Advisory Group
Social Sciences and Humanities in the European Research Area

Follow-up Report on the European and Scientific Agendas (FR1)

The Research and Development Policy

2004.06.09

Contents

Introduction 3

1. SOURCES 3

1.1. European Research Policy and European research Area 3
1.2. 6th Framework Programme 3
1.3. National Programmes 4
1.4. News Agencies 4
1.5. Indicators 5

2. REFERENCES CONCERNING THE EUROPEAN AGENDA 6

2.1. European Union - Recent official publications 6
2.2. National documents 8
2.3. News Agencies 8

3. QUOTATIONS 9

3.1. EU official publications 9
The European and international dimension 10
Focus and concentration – the thematic priorities 10
3.2. National official publications 14
3.3. News Agencies 18

4. INDICATORS 21

5. ACADEMIC REFERENCES 25

6. SOME KEY-ISSUES AT EUROPEAN LEVEL 26

Social sciences and humanities can make a relevant contribution to the construction of Europe by identifying possible answers to some of its main challenges: achieving enlargement, enhancing competitiveness with social cohesion, fostering sustainable development and quality of life, combining European with national identities, enhancing the role of Europe in international governance, reforming political institutions at European and national levels.

In order to enhance the strategic monitoring of FP6, the European Commission – DG Research has created an Advisory Group on "Social Sciences and Humanities in the European Research Area" (SSH-ERA).

The Advisory Group on Social Sciences and Humanities should give advice to the European Commission and stimulate the European research community regarding the following objectives:

a/ Identifying the research priorities in the thematic priority 7;
b/ Enhancing the interface between SSH and the other thematic priorities;
c/ Developing the interfaces between SSH and Community policies;
d/ Anticipating new problems and scientific and technological needs;
e/ Exploring a SSH approach on Research and Innovation;
f/ Defining the strategy to build the European Research Area.

The present project - SSHERA - is designed to provide tools to explore the development of the research agenda.

In order to underpin the general development of this project, it is important to carry out a regular follow-up of the scientific agenda and the European agenda, with the aim of fostering their interaction. The central purpose of this Follow-up Report will be to provide general background information on a concrete theme which might be useful for researchers who are focusing on European issues.

Introduction

This first Follow-up Report will deal with European Research and Development Policy, in order to sum up its state of the art and its possible implications for the scientific agenda.

We will begin with a presentation of the most relevant and updated bibliography on European R&D policy, gathering relevant official publications, at both European and national levels.

Secondly, we will make some quotations of these documents or of relevant European news agencies concerning R&D policy.

Thirdly, we will introduce major R&D indicators.

Fourthly, we will identify some recent academic references which might be relevant to illustrate the new trends in the scientific agenda.

Finally, we will suggest some key-issues for possible interactions between the European and the scientific agendas.

1. Sources

1.1. European Research Policy and European research Area

European Commission – Research Directorate-General:
http://europa.eu.int/comm/dgs/research/index_en.html

European Commission – Research Website
http://europa.eu.int/comm/research/index_en.cfm

European Commission – Lisbon Strategy Website:
http://europa.eu.int/comm/lisbon_strategy/key/research_en.html

Cordis Website
http://www.cordis.lu

EurLex – The Portal to European Union Law
http://europa.eu.int/eur-lex/en/index.html

1.2. 6th Framework Programme

http://fp6.cordis.lu/fp6/home.cfm

1.3. National Programmes

General

http://www.cordis.lu/national_service/en/

Finland

http://www.cordis.lu/finland/home.html

Finnish science and technology information service:
http://www.research.fi/index_en.html

Tekes: http://www.tekes.fi/eu/eng/index.html

Academy of Finland: http://www.aka.fi/

Austria

http://www.cordis.lu/austria/en/home.html

Website of the Austrian Federal Ministry for Education, Science and Culture in Vienna: http://www.bmbwk.gv.at

Greece

http://www.cordis.lu/greece/home.html

General Secretariat for Research and Technology:
http://www.gsrt.gr/default.asp?V_LANG_ID=2

1.4. News Agencies

Agence Europe

http://www.agenceeurope.com

Euractiv

http://www.euractiv.com/cgi-bin/cgint.exe?1&1000=1&tmpl=index

EU Observer

http://www.euobserver.com/index.phtml

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1.5. Indicators

Eurostat:

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Council of the European Union, *Council Resolution on Establishing a European area of research and innovation*, 15 June 2000

Council of the European Union*, Council Resolution on Making a reality of the European area of research and innovation*, 16 November 2000

Council of the European Union, *Council resolution on Investing in research for European Growth and Competitiveness*, 22 September 2003
Council of the European Union, *Council Resolution on Profession of researchers in the European research area (ERA)*, 10 November 2003

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Council of the European Union, *Council Resolution equal access to and participation of women and men in the knowledge society for growth and innovation*, 26 November 2003

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European Commission, *A European Initiative for Growth – Investing in Networks and Knowledge for Growth and Jobs* (Final Report to the European Council), COM (2003) 690 final, 21.11.2003

Quick start Programme, in European Commission, A European Initiative for Growth – Investing in Networks and Knowledge for Growth and Jobs (Final Report to the European Council), COM (2003) 690 final, 21.11.2003

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Agence Europe, Brussels, 2004.04.19.

Agence Europe, *EU/RESEARCH/COMPETITIVENESS COUNCIL: Mr Busquin takes stock of ITER and ideas on future of research at Competitiveness Council*, Brussels, 2004.05.12.

3. Quotations

3.1. EU official publications

The European Research Area

in *European Commission, Towards a European research area* COM (2000) 6 final, 18.01.2000, pp.8-9.

