Proposal for a Decision of the European Parliament and of the Council concerning the multiannual framework programme 2002-2006 of the European Community for research, technological development and demonstration activities aimed at contributing towards the creation of the European Research Area

(2001/C 180 E/11)

(Text with EEA relevance)


(Submitted by the Commission on 26 February 2001)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 166(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty

Whereas:

(1) Article 163 of the Treaty gives the Community the objective of strengthening the scientific and technological bases of Community industry and encouraging it to become more competitive at international level, while promoting research activities deemed necessary by virtue of other Community policies.

(2) Pursuant to Article 165 of the Treaty, the Community and its Member States are required to coordinate their research and technological development activities so as to ensure that national policies and Community policy are mutually consistent.

(3) Article 166 of the Treaty provides for the adoption of a multiannual framework programme setting out all Community research, technological development and demonstration (RTD) activities.

(4) In 2000 the Commission submitted two communications, respectively on the prospects for and the objectives of creating a European Research Area (¹), and on making a reality of the European Research Area and guidelines for EU research activities in the period 2002-2006 (²). In 2000 the Commission also submitted a communication on 'Innovation in a knowledge-driven economy' (³).

(5) The European Councils in Lisbon in March 2000 and Santa Maria de Feira in June 2000 adopted conclusions aimed at the rapid establishment of a European research and innovation area with a view to job creation and economic growth.

(6) The European Parliament (⁴)(⁵), the Council (⁶)(⁷), the Economic and Social Committee (⁸) and the Committee of the Regions (⁹) have also supported the creation of the European Research Area.

(7) On 19 October 2000 the Commission submitted the conclusions of the external assessment of the implementation and results of the Community activities carried out in the five years preceding that assessment, accompanied by its observations (¹⁰).

(8) It is therefore necessary to adopt a framework programme for the period 2002-2006 capable of exercising a structuring effect on research and technological development in Europe and making a significant contribution to bringing about the European Research Area.

(9) In accordance with Article 166(1) of the Treaty, it is necessary to set the scientific and technological objectives and priorities for the activities envisaged, the maximum overall amount, the detailed rules for the Community's financial participation in the programme for the period 2002-2006, as well as the respective shares for each of the activities envisaged, and to indicate the broad lines of the activities in question, while respecting the objective of protecting the financial interests of the Community.

(10) The Joint Research Centre is called on to contribute to the implementation of the framework programme, in particular in those areas in which it can offer objective and independent expertise and in which it can play a role in the implementation of other Community policies.

---

(11) Research activities carried out within the framework programme should respect fundamental ethical principles, notably those which appear in the Charter of Fundamental Rights of the European Union.

(12) Following the Commission Communication ‘Women and Science’ (1) and the Resolutions of the Council (2) and the European Parliament (3) on this theme, an action plan is being implemented in order to reinforce and increase the place and role of women in science and research.

(13) The Commission should submit regular progress reports on the implementation of the framework programme for 2002-2006 and, in good time and before submitting its proposal for the next framework programme, have an independent assessment carried out of the implementation of the activities undertaken.

HAVE DECIDED AS FOLLOWS:

Article 1

1. A multiannual framework programme for Community research, technological development and demonstration activities, hereinafter referred to as the ‘framework programme 2002-2006’ is hereby adopted for the period 2002-2006.

2. The framework programme 2002-2006 shall comprise all Community activities envisaged in Article 164 of the Treaty.

3. Annex I sets out the scientific and technological objectives and the related priorities and indicates the broad lines of the activities envisaged.

Article 2

1. The maximum overall amount for Community financial participation in the entire framework programme 2002-2006 shall be EUR 16,270 billion: the proportion assigned to each of the activities is fixed in Annex II.

2. The detailed rules for financial participation by the Community shall be governed by the Financial Regulation applicable to the General Budget of the European Communities, supplemented by Annex III.

Article 3

All the research activities carried out under the framework programme 2002-2006 must be carried out in compliance with fundamental ethical principles.

Article 4

Progress with implementing the framework programme 2002-2006, and in particular progress towards achieving its objectives and meeting its priorities, shall be presented in detail in the report to be published by the Commission each year pursuant to Article 173 of the Treaty.

Article 5

Before submitting its proposal for the next framework programme, the Commission shall have an assessment carried out by independent high-level experts of the implementation of Community activities during the five years preceding that assessment. The Commission shall communicate the conclusions thereof, accompanied by its observations, to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.

Article 6

The framework programme 2002-2006 is open to the participation of:

— the EEA countries, in accordance with the conditions established in the EEA agreements;

— the central and eastern European candidate countries (CEEC), in accordance with the conditions established in the Europe Agreements, in the additional protocols thereto and in the decisions of the respective Association Councils;

— Cyprus, Malta and Turkey, on the basis of bilateral agreements to be concluded with these countries;

— Switzerland and Israel, on the basis of bilateral agreements to be concluded with these countries.

(1) COM(1999) 76.
(3) Resolution of 3 February 2000, PE 284.656.
ANNEX 1

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND BROAD LINES OF THE ACTIVITIES

Activities under the framework programme for research and technological development (2002-2006) will be carried out in accordance with the three general objectives set out in the Treaty:

— strengthening the scientific and technological bases of Community industry;
— encouraging it to become more competitive;
— promoting research activities deemed necessary by virtue of other Chapters of the Treaty.

In order to achieve these objectives more effectively, the framework programme will be restructured around three targets:

1. integrating European research;
2. structuring the European Research Area;
3. strengthening the foundations of the European Research Area.

The activities carried out in order to achieve the last two targets are intended to structure various dimensions of the European Research Area that are closely connected with research and constitute its environment, as well as helping to establish or consolidate the foundations underpinning its operation. They will therefore be implemented across the whole field of science and technology.

The activities carried out to further the first objective, which will represent the bulk of the efforts deployed under the framework programme, are intended to integrate research efforts and activities on a European scale. They will be carried out:

— in a limited number of priority thematic areas exclusively by means of strongly integrating and powerful instruments: networks of excellence, integrated projects and EU participation in national research programmes implemented jointly pursuant to Article 169 of the Treaty;
— in areas related to the anticipation of EU science and technology needs in the form of certain specific needs of EU policies or new emerging needs;
— in the field of science and technology as a whole in the case of complementary research activities for SMEs.

International cooperation activities will be an integral part of the activities carried out under the first target of the framework programme. They may take the form:

— of initiatives aimed at securing for Europe a leading role in international research efforts on global issues, and ensuring a coherent contribution by Europe to these;
— of integrated bilateral cooperation activities with third countries (1) or groups of third countries;
— of participation of third country researchers and organisations in projects and networks in areas of particular interest to those countries.
— as regards anticipating EU science and technology needs, of specific cooperation activities with certain third countries or groups of third countries.

