/search.pl>)

Directorate General (DG): An administrative unit of the Commission, comparable with national ministries. Currently the Commission is divided into about 40 DGs (and comparable services). Five of them are involved in the management of FP6: DG Research (RTD), DG Information Society (INFOS), DG Transport and Energy (TREN), DG Enterprise (ENTR), and DG Fisheries (FISH).

Direct action: A research activity carried out by the *JRC* directly on behalf of and in the interest of the institutions of the EU. Results are owned by the European Communities.

EFTA-countries: Iceland, Norway, Switzerland, and Liechtenstein.

ERA-NET: The principal means for the FP6 to support the coordination of national and regional research programmes. The scheme is financed as a part of the *specific programme* "Integrating and strengthening the European Research Area".

EU-15 Member States: Before 1 May 2004, the European Union consisted of 15 Member States (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom).

EU-25 Member States: The current 25 Member States of the European Union are Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

Eurobarometer surveys: Since 1973, the European Commission has been monitoring the evolution of public opinion in the Member States, thus helping the preparation of its legislation and the evaluation of its work. The surveys and studies address major topics concerning European citizenship such as enlargement, health, culture, information technology, environment, the Euro, and so on. A Standard Eurobarometer survey consists of approximately 1000 face-to-face interviews per Member State. Reports are published twice yearly. (http://ec.europa.eu/public_opinion/index_en.htm)

EURATOM: The European Atomic Energy Community (EURATOM) is one of the building blocks of the EU. In relation to Community research policy, the EC Framework Programme is complemented by an EURATOM Framework Programme under the Euratom Treaty which covers training and research activities in the nuclear sector.

EUREKA: A pan-European network for market-oriented, industrial R&D. EUREKA supports the competitiveness of European companies through international collaboration, in creating links and networks of innovation. The objective is to bring high quality research and development efforts to the market and to use the multiplying effects of cooperation. (<http://www.eureka.be/>)

European Research Advisory Board (EURAB): An independent advisory committee created by the Commission to provide advice on the design and implementation of EU research policy. EURAB is made up of 45 top experts from EU countries and beyond.

European Research Area (ERA): A general concept proposed by the Commission and endorsed by the European Parliament and Council in 2001 to overcome the fragmentation of European research and innovation efforts. The concept comprises organising cooperation at different levels, coordinating national or European policies, networking teams and increasing the mobility of individuals and ideas. FP6 is an important tool in support of the ERA, alongside national efforts and other European cooperative research activities.

European Research Council (ERC): Introduced in FP7, it will be the first pan-European funding agency for *frontier research*. Early stage as well as fully established investigators from across Europe will be able to compete for grants with scientific excellence as the sole criterion for funding. The independent Scientific Council will direct the ERC's scientific operations and ensure that its support is in accordance with the highest standards of science and scholarship. (http://ec.europa.eu/erc/index_en.cfm)

European Space Agency (ESA): Established in 1975, it is an intergovernmental organisation dedicated to the exploration of space, currently with 17 Member States. Its mission is to shape the development of Europe's space capability. By coordinating the financial and intellectual resources of its members, it can undertake programmes and activities far beyond the scope of any single European country. (For more information see: <http://www.esa.int/export/esaCP/index.html>)

Financial perspective: It forms the framework for Community expenditure over a period of several years. It is the product of an inter-institutional agreement between the European Parliament, the Council, and the Commission, and indicates the maximum volume and the composition of the foreseeable Community expenditure. It is adjusted annually by the Commission to take account of prices and the development of Community GNP. To date, four inter-institutional agreements of this type have been concluded, the first in 1988, the second in 1992, the third in 1999, and the fourth in 2006: the 1988–92 financial perspective (Delors I package), the 1993–99 financial perspective (Delors II package), the 2000–06 (Agenda 2000), and the 2007–13 financial perspective. (For more information see http://ec.europa.eu/budget/documents/multiannual_framework_en.htm) (http://europa.eu/scadplus/glossary/index_en.htm)

