



EUROPEAN
COMMISSION

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The European Research Area: Green Paper Consultation

Preliminary results





EUROPEAN COMMISSION
RESEARCH DIRECTORATE-GENERAL

PRELIMINARY RESULTS

PUBLIC CONSULTATION

GREEN PAPER ON THE ERA

DRAFT

Note: These preliminary results should be treated with some caution – they should not be considered to be a comprehensive analysis of the responses

September 2007

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PRELIMINARY ANALYSIS: SAMPLE HIGHLIGHTS

GENERAL OBSERVATIONS

- There has been a strong mobilisation of stakeholders in response to the ERA Green Paper consultation with 686 responses to the on-line questionnaire plus an additional 127 free-format submissions received so far;
- Preliminary analysis of this input reveals strong stakeholder support for the ERA vision. High importance is accorded to each of the six specific ERA dimensions highlighted in the Green Paper with "knowledge sharing" coming out on top, though "realising a single labour market for researchers" being the most important in terms of need for action at EU level;
- Stakeholders draw attention to crucial interconnections and interdependencies between the ERA dimensions, such as the importance of researcher mobility for knowledge-sharing, the links of research infrastructure with research institutions and career prospects of researchers and joint programming with international cooperation on global issues and challenges;
- There is strong support for action on all ERA dimensions and at all governance levels (regional, national, European) and particularly for action at EU level on researchers, international cooperation and infrastructures. A majority of respondents endorse the use of various mechanisms to promote ERA depending on the issues to be addressed such as financial incentives, increased budget for EU actions, reinforced coordination, guidelines or legislative actions;
- However, stakeholders generally do not favour binding legislative actions at European level but rather flexible, voluntary and bottom-up cooperation schemes, networking and exchange of best practices. They advocate that the Commission facilitate rather than regulate (e.g. via the open method of coordination, issuing principles to be shared and guidelines);
- Sustainable "variable geometry" partnerships are deemed to be very important in developing more efficient and dynamic relationships and establishing effective coordination processes and joint actions - between institutions, between public and private sectors and between regions and countries.

REALISING A SINGLE LABOUR MARKET FOR RESEARCHERS

- Respondents strongly favour more actions to speed up implementation of the Charter and Code (C&C)¹, though the majority of free-format contributors, especially from the private sector, reject the translation of the C&C into binding rules;
- Statutory pension rights, health and unemployment benefits seem to be the most problematic social security areas for mobile researchers within the EU. There is broad support for actions to develop common rules on the acquisition, preservation and transferability of supplementary pension rights for researchers;
- An overwhelming majority (87%) of the respondents applaud the idea of offering end-of-career researchers new job opportunities, such as training, coaching or advisory functions, so that their experience and expertise can be made use of;
- The majority of respondents suggest that the effectiveness of Member State and Community efforts to attract the European "scientific diaspora" and the best non-EU talent could be increased by European and trans-national fellowship funding programmes and EU-wide exchange of best practices.

DEVELOPING WORLD-CLASS RESEARCH INFRASTRUCTURES

- 82% of the respondents agree that a common approach is required to develop the research infrastructures identified by ESFR² and that leadership should be at the EU level;
- A majority of respondents consider that the current situation can not facilitate the creation and operation of new infrastructures and that a new legal European framework or guidelines should be

¹ European Charter for Researchers and the Code of Conduct for their Recruitment ("Charter and Code"), published in 2005 by the European Commission as a common, albeit voluntary framework

² European Strategy Forum for Research Infrastructures

developed covering issues such as access, conditions of use, intellectual property rights, training and support;

- Most respondents agree that an international forum is needed to create research infrastructures addressing global needs - the most favoured approach would be mixed Member State / EU representation, with involvement from the ESFRI.

STRENGTHENING RESEARCH INSTITUTIONS

- A majority of respondents agree that excellence and competitiveness of EU research institutions will be reinforced if more funding is allocated and more on a competitive basis;
- More than 60% support the idea that sustainable partnerships at European level between research institutions and industry are needed to create European world-class virtual centres of excellence;
- A majority of the respondents suggest that there is a need, at EU level, for shared principles to enhance the autonomy of research institutions and for shared mechanisms to assess academic achievements. Many stakeholders confirm the need to go further with the modernisation agenda of universities;
- Most also agree that the EU and Member States could promote the emergence of European and global research communities which take full advantage of ICT mainly through joint implementation of infrastructures and exchange of good practices;
- Stakeholders consider that successful public-private partnerships should better develop in a "bottom-up" way and on a voluntary basis in varying local, regional, national and European contexts;
- Several RPOs consider their role in furthering ERA to have been inadequately reflected in the Green Paper and highlight the need for specific actions to support stronger and sustainable cross-border co-operation between them.

SHARING KNOWLEDGE

- Over 80% of respondents call for open access to scientific data and publications, though many – particularly industrial respondents – point out that such initiatives may need to be limited for reasons of legal conformity, commercial sensitivity etc. and over 70% desire to see EU level databases / initiatives developed, though national / regional access would be needed; existing commercial entities (mainly publishers) call for closer interaction with the Commission regarding next steps;
- It is also agreed by almost all respondents (over 90%) that cultural differences between the business and science communities and a lack of incentives remain major obstacles to efficient knowledge transfer;
- Although respondents on the whole favour the promotion of common principles at European level (such as the need for research institutions to have IP management systems and policies in place or for royalties to be shared with researchers), the preferred method of delivery varied, with significant support for financial incentives for research institutions and model contracts and the development of a European Charter.

OPTIMISING RESEARCH PROGRAMMES AND PRIORITIES

- The identification of future research challenges and opportunities (through foresight) and evaluation of publicly funded research proposals by peer review is suggested by respectively 88% and 82% of the respondents as the main areas for closer EU-wide collaboration;
- 77% of the respondents agree that addressing resource-intensive and complex scientific challenges requires cross-border cooperation between public authorities, while only 5% disagree;
- The preferred ways for how public authorities should organise trans-national cooperation include: concentration of efforts in European level programmes (74%); joint public programmes with variable geometry (72%); and ERA-net type loose and bottom-up coordination (71%).