"The definition of the European research area should embrace in particular the following aspects:

- Networking of existing centres of excellence in Europe and the creation of virtual centres through the use of new interactive communication tools.
- A common approach to the needs and means of financing large research facilities in Europe.
- More coherent implementation of national and European research activities and closer relations between the various organisations of scientific and technological cooperation in Europe.
- Better use of instruments and resources to encourage investment in research and innovation: systems of indirect aid (within the Community rules on State aid), patents, risk capital.
- Establishment of a common system of scientific and technical reference for the implementation of policies.
- More abundant and more mobile human resources:
  - Greater mobility of researchers and introduction of a European dimension to scientific careers.
  - More prominence to the place and role of women in research.
  - Stimulating young people's taste for research and careers in science.
- Greater European cohesion in research based on the best experiences of knowledge transfer at regional and local levels and on the role of the regions in the European research efforts.
- Bringing together the scientific communities, companies and researchers of Western and Eastern Europe.
- Improving the attraction of Europe for researchers from the rest of the world.
- Promotion of common social and ethical values in scientific and technological matters.

Issues that have so far not been properly tackled should be re-examined. The question of launching "variable geometry" programmes and actions at European level, for example, and the shape that these should take comes into sharper focus once more with the prospect of a Europe soon to be enlarged to 25 or 30 countries. The possibilities in this area within the Treaty should be looked at once more.

In the same way, the question of "dual use research" needs to be looked at more deeply. In areas such as aeronautics, advanced materials or information technologies and communications, numerous research projects can give rise to applications in both the civil and the defense sector."

The 6th Framework Programme

in *Brochure The 6th Framework Programme in brief*, December 2002, p.1.

"FP6 is the European Community Framework Programme for Research, Technological Development and Demonstration. It is a collection of the actions at EU level to fund and promote research.

Basic features distinguishing FP6 from other national or international research funding programmes:

The European and international dimension
Following the principle of subsidiarity, projects have to be transnational. In other words: only consortia of partners from different member and associated countries can apply; for mobility and training actions the fellows typically have to go to a country different from their country of origin or residence. Activities that can better be carried out at national or regional level, i.e. without co-operation across borders will not be eligible under the Framework Programme. FP6 provides also possibilities and funding for organisations from third countries ("international co-operation").

The strategic objectives
Based on the Treaty establishing the European Union, the Framework Programme has to serve two main strategic objectives: Strengthening the scientific and technological bases of industry and encourage its
international competitiveness while promoting research activities in support of other EU policies. These two objectives are setting the general scene for choosing priorities and instruments.

Focus and concentration – the thematic priorities
FP6 does not cover all areas of science and technology (the specific research activities for SMEs, Marie-Curie actions, infrastructure actions, policy coordination and the science and society programme are exceptions from this rule). Based on the above strategic objectives, a limited number of thematic priorities (and selected topics within the overall priorities) have been identified. Detailed descriptions of these areas and specific topics will be given in the calls for proposals. Potential participants have to check carefully if their ideas for projects fit within the scope of these priorities and topics. Multidisciplinary proposals addressing several topics may be submitted. Any proposal submitted in response to a call should however have a centre of gravity on one topic open in this call.

Sharing of costs and ownership of results
In general, the EU contributes only a certain percentage of the total costs of a project. Participants have to mobilise own resources accordingly. The percentage of the EU's financial contribution depends on the type of activity. "

Action Plan for Research

in *Investing in research: an action plan for Europe*, COM (2003) 226 final, 30.4.2003, pp. 3-6

Guidelines for action

"Fostering the coherent development of national and European policies
- Shaping a common vision for the development and deployment of key technologies
- Enabling all regions to benefit from increased investment in research
- Designing a coherent mix of policy instruments

Improving public support to research and innovation
- Human resources
- Public research base and its links to industry
- Improving the mix of public financing instruments and their effectiveness

Redirecting public spending towards research and innovation
- The stability and growth pact and the broad economic policy guidelines
- Balance between national and EU public funding until 2010
- State aid rules

Public procurement

Improving framework conditions for private investment in research
- Intellectual property
- Regulation of products and standardisation
- Competition rules
- Financial markets
- Fiscal environment
- Corporate research strategy, management and financial reporting

(...)

A Call for Action
The Barcelona European Council launched in March 2002 a call for action to increase investment in research and technological development1 and close the gap with Europe's main competitors. Investment in research, the European Council decided, should rise from 1.9% to 3% of GDP in the European Union by 2010, and the share funded by business should rise to two-thirds of the total. Since then all stakeholders have confirmed the relevance of that call and the need to act quickly, on the lines suggested by the Commission communication of September 2002 "More research for Europe: towards 3% of GDP". The gap in research investment between the European Union and the United States is already in excess of € 120 billion per year and widening fast, with alarming consequences for the long-term potential for innovation, growth and employment creation in Europe. The gap is linked to less attractive conditions for private investment in research in Europe, due both to lower and possibly less effective public support, and to various obstacles in the wider framework conditions of European research and innovation.

Many Member States have also set national targets in line with the European 3% objective. For example, both France and Germany have adopted the 3% objective for themselves, and so has a future Member State, Slovenia.

The European association of industry (UNICE) and the European Round Table of Industrialists (ERT), stressed that reaching the 3% objective is crucial for Europe's competitiveness but will require major policy changes to restore Europe's attractiveness for research investment. ERT made the 3% objective the main focus of its recommendations to the European Council of March 2003 and UNICE one of its major topics.

Associations representing small and medium-size enterprises (SMEs) concurred on the importance of increased investment in research for their constituencies.

According to an econometric study undertaken for the Commission services, attaining the 3% of GDP objective for research investment would have a significant impact on long-term growth and employment in Europe, in the order of 0.5% of supplementary output and 400,000 additional jobs every year after 2010. The full impact on growth and employment may be even higher thanks to the boost that additional world-class research will give to the international competitiveness of European industry and services and to Europe's global economic attractiveness. Last but not least, more research in areas of social and environmental interest will help Europe lead the way towards a more sustainable future. As emphasised by the Commission in its report to the March 2003 European Council, investing in research is thus at the heart of the strategy set by the Lisbon European Council in March 2000 for Europe's economic, social and environmental renewal.