Framework Programme (FP): Since 1984, research and innovation activities of the EU are grouped in one big multi-annual programme, the Framework Programme for Research and Technical Development. While FP1–FP6 were conceived for a period of four years, FP7 is synchronised with the duration of the EU's *financial perspective* and covers the period 2007–2013. The FPs are elaborated and proposed by the Commission and have to be adopted by the European Parliament and the Council in co-decision. They are further elaborated by Specific Programmes which are implemented in detail by *Work Programmes*. (For further information see <http://europa.eu.int/comm/research/why.htm>)

Framework Programme ex-post evaluation system: Introduced in 1994, its two main components are yearly monitoring exercises and five-yearly in-depth assessments (the so-called “Five-Year Assessments”) carried out overall and usually also at specific programme level. The annual monitoring exercise is intended to enable a quick response to issues arising from ongoing programme implementation.

The objective of the Five-Year Assessments is to provide input for policy formulation on the basis of feedback obtained from programme implementation. Both annual monitoring and Five-year Assessment rely to a great extent on panels of independent experts making use of studies carried out by professional evaluators.

Frontier research: The term reflects a new understanding of *basic research*, introduced in FP7. On the one hand it denotes that basic research in science and technology is of critical importance to economic and social welfare, and on the other that research at and beyond the frontiers of understanding is an intrinsically risky venture, progressing in new and most exciting research areas, and is characterised by an absence of disciplinary boundaries. (http://ec.europa.eu/erc/index_en.cfm?p=3_glossary)

Government budget appropriations or outlays on R&D (GBAORD): All appropriations allocated to R&D in central government budgets. Data on government R&D appropriations therefore refer to budget provisions, not to actual expenditure, that is, GBAORD measures government support for R&D using data collected from budgets. (Source: Eurostat)

Gross domestic expenditure on R&D (GERD): Total intramural expenditure on R&D performed on the national territory during a given period. GERD includes R&D performed within a country and funded from abroad but excludes payments made abroad for R&D. (Source: Eurostat)

Gross Domestic Product (GDP) at market prices: This aggregate represents the result of the production activity of resident producer units. It corresponds to the economy's output of goods and services, less intermediate consumption, plus taxes linked to imports. The sum of the regional values of the GDP at market prices might differ from the national values for some countries. (Source: Eurostat)

Gross National Income (GNI): GDP less net taxes on production and imports, less compensation of employees and property income payable to the rest of the world plus the corresponding items receivable from the rest of the world. In other words, GDP less primary incomes payable to non-resident units plus primary incomes receivable from non-resident units. (Source: Eurostat)

Higher education sector: It is composed of all universities, colleges of technology, research institutes, and other institutes of post-secondary education. While this definition describes the general coverage of the sector, it is difficult to provide clear guidelines which ensure internationally comparable reporting of data because it is not backed by the System of National Accounts (SNA). As its definition is based on mixed criteria, it is particularly susceptible to varying interpretation resulting from national policy preoccupations and definitions of the sector. (Source: Eurostat)

“Ideas” Specific Programme: It elaborates in detail the part of the 7th Research Framework Programme which deals with investigator-driven research based on initiatives of the research community. The “Ideas” Specific Programme will create the *European Research Council*, and provide its source of funding.

Impact Assessment: Since 2003, all draft EU legislation has to be accompanied by a report which assesses the expected impacts of the proposal in question on the economy, society, and the environment. Impact Assessment (IA) is part of the so-called “Better Regulation Package” which is designed to cut red-tape, to tackle excessive regulation, and to help strike the right balance between the costs and the benefits of legislation. As a method, it identifies the main options for achieving the objective and analyses their likely impacts in the economic, environmental and social fields. It outlines advantages and disadvantages of each option and examines possible synergies and trade-offs. The 7th Framework Programme is the first FP to be accompanied by an in-depth IA report. (http://ec.europa.eu/governance/impact/index_en.htm).

Indirect action: Research and other activities carried out by legal entities (e.g. enterprises, research institutions, universities, etc.) in their own interest, with funding by the EU *Framework Programme*. Most of the indirect actions are based on shared costs, that is, the Community contribution covers a percentage of the overall costs. Results are, in general, owned by the institutions carrying out the actions. The bulk of FP6 is implemented by indirect actions (for comparison see *direct action*).