OPENING TO THE WORLD: INTERNATIONAL COOPERATION

- Over 84% of respondents support the EC and Member States working together to: define common European priorities; ensure a coordinated and efficient use of instruments and resources; enhance coherence of their programmes; and promote exchanges and synergies;
- 80% of respondents are in favour of Europe taking a more active approach to define the global S&T agenda in multilateral fora, with 75% expressing the wish that Europe should "speak with one voice" and 69% thinking that this could be achieved through placing emphasis on a small number of high-priority global research related themes.

1. BACKGROUND

With the [Green Paper](#) "The European Research Area: New Perspectives", the European Commission launched a broad institutional and public debate on what needs to be done to give renewed impetus to the realisation of an open, competitive and attractive European Research Area, which would meet the needs and expectations of the scientific community, business and citizens. Stakeholders were invited to contribute to the debate by responding to the issues raised in the Green Paper, particularly via an on-line questionnaire, though other ad hoc forms of response were also encouraged.

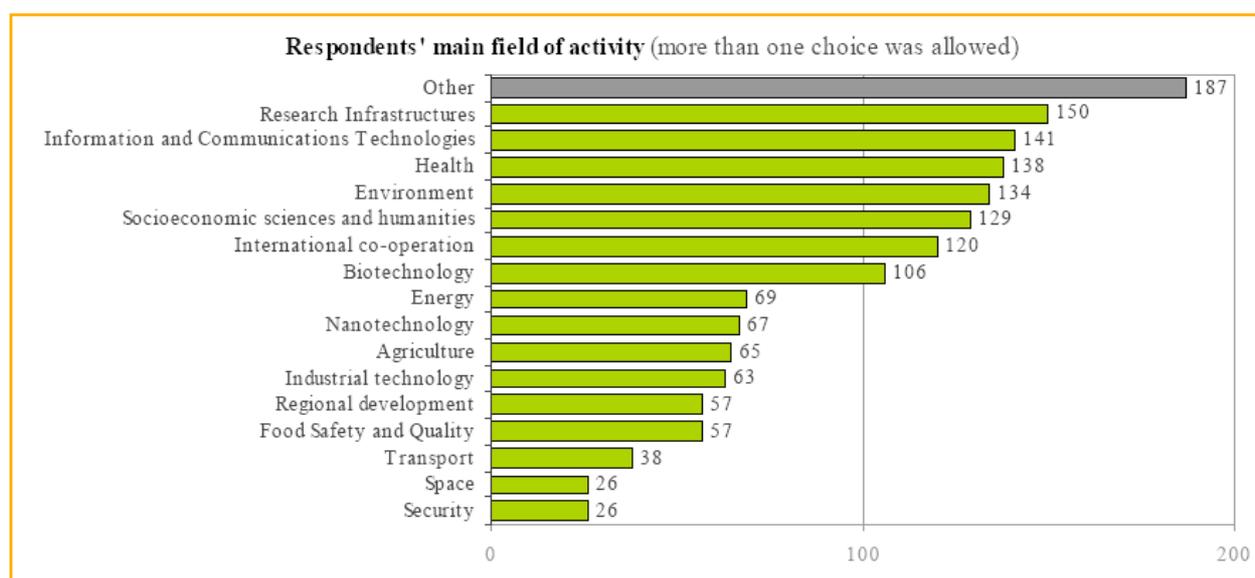
The on-line public consultation lasted from 1st May 2007 until 31st August 2007 with 686 responses received. In addition, 130 free-format submissions (position papers, opinions, etc.) have been received to date and this number is likely to increase slightly especially with a number of formal submissions expected from some Member States.

This document presents a first synthetic analysis of the responses. A more detailed analysis of all responses will be issued later this year, including a breakdown by type of stakeholders. The Commission will take account of the results of the consultation in preparing initiatives that will be proposed in 2008.

2. PROFILE OF THE RESPONDENTS

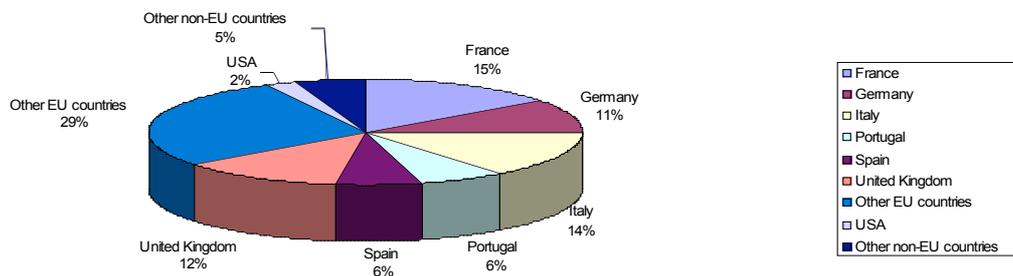
70% of the on-line respondents reply as individuals and two thirds of which are male. Of the 30% responding on behalf of their organisations, 20% come from Higher Education Institutions, 16% from other public sector research performers, 6% from governmental bodies, 12% from commercial organisations (half of them SMEs), 4% from associations with commercial interests, 20% from NGOs and 4% from research funding organisations. 58% of the organisations' activities are reported to be national, 55% international and 52% European, with regional and local activities following behind (33% and 20% respectively). More than 60% of the Higher Education Institutions belong to the UK, France and Italy and more than 50% mention as key areas of activity ICT and socio-economic sciences and humanities.

Respondents' research areas of activity or interest are in decreasing order research infrastructures, ICT, Health, Environment, Socio-economic sciences and humanities, international cooperation and biotechnology.



More than 60% of the responses come from France, Italy, the UK, Germany, Portugal and Spain. All member States, apart from a new member State, are the origin of at least one response, while the US ranks 12 in number of responses (14 responses). The ranking of the national origin of the reported organisations is different than the ranking of the countries of residence, with Belgium and the Netherlands replacing Portugal and Spain in the group of the top six countries.