As a fundamental and general principle, the rule of support on the basis of competitive calls for proposals and the evaluation of the scientific and technological quality of those proposals by means of peer review will be used to implement the bulk of the activities under the framework programme.

(1) Third countries: countries that are not members of the EU and are not associated with the Framework Programme. The countries associated with the Framework Programme, whose organisations and researchers can, by virtue of this, participate in Framework Programme activities under the same conditions as those of the Member States of the EU are: the European Economic Area countries, the candidate countries, Switzerland and Israel.
1. INTEGRATING EUROPEAN RESEARCH

1.1. Priority thematic areas of research

The activities carried out under this part of the framework programme are intended to assemble a critical mass of resources and support a high level of integration of research capacities in Europe in areas in which this is especially necessary on account of the particular importance of those areas for the competitiveness of European industry or the major political and social implications of the issues in question.

Seven priority thematic areas have been selected.

1.1.1. Genomics and biotechnology for health

Objective

The activities carried out in this area are intended to help Europe exploit, by means of an integrated research effort, breakthroughs achieved in decoding the genomes of living organisms, more particularly for the benefit of public health and citizens and to increase the competitiveness of the European biotechnology industry.

Justification of the effort and European added value

‘Post-genomic’ research based on analysis of the human genome and genomes of model (animal, plant and microbial) organisms, will culminate in numerous applications in various sectors, and notably in the development of new diagnostic tools and new treatments capable of helping to combat diseases that are not at present under control, offering major potential markets.

However, this work requires considerable and sustained financial outlay. In the United States, public and private spending on post-genomic research is rising steadily and significantly: nearly 2 billion dollars of public-sector funding per annum, essentially managed by the NIH (1) (the total budget for which will increase by 14.4% in 2001) and twice as much industrial funding.

Europe's spending on research is at present much lower and less coherent. The launching of publicly funded research programmes on post-genome research in several Member States is a big step in the right direction. All in all, however, the efforts made are inadequate and dispersed.

European industry also spends much less on research than US industry does: 70% of genomics companies are located in the United States and a substantial and increasing proportion of European private-sector investment is made in that country.

To enable the EU to improve its position in this area and benefit fully from the economic and social spin-offs of the expected developments, it is necessary both to increase investment significantly and integrate the research activities conducted in Europe within a coherent effort.

Actions envisaged

The Community activities carried out to this end will address the following aspects:

— Fundamental knowledge and basic tools for functional genomics:
  — gene expression and proteomics;
  — structural genomics;
  — comparative genomics and population genetics;
  — bioinformatics;

— Application of knowledge and technologies in the field of genomics and biotechnology for health:
  — technological platforms for the development of new diagnostic, prevention and therapeutic tools;
  — support for innovative research in genomics start-up companies.

— Application of medical genomics knowledge and technologies in the following fields:
  — combating cancer, degenerative diseases of the nervous system, cardiovascular diseases and rare diseases;

(1) National Institutes of Health
— combating resistance to drugs;

— studying human development, the brain and the ageing process.

A broader approach will be pursued with regard to combating the three poverty-linked infectious diseases (Aids, malaria and tuberculosis) which have priority in terms of disease control at EU and international level.

1.1.2. Information Society technologies

Objective

The activities carried out in this area, pursuant to the conclusions of the Lisbon European Council and the objectives of the e-Europe initiative, are intended to stimulate the development in Europe of technologies and applications at the heart of the creation of the Information Society in order to increase the competitiveness of European industry and allow European citizens in all EU regions the possibility of benefiting fully from the development of the knowledge-based society.

Justification of the effort and European added value

At the dawn of the 21st century, information and communication technologies are revolutionising the functioning of the economy and society, and are generating new ways of producing, trading and communicating. The effort devoted to these technologies in Europe is still insufficient, particularly when compared with the United States. In that country, public and private sector funding combined is three times as much for this sector as the corresponding spending in Europe.

This has become the EU's second most important sector of the economy, with an annual market of EUR 2 000 billion and employing more than 2 million persons in Europe, a number that is steadily rising.

Industrial and commercial successes of the kind that Europe has achieved in mobile communications as a result of the GSM standard will not be repeated unless a concerted effort is made to invest a critical mass of research resources in this area, by integrating public and private sector efforts on a European scale.

The objective of ambient intelligence

With a view to exerting maximum impact in economic and social terms, effort should focus on the future generation of those technologies in which computers, interfaces and networks will be more integrated into the everyday environment and will render accessible, through easy and 'natural' interactions, a multitude of services and applications. This vision of 'ambient intelligence' seeks to place the user, the human being, at the centre of the future development of the knowledge-based society.

Community actions will concentrate on the technological priorities that will make it possible to realise this vision. They will aim at mobilising the community of researchers around targeted initiatives, such as the development of the next generations of mobile communication systems, so as to achieve medium and long-term objectives while being able to react to the new needs and demands of markets as well as public policy.

Actions envisaged

The actions undertaken will therefore address the following technological priorities:

Integrating research into technological areas of priority interest for citizens and businesses.

Completing and building on progress expected in the development of basic technologies, research aimed at finding solutions for major societal and economic challenges and, accordingly, focusing on:

— ambient intelligence systems offering access to the information society for all, whatever their age and situation, as well as interactive and intelligent systems for health, mobility, security, leisure, preservation of the cultural heritage and environmental monitoring;

— electronic and mobile commerce, as well as technologies for secure transactions and infrastructures, new tools and new methods of work, technologies for learning and systems for corporate knowledge management, for integrated business management and for e-government;
large-scale distributed systems and platforms, including GRID-based systems that provide effective solutions to complex problems in areas such as the environment, energy, health, transport and industrial design.

**Communication and computing infrastructures**

Information access, transmission, storage, distribution and location systems intended to meet the growing needs for the connectivity and processing of information, with the research effort relating to communication and computing infrastructure addressing as a matter of priority:

- the new generations of wireless and mobile communications systems and networks; satellite communications systems; all-optical technologies; integration and management of communication networks; capacity-enhancing technologies necessary for the development of systems, infrastructures and services, in particular for audiovisual applications;

- software technologies and architectures assuring multifunctional services and distributed systems; engineering and control of complex and large-scale systems to ensure reliability and robustness.

**Components and microsystems**

Miniaturised and low-cost components based on new materials and integrating extended functionalities, with the effort focusing on:

- the design and production of micro- and opto-electronic and photonic components,

- nanoelectronics, microtechnologies and microsystems, and multidisciplinary research into new materials and quantum devices; new computing models and concepts.