Instrument: The different mechanisms for indirect Community intervention to implement FP-funded activities (in other words, the different types of projects). The range of instruments in FP6 covers research and development, demonstration and innovation activities, integrating activities, special actions for SMEs, fellowships for individuals, support for access to large research infrastructures, and so on.

Integrated Project (IP): One of the new *instruments* of FP6. An Integrated Project is a transnational multi-partner project with the main aim to generate knowledge in the priority thematic areas of FP6. Integrated Projects have to include R&D activities and can in addition have demonstration, training, and innovation-related activities.

Intellectual Property Rights (IPR): They cover all aspects of owning, protecting, and giving access to knowledge and pre-existing know-how.

Interactive Policy Making initiative (IPM): An initiative by the European Commission to collect feedback from citizens, consumers, and businesses in order to better understand how they perceive and what they expect from Community policies. It consists of two Internet-based instruments (Feedback mechanism and Online Consultation Mechanism) which are both available via the “Your Voice in Europe” webportal, developed in the context of IPM and is the Commission’s “single access point” for consultations. (http://ec.europa.eu/yourvoice/ipm/index_en.htm)

Joint Research Centre (JRC): As a service of the European Commission, the mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation, and monitoring of EU policies. It functions as a reference centre of science and technology for the Union. The JRC has a network of research institutes in different Member countries (Belgium, Germany, Italy, the Netherlands, and Spain). Its activities are financed by the *Framework Programme* via the *direct actions*.

Labour productivity: Labour productivity is defined as GDP (in PPS) per hour worked. According to the growth accounting methodology, labour productivity can be decomposed into capital deepening and multi-factor productivity. (Source: Eurostat)

Lisbon strategy: At the European Council Meeting in Lisbon in March 2000, the EU’s political leaders set a new goal for the EU in order to be able to compete with other major world players: to become, within a decade, “the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion”. The “Lisbon strategy” covers such matters as research, education, training, Internet access, and online business. It also covers reform of Europe’s social protection systems, which must be made sustainable so that their benefits can be enjoyed by future generations. Every spring the European Council meets to review progress in implementing the Lisbon strategy. (http://europa.eu/abc/eurojargon/index_en.htm)

Marie Curie Actions: The main objective of the FP’s Marie Curie Actions is to strengthen training, the career prospects, and mobility of European researchers in order to provide support for the development of world-class human resources. Under FP7, special focus will be given to skills and career development, increasing mobility between university and industry, and strengthening links with national systems.

NEMESIS: The NEMESIS model is a large-scale econometric model at the macro-level and sectoral level, which has been built by a Community-funded *consortium* of European research institutes. It comprises roughly 70,000 equations. The model can be used for several purposes, which include the assessment of structural (mainly R&D and environmental) policies, the study of the short- and medium-term consequences of a wide range of economic policies, short- and medium-term forecasting (up to 8 years) at the macro-level and sectoral level, and building long-term baseline scenarios (up to 30 years). More information on NEMESIS can be found on <http://www.nemesis-model.net>.

Network of Excellence (NoE): A new *instrument* introduced in FP6 to overcome the fragmentation of the European research landscape with the objective to strengthen European excellence in a given area. Its purpose is to reach a durable restructuring/shaping and integration of efforts and institutions (laboratories, departments, units, teams, etc.) in areas where this is necessary.

New instruments: The specific aim of FP6 is not just to fund good research but also to have a structuring and coordinating effect on the European Research Area (see *ERA*), and requires the application of new types of projects (new mechanisms for indirect Community intervention) bringing together a critical mass of resources and leading to lasting integration of research capacities. The three new instruments are *Integrated Projects*, *Networks of Excellence* and the application of *Article 169*.

One-stage procedure: Within this procedure of proposal submission and evaluation in FP6, a full proposal has to be submitted immediately and will be the basis for evaluation and selection of projects to be funded (see also *two-stage procedure*).