Origin of respondents



A significant number (48%) of free-format submissions come from NGOs, 22% of which associations representing the interests of researchers in specific field; 13% come from governmental bodies many of which are the product of national consultations; 9% come from academia and equal percentage from other public sector research performers; 15% come from the private sector and associations representing commercial interests.

3. THE EUROPEAN RESEARCH AREA VISION

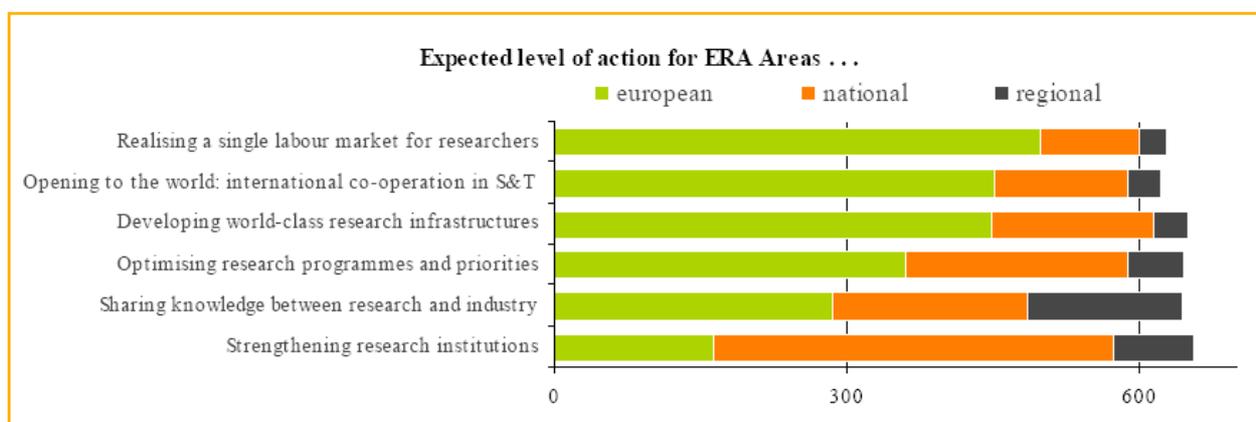
The developments deemed most likely to affect the development of ERA in the next 10 years are by decreasing order of importance), Public investment, Globalisation of research, Private investment, Emergency of new scientific powers and Specialisation of research activities at European rather than MS level.

All six of the ERA dimensions in the Green paper are considered important by respondents. The results position “Sharing knowledge” as the most important area contributing towards the ERA Vision, followed by “Developing world-class research infrastructures”, “Strengthening research institutions” and “Optimising research programmes and priorities”. “Opening to the world” and “Realising a single labour market for researchers” are ranked in fifth and sixth place, respectively. Position papers and comments highlighted the importance of the links among the axes.

Importance of ERA Areas	r1	r2	r3	r4	r5	r6	r7	n/o	votes	score	rank
Sharing knowledge (notably between research and industry)	297	155	99	49	32	22	16	16	686	5156	1
Developing world-class research infrastructures	269	169	96	63	21	26	14	28	686	4999	2
Strengthening research institutions	247	178	125	46	25	22	17	26	686	4964	3
Optimising research programmes and priorities	193	180	133	59	43	29	20	29	686	4611	4
Opening to the world: international co-operation in S&T	166	164	123	81	54	54	14	30	686	4318	5
Realising a single labour market for researchers	189	124	137	82	50	39	24	41	686	4284	6
Other	120	22	10	5	2	3	13	65	240	1481	7

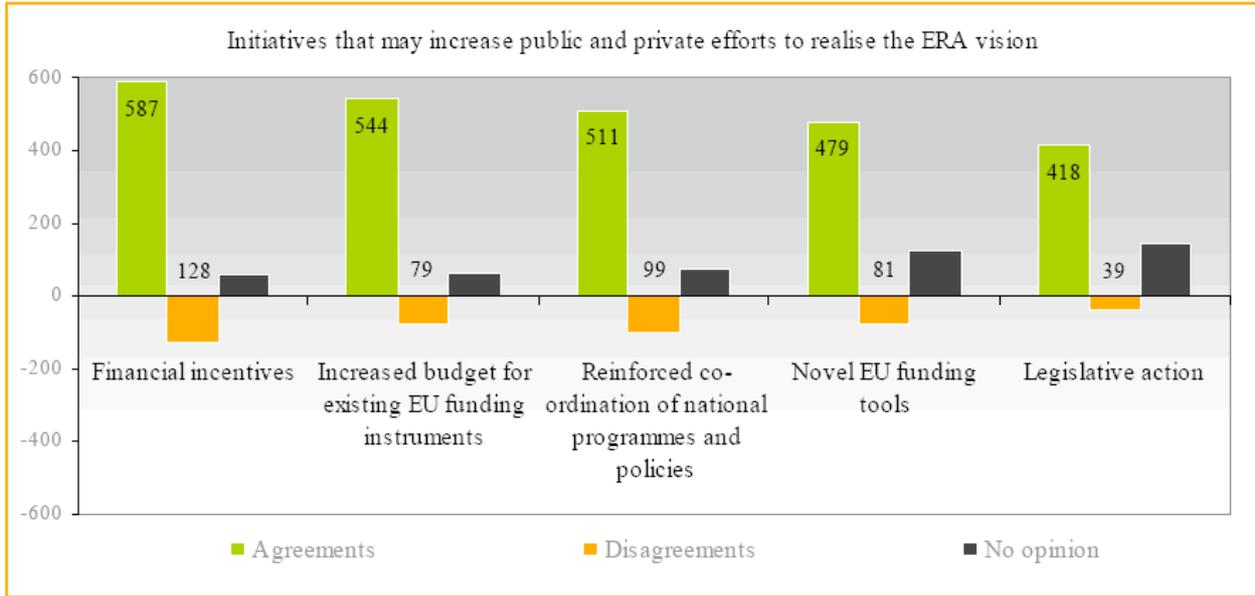
Scoring criteria: rank 1 = 10 points, rank 2 = 8, rank 3 = 6, rank 4 = 4, rank 5 = 3, rank 6 = 2, rank 7 = 1; n/o = no opinion

When contributors are asked about the level of action for each area, the results show a different ranking order in terms of the expected level of European action. “Realising a single labour market for researchers”, “Opening to the world” and “Developing world-class research infrastructures” are the top 3 areas of expected European-level action. “Strengthening research institutions” is more likely to be expected as a national-level action. Also important is the perceived role of action at regional level for "Sharing knowledge".