**Information management and interfaces**

Research into information management tools and interfaces, with a view to enabling easier interaction everywhere and at all times with knowledge-based services and applications, addressing:

- knowledge representation and management systems based on context and semantics, including cognitive systems, as well as tools for creating, organising, sharing and disseminating digital content;

- multisensory interfaces capable of understanding and interpreting the natural expression of human beings through words, gestures and the various senses, virtual environments, as well as multilingual and multicultur- al systems indispensable to the establishment of the knowledge-based society on a European scale.

1.1.3. **Nanotechnologies, intelligent materials, and new production processes**

**Objective**

The activities carried out in this area are intended to help Europe achieve a critical mass of capacities needed to develop and exploit, especially for greater eco-efficiency, leading-edge technologies for the knowledge- and intelligence-based products, services and manufacturing processes of the years to come.

**Justification of the effort and European added value**

Manufacturing industry in Europe at present produces goods and services valued at around EUR 4 000 billion a year. In an increasingly competitive world market, it must maintain and increase its competitiveness while meeting the requirements of sustainable development. To do so, it is necessary to put substantial effort into the design, development and dissemination of advanced technologies: nanotechnologies, knowledge-based materials and new production processes.

Lying at the frontier of quantum engineering, materials technology and molecular biology, and one of the foreseeable hubs of the next industrial revolution, nanotechnologies are attracting considerable investment on the part of the EU’s competitors (500 million dollars of public funding in 2001 in the United States, i.e. twice as much as current spending there and five times as much as Europe spends at present).

Europe has significant expertise in certain sectors such as nanomanufacturing and nanochemistry, and needs to increase and coordinate its investment effort in this area.
Where materials are concerned, the aim is to develop intelligent materials which are expected to add considerable value in terms of applications in sectors such as transport, energy and the biomedical sector and for which there is a potential market of several tens of billions of euros.

The development of flexible, integrated and clean production systems will also require a substantial research effort concerning the application of new technologies to manufacturing and management.

**Actions envisaged**

**Nanotechnologies:**
- long-term interdisciplinary research into understanding phenomena, mastering processes and developing research tools;
- supramolecular architectures and macromolecules;
- nano-biotechnologies;
- nanometre-scale engineering techniques to create materials and components;
- development of handling and control devices and instruments;
- applications in areas such as health, chemistry, energy, optics and the environment.

**Intelligent materials:**
- development of fundamental knowledge;
- technologies associated with the production and transformation of new materials;
- support engineering.

**New production processes:**
- the development of flexible and intelligent manufacturing systems incorporating advances in virtual manufacturing technologies, interactive decision-aid systems and high-precision engineering;
- systems research needed for waste management and hazard control;
- development of new concepts optimising the life-cycle of industrial systems, products and services.

1.1.4. **Aeronautics and space**

**Objective**

The aim of activities carried out in this area is two-fold: to consolidate, by integrating its research efforts, the position of the European aerospace industry vis-à-vis increasingly strong world competition; and to help exploit the potential of European research in this sector with a view to improving safety and environmental protection.

**Justification of the effort and European added value**

The aerospace industry consists of two technologically and economically separate sectors but they are closely associated on account of their industrial and political implications and the stakeholders involved and they are examples of European economic and commercial success stories. However, US investment in aerospace is three to six times higher, depending on the sector.

In an increasingly demanding competitive environment, foreseeable aviation requirements worldwide correspond to some 14 000 new aircraft over the next 15 years, representing a market worth EUR 1 000 billion. The efforts made to integrate industrial capacities and development activities which have brought about European successes in this area now need to be matched by similar efforts to integrate research into priority themes and subjects.

With this aim in view, the 'Vision for 2020' (1) report of eminent European personalities in this sector of industry recommends optimising European, national and private sector research efforts around a common vision and a strategic research agenda.

---

On space, following on from the Commission's communication 'Europe and space: Turning to a new chapter' (1), the EU will support research designed to make use of space for the benefit of markets and society.

**Actions envisaged**

**Aeronautics**

Community aeronautical research activities will address research and technological development activities necessary to:

— increase the competitiveness of the European industry with regard to commercial aircraft, engines and equipment;

— reduce environmental nuisances and loads (CO₂ and NOₓ emissions, noise);

— increasing aircraft safety in the context of the substantial rise in air traffic;

— increase the capacity and safety of the aviation system, in support of a 'Single European Sky' (air traffic control and management systems).

**Space**

Community space activities carried out in close coordination with the ESA, the other space agencies and industry, in order to strengthen the coherence of the very major investment involved, will address the implementation of:

— the Galileo satellite navigation project;

— the GMES platform for monitoring for environment and security;

— advanced research needed to integrate the space segment and the Earth segment in the field of communications.

**1.1.5. Food safety and health risks**

**Objective**

The activities carried out in this area are intended to help establish the integrated scientific and technological bases needed to develop a system of production and distribution of safe and healthy food and control food-related risks, relying in particular on biotechnology tools, as well as health risks associated with environmental changes.

**Justification of the effort and European added value**

The recent food crises, and in particular BSE, have highlighted both the complexity of food safety issues and the fact that in most cases they have international and cross-border implications. The integration of the European internal market as regards agriculture and food makes it necessary to address the problems that arise in this area, and hence to carry out related research, on a European scale. It is against this background that the European Food Authority will shortly be established.

Citizens and consumers expect that research will help to guarantee that the food and products marketed are safe and healthy and can be consumed in total safety.

This requires the availability of the most complete, precise and up to date scientific knowledge. Apart from the public health aspect, the prosperity of a sector representing some EUR 600 billion in terms of annual turnover and 2.6 million jobs is at stake.

Europe also needs to be able to make a substantial contribution to the research efforts on these issues, which now arise at world level, as well as a coherent contribution to the international debate on them, based on the most precise and complete knowledge.

The same remarks apply to the various aspects of the problems associated with the health impact of environmental changes which are a source of growing concern for European citizens, and which often manifest themselves on an international scale. For all these reasons, but also in order to derive the benefit of the combination of the best sources of expertise available in complex areas, the research in question should be carried out at European level in such a way as to ensure genuine coordination of national activities.