Assuming an average EU GDP growth rate of 2% per year until 2010, the targets set in Barcelona (3% and 2/3 from the private sector) require a growth rate of 8% per year for the overall European research effort, shared between a 9% yearly increase for business funding and a 6% yearly increase for public funding.

In order to achieve this, the action plan first addresses the need to develop a common understanding shared at all policy levels and by all stakeholders, and to ensure sustained and coherent progress throughout Europe. This can notably be achieved by using, where appropriate, an open co-ordination process, European technology platforms and a mutual learning process for European regions, and by designing and implementing policy mixes that combine in a coherent way a broader range of policy instruments. Making the whole of Europe working together is an important issue."

Basic Research

in *Europe and Basic Research*, COM (2004) 9 final, 14.01.2004, pp. 3; 12-14.

"An important debate is taking place in Europe today on the subject of basic research, the issues involved and the best way of dealing with them at a European level.
The debate is taking place against the background of the emerging knowledge-based economy and society; within the framework of the project to create a European Research Area, which has hitherto not explicitly taken account of the issue of basic research; and

together with the target set by the EU of increasing its overall research effort to 3% of GDP by 2010.

The Prospects
Along with its assets, Europe, as has been shown, suffers from a number of weaknesses as far as basic research is concerned. These are largely due to the compartmentalised nature of the national research systems, and above all the lack of sufficient competition between researchers, teams and individual projects at a European level.
Since these weaknesses vary in nature, they will not be overcome and the challenges associated with overcoming them will not be met unless resources, approaches and instruments are combined. There is no single formula which will allow all of the problems to be solved at the same time.
To enable Europe to extract the maximum benefit from its scientific potential and intellectual resources, to serve the economy and European society, action must be taken at several levels.

A new support mechanism at European level
First and foremost, there seems to be a need to introduce an European level support mechanism for individual teams' research projects, modelled on the "individual grants" given by the NSF.
Given that, according to the scientific community itself, it is difficult to establish strict, universal criteria for distinguishing between basic research and applied research, such a mechanism would therefore actually benefit from being applied throughout the scientific and technological field.

To be able to implement this new activity and achieve a sufficient impact without endangering other activities which support research at European and national levels, a significant volume of fresh funding should be provided for in the Union's research budget. Converging on this point with the recommendations of the "Mayor Group", the Commission plans to propose making the introduction of such a mechanism, as well as increased support for basic research, one of the main themes of the Union's future action in the field of research.

While the introduction of such a new funding mechanism is necessary and will be useful, it will not be enough to resolve all of the problems affecting Europe in the field of basic research.

Other activities must be launched in combination, and those already in progress today must be continued and strengthened, in line with the other major lines of future EU action in the field of research, as envisaged by the Commission. To provide basic research with the resources it needs to achieve its rightful position in the European Research Area, it is in particular essential to:
- Strengthen European support for research infrastructures, and support the creation of centres of excellence in the enlarged Union, through a combination of national and European, public and private funding;
- Increase support for the development of human resources, researcher training and the development of careers in science;
- Support collaboration and networking: in some cases, the mechanism which best meets the needs for a particular basic research topic is that of a collaborative project or a network. The possibility of making use of such a mechanism, as is done in

particular today in the case of networks of excellence under the 6th Framework Programme, must continue to be ensured.
- Improve the coordination of national activities, policies and programmes in the field of basic research: the tools for this purpose exist at a Community level, in the form of the ERA-NET scheme and Article 169 of the Treaty."

3.2. National official publications

In this section, we will present the basic features of some national research policies, focusing on the interface and synergies between the European Research Policy and National Programmes.

The examples of Finland, Austria and Greece.

Finland, in http://www.cordis.lu/finland/rd.htm
Finland spends nearly 4% of its GDP on R&D; it is Europe's leading information society - the most wired and wireless nation in the world, as well as a forerunner of innovation system development. Finland has a rapidly-growing biotechnology sector - 10% of the small European biotech companies are located in Finland. It has advanced bioenergy technology for combined heat and power (CHP) generation.

Finland and FP6

The Sixth Framework Programme is seen in Finland as the main tool for realisation of the European Research Area. FP6 provides funding both for strengthening the basic research and for developing more European centres of excellence. Inputs in researchers' formation and mobility are also important policies when constructing a solid base for research in the enlarging Europe.

A functional innovation environment is one of the Finnish R&D priorities. Technology implementation and exploitation of R&D results for societal challenges is a crucial part of FP6. The Government acknowledges that it is important to provide information on the Finnish partners and on its innovation policy as a way towards a real European research area.

Finnish Research and Technology Programmes

The research community and enterprises have active networks in Finland. The R&D funding has been strongly focused to national research and technology programmes which have turned out to be productive and functional. Programmes are key instruments to promote the establishment of creative research environments and their development. The research institutes, universities and enterprises together with the funding organisation plan carry out the work performed in programmes. The programmes usually last for 3-5 years and the budget varies from 5 million up to 100 million euros. The programmes are also open to foreign participants, provided they fund their own research. The technology programmes are co-ordinated by Tekes, the National Technology Agency, and the research programmes by the Academy of Finland.

Tekes - the National Technology Agency of Finland, in http://www.cordis.lu/finland/rd_tekes.htm

Tekes is the main organisation for technology financing in Finland. This Agency funds and activates challenging product development and research projects. The emphasis is on technology programmes, which are joint projects of research institutes, universities and industry. The programmes aim to strengthen the technological and scientific skills, in order to promote employment and social welfare.

The programmes are focused on technology areas that are important to Finnish industry and service sector. More than 40 programmes - worth 1.5 billion euro annually - are currently in process. Areas recently brought up have varied from communications technology to biotechnology and from the development of new production processes to material technologies.