All proposed European level mechanisms to increase public and private efforts to realise ERA are endorsed by the majority of respondents, depending on the issues to be addressed. The following figure shows them in decreasing order: financial incentives, increased budget for existing EU actions, reinforced coordination of national programmes and policies, novel EU funding tools and

legislative action Last but not least, throughout the questionnaire, many voices advocate for the Commission to be a facilitator rather than a regulator.



4. THE DIMENSIONS OF THE ERA VISION

4.1 REALISING A SINGLE LABOUR MARKET FOR RESEARCHERS

The analysis of the on-line responses reveals a lack of awareness of the Recommendation on the European Charter for Researchers and the Code of Conduct for their Recruitment ("Charter and Code"), published in 2005 by the European Commission as a common, albeit voluntary framework. Only 44.8% of on-line respondents say they are sufficiently aware of the Charter and Code and, among them, 61.9% think that, unless the Charter & Code were legally binding, their principles are unlikely to be adequately implemented and contribute to improve the attractiveness of researchers' careers. The broad variety of ways that research is conducted throughout Europe is considered to be a complication for implementing the C&C. To translate the principles into action, one concrete proposal is to link research funding from the EU research programmes to the recognition and the implementation of some of the Charter principles by the organisations receiving EU funding. A great majority (75%) of on-line respondents believe that a "Charter and Code label" should be awarded to employers and funders which are engaged in applying their principles.

The majority of "free-format" respondents, in particular from the private sector, express preference for the Charter & Code to remain voluntary (*"The principle of certifying institutions which apply the Charter would constitute an excellent means of achieving this, without the need for coercive regulation"*), and *"We cannot imagine that innovating SMEs would have to publish all their vacancies for R&D staff on the European Researcher's Mobility portal and that they should use selection committees with the composition prescribed by the Code"*). However, incentives for compliance with the "Charter & Code" may be accepted by research institutions.

Statutory pension rights are considered to be the most problematic area of social security for researchers mobile within the EU (37.8%), followed by health insurance (28%), unemployment benefits (27.1%) and family benefit (parental leave: 22%). Statutory pension rights are the researchers' main concern, due to the fact that most of them will have to ask those pension benefits to different systems in the various countries where they lived and worked. Even if the actual European legislation allows the additionality of periods made under various systems, the procedure to obtain the pension rights is still very long and need many months of communication between the various social security administrations. The acquisition, preservation and transferability of supplementary pension rights are also considered to be a major obstacle to mobility with 53% of respondents in favour of a new European legal framework providing common rules adapted to highly-mobile workers.

This is also strongly supported by many free-format responses, e.g.: *"It is a major barrier to the mobility of older researchers, and to younger researchers who fear that their pension rights cannot be repatriated if they wish to return home at a later stage. This is a difficult issue to which the Commission and member states will need to devote considerable political will if it is to be resolved."* It is also commented as follows *"The problem of portability of pension rights is being dealt with in talks between Member States of the European Union and the need for a standardised frame has become a priority. Instruments that address this issue must be prepared, otherwise the researchers who have been most actively mobile will also be the poorest when they are old"*.

Almost half of the respondents highlight that applying "Flexicurity" principles to the European researcher labour market will make research careers more attractive, while the same percentage

suggest that the uptake of "Flexicurity" principles in the European researcher labour market will be accelerated by development of common standards among employers and funders of researchers.

74% of the respondents consider that more talented young people would be attracted to a research career if given more information about careers in research. 67% of the Higher Education institutions agree on the trans-national networking of doctoral training programmes with early stage researchers trained in different network nodes.

An overwhelming majority (87%) of the respondents applaud the idea to offer end-of-career researchers new job opportunities, as for example training, coaching or advisory functions, so that their experience and expertise can be made use of. Even more (88%) agree that providing for working and funding conditions that foster a better work/life-balance will positively affect the number of women researchers and in particular in senior positions. Last but not least, only 29% agree on the principle of positive discrimination in recruitment, versus 58% who disagreed.