---

**Actions envisaged**

Community activities will cover research relating to various aspects of the control of health risks and links between health and food:

— methods of analysis and detection of chemical contaminants and pathogenic micro-organisms (viruses, bacteria, parasites, and new agents of the prion type);

— impact of animal feed, and the use of sub-products of different origins for that feed, on human health;

— ‘traceability’ processes, in particular relating to genetically modified organisms, including those based on recent biotechnology developments;

— safer production methods and healthier foodstuffs, including those based on biotechnologies and on organic farming processes;

— epidemiology of food-related diseases and genetic susceptibilities;

— impact of food, and in particular products containing genetically modified organisms, on health;

— environmental health risks, with emphasis being placed on cumulative risks, transmission routes to human beings, long-term effects and exposure to small doses, as well as the impact on particularly sensitive groups, and especially children.

1.1.6. **Sustainable development and global change**

**Objective**

The activities carried out in this area are intended to strengthen the scientific and technological capacities needed for Europe to be able to implement sustainable development and make a significant contribution to the international efforts to understand and control global change and preserve the equilibrium of ecosystems.

**Justification of the effort and European added value**

The global implementation of sustainable development requires more particularly:

— the design, development and dissemination of technologies making it possible to ensure more rational use of natural resources, less waste production and a reduction in the impact of economic activity on the environment;

— a better understanding of the mechanisms of global change, and in particular climate change and our related forecasting capacities.

Where technology is concerned, as highlighted in the Commission Green Paper ‘Towards a European strategy for the security of energy supply’ (2), two areas concerned as a matter of priority are energy and transport, which are responsible for over 80 % of total emissions of greenhouse gases and more than 90 % of CO₂ emissions.

Under the Kyoto Protocol, the EU is required to reduce its greenhouse gas emissions by 8 % compared with the 1990 levels in the period 2008-2012.

Achieving this objective in the short term requires a major large-scale effort to deploy technologies currently under development.

Above and beyond this objective, the long-term implementation of sustainable development in the coming decades makes it necessary to ensure the availability, under economic conditions, of the most appropriate energy sources and carriers in this respect. This will require a sustained longer-term research effort.

Medium and long-term research efforts will also be necessary to develop the sustainable European transport system that is likely to be mentioned as a priority objective for the EU in the White Paper on the Common Transport Policy currently being prepared by the Commission.

On the study of climate change, the efforts made today at world level represent some EUR 2 billion per annum. Europe spends EUR 500 million compared with EUR 900 million in the case of the United States.

---

(1) The priority objectives for nuclear research are set out in the Annex ‘Scientific and technological objectives’ of the proposal for the Euratom Framework Programme.

(2) COM(2000) 769.
The European Union is a party to the international agreements in the various areas associated with global change such as the Kyoto Protocol on Climate change and the UN Conventions on Biodiversity and Desertification. It has a duty to make a substantial and coherent contribution to the efforts made through the major international research programmes on these themes.

Action by the Community can help to ensure this vital coordination of Europe's contribution to the world effort.

Actions envisaged

Technologies for sustainable development

The Community's effort in the short and medium term will concentrate on a limited number of large-scale actions in the following areas:

— renewable energy sources, energy savings and energy efficiency, especially in the urban environment, as well as clean transport, with the development of new vehicle concepts in particular for road transport, as well as the development of alternative motor fuels;

— intelligent transport, especially in the form of technologies making possible a rebalancing as well as the integration and increasing intermodality of different modes of transport, for example by means of innovations in the management of the logistic chain (in particular containers).

Turning to the longer term, activities will concentrate as a matter of priority on:

— fuel cells for stationary applications and in transport;

— hydrogen technology;

— new concepts in solar photovoltaic technologies and advanced uses of biomass.

Global change

Community activities will address the following aspects as a matter of priority:

— impact and mechanisms of greenhouse gas emissions on climate and carbon sinks (oceans, forests and soil);

— water cycle;

— biodiversity, protection of genetic resources, operation of terrestrial and marine ecosystems and interactions between human activities and the latter;

— mechanisms of desertification and natural disasters connected with climate change;

— global climate change observation systems.

1.1.7. Citizens and governance in the European knowledge-based society

Objective

The activities carried out in this area are intended to mobilise in a coherent effort, in all their wealth and diversity, European research capacities in economic, political, social and human sciences with a view to understanding and addressing issues related to the emergence of the knowledge-based society and new forms of relationships between its citizens and institutions.

Justification of the effort and European added value

At the European Councils in Lisbon in March 2000 and Nice in November 2000, the European Union set itself the ambitious objective of becoming 'the most competitive and dynamic knowledge-based economy in the world, capable of sustained economic growth providing more and better jobs and greater social cohesion'.

In this perspective, the European Council in Lisbon underlined that 'human resources are Europe’s main strength', stressing the need for Europe’s education and training systems to ‘adjust both to the needs of the knowledge-based society and to the need to raise the level of employment and improve quality’.
Europe's transition towards a knowledge-based economy and society, and its sustainable development in the interests of the quality of life of all citizens will be all the easier if it takes place in a way which is properly understood and managed. This requires a substantial research effort concerning the issues of integrated and sustainable economic and social progress based on the fundamental values of justice and solidarity which characterise the European model of society. In this respect, economic, political, social and human sciences research should more particularly help to ensure the harnessing and exploitation of an exponentially increasing quantity of information and knowledge and an understanding of the processes at work in this area.

In Europe, this issue arises in particular in connection with the functioning of democracy and new forms of governance, and in the general context of this. What is at stake is the relationship between citizens and institutions in a complex political and decision-making environment characterised by the coexistence of national, regional and European decision-making levels and the increasing role of civil society and its representatives in the political debate.

Issues such as these have a clear and intrinsic European dimension, and there is much to be gained by examining them from a global perspective.

This European dimension is only just starting to be taken into account in research conducted at national level, and is not yet receiving all the attention that it requires.

It seems highly appropriate to address these aspects on the European scale. What is more, action taken at EU level will make it possible to ensure the requisite degree of methodological coherence and guarantee that full benefit is derived from the rich variety of approaches existing in Europe and European diversity.

Actions envisaged

Action by the Community will focus on the following themes:

Knowledge-based society

— improving the production, transmission and utilisation of knowledge in Europe;

— options and choices for the development of a knowledge-based society serving the EU objectives set at the Lisbon and Nice European Councils, in particular as regards improving the quality of life, employment and labour market policies, life-long education and training, and strengthening social cohesion and sustainable development;

— variety of transition dynamics towards the knowledge-based society at local, national and regional level.

Citizenship, democracy and new forms of governance

— consequences of European integration and enlargement of the EU for democracy, the concept of legitimacy, and the functioning of the institutions;

— redefinition of areas of competence and responsibility, and new forms of governance;

— security issues connected with the resolution of conflicts and restoration of peace and justice;

— emergence of new forms of citizenship and identities, forms and impact of cultural diversity in Europe.