The technology programmes are open to foreign enterprises, research institutes and universities for collaboration with Finnish partners. Tekes strongly encourages international co-operation and mobility of researchers. Costs of a visiting researcher may be financed by Tekes as a part of a technology programme.
Tekes also coordinates and offers financial support for Finnish participation in international technology initiatives such as EU research programmes and several other European research activities. Tekes offers a good example of a national Agency exploiting synergies with the EU and other international R&D programmes.

Academy of Finland, in http://www.cordis.lu/finland/rd_academy.htm

The Academy of Finland is a funding organisation for financing basic research in all fields in Finland. It promotes the establishment of creative research environments and their development. A research programme consists of a number of interrelated projects within the same field of research. The aim of the programmes is to raise the quality of research in the field, to create a sound knowledge base, to increase the networking of researchers and to intensify research training.

The foreign groups are welcome to join the programme in collaboration with a Finnish group. However, the Academy of Finland is funding only Finnish research groups at the moment.

The Finnish Secretariat for EU R&D helps Finnish companies, universities, institutions of higher education and research centres participating in EU R&D programmes, supports the activities of Finnish committee members and responsible organisations and provides information about the opportunities offered by various programmes.

Austria, in http://www.cordis.lu/austria/en/home.html

With regard to research expenditure, Austria is currently average among the OECD countries, with a rate of about 2.0% (measured against the gross domestic product).
The Federal Government of Austria issued in 2000 a Declaration on 'Current Issues in Research and Technology Policy' in which it sets the objective of increasing the share of

research and development expenditure in the GNP to 2.0% by 2002 and to 2.5% by the year 2005. The aim is to carry out investments securing a successful future scientific, economic, social and cultural development in Austria, as well as to connect to European developments in research and technology, so that Austria's science and economy can remain competitive and improve their competitiveness in Europe demonstrably, both in regional - mainly Central European - and in global competition.

Objectives of Research and Technology Policy

Along with the aim to increase the efficiency of the national innovation structure and to promote human resources and their development, research and technology policy in Austria places particular emphasis on intensifying the internationalization of the research establishments, and especially the universities, increased mobility of researchers and on cooperation between science and industry. A number of trend-setting reforms in the last few years in the field of research and development have taken place on the basis of deregulation, decentralization and the institutions being more self-governing and autonomous.

Research Policy Strategies

The national authorities acknowledge that Austria's accession to the European Union has created new framework conditions and new opportunities for Austrian R&D. In order to use these opportunities to the optimum extent, a strategic reorientation of research policy has taken place at the national level.

Priority objectives of the Federal government in the area of research and technology are the following:

- networking with European partners and targeted extension of competence clusters;
- extension of funding under programmes by creating national research programmes with thematic focuses,
- matching current EU programmes or in preparation of the new Framework Programme.

Biotechnology and genetic engineering are a major priority research and development field, amongst others. "e-Austria", a specific Austrian programme, emphatically aims at improving qualifications in information technology and telecommunications in a European context (e-Europe). Intensifying the dialogue between science and society will contribute to reducing scepticism towards science; a special programme has been prepared for this purpose.

An independent Council for Research and Technology Development was set up to provide advice to the Federal government, individual Federal ministries and the Federal provinces on issues of research and technology development. Its central tasks are, amongst others, preparing a long-term research strategy for Austria, preparing recommendations concerning guidelines for research funding, continuously reviewing the recommended steps for implementation, as well as providing advice on how to strengthen Austria's position in international RTD cooperation.

Greece, in http://www.cordis.lu/greece/home.html

Over the last decade, Greece has made significant improvements in research and technological development. According to some innovation indicators published by the European Commission (EU Innovation Scoreboard), Greece is in a "catching up" phase, with strong overall trends in improving research and innovation.
The gross expenditure in R&D has risen from 0,20% of GDP in the early 1980s to 0,68% in 1999 and has experienced the highest annual growth rate in the EU since 1995.

The General Secretariat for Research and Technology (GSRT) is the central agency for the administration of the Greek R&D and Innovation system. The GSRT is responsible for drawing up and implementing a national R&D and Innovation strategy.
The national research programmes implemented by the GSRT, together with the EU R&D programmes (which it coordinates at national level) are the main sources of funding for R&D in Greece.
As regards the allocation of research funds, the largest share goes to universities, followed by research centres and businesses.

R&D and Innovation in Greece - Programmes

The exploitation and promotion of new technologies forms the basis of the development strategy, adopted by Greece for the period 2001-2006.

One of the main objectives of the Greek research policy is to open the Greek research system (both public and private) to the international arena. This implies increasing the international collaborations of the public research centres and enterprises with foreign counterparts.
The qualitative improvement of Greek participants in the EU Framework Programmes and the increased participation in European and International Organisations programmes (ESA, ESF, etc.), as well as the opening up of the national programmes for international collaboration, is seen not only as a way to improve the level of research, but also to make it attractive for investors.

Another national priority is to increase the gross domestic expenditure in R&D to 1.5% of GDP in 2010, directly relating this goal with the decisions of the European Council in Lisbon and Barcelona that GERD should reach 3% of GDP in the EU by 2010.

The thematic priorities of the research and technology policy are based on two main policy tools which guide the research activities in Greece:

- The Concerted Programmes under the Operational Programme for Competitiveness and the Operational Programme for the Information Society (2002-2006)
- The 6th Framework Programme as well as the programmes of the International Organisations (European Space Agency, etc.) 2002-2006

3.3. News Agencies

Strasbourg, 02/04/2004 (Agence Europe) European Parliament reaffirmed its support for the Lisbon strategy. It stressed that setting up a high level group to meet the halfway deadlines of the strategy will not replace political action on the part of the Member States. It also called upon all Member States to bring their research expenditure to 3% of GDP by 2010.