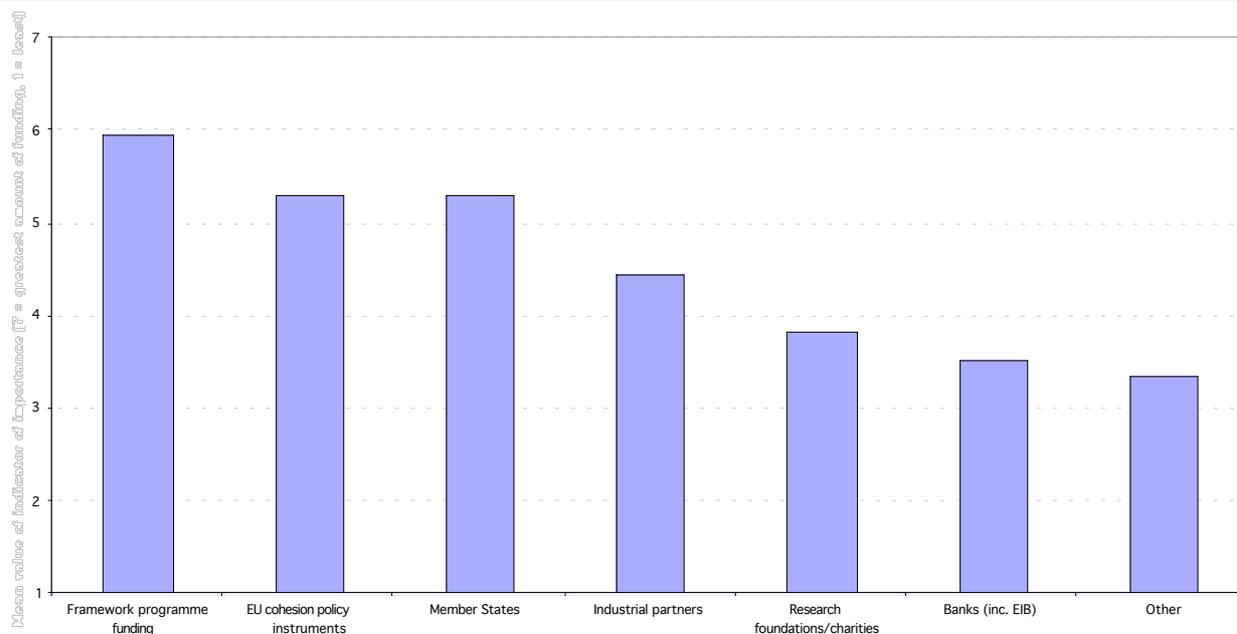
77% of the respondents suggest that joint programming and funding approaches could attract European researchers currently working outside Europe ("scientific diasporas"), while the mobility and return of European and non-European researchers could be best promoted by trans-national fellowship funding programmes.

Many stakeholders mention that education was not adequately present in the ERA Green paper although it is seen as a pre-requisite for spreading scientific knowledge and attracting young people in science. It is also important that effective and reliable information is available through careers services when young people are making their initial career choices and decisions at school. The opportunities to be mobile and experience the advantages that a period spent living and working abroad offer could also be highlighted at an earlier stage.

The need for effective articulation in the context of the knowledge triangle was highlighted and one submission suggested *"It is fundamental to generalise the initiative called "Getting down to it" by Nobel Prize Georges Charpak, and reinforced by the so called Rocard report, like the introduction of combining school and work experience or technological training to enter scientific and technological higher education programmes. This could be achieved through new common initiatives in the European Education Area and the ERA"*

4.2 DEVELOPING WORLD-CLASS RESEARCH INFRASTRUCTURES

82% of the respondents to the on-line questionnaire agree that a common approach is required to develop the Research Infrastructures identified by the ESFRI and that this should be done at the European level. Framework Programme funding is regarded as the most appropriate source of funds for this purpose, followed by EU cohesion policy instruments and funding by Member States. In response to the question "What action is required at the European level to facilitate the creation and operation of these new infrastructures identified by ESFRI", there is a clear agreement (67%) that a new legal European framework or guidelines should be developed to facilitate such activity. More than 57% of respondents disagree with the statement that the current situation can facilitate the creation and operation of new forms of Research Infrastructures.



Respondents' rankings of funding sources for research infrastructures identified by the ESFRI (mean rankings by respondents, with 7 = greatest amount of funding and 1 = lowest)

In terms of charges for access, 78% agree that commercial users should be charged a fee for usage. Over 70% disagree with the statement that intellectual property should be retained by the owner of the infrastructure. There is a considerable degree of agreement that it should be the owners of the research infrastructures who should provide the training and support in the use of the infrastructures.

When asked for their views on ways in which public research funding could contribute to the long term development of research infrastructures, respondents rank most highly the development of S&T programmes establishing communication and dialogue between infrastructures, closely followed by specific science and technology programmes relating to the instrumentation and databases. Mechanisms to support such programmes could use a mix of EU and Member State funding, as provided for under article 169 (59% of respondents) or the EU Research Framework Programme (32% of respondents).

Opinions were sought on the lack of private sector investment in Research Infrastructures. While three quarters of respondents agree that there was underinvestment in Research Infrastructures by the private sector, there is no clear agreement over the causes, apart from the views that the private sector does not identify a requirement for specific research infrastructures and that rules related to intellectual property rights are unclear or unfavourable.

Last but not least, concerning the globalisation of research efforts and the need for a global approach to the sharing of certain types of research infrastructures, respondents are in general agreement that an international forum is needed to coordinate the effort of creating research infrastructures addressing global research needs. The most favoured approach to the development of such a forum is with mixed Member State/EU representation and involvement of ESFRI. There is also support for participation to the OECD Global science forum.

Free-format submissions provide further support to the views expressed via the on-line responses as well as raising some additional points. They confirm the need for a new legal framework governing the foundation and operation of infrastructures, with due regard to the need for flexibility, given the diversity of infrastructures. There is also support for a global forum on research infrastructures. They also suggest that different scales of infrastructures require different policies and instruments to support them. It may be useful to categorise research infrastructures in

some way (e.g. "hard" or "soft" infrastructures in terms of physical equipment needs, or by size). Efforts should also focus on the development of an integrated European approach for small scale facilities to prevent replication of such facilities across the EU.

4.3 STRENGTHENING RESEARCH INSTITUTIONS

The results of the consultation highlight a consensus on the paths to increase the excellence and the competitiveness of the research institutions, focusing especially on three main issues: more funding, more autonomy, stronger cooperation in research between research institutions and the private sector. The quality of the responses of the main stakeholders shows how research institutions themselves, scientists and industry representatives link efficiency of ERA in the globalisation context with the capacity of institutions to lead strategies, to make choices and assume their diversity in a more fruitful cooperation, able to respond to the needs of the societies and economies. Main positions also confirm the need of going further on the modernisation agenda of universities, set up in the 2006 Communication.