In operational terms, Community activities will focus on support for:

— transnational research and comparative studies and the coordinated development of statistics and qualitative and quantitative indicators;

— interdisciplinary research in support of public policies;

— the establishment and exploitation on a European scale of research infrastructures and data and knowledge bases.

1.2. Anticipating the EU’s scientific and technological needs

The activities carried out under this heading are intended to:

— respond to the scientific and technological needs of the policies of the Community and of the Union in all the areas corresponding to those policies, including the priority thematic areas which do not require recourse to the three major instruments used in the priority areas but which require specific actions and methods of intervention;
— respond flexibly and rapidly to emerging scientific and technological needs and major unforeseeable developments, as well as needs appearing at the frontiers of knowledge, more specifically in multithematic and interdisciplinary areas, including areas linked to the priority areas.

These activities will be carried out in the following areas and will address the following themes:

1.2.1. **Activities carried out on the basis of calls for proposals**

These will cover two non-exclusive categories of research:

— research necessary for the formulation, implementation and enforcement of Community and EU policies:
  
— research in support of the implementation of common policies such as the common agricultural policy and the common fisheries policy;
  
— research in support of EU policy objectives such as, for example, those set out in the 6th Environment Programme (1) and the Green Paper 'Towards a European Strategy for the Security of Energy Supply' (2);
  
— research in support of the objectives set for the EU by the European Council, for example the objectives set by the Lisbon and Feira European Councils with regard to economic policy, Information Society and e-Europe, enterprise, social policy and employment, education and training, including the requisite statistical methods and tools;
  
— research necessary for other Community or EU policies in areas such as, for example, health, in particular public health, regional development, trade, external relations and development aid or justice and home affairs;
  
— research that responds to needs in new, interdisciplinary and multidisciplinary areas or areas at the leading edge of knowledge, especially in order to help European research cope with unexpected major developments, including in areas linked to the priority fields.

The activities carried out in these areas will be implemented under the following conditions, on the basis of the following principles and with the help of the following mechanisms:

— The activities concerned will essentially take the form of:
  
— specific targeted projects generally of a limited scale carried out in partnerships of a size commensurate with the needs to be met;
  
— the networking of research activities carried out at national level, where the existing capacities in the Member States need to be mobilised in order to achieve the objectives.

In certain duly justified cases, where the objectives in question can be better achieved by these means, limited use may be made of the instruments used in the priority thematic areas such as the networks of excellence or, where appropriate, the integrated projects.

— The choice of research topics, areas and subjects will be made by the Commission on the basis of assessment by an internal group of users, taking account of the opinion of an independent consultative body made up of high-level scientific and industrial experts.

— For the implementation of these activities, recourse may be had to a two-step mechanism: calls for expressions of interest open to any entity or organisation in the EU to identify needs precisely and then evaluate them; calls for proposals on themes selected on this basis.

— Of the projects judged to be of sufficient scientific and technical quality by peer review, the Commission will select those most likely to help support the policies it is responsible for implementing.

— In accordance with their spirit and objective, the activities carried out under this heading will be implemented on the basis of annual decisions.

---

(2) COM(2000) 769.
These activities will also comprise in particular:

— **Specific research activities for SMEs**

SMEs will participate in the framework programme essentially in the context of the activities carried out in the priority thematic areas.

Carried out in support of European competitiveness and enterprise and innovation policy, these specific actions are intended to help European SMEs in traditional or new areas to boost their technological capacities and develop their ability to operate on a European and international scale.

These actions, which may be carried out in the entire field of science and technology, will take the form of:

— Collective research activities

Large-scale medium-term research activities carried out by technical research centres for industrial associations or industry groupings in entire sectors of industry dominated by SMEs at the European level;

— Cooperative research activities

Research activities carried out by research centres for a number of SMEs in different European countries on themes of common interest or by high-tech SMEs in collaboration with research centres and universities;

— Specific international cooperation activities:

These specific activities, carried out in support of the EU’s foreign policy and development aid policy, will be in the field of cooperation with, in particular:

— Mediterranean third countries;
— Russia and the States of the CIS;
— Developing countries.

### 1.2.2. Joint Research Centre activities

In accordance with its mission of providing scientific and technical support for EU policies, the JRC will focus on priority themes relating to the formulation and implementation of sectoral policies. The activities carried out will have a strong European dimension, and will draw on a range of specific expertise.

These activities will be carried out by the JRC within its areas of specific competence, for which it has special or even unique facilities, as well as in the areas in which its impartiality in terms of national and private sector interests allows it to conduct as efficiently as possible research activities related to the formulation and implementation of Community policies, and the performance of the resulting tasks, some of which are the Commission’s responsibility.

The JRC will carry out these activities in close cooperation and by networking with scientific circles, national research organisations and businesses in Europe.

The essential common denominator of the JRC’s activities will be the safety of citizens in its different aspects: health, environment, nuclear safety, public security, combating fraud.

To these ends, two specific research areas have been selected (a third being covered by the activities to be carried out by way of Euratom actions):

— **Food, chemical products and health:**

  Food safety and quality, in particular to combat BSE; genetically modified organisms; chemical products; biomedical applications (more particularly establishment of references in this area).

---

(1) The JRC’s activities in the field of nuclear research are described in the Annex ‘Scientific and technological objectives’ to the proposal for a Euratom Framework Programme. The JRC will also carry out activities in connection with the structuring of the European Research Area, and will be able to participate in all the research activities under the Framework Programme carried out on the basis of calls for proposals in the priority areas and under the heading ‘Anticipating the EU’s scientific and technological needs’. It will also carry out a limited amount of exploratory research in connection with those activities.
- Environment and sustainability:

Climate change (carbon cycle, modelling, impacts) and technologies for sustainable development (renewable energy sources, tools for the integration of policies); protection of the European environment; development of reference measurements and networks; technical support for the objectives of GMES.

Three types of activities of a general nature will also be carried out:

- Technology foresight:

  Technological and economic foresight work based on the activities of European networks;

- Reference materials and measurements (1):

  The Community Reference Bureau (BCR) and certified reference materials: validation and qualification of chemical measurement methods.

- Public security and combating fraud:

  Detection of anti-personnel mines; prevention of natural and technological hazards; networks in support of cybersecurity in the EU; fraud control technologies.

2. STRUCTURING THE EUROPEAN RESEARCH AREA

2.1. Research and innovation

Objective

These activities are intended to stimulate technological innovation, utilisation of research results, transfer of knowledge and technologies and the setting-up of technology businesses in the Community and in all its regions.