EU) EU/SCIENCE/RESEARCH: Community action plan for more scientists in Europe
Brussels, 06/04/2004 (Agence Europe) - At an international conference in Brussels on 2 April on "Increasing human resources for science and technologies in Europe", the high-level expert group chaired by former Portuguese Science and Technology Minister José Mariano Gago transferred its recommendations on increasing human resources in Europe for these two sectors to Commissioner Philippe Busquin.
The group, created in May 2003 by Mr Busquin as an integral part of the Commission strategy to meet the Lisbon and Barcelona objectives, identified obstacles hindering the growth in number of scientists in Europe. In a press release, the group highlights problems in the public sector, which receives less funding than in the US and suffers from a lack of resources, low salaries and poor career prospects. It also underlines the need for universities to attract a large range of aptitudes needed for the multitude of scientific careers, instead of solely concentrating on preparing university careers.
The group considers that Europe must step up efforts to promote scientific careers in the private sector and should encourage a new partnership between universities and businesses to develop careers and better mutual understanding. The group also proposes to raise awareness amongst university students of the possibility of opting for a scientific career. The experts consider that the system of teaching science in Europe is out of touch with the 'real scientific world' and focuses too much on out-dated notions. The Commission is considering the possibility of launching an awareness campaign based on the gaps highlighted in the expert group report (Report available at http: //europa.eu.int/comm/research/conferences/2004/sciprof/index_en.html).

(EU) EU/EP/SCIENCE/RESEARCH: Investment must be promoted, structure of scientific world changed and researchers kept better informed if Lisbon goals are to be achieved - In support of area for dialogue between scientific and political worlds - Irish example to eliminate braindrain to United States
Brussels, 13/04/2004 (Agence Europe) - In order to achieve the Lisbon research objectives (i.e. spending equal to 3% of GNP for 2010), investment must be promoted, the public must be informed of successes in this field, and young people must be encouraged to put a great deal of effort and enthusiasm into research. Such was the content of the conclusions reached by the European Science Congress, organised on 6 and 7 April in Brussels by the European Parliament's Committee on Research and Industry on the theme "Investing in Research is Investing in the Future". Among those taking part were European Commission President Romano Prodi, EP Vice-President (a qualified physician) Alejo Vidal-Quadras Roca (EPP-ED, Spain), Ministers of Science Noël Dempsey (Ireland) and Kleiber (Poland), Finnish Trade and Industry Minister Mauri Pekkarinen, and the Director General at the European Commission DG for Research,

Achilleas Mitsos (Philippe Busquin, the European Commissioner for Research, being on a visit to China).
"Europe is turned to the future, and not just to the past", Rolf Linkohr (German Social Democrat) said after the work. He is the EP rapporteur on the Commission's communication "Investing in Research: an action plan for Europe". "It is growth that is important for Europe, its own identity (...). One should not simply point out the differences between the United States and Europe. Successes achieved must be explained in order to arouse enthusiasm among the young so that they take an interest in and make an effort in the field of research", Mr Linkohr added. He explained: "The time is right: the Lisbon goals are not being delivered and this has begun to make Member States ill at ease, feeling guilty that they have not stepped up their research and science budgets". It was Mr Linkohr's view that "a budget of one billion euro over four years is a minimum". Also, it is perfectly feasible if one considers that it is necessary to share this amount out over a Union of 450 million inhabitants. Mr Linkohr reproached small and medium-sized firms (SME) in Europe to devote too little to research and development (R&D), while admitting that their situation, compared to their American counterparts, is not good. He went on to explain that, in the United States, SMEs are considered as having strategic importance especially in terms of competitiveness. Finally, Rolf Linkohr said progress also depends on "frame of mind". "Do we want a society guided by consumers or by rationality and science?", he asked, highlighting the link with "our identity". Mr Vidal-Quadras was another who felt that funding is indispensable but not enough. Other factors come into play for achieving the Lisbon goals, he said, citing the structure of the scientific world and the methods for training researchers. "If one reaches 3% of GNP but does not change the structures of our scientific world, then I believe that money will be wasted", the MEP said. It is his view that "to be competitive, we need a good scientific environment, more action and no dependence of any kind on any supervisory authority".
Irish Minister Noël Dempsey explained how, after the model set by the Irish, one must stop the most brilliant minds from leaving Europe for the United States. Between 1999 and 2003, Ireland increased its investment in research and development 25-fold, and plans to multiply this again three times by 2006, the minister said, stressing that, once an amount has been allocated, the decision is taken on the basis of two principles: competitiveness and excellence. Mr Dempsey also recalled that the Irish government has created the Science Foundation Ireland (after the US model of the National Science Foundation), which focuses on information technology and biotechnologies, with a budget of EUR 650 million for the period 2000-2006. It is a foundation, the minister concluded, which "has identified the best researchers and successfully created the conditions, in Ireland, to attract them".
During the press conference after the Congress, Mr Linkohr urged for greater attention to be paid to European SMEs, mainly through an innovation and research strategy with SMEs in mind. Belgian Socialist Olga Zrihen felt that "this Congress has marked the determination of the outgoing team of MEPs to show the interest that it holds in science". In her view, it is necessary to "establish relations of trust between the political world and the research sector. An area of dialogue between the two worlds is needed". Polish Science Minister Mr Kleiber explained that, despite their weaknesses, the future Member States will gradually be able to contribute to developing European research. Before this, however, they must strengthen their legal framework (competition law, intellectual property rights), make their employment markets more flexible and consolidate the private sector. "We shall have more and more students and researchers and labour will cost less than in the EU15. That is promising", the minister concluded. Mr Barbagelata, Director for Industry (the D'Appolonia company, Genoa, Italy), spoke of the SMEs'

"malaise" and insisted on a better distribution of means intended for research. Professor Lindberg (Sweden's Royal Academy of Science and President of the Advisory Council of the European Science Academies) stressed the effort that must still be made in education, beginning at school.