As a brief summary, the following key issues are shared by the majority of the stakeholders in their free-form contributions or by at least 80% of the respondents to the on-line questionnaire:

- Providing long-term and institutional funding for research, increasing public funding, improving the coordination of national and regional research funding; the goal of 2% of GDP invested in higher education sounds as a priority;
- Fostering networking, coordination and integration at the institutional level;
- Enhancing links and cooperation between Research Institutions and the business sector; and also between research performing organisations and universities;
- Improving researchers careers;
- Promoting inter- and trans-disciplinarity;
- Reinforcing autonomy and accountability of research institutions, and improve their research management;
- Linking research funding to scientific performance: 76.8% of the respondents agree with the idea that the comparison between the magnitude of public R&D funding received and the research outputs produced by an institution should be taken into account when assessing its research activities. One third of the respondents think that there is need for shared criteria at European level for the funding of research institutions research activities;
- Assessing pure research activities through academic outputs is strongly supported by the respondents, especially in new EU countries and among scientists and less supported by those in strategic or policy positions. The use of non-academic commercial or non-commercial outputs in the assessment obtains a lower support (less than one third of respondents).

A majority of respondents also mention harmonisation of accounting rules, fund-raising from other than public sources and making project-based funding predominant over institutional funding.

Concerning the question on the relevant ways to increase scientific cooperation between research institutions, two kinds of actions are considered as relevant to create European world-class virtual centres of excellence, those what are:

- sharing research resources between Research institutions at European level;
- sharing research and knowledge management at European level.

More than 60% support the ideas of “restructuring or possibly integrating Research Institutions” and “competition at European level for obtaining the status of European Centre of Excellence”.

The concept of virtual centres of excellence is seen as needing more clarification, as some respondents argue that priority might be given to enhancing links with local institutions and industry. Suggestions highlight that the most important aspect in this context is the sustainability of the partnership, including those of public-private nature. Important aspects of networking are the intended benefits of such networking, the flexibility and dynamics to respond to changes in the global and competition oriented contexts, the long-term funding, the career prospects of researchers and often the local context and the physical clustering.

A majority of respondents consider that successful public-private partnerships should develop in a "bottom-up" way and on a voluntary basis in varying local, regional, national and European contexts. The replies do not show a strong need for a regulatory approach, but guidelines, such as the "Responsible Partnering" guidelines issued by the European University Association, can be useful.

There is also a high degree of agreement on the best way to promote the emergence of European and global research communities which take full advantage of the potential of computing, information and communication infrastructures with both "joint implementation of infrastructures" and "wide exchange of good practices" obtaining a high level of support from respondents. The support for common standards is lower.

Several RPOs consider their role as cornerstones of the European research landscape and in furthering ERA to have been inadequately reflected in the Green Paper and highlight the need for specific actions to support stronger and sustainable cross-border co-operation between them: *"To overcome limitations of national institutional funding schemes, a new instrument should be created for bilateral institutional cooperation...// ... Such institutional cooperation could take a variety of forms, i.e. joint ventures with local partners, laboratories embedded into a partner's organization, branches of institutes and even stand-alone research institutes. In contrast to multilateral project cooperation, this approach can lead to a real and deep European integration. It will, however, only work on the basis of bilateral agreements (no more than two member states involved)... In order to spread it throughout Europe, a bilateral EU-programme for institutional cooperation is necessary... Therefore it would be of great help if the European Commission could coordinate a structured dialogue between the Member States. "*

4.4 SHARING KNOWLEDGE

Over 80% of respondents welcome the concept of open access to both publications and raw data. It should be noted however that access to scientific data and access to scientific publications raise different issues and concerns among stakeholders. The majority of researchers, research organisations and libraries call for immediate access to both and express a need for improvement of access and dissemination. A library association emphasises that *"there are still significant barriers to access in researchers' information channels"*, a situation which leads to *"unbalanced and ineffective knowledge sharing, so limiting the potential of the ERA"*.

On the other hand, industry and certain libraries give some caveats regarding open access to commercially sensitive data, in particular. An industry association highlights that *"To get excellence in European Research, the broadest possible access to the state of the art knowledge must be guaranteed for all researchers, in private as well as in public... However [...] in many instances giving immediate and totally open access to the results of publicly funded research may not be in the long term and best interests of EU citizens... Publicly funded research especially in*

cutting-edge areas of technology can potentially give rise to valuable intellectual property rights which if properly managed by the relevant public research institution can give rise to tangible benefits (e.g. through the creation of revenue streams) which can be used to support general educational aims or increase further the scale and quality of the European science base".

The issue of compatibility of existing intellectual property legislation and open access is also highlighted by several respondents. While publishers recall the economic importance of current copyright arrangements, a governmental research body questioned their underlying principles: "*... current copyright law should be evaluated with a view to finding ways in which the law guarantees scientific authors the right to publish their research results under an open access regime ...*".

Scientific publishers underline the added value that they bring to the scientific process and the fact that they are open to new business models providing that their costs were covered. That said, some highlight concerns about the Commission's intentions in this field. Indeed, a publisher states that they were "*concerned at the possible development of a policy, implied by the questionnaire, that requires researchers to post their accepted author manuscripts in a repository at a single specified time frame*", and consider that "*such a one-size-fits-all policy would be detrimental to journals because each journal's economic and usage profile is unique, and that such a policy would harm science and its beneficiaries*". Many publishers also call for the Commission to collaborate closely with them, in order to find possible solutions to the question of researcher access to publications.

Regarding the main factors hindering efficient knowledge transfer to industry, almost all respondents highlight cultural differences between the business and science communities and a lack of incentives. In order to address this issue, a number of options are proposed, ranging from guidelines or financial incentives to legislative initiatives (similar to a Bayh-Dole act for Europe). Respondents generally supported non-legislative approach, with model contracts, charters, guidelines and financial incentives being firmly supported as long as they remain purely voluntary. "*We strongly support the EU Commission in fostering cooperation between universities and industry...The US Bayh-Dole Act has had positive outcomes in many respects, but has also (perhaps inadvertently) misaligned the private interests of university technology transfer offices with broader public interests, including innovation and economic growth. ... The proposed IP Charter should concentrate on highlighting out the issues that need to be addressed in a collaboration agreement and what the possible approaches and solutions exist ...*"

The online consultation also finds that:

- research institutions should have IPR management systems + policies in place (95% agreement);
- royalties should be shared with researchers (89% agreement);
- public authorities should have a non-exclusive licence to use the results (60% agreement);
- industry should refund the public contribution if they manufacture products outside of Europe (60% agreement);
- all income should be used for research and education (79% agreement);
- EU industry should be given preference when selling the results (60% agreement).