Justification of the effort and European added value

Europe's comparatively poor ability to transform the results of research work and scientific and technological breakthroughs into industrial, economic and commercial successes is one of its most notable weaknesses. Actions to stimulate business innovation at European level can help to raise the overall level of Europe's performance and increase European capacities in this area, by helping businesses and innovators in their efforts to operate on a European scale and on international markets, and by giving stakeholders in all regions of the EU the benefit of the experience and knowledge acquired in other regions through initiatives undertaken at this level.

Actions envisaged

Activities will be carried out under this heading to complement activities relating to innovation included in those carried out under the heading 'Integrating research'.

These will be in the form of actions providing general support to innovation, complementing and in liaison with national and regional activities, with a view to increasing the coherence of efforts in this area.

The activities carried out in this area will take the form of support for:

- networking of stakeholders in the European innovation system and carrying out analyses and studies in order to promote exchanges of experience and good practice;

- actions to encourage transregional cooperation regarding innovation and support for the setting-up of technology businesses, as well as for the preparation of regional strategies in this area;

- actions to experiment with new tools and new approaches concerning technological innovation;

- establishment or consolidation of information services and in particular electronic services, such as Cordis, and assistance services relating to innovation (technology transfer, protection of intellectual property, access to risk capital);

(1) Metrology activities in the nuclear field are described in the Annex 'Scientific and technological objectives' to the proposal for a Euratom Framework Programme.
— economic and technological intelligence activities (analyses of technological developments, applications and markets and processing and dissemination of information which may help researchers, entrepreneurs, and in particular SMEs, and investors in their decision-making);

— analysis and evaluation of innovation activities carried out in the framework of Community research projects and exploitation of lessons which can be drawn from innovation policies.

Some of these activities will be carried out in liaison with those of the EIB (in particular by means of the EIF) under its 'Innovation 2000 Initiative' as well as the Structural Funds.

2.2. Human resources and mobility

Objective

The activities carried out under this heading are intended to support the development of abundant world class human resources in all the regions of the Community by promoting transnational mobility for training purposes, the development of expertise or the transfer of knowledge, in particular between different sectors; supporting the development of excellence; and helping to make Europe more attractive to third country researchers. This should be done with the aim of making the most of the potential offered by all sectors of the population, especially women, taking appropriate measures for this purpose.

Justification of the effort and European added value

Promoting transnational mobility is a simple, particularly effective and powerful means of boosting European excellence as a whole, as well as its distribution in the different regions of the EU. It creates opportunities for significantly improving the quality of the training of researchers, promotes the circulation and exploitation of knowledge, and helps to establish world-class centres of excellence that are attractive throughout Europe. EU level action in this area (as in human resources in general) leading to the attainment of critical mass will inevitably have a major impact.

Actions envisaged

These activities, which will be carried out in the whole field of science and technology, will take in particular the following forms:

— global support measures for universities, research centres, businesses and networks, for the hosting of European and third country researchers;

— individual support measures for European researchers for the purposes of mobility to another European or a third country, and for top-class third-country researchers wishing to come to Europe;

— mechanisms for return to the countries and regions of origin, as well as professional (re-)integration mechanisms, in particular linked to the granting of global and individual support;

— financial contribution to national or regional programmes in support of researcher mobility open to researchers from other European countries;

— support for European research teams of the highest level of excellence, more particularly for leading edge or interdisciplinary research activities;

— scientific prizes for work of excellence carried out by a researcher having received EU financial support for mobility.

2.3. Research infrastructures

Objective

The activities carried out under this heading are intended to help establish a fabric of research infrastructures of the highest level in Europe and to promote their optimum use on a European scale.

Justification of the effort and European added value

The development of a European approach with regard to research infrastructures, and the carrying out of activities in this area at EU level, can make a significant contribution to boosting European research potential and its exploitation: by helping to ensure wider access to the infrastructures existing in the different Member States and increasing the complementarity of the facilities in place; by promoting the development or establishment of infrastructures ensuring a service on a European scale, as well as optimum construction choices in European terms and in terms of regional technological development.
Actions envisaged
These activities will be carried out in the whole field of science and technology, including in the priority thematic areas. The need for European research in all areas and disciplines to have a high-capacity and high-speed communication infrastructure (based more particularly on GRID-type architectures), as well as electronic publishing services, will in particular receive special attention. These activities, which will be defined and carried out using the scientific advice of the European Science Foundation in particular, will take the form of support for:

— transnational access to research infrastructures;

— implementing integrated activities, by means of European-scale infrastructures or consortia of infrastructures, making it possible to ensure the provision of services on a European scale and possibly covering, in addition to transnational access, the establishment and operation of cooperation networks, and the execution of joint research projects; raising the level of the performance of the infrastructures concerned;

— carrying out feasibility studies and work in preparation for the creation of new European scale infrastructures;

— optimising of European infrastructures by providing limited support for the development of new infrastructures. This support may supplement contributions from the EIB or the Structural Funds to the funding of these infrastructures; the feasibility studies should systematically explore the possibilities of such a contribution.

2.4. Science/society
Objective
The activities carried out under this heading are intended to encourage the development of harmonious relations between science and society and the opening-up of innovation in Europe as a result of the establishment of new relations and an informed dialogue between researchers, industrialists, political decision-makers and citizens.

Justification of the effort and European added value
Science/society issues need to a large extent to be addressed at European level on account of their strong European dimension. This is bound up with the fact that very often they arise on a European scale (as the example of food safety problems shows), with the importance of being able to benefit from the often complementary experience and knowledge required in the different countries and with the need to take into account the variety of views on them, which reflects European cultural diversity.

Actions envisaged
In line with the Commission Staff Working Paper 'Science, Society and Citizens in Europe' (1), the activities carried out in this area in the whole field of science and technology will particularly address the following themes:

— Bringing research closer to society: Science and governance; scientific advice; involvement of society in research; foresight;

— Ensuring that use of scientific and technological progress takes place in a responsible fashion: risk; expertise; implementing the precautionary principle; European reference system; ethics;

— Stepping up the science/society dialogue: new forms of dialogue; knowledge of science by citizens; young people's interest in scientific careers; women in science and research.

They will take the form of activities in support of:

— networking and establishment of structural links between the institutions and activities concerned at national, regional and European level;

— exchange of experience and good practice;

— carrying out specific research;

— high-profile awareness-raising initiatives such as prizes and competitions;
— establishing data and information bases and carrying out studies, in particular statistical and methodological studies, on the different themes.