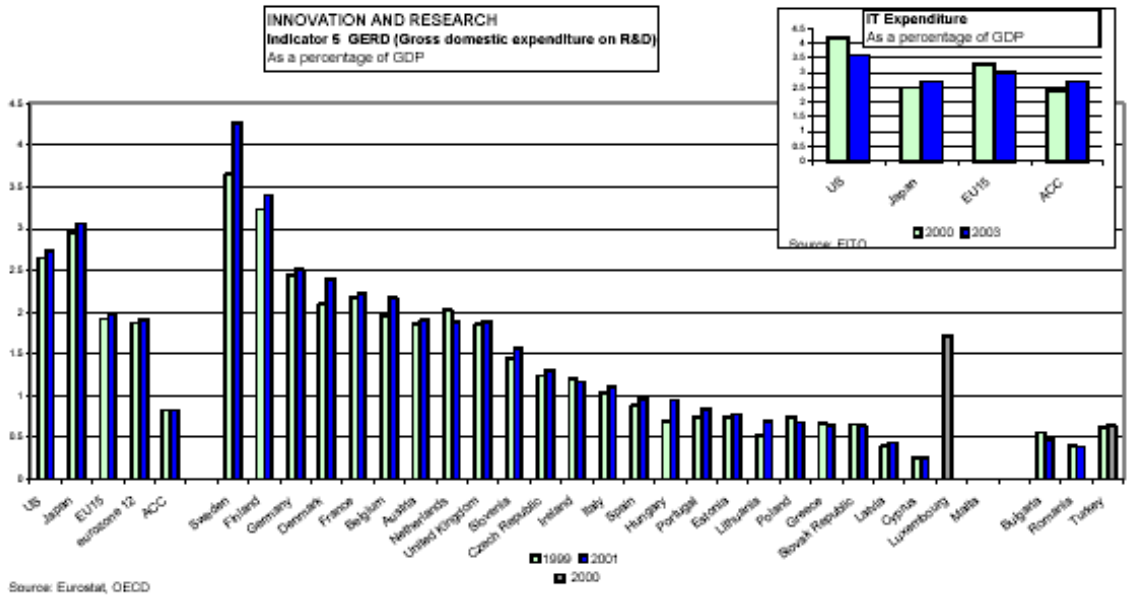
Brussels, 19/04/2004 (Agence Europe) Faced with emerging economic powers such as China and India, it describes developments such as the net drop in productivity in the manufacturing sector, disappointing performances in that of high technology and the lack of innovation and investment in research on the part of the private sector as "worrying".
Against this backdrop, the Commission is to propose three types of measure to be included in the Lisbon process. Firstly, better assessment of consideration of the cumulated impact of provisions and regulations affecting the industrial sectors. Secondly, greater coherence and better co-ordination will be given to national policies on innovation, R&D and competitiveness: the Commission plans notably to adopt an action plan on this point in September. Lastly, it intends to recommend the generalisation of high-level consultations with the various economic sectors on subjects such as R&D, training, administrative provisions, etc, a formula which is currently limited to the aeronautical, pharmaceutical and shipbuilding sectors.

(EU) EU/RESEARCH/COMPETITIVENESS COUNCIL: Mr Busquin takes stock of ITER and ideas on future of research at Competitiveness Council
Brussels, 12/05/2004 (Agence Europe) - Commissioner Philippe Busquin had hoped to present the text of the initial exploratory draft for the Community research policy to next Monday's Competitiveness Council, as part of preparations for the 7th framework programme. This text would have allowed the Ministers to conduct an initial debate, and to kick off consultation of the scientific community. However, the Commission decided otherwise on Wednesday: the Commissioner will have to make do with an oral presentation of the outlines of a future framework programme based around the consolidation of the European research area. The draft communication, which has become a "martyr text", must be re-worked to take account of the many observations made by Mr Busquin's colleagues. Many of them expressed the hope that this text will be re-integrated into the general debate on the financial perspectives, and therefore insist that Community added value should be particularly stressed, as should the efficiency of budgetary instruments.
During the meeting of the Competitiveness Council, the Commissioner will also take stock of negotiations on the international thermonuclear experimental reactor, ITER. Despite the Commission's negotiation efforts based on an extended approach allowing some of the work to be divided between two of the rival sites, the partners have not yet managed to agree on the choice of site to host the reactor- Cadarache in France, or Rokkasho-mura in Japan.

4. Indicators

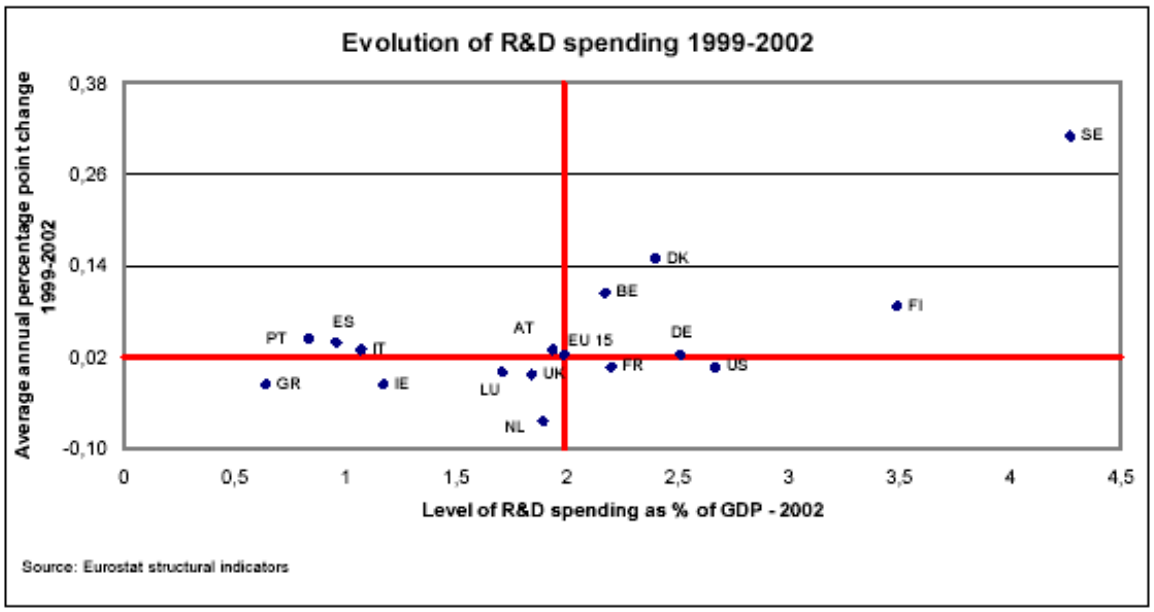
In the aftermath of the Lisbon European Council, Eurostat created a special data base with a set of structural indicators used to underpin the Commission's Synthesis Report to the Spring European Councils. These indicators cover the five domains of Employment, Innovation and Research, Economic Reform, Social Cohesion, Environment as well as the General Economic Background and can be found on Eurostat's website, with free access.