Open method of coordination (OMC): A relatively new and intergovernmental means of governance in the EU, based on the voluntary cooperation of Member States. It rests on soft law mechanisms such as guidelines and indicators, benchmarking and sharing of best practice, not on official sanctions for laggards. Rather, the method's effectiveness relies on a form of peer pressure and naming and shaming, as no Member State wants to be seen as the worst in a given policy area. The OMC was first applied in EU employment policy, as defined in the Amsterdam Treaty of 1997. It was officially defined and endorsed at the *Lisbon* Council for the realm of a broader fields of policies, among which is research. Since then it has been applied in the European employment strategy, pensions, immigration, education and culture, and asylum, and its use has also been suggested for health as well as environmental and research affairs (such as the 3% objective).

Participant: Legal entities in FP-funded projects contributing to an *indirect action* and having rights and obligations with regard to the Community and to one another under the terms of the *Rules for Participation*. Under the contract with the Community, participants are referred to as contractors.

Peer review: The *evaluation* of proposals with the help of independent external experts (peers). For FP6, the procedures for the evaluation of proposals are described in detail in a Commission decision on "Guidelines on proposal evaluation and selection procedures".

"People" Specific Programme: It elaborates in detail the part of the 7th Research Framework Programme which deals with support of individual researchers. The "People" Programme will strengthen the human potential in R&D in Europe by putting into place a set of *Marie Curie* actions, addressing researchers at all stages of their career.

Proportionality principle: Alongside *subsidiarity* a major principle governing the exercise of powers within the Community. By virtue of this principle, action taken by the Union, in terms of its form and content, does not exceed what is required to achieve the objectives set out in the Treaties. (http://europa.eu/scadplus/constitution/subsidiarity_en.htm)

Project evaluation: The process of assessing the quality of proposals and arranging them in a ranked list to prepare the decision on the selection of projects to be funded. For FP6, evaluation procedures are described in the "Guidelines on Proposal Evaluation and Selection Procedures".

Purchasing Power Standards (PPS): Financial aggregates are sometimes expressed in Purchasing Power Standards, rather than ecu/euro based on exchange rates. PPS are based on comparisons of the prices of representative and comparable goods or services in different countries in different currencies on a specific date. (Source: Eurostat)

Research and experimental development (R&D): R&D comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture, and society and the use of this stock of knowledge to devise new applications. This term covers three activities: *basic research*, *applied research* and experimental development (Definition based on Frascati manual, Source: Eurostat)

Researchers: Professionals engaged in the conception or creation of new knowledge, products, processes, methods, and systems, and in managing the projects concerned. Included in this are managers and administrators engaged in the planning and management of the scientific and technical aspects of a researcher's work, as well as postgraduate students engaged in R&D. (Source: Eurostat)

R&D intensity: Gross Domestic Expenditure on R&D (GERD) expressed as a percentage of Gross Domestic Product (GDP). (Source: Key Figures, 2005)

Rules of Participation for the Framework Programme: They set out the framework that governs the relationship between the Commission and the institutions that *participate* in the programme, covering aspects such as procedures for *calls for proposals*, types of grants, levels of financing, *consortia* composition, the *evaluation* process, financial management of projects, and dissemination of project results. The Rules of Participation are adopted by the European Parliament and the Council in co-decision upon a proposal from the Commission (art. 167 TEC).

Small and medium-sized enterprises (SMEs): Enterprises having fewer than 250 employees and with either an annual turnover of no more than ECU 40 million or a balance sheet total of no more than ECU 27 million. (Source: Eurostat)

Specific Support Actions (SSA): As an *instrument* of FP6, they are intended to support its implementation and may also be used to help prepare for future EU research policy activities. Within the priority thematic areas, they involve, for example, conferences, studies, scientific awards, working groups, dissemination activities, or a combination of these. They are also intended to stimulate the participation of small research teams, SMEs as well as organisations from the candidate countries – in the activities of the priority thematic areas, especially through *networks of excellence* and *Integrated Projects*.

Specific Targeted Innovation Projects (STIP): As multi-partner innovation projects, their purpose is to support activities exploring, validating, and disseminating new innovation concepts and methods at European level. The Community contribution is paid as a *grant to the budget* (percentage of total costs of the project).