3. STRENGTHENING THE FOUNDATIONS OF THE EUROPEAN RESEARCH AREA

Objective

The activities carried out under this heading are intended to step up the coordination and to support the coherent development of research and innovation-stimulation policies and activities in Europe.

Justification of the effort and European added value

Making a reality of the European Research Area depends first and foremost on improving the coherence and coordination of research and innovation activities and policies conducted at national, regional and European level. Action by the Community can help to promote efforts to this end, as well as to lay the foundations in terms of the information, knowledge and analyses that are essential for the successful completion of this project.

Actions envisaged

These activities, to be carried out in the whole field of science and technology, will take the following forms:

— To step up the coordination of research activities carried out in Europe, at both national and European level, financial support for:
  — the mutual opening-up of national programmes;
  — networking of research activities conducted at national level;
  — scientific and technological cooperation activities carried out in other European cooperation frameworks, in particular the cooperation activities of the European Science Foundation;
  — collaboration and joint initiatives of specialised European scientific cooperation organisations such as CERN, EMBL, ESO and the ESA (1).

These actions will be implemented in the general context of efforts undertaken to optimise the overall performance of European scientific and technological cooperation and ensure that its different components, including COST and Eureka, are complementary.

— In order to support the coherent development of research and innovation policies in Europe:
  — carrying out analyses and studies, and work relating to scientific and technological foresight, statistics and indicators;
  — setting-up and support for the operation of specialised working groups and forums for concertation and political debate;
  — support for work on the benchmarking of research and innovation policies at national, regional and European level;
  — support for carrying out work on the mapping of scientific and technological excellence in Europe;
  — support for carrying out the work needed to improve the regulatory and administrative environment for research and innovation in Europe.

(1) CERN: European Organisation for Nuclear Research; EMBL: European Molecular Biology Laboratory; ESO: European Southern Observatory; ESA: European Space Agency.
ANNEX II

MAXIMUM OVERALL AMOUNT, RESPECTIVE SHARES AND INDICATIVE BREAKDOWN

The maximum overall financial amount and the respective shares of the various activities as referred to in Article 164 of the EC Treaty are as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>EUR million</th>
</tr>
</thead>
<tbody>
<tr>
<td>First activity (1):</td>
<td>13 570</td>
</tr>
<tr>
<td>Second activity (2):</td>
<td>600</td>
</tr>
<tr>
<td>Third activity (3):</td>
<td>300</td>
</tr>
<tr>
<td>Fourth activity (4):</td>
<td>1 800</td>
</tr>
<tr>
<td>Maximum overall amount (*)</td>
<td>16 270</td>
</tr>
</tbody>
</table>

(*) Indicative breakdown:

1. Integrating research (1) (6)
   - Genomics and biotechnology for health: 2 000
   - Information Society technologies: 3 600
   - Nanotechnologies, intelligent materials, new production processes: 1 300
   - Aeronautics and space: 1 000
   - Food safety and health risks: 600
   - Sustainable development and global change: 1 700
   - Citizens and governance in the European knowledge-based society: 225
   - Anticipating the EU's scientific and technological needs (7): 2 345

2. Structuring the European Research Area
   - Research and innovation: 300
   - Human resources: 1 800
   - Research infrastructures: 900
   - Science/society: 50

3. Strengthening the foundations of the European Research Area
   - Support for the coordination of activities: 400
   - Support for the coherent development of policies: 50

Total: 16 270 (8)

(1) Covering the activities carried out under the heading 'Integrating research', with the exception of international cooperation activities; research infrastructures, and the theme 'Science/Society' carried out under the heading 'Structuring the European Research Area', and activities carried out under the heading 'Strengthening the foundations of European Research Area'.

(2) Covering the international cooperation activities carried out under the heading 'Integrating research', in the priority areas and under the heading of anticipating the EU's scientific and technological needs.

(3) Covering the specific activities on the theme 'Research and innovation' carried out under the heading 'Structuring the European Research Area' in addition to innovation activities carried out under the heading 'Integrating research'.

(4) Covering the activities concerning human resources and support for mobility carried out under the heading 'Structuring the European Research Area'.

(5) The aim is to allocate at least 15 % of the financial resources assigned to this heading to SMEs.

(6) Including EUR 600 million in total for international cooperation activities.

(7) Including EUR 715 million for JRC activities.

(8) To which should be added the sum of EUR 1,230 million under the Euratom Framework Programme, broken down indicatively as follows: Treatment and storage of nuclear waste EUR 150 million; Controlled thermonuclear fusion EUR 700 million (of which EUR 200 million is foreseen for participation in the ITER project); other activities EUR 50 million; JRC activities EUR 330 million (of which EUR 110 million for the treatment and storage of waste).
ANNEX III

INSTRUMENTS AND DETAILED RULES FOR COMMUNITY FINANCIAL PARTICIPATION

To help bring about the European Research Area, the Community will contribute financially, under the specific programmes, to the research and technological activities, including demonstration activities, carried out in the priority thematic areas of the framework programme as well as in other areas and other themes in the field of science and technology.

The Community's financial contribution to these activities, which will incorporate measures to encourage innovation, will be carried out by means of a range of instruments described below.

1. INSTRUMENTS

1.1. Instruments to integrate research

1.1.1. Networks of excellence

In the priority thematic areas of research under the framework programme, financial contribution to networks of excellence

Support to these networks is intended to promote excellence in Europe by means of a deep and lasting integration of excellence capacities existing in universities, research centres and industries in several Member States into a critical mass of expertise by creating 'virtual centres of excellence'.

Integration will be ensured by means of a joint programme of activities representing a substantial part of the activities of the entities networked. The entities will need to have or acquire the operational autonomy necessary to gradually integrate their activities with those of other entities.

The programmes of activities, representing an order of magnitude of several millions of euros per annum, will be defined on the basis of precise research themes and topics, but not on the basis of pre-defined objectives or results. Implementing them will entail the gradual integration of the work programmes in the areas concerned, a precise breakdown of activities, a significant volume of exchanges of personnel, and intensive use of electronic information and communication networks and virtual and interactive working methods. These programmes will necessarily and in a verifiable manner involve activities to manage, transfer and exploit the knowledge produced.

The networks of excellence will be selected on the basis of calls for proposals.

Opening up participation in the networks of excellence to researchers from other European countries than those of the associated entities will be encouraged by means of measures in support of mobility. Participation in the networks of excellence will in addition be open to third country organisations and European scientific cooperation organisations.

1.1.2. Integrated projects

In the priority thematic areas of research of the framework programme, financial contribution to integrated projects

These projects, representing an order of magnitude of up to several tens of millions of euros, will be carried out by consortia often involving intense university/industry collaboration.