We will present below a few examples of these indicators in the area of research and Innovation. The figures have been taken from the Commission's Synthesis report and the tables from Eurostat's data base.



Source: Eurostat, OECD
Notes:
US: excludes most or all capital expenditure.
EU15, Eurozone12, ACC (without Malta): OECD estimate
Austria: provisional estimate for 2001, 1999; Belgium, Greece: estimate for 2001, 1999
France: provisional for 2001; Portugal: estimate for 2001
Ireland: estimate for 1999
2002 available for US (OECD estimate): 2.67; EU-15 (OECD estimate): 1.99; Austria (provisional estimate): 1.94; Finland (forecast): 3.49; France (estimate): 2.2; Germany (estimate): 2.51; UK (forecast): 1.84; Slovak Republic 0.59

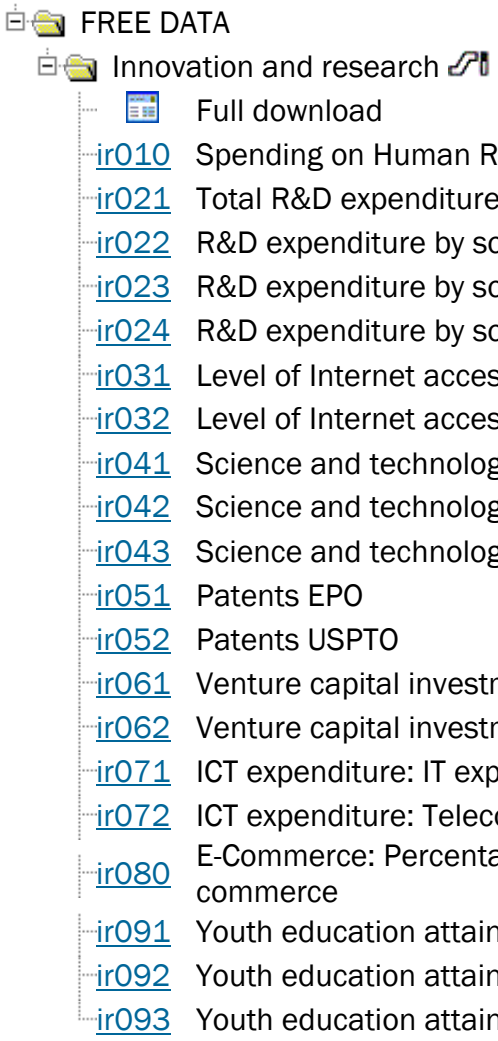
In European Commission, *Report from the Commission to the Spring European Council – Delivering Lisbon, Reforms for the enlarged Union*, COM (2004) 29, 20.01.2004, p.39.



In, European Commission, *Report from the Commission to the Spring European Council – Delivering Lisbon, Reforms for the enlarged Union*, COM (2004) 29, 20.01.2004, p.40.

Total R&D expenditure

The four indicators provided are GERD (Gross domestic expenditure on R&D) as a percentage of GDP, percentage of GERD financed by industry, percentage of GERD financed by government and percentage of GERD financed from abroad. "Research and experimental development (R&D) comprise 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" (Frascati Manual, 2002 edition, § 63). R&D is an activity where there are significant transfers of resources between units, organisations and sectors and it is important to trace the flow of R&D funds.



In: Eurostat Structural Indicators: Free data, at http://europa.eu.int/comm/eurostat/.