Specific Targeted Research Projects (STREP): As multi-partner research or demonstration projects, their purpose is to support RTD activities of a more limited scope than *Integrated Projects*. The Community contribution is paid as a *grant to the budget* (percentage of total costs of the project). STREP are used in implementing the priority thematic areas, in areas anticipating S&T needs, in specific international cooperation research activities, and in research activities developing harmonious relations between science and society.

Stability and Growth Pact: To be seen against the background of the third stage of economic and monetary union (EMU), which began on 1 January 1999. Its aim is to ensure that the Member States continue their budgetary discipline efforts once the single currency has been introduced. In the medium term the Member States have undertaken to pursue the objective of a balanced or nearly balanced budget. Along the same lines, States not taking part in the third stage of EMU are required to submit a convergence programme. The Stability and Growth Pact opens the way for the Council to penalise any participating Member State which fails to take appropriate measures to end an excessive deficit. (http://europa.eu/scadplus/glossary/index_en.htm)

Stakeholder: Any person or organisation with an interest in or affected by EU legislation and policy-making is a “stakeholder” in that process. The European Commission makes a point of consulting as wide a range of stakeholders as possible before proposing new legislation or new policy initiatives. (http://europa.eu/abc/eurojargon/index_en.htm)

Subsidiarity principle: Alongside *proportionality*, a major principle governing the exercise of powers within the Community. It means that EU decisions must be taken as closely as possible to the citizen. In other words, the Union does not take action (except on matters for which it alone is responsible) unless EU action is more effective than action taken at national, regional, or local level. (http://europa.eu/abc/eurojargon/index_en.htm)

Third country: A country which is neither a Member State nor an Associated country and which falls in any of the following categories: Candidate countries; countries neighbouring the EU; Mediterranean partner countries; Western Balkans and the Newly Independent States; developing countries; emerging economies.

Technology Platforms: Introduced in FP7, they will bring together companies, research institutions, the financial world, and regulatory authorities at European level to define a common research agenda which should mobilise a critical mass of – national and European – public and private resources. This approach has been, or will be, adopted in areas such as energy (hydrogen technology, photovoltaic solar energy), transport (aeronautics), mobile communications, embedded systems, and nanoelectronics. Often, it will be possible to implement the agenda by means of *Integrated Projects*. A possible framework for their implementation is a structure based on *article 171 TEC (Joint Undertaking)*.

Thematic priorities/areas: Every Framework Programme provides support for transnational cooperation at every scale across the EU and beyond, in a number of thematic areas corresponding to major fields of the progress of knowledge and society, where research must be strengthened to address European social, economic, environmental, and industrial challenges. The nine themes determined for EU action in the FP7 proposal are (a) Health; (b) Food, Agriculture, and Biotechnology; (c) Information and Communication Technologies; (d) Nanosciences, Nanotechnologies, Materials and new Production Technologies; (e) Energy; (f) Environment (including Climate Change); (g) Transport (including Aeronautics); (h) Socio-economic Sciences and Humanities; and (i) Security and Space.

Triadic Patents: The set of patented inventions for which protection has been sought at all three major patent offices (the European Patent Office – EPO, the US Patent and Trademark Office – USPTO, and the Japanese Patent Office – JPO). The country of origin is defined as the country of the inventor. The advantage of triadic patents is that they can eliminate the “home advantage effect”. They may also be associated with patents of a higher expected commercial value, since it is costly to file through three patent systems. However, it is also likely that they tend to reflect the patenting activity of larger companies who seek, and can afford, broader international protection (Source: Key Figures, 2005)

Two-stage procedure: This submission and evaluation procedure of FP6-funded projects includes a first step where a short outline proposal is to be submitted and evaluated, followed by a second step of submission and evaluation of a full proposal only for the outline proposals evaluated positively. The application of this procedure will be announced in the *work programmes* and in the *calls for proposals* (see also *one-stage procedure*).

Work Programme: Plans drawn up by the Commission for the implementation of the *specific programmes* of the Framework Programme. They comprise detailed descriptions of the activities (thematic priorities, *instruments* used, evaluation procedures and criteria, deadlines, roadmaps) and are revised at least annually. They provide all information necessary to launch calls for proposals.

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