That said, the responses also make it clear that publicly funded results should not necessarily be owned by the research institution, that research institutions should be free to sell their results to industry and finally that SMEs should not be given preference when selling the results.

Regarding specific R&D-specific issues related to IP legal framework, such as the grace period, only 30% of responses to the online questionnaire and of written contributions answer this question. The majority (70%) of these are in favour of a grace period, and of common consistent rules regarding joint ownership regimes, prior user rights and the research exception, but several

call for action in an international context rather than at European level. For example, an Industry Association states that: *"Only if international substantive patent law harmonisation has been achieved on the basis of a worldwide first-to-file system and a worldwide grace period, the European Patent Convention and the various national patent laws should be amended in accordance with the international substantive patent law harmonisation treaty..."* Some respondents also mention other possible areas for action such as the Community patent or clarification of state aid rules.

Regarding how to improve S&T communication to society, the responses reflect a general level of support for more and better forms of engagement between scientists and wider society. Concerning dissemination of knowledge, the responses emphasize the importance of education and communication, in particular television and websites with the latter allowing more interactivity. Responses underline the need for two-way dialogue with scientists as the best way to distribute scientific knowledge, calling for changes in the institutional resources and incentives for science to engage with the public. When asked how science decision-making can better take into account societal concerns, respondents favour multi-disciplinary expertise and increasing the transparency of how scientific results feed back into policy making.

Among the proposals to reinforce dialogue and cooperation with civil society and its organisations, citizen panels and focus groups and specific consultation channels are highlighted by more than the fourth of the respondents. A main possible disadvantage to intensifying the dialogue with civil society is the perceived risk that it may divert funds which may otherwise be used for research. Many respondents think that dialogue with civil society will contribute not only to better public understanding but also to a higher social relevance and a clarification of the relevance of science to policy. A dialogue between researchers and civil society and civil society organisations can help promote better understanding of research by citizens, greater dissemination of research results, clarify relevance of research for policies and enhance societal relevance for research activities.

4.5 OPTIMISING RESEARCH PROGRAMMES AND PRIORITIES

More than 80% of the respondents agree that the rules and procedures are too complex at the EU FP level. 60% consider that the same applies at Member State level, while at the regional level views are split. The free-format contributions reinforce these results, as, for example, in the statement: *"Any action enhancing simplification of rules and procedures of EU research funding systems is to be welcomed. Transparency and similarity of national funding programmes might be one way to increase effectiveness and efficiency of the R&D systems"*.

When it comes to solutions, the majority of the respondents choose "common rules regarding accounting to promote cross-border cooperation", "a two stage evaluation approach", and "common rules for individual grants to promoting grant portability". The options "reducing the requirement for reporting" and "decreasing the detail required in research proposals" attract mixed opinions. Free-format responses from organisations suggest that reporting requirements are important to set deadlines and other conditions and help joint programming delivery of results.

Regarding the areas proposed as candidates for closer working at EU level, "foresight" clearly takes the first place (88% of the respondents agree with this option). "Project peer review" follows in order of preference (82%). The free-format contributions support these results. For example: *"The national players (research funders, research performers and governments) have to act in concert in implementing a common strategy developed through common foresight in order to*

increase their efforts to remove the institutional barriers faced by people and money, to implement schemes like 'money follows researchers' and 'money follows cooperation', to adopt common peer review systems which allow quality comparison across borders, to ease the sharing of research infrastructure, and to create common pot schemes for research funding".'

Another respondent agrees that *"Foresight, technology assessment and benchmarking should also be used as tools for finding the future needs and solutions. Better European foresight activities are needed for common priorities to be sought. Open-minded foresight would be useful as an eye-opener for both the public and private actors."* And also *"...Collaboration between programme managers and funders at national level will naturally lead to consideration of such issues as shared peer review and programme evaluation Experience, peer reviews and quality assurance from the ERC could inform future developments in this area'*. However there is also the statement that *'this is an area where an OMC approach for voluntary coordination could be more effective, rather than a top down effort to create a mandatory European structure."* Another respondent points out that the common principles for peer review, quality assurance and joint evaluation of research programmes, should, however, allow flexibility and programme-by-programme variation.

Respondents agree that common approaches to the quality assurance of research across the EU would be valuable and feel that peer review, in particular, must be made more open. However, they also warn that peer reviews, quality assurance and joint evaluation can also add to bureaucracy. Furthermore, at least one Member State believes that it is not the EU task to formulate common points of departure at EU level in relation to a peer review, quality assessment and financial accountability. However, they agree that the EU can support and, where necessary, stimulate national financing organisations' bottom-up initiatives in this field.

74% of respondents agree on the fact that national investigator driven (basic) research programmes should be open to the participation of persons from all EU Member States. Those agreeing clearly prefer "the networking of research activities and the mutual opening of national and regional research programmes via e.g. ERA-Net type of activities" as the best way to achieve opening up of basic research programmes. The full opening of programmes to applications from all is also preferred by the majority but with more disagreements. Opinions are even closer regarding the option "limited opening of programmes based on bilateral agreements", while there is more disagreement in relation to the "unilateral opening of programmes to some or all EU Member States".

Fewer respondents agree to the opening up of socially driven (applied) research. Agreement to the opening up of programmes is also evident in the free-format responses but these tend to be more cautious and to highlight certain conditions as well. For example, one Academy states that *"Research programmes must be opened step by step, initially through bilateral cooperation or possibly via ERA-Net networks... National programmes should be opened up to researchers from other countries only when that offers real added value nationally and at the European level"*. In similar lines others highlight that *"the national R&D programmes should gradually open to participants from other countries and that the ability to implement fully national research programmes must however be maintained."* One submission by a Member State highlights the need for more consultation at European level regarding the possibilities of, and hindrances to, the mutual opening up of national programmes for research projects to partners from other European countries.