Gross domestic expenditure on R&D

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU (25 countries)	:	:	:	1.86 (s)	1.84 (s)	1.83 (s)	1.83 (s)	1.88 (s)	1.91 (s)	1.93 (s)	:	:
EU (15 countries)	1.92 (s)	1.94 (s)	1.91 (s)	1.89 (s)	1.88 (s)	1.87 (s)	1.88 (s)	1.92 (s)	1.95 (s)	1.98 (s)	1.99 (s)	:
Euro-zone (12 countries)	1.86 (s)	1.89 (s)	1.84 (s)	1.83 (s)	1.82 (s)	1.81 (s)	1.82 (s)	1.87 (s)	1.89 (s)	1.91 (s)	1.92 (s)	:
Belgium	:	1.71 (e)	1.67 (e)	1.64 (er)	1.76 (er)	1.88 (er)	1.91 (er)	1.96 (er)	2.04 (er)	2.17 (er)	:	:
Czech Republic	:	:	:	:	:	:	:	:	1.23	1.22	:	:
Denmark	1.68 (e)	1.74	:	1.84	1.85 (e)	1.94	2.06 (ei)	2.10 (r)	2.27 (er)	2.40	:	:
Germany	2.48 (eir)	2.31 (ir)	2.21 (eir)	2.15 (ir)	2.19 (eir)	2.30 (r)	2.33 (eir)	2.44 (r)	2.49 (eir)	2.51 (r)	2.51 (eir)	:
Estonia	:	:	:	:	:	:	0.61	0.75	0.66	0.78	:	:
Greece	:	0.37	:	0.43	:	0.46	:	0.65 (e)	:	0.64 (e)	:	:
Spain	0.70	0.79	0.78	0.79	0.80 (e)	0.81	0.90 (e)	0.88	0.94 (er)	0.95 (r)	:	:
France	2.48	2.43	2.35	2.30	2.27	2.24	2.18	2.18	2.18 (b)	2.23	2.20 (e)	:
Ireland	1.00 (e)	1.19 (e)	1.32 (e)	1.39 (e)	1.33 (e)	1.22 (e)	1.25	1.20 (e)	1.15	1.17	:	:
Italy	0.98	1.07	1.04	1.10	1.02	1.05 (br)	1.07 (r)	1.04 (r)	1.07	1.11	:	:
Cyprus	:	:	:	:	:	:	0.23	0.25	0.25	0.27	:	:
Latvia	0.59	0.49	0.42	0.53	0.47	0.42	0.45	0.40	0.48	0.44	:	:
Lithuania	:	:	0.52	0.46	0.52 (b)	0.56	0.56	0.52	0.60	0.69	:	:
Luxembourg	:	:	:	:	:	:	:	:	1.71 (r)	:	:	:
Hungary	1.05 (i)	0.98 (i)	0.89 (i)	0.73 (i)	0.65 (i)	0.72 (i)	0.68 (i)	0.69 (i)	0.80 (i)	0.95 (i)	:	:
Netherlands	1.97	1.91 (b)	1.93	1.89	1.97	2.05	1.95	2.02 (r)	1.90 (r)	1.89 (r)	:	:
Austria	1.50 (e)	1.45	1.51 (e)	1.49 (e)	1.57 (e)	1.72 (e)	1.80	1.86 (e)	1.84 (e)	1.90 (e)	1.93 (e)	:
Poland	:	:	:	:	:	:	:	0.70	0.66	0.64	0.59	:
Portugal	0.53	:	:	0.56 (r)	:	0.61	:	0.75 (r)	:	0.85 (e)	:	:
Slovenia	1.91	1.60 (bi)	1.76 (i)	1.61 (i)	1.36	1.35	1.40	1.44	1.46	1.57	:	:
Slovakia	:	:	0.90	0.93	0.92	1.09	0.79	0.66	0.65	0.64	0.58	:
Finland	2.08	2.45	2.38	2.19	2.49	2.68	2.90	3.23	3.40	3.41	3.49 (f)	:
Sweden	:	2.99	:	3.35	:	3.55	3.62 (e)	3.65	:	4.27	:	:
United Kingdom	2.08	2.11	2.06	1.97	1.90	1.82	1.81	1.84	1.84 (r)	1.89 (r)	1.84 (f)	:
Bulgaria	1.64	1.18	0.88	0.62	0.52 (b)	0.51	0.57	0.57 (b)	0.52	0.47	:	:
Romania	:	:	:	:	:	:	:	0.40	0.37	0.39	:	:
Turkey	0.49	0.44	0.36	0.38	0.45	0.49	0.50	0.63	0.64	:	:	:
Iceland	1.32 (i)	1.33	1.38 (i)	1.54	:	1.88	2.07	2.38	2.76 (e)	3.06	3.09 (f)	:
Norway	:	1.72	:	1.70	:	1.64	:	1.65	:	1.60	:	:
Japan	2.89 (i)	2.83 (i)	2.77 (i)	2.90 (i)	2.78 (bi)	2.84 (i)	2.95 (i)	2.96 (i)	2.99 (i)	3.07 (i)	:	:
United States	2.62 (i)	2.50 (i)	2.40 (i)	2.49 (i)	2.53 (i)	2.56 (i)	2.59 (i)	2.63 (i)	2.70 (i)	2.72 (i)	2.64 (ip)	2.59 (ip)

(:) Not available
(s) Eurostat estimate
(e) Estimated value
(r) Revised value
(i) See footnote
(b) Break in series
(f) Forecast
(p) Provisional value
Source: Eurostat, OECD

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6. Some Key-issues at European level

To build the European Research Area goes much beyond launching a new Framework Programme. It is still too early to assess the success of this new stage. A qualitative leap is at stake in order to create more scientific critical mass with a real impact at world level. This depends crucially on combining national capacities towards some common priorities and on involving new actors in research and development. The focus of the new Community Framework Programme (FP6 2002-2006) should be put on catalysing all this broader process by building European networks and opening the national programmes. Finally, the international dimension of the research policy can be at the forefront of more knowledge-based cooperation of the European Union with third countries creating new prospects for growth and development.

Hence, bearing in mind all these main shaping factors of the European Research Area, some key-issues for the future seem to be:

- how can we launch a process which involves the researchers working on a specific research topic at both European and national level? The purpose of the open method of coordination is to develop this process regarding some common priorities notwithstanding the respect for national diversity in setting research priorities;
- how can we use the new instruments of FP6 in order to support excellence but also to diffuse and to build more scientific competence?;
- how can we combine the instruments of research policy with the instruments of enterprise and innovation policy in order to involve new actors, and namely companies, in the development of a knowledge-based economy? More sophisticated and effective instruments for intellectual property rights and for funding private research should require particular attention. A stronger and more systematic interface between knowledge producers and knowledge users should be promoted. More broadly, the governance of the European innovation systems should be improved;
- How should the research cooperation with third countries be connected with a broader view on Europe's role to improve global development and governance? For instance, the recently adopted (World Summit of Johannesburg, 2002) Plan of Implementation for Sustainable Development offers a large range of opportunities for both supporting developing countries and promoting new services and jobs in Europe;
- Finally and particularly important, how can the European capacity of exploring the forefront of scientific research be promoted?