The projects may cover 'risky' research and will in all cases have clearly defined objectives in terms of scientific and technological knowledge or products, processes or services. The integrated projects may in some cases be made up of clusters dedicated to different aspects of one and the same objective, integrated into a single action by industry and public sector research partners on the basis of a regularly updated timetable.

Carrying them out will necessarily and in a verifiable manner entail activities relating to dissemination, transfer and exploitation of knowledge as well as analysis and evaluation of the economic and social impact of the technologies concerned and the factors involved in their successful exploitation.

They will preferably be carried out on the basis of overall financing plans involving significant mobilisation of public and private sector funding, and recourse to other collaboration or funding schemes, in particular Eureka and the instruments of the EIB and the EIF.

The integrated projects will be selected on the basis of calls for proposals. Participation in them will be open to third country organisations and organisations for European scientific cooperation. There will be specific measures to encourage SME participation.
The networks of excellence and the integrated projects will be administered by the participants with a high level of autonomy. They will in particular have the possibility:

— of associating other partners with the activities that they undertake;

— of defining projects of limited scale as components of their programmes of activity and launching calls for proposals;

— of adapting the content of those programmes according to needs.

The implementation of the programmes of activities carried out by the networks of excellence and in the context of the integrated projects will be regularly evaluated.

1.1.3. Participation in national programmes carried out jointly

In the priority thematic areas of research of the framework programme, financial contribution to national programmes carried out jointly pursuant to Article 169 of the Treaty.

The programmes concerned will be clearly identified programmes implemented by governments or national research organisations. Their joint implementation will entail recourse to a specific implementation structure. This may be achieved by means of harmonised work programmes and common, joint or coordinated calls for proposals. In appropriate cases, the development or operation of common infrastructures may be involved.

The Community may contribute financially to the programmes carried out jointly. Where those programmes are open to other European countries, the Community may also support the participation of researchers, teams or institutions from those countries.

1.1.4. Anticipating the EU's scientific and technological needs

The instruments for implementing the activities carried out under the heading 'Anticipating the EU's scientific and technological needs' are described in Annex 1.

1.2. Instruments to structure the European Research Area

The instruments for implementing the activities carried out in the following areas are described in Annex 1:

— research and innovation;

— human resources and mobility;

— research infrastructures;

— science/society.

1.3. Instruments to strengthen the foundations of the European Research Area

The instruments for implementing the activities carried out under this heading are described in Annex 1.

2. DETAILED RULES FOR FINANCIAL PARTICIPATION BY THE COMMUNITY

The Community will contribute financially towards implementing the instruments defined below in compliance with the Community framework for State aid to research and development, as well as international rules in this area, and in particular the WTO Agreement on Subsidies and Countervailing Measures. It will need to be possible to adjust the scale and form of financial participation under the framework programme on a case-by-case basis, in particular if funding from other public sector sources is available, including other sources of Community financing such as the EIB and EIF.

In the case of participation of bodies from regions lagging in development, when a project receives the maximum intensity of co-financing authorised under the framework programme or an overall grant, an additional contribution from the Structural Funds, pursuant to Council Regulation (EC) No 1260/99 (1), could be granted.

In the case of participation of bodies from the candidate countries, an additional contribution from the pre-accession financial instruments could be granted under similar conditions.

Financial participation by the Community will be granted in compliance with the principle of co-financing, with exception of financing for studies, conferences and public tenders. Depending on the nature of the different instruments, financial participation by the Community may be of an overall nature or take the form of a grant to the budgets for each of the steps in the implementation of the instruments.

Financial participation by the Community will, as a general principle, be decided following open calls for proposals or invitation to tender procedures.

The Community may also contribute in the form of grants to the capital needed to develop research infrastructures.

The Commission will carry out the research activities in such a way as to ensure the protection of the Community's financial interests by means of effective controls and, if irregularities are detected, by means of dissuasive and proportionate penalties.

In the decisions adopting the specific programmes implementing this Framework Programme, there can be no derogations from the rules set out in the table below.

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Financial participation by the Community under the framework programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrating research (*)</td>
<td></td>
</tr>
<tr>
<td>1. Financial contribution to networks of excellence.</td>
<td>The Community may award an overall grant on the basis of the results from implementation of a common programme of activities.</td>
</tr>
<tr>
<td>2. Financial contribution to integrated projects.</td>
<td>The Community may award a grant to the budget of these projects corresponding to a maximum of 50% of their total cost.</td>
</tr>
<tr>
<td>3. Financial contribution to national programmes carried out jointly.</td>
<td>The Community may award a grant to the budget of jointly-executed activities corresponding to a maximum of 50% of their total cost; it may cover on an overall basis the participation of third country researchers and organisations in the activities.</td>
</tr>
<tr>
<td>4. Financial contribution to activities carried out in order to anticipate the EU’s scientific and technological needs, including specific research activities for SMEs and specific international cooperation activities.</td>
<td>The Community may award a grant to the budget of these activities corresponding to a maximum of 50% of their total cost and assume responsibility for the entire budget of the JRC.</td>
</tr>
<tr>
<td>Structuring the European Research Area</td>
<td></td>
</tr>
<tr>
<td>1. Financial contribution to activities to promote interaction between research and innovation.</td>
<td>The Community may award a grant for the budget for these activities.</td>
</tr>
<tr>
<td>2. Financial contribution to the development of human resources and increased mobility.</td>
<td>The fellowships and support for excellence will be of a global nature.</td>
</tr>
<tr>
<td>3. Financial contribution in support of research infrastructures.</td>
<td>The Community may award a grant to the budgets for the preparatory technical work, including feasibility studies, to a maximum of 50% of their total cost; it may award an overall grant for transnational access and network development activities and, on the basis of the results, for the implementation of integrated initiatives; it may award a grant to the budgets for the development of new infrastructures corresponding to a maximum of 10% of their total cost.</td>
</tr>
<tr>
<td>4. Financial contribution towards the development of harmonious relations between science and society.</td>
<td>The Community may award a grant for the budgets for these initiatives.</td>
</tr>
<tr>
<td>Strengthening the foundations of the European Research Area</td>
<td></td>
</tr>
<tr>
<td>1. Financial contribution to coordination activities.</td>
<td>The Community may award a grant for the budgets for these activities.</td>
</tr>
<tr>
<td>2. Financial contribution to measures in support of the coherent development of research policies.</td>
<td>The Community may award a grant for the budgets for these measures.</td>
</tr>
</tbody>
</table>

(*) In the three categories of activities undertaken under ‘Integrating research’ Community funding can cover the participation of bodies and researchers from third countries.