77% of respondents agree (only 5% disagree) that addressing resource intensive, complex scientific challenges requires cooperation between public authorities. Those who agree, rank "high-level civil servants" first closely followed by "EU Research Ministers" and "industry" (> 3.5 on a 1-6 scale of importance) when asked about the best placed stakeholders to define research issues the magnitude of which requires a trans-national approach. When it comes to the question

how public authorities can organise trans-national cooperation, concentration of efforts in European level programmes is the most supported (74%) option. But joint public programmes with variable geometry, and ERA-net type loose and bottom-up coordination are also almost equally supported (72% and 71% respectively).

An example of this view is: *"In recognition of the needs and expectations of the European Research Area, and working towards coherence between national and regional programmes and research priorities of European relevance, it is increasingly important to develop a partnership approach to programmes funded by FP7 and those funded nationally (particularly since national funding is estimated to represent approximately 90% of available research funds). To this end, the optimal use of instruments such as ERA-Nets (including ERA-Net+), Technology Platforms and Article 169 is essential."*

One body representing a national Higher Education Sector considers that coordinating national research programmes, through common calls and common pot arrangements whenever possible, would be an important contribution to boosting Europe's competitiveness. They want to see incentives at the European level for such programmes. This contrasts with the view of the corresponding government which currently considers that the ERA-Net actions are adequately supported within FP7 and stresses that bottom-up collaboration remains the most effective way forward in these areas. Nevertheless, the need for evaluating existing mechanisms such as the ERA-Nets is also noted. A government points that: *"It is not yet clear whether the common financing of cross-border research projects via ERA networks is also going to be a success as regards results and efficiency."*

Some contributions from national Higher Education bodies suggest support for more joint programming between national research programmes, eventually leading to joint programmes, but insist on the facilitating role to be played by the Commission, with Member States remaining in the lead for defining priority topics on which to coordinate their joint activities. On the other hand, the need for far reaching European-level coordination of national and regional activities, programmes and activities is questioned: *"Such a development would make articulation with the diversity of national and regional policies difficult, clumsy and ineffectual. It would also tend to stifle bottom-up initiatives"*.

When asked about whether the European Community should seek membership of intergovernmental research organisations, on average 47% of the respondents do not respond or state they had no opinion (average 20%). Of those who do have an opinion, Community membership of ESA, CERN and EMBL gather most of the positive responses, closely followed by ESO and ESRF. ILL seems to be the least known among the respondents as less than 30% provide an opinion (16% in agreement; 10% in disagreement). Responses from the relevant intergovernmental organisations themselves (in particular EIROforum members) confirm the necessity to reinforce cooperation but for the majority, the option of Community membership is not seen as appropriate.

4.6 OPENING TO THE WORLD: INTERNATIONAL COOPERATION in S&T

The preliminary analysis of the online consultation highlights that there is strong support for the EC and Member States to work together to define common European priorities for international S&T cooperation (86% of respondents). Hence, it is not surprising that 89% also see a need for the

EC and Member States to ensure a coordinated and efficient use of tools and resources and 84% of respondents agree that the communication and coherence between national and EC programmes and policies for international S&T cooperation need to be enhanced. It is worth noting that 69% of respondents agree that making S&T cooperation more central to other areas of international relations is also essential.

In order to achieve these objectives 70% of respondents consider it important to use existing coordination mechanisms and instruments (e.g. Member State representatives; advisory groups; Programme Committees, Working Groups; ERA-Nets), yet 70% want to see other tools for developing joint responsibilities established (e.g. a "road map" or "action plan") including voluntary mechanisms that promote the development of an EU "common position". 57% of respondents would support a dedicated joint forum to identify and agree international initiatives and 55% are in favour of the closer involvement of third countries and other stakeholders (e.g. civil society organisations) in setting up policies.

The need to modulate S&T cooperation with various groups of countries in order to focus on specific objectives is widely acknowledged and to achieve this, the importance of several mechanisms is recognised. 80% of respondents say this should take place through the EC Research Framework Programmes (e.g. through targeted calls for proposals), 74% support the idea that S&T cooperation could be modulated through the EC Research Framework Programmes co-ordinated with Member State actions, 65% think this modulation will profit from the use of bilateral EC and national S&T-agreements, while 60% responded that this objective can best be achieved via regional agreements (e.g. with MERCOSUR, Black Sea Economic Cooperation) or through other external EU policies and programmes (e.g. European Neighbourhood Policy). In general, 65% of respondents mention that S&T-agreements between the EU and third countries provide a useful framework for international S&T cooperation; however, 52% also think that these agreements need to be made more effective.

In terms of focussing S&T cooperation support is highest (80% of respondents) for aiming to design programmes of mutual benefit, particularly to address global challenges for "industrialised and emerging economies". An almost equal percentage of respondents (76%) find that the focus should be on helping to develop S&T infrastructures, skills and research resources (S&T capacity enhancement) for "developing countries", while the support for associating European Neighbourhood Policy (ENP) countries to the ERA is slightly lower (52% of respondents, and a relatively high share of 29% has "no opinion"). Concerning the way that respondents, nevertheless, think ENP countries should be integrated into the ERA, 69% favour the availability of sufficient funding, 55% see the exchange and increased mobility of researchers as an important task, 43% would prefer the coordination of research programming and 42% support the sharing of research infrastructures in particular.

Finally, 80% of respondents are in favour of Europe taking a more active approach to define the global S&T agenda in multilateral fora. In this context almost 75% of respondents express the wish that Europe should "speak with one voice" in multilateral initiatives and 69% think that this could be achieved through placing emphasis on a small number of high priority global research related themes.

The free-format submissions also show significant support for closer cooperation between the Member States and the Community, in particular in areas of global significance, but probably according to the principle of "variety geometry". A majority of responses also support closer integration of neighbouring countries into the ERA. Last but not least, several responses highlighted the need for an overall EU strategy for international S&T cooperation.