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NOTE

Subject: GPC contribution to the ERAC input to a proposal on the ERA Framework

Delegations will find in the annex GPC contribution to the ERAC input to a proposal on the ERA Framework, as adopted by GPC at its meeting on 11 November 2011.

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on the ERA Framework¹****Contents**

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¹ This text represents a consensus opinion of the High Level Group on Joint Programming and does not prejudice in any way the positions articulated by Member States concerning the ERA Framework and other issues such as the European Commission's Communication on Partnering in Research and Innovation.

GPC Opinion

Following the Council Conclusions on the development of the European Research Area (ERA) through ERA-related Groups of 31 May 2011 (doc. 11032/11), the GPC has undertaken the task of preparing a contribution to the ERAC opinion to a proposal on the ERA Framework and, at the same time, to the implementation of the Innovation Union Flagship Initiative. The specific aim of this contribution is to focus on issues relevant to the GPC area of activities, in particular on the operation of JPIs, its role in the European research and innovation landscape and more broadly, on topics such as cross-border operations and transnational research.

The contribution report was drafted by the GPC Task Force, composed of GPC delegates who volunteered to participate in the TF proceedings. It was subsequently discussed at two consecutive GPC meetings and adopted by the Group, following its standard acceptance procedure.

Seeing the development of ERA as an evolutionary process, it is important to identify obstacles to cross-border cooperation and instruments to support such cooperation simultaneously. Building on experience gained by the pilot JPI and other forms of cross-border cooperation, as well as evaluation of GPC-related activities, will help identifying which instruments could be prioritized first and towards 2014. This document examines barriers to and possibilities for effective operation of JPIs in the context of their contribution to a successful completion of the ERA.

The document is composed of two main parts. The first part presents the GPC recommendations with respect to the ERA Framework. The second part, included as the Annexes, contains comments regarding the ERA background and formal requirements concerning the GPC contribution, as well as supporting evidence based on identified weaknesses accompanied by proposals for specific policy measures.

The grand societal challenges have been identified as a critically important arena where the global competition will be of considerable magnitude and impact. In an effort to strengthen the ERA, while addressing the grand challenges, the increasing investments of MS/AC resources in order to reach and realize the critical mass is seen as a factor of prime significance. The aim of Europe 2020, namely to reach the 3% goal as soon as possible is of particular importance in this context.

Furthermore, the insufficient level of participation by small MS/AC and by less RD&I intensive MS/AC and regions in JPIs is raising concerns. Therefore an increased level of participation of these MS/AC should be promoted, as long as it helps to use the EU's full intellectual capacity, both in infrastructure and human resources, and to successfully tackle major societal challenges in the global competitive environment. Amongst the whole range of possible activities it requires enlisting considerable financial engagement of MS/AC in transnational research and innovation funding, especially through instruments of joint programming, such as the JPIs, or other initiatives, like the SET-Plan, PPPs, or programmes according to Art. 185 of the Treaty (TFEU). Recognising at the same time that most JPs have not yet reached a stage of implementation, but show encouraging signs for involving more cooperation once they reach this stage.

With this background perspective the following main conclusion is proposed:

The policy measures included in the ERA Framework should support effective cross-border operations and transnational research, while at the same time stimulate the efforts to engage MS/AC in a meaningful participation in these activities in a manner that is conducive to reaching the goal of excellence and relevance in research.

A number of specific conclusions and recommendations have been made regarding these policy measures, which should address the means and instruments to sustain a constant and decisive drive for enhanced quality and competitive efficiency of excellent world class scientific and innovation activities through effective cross-border operations and transnational research. Simultaneously, efforts should be undertaken to engage MS/AC and regions in a meaningful participation in these activities through appropriate mechanisms.

A. The ERA Framework should stimulate development of an effective EU research and innovation policy strategy for cross-border cooperation, with structures and processes to design, implement and monitor policy actions, strengthening world class research in a coordinated manner at and between MS/AC and EU levels and with other policy areas.

At the same time it must be ensured that research and innovations activities undertaken within Joint Programming initiatives are firmly rooted in society and responsive to its needs.

1. Research collaboration across borders between all the stakeholders, namely the research performing organisations, research and innovation funding organisations as well as private sector (industry, SME), should be encouraged wherever appropriate. In particular, in relation to grand challenges, development of shared perspectives and visions, together with the definition of strategic research agendas and its innovation activities should be supported. It should be recognised, however, that scientific and technological collaboration is driven by researchers and industry, while managerial and financial aspects should create an adequate supportive environment.
2. In order to strengthen the links and coherence between different ERA actors, there is need for more information and overall picture of the ERA research and innovation landscape. There should be a better overview of different EU programmes as well as different national programmes. Also more links and communication between different ERA initiatives and instruments are needed.
3. Better understanding should be developed between the Commission, the MS/AC and the scientific communities on what the European Innovation Partnerships will mean for Joint Programming. This is essential for defining the most useful role for Joint Programming Initiatives.

4. **Comprehensive evaluation and impact metrics and criteria should be developed, so that there could be an objective assessment of the strengths and weaknesses of European research and innovation systems.** Particular account should be taken of the quality of research, its impact on the grand challenges of our society, the competitiveness of industry and the economic growth. Potential for contribution to exploitation and full utilisation of the intellectual capital of all MS/AC should also be taken into account.
5. While in some areas different national funding systems may create desirable competition, a good balance and a good division of work between the European, the national and the regional levels should be pursued. It is likely, however, that such balance would be different vertically – across the disciplines, and horizontally – across the MS/AC, and should be established on a case-by-case basis.
6. **The role of the Commission should – based on the positive experiences and well-established networks of programme owners in ERA-Nets and other coordination measures in FP6 and FP7 – include support and provision of incentives for joint development of strategic research agendas and as appropriate innovation activities, and coordination and implementation of joint programmes.** This should be done as early as possible. The emphasis should be on finding ways to enable transnational research, rather than transnational funding per se.
7. MS/AC could be supported, while respecting their competence, to undertake a review of legal systems, with the aim to ensure that the legal mandate, rules and procedures enable optimal support cross-border research and innovation activities.
8. Retaining of the general principle of variable geometry, i.e. that the participation in activities of JPI is voluntary and is open to all MS/AS either as partners or observers, should be ensured.

B. To encourage wider participation by MS/AC in Joint Programming initiatives, supporting measures aiming for effective alignment, implementation and coordination of their research, and as appropriate innovation, programmes should be available at the EU level. Furthermore, any such supporting measures should be conditional on reciprocal implementation of relevant policy measures at the national level. In particular, access to any incentive funding provided at the EU level for the implementation of jointly agreed programmes shall be accompanied by adequate financial and administrative commitment from the involved MS/AC.

9. Less RD&I intensive MS/AC should be encouraged to participate in a review of national policies and scientific and innovation programmes, with the objective to develop, where not available, or enhance national programmes to make them compatible with regard to the ERA initiatives (namely JPIs) on major societal challenges.

10. **Less RD&I intensive MS/AC should be encouraged to use cohesion (structural) funds at their disposal as a contribution to JPIs or other forms of transnational co-operations.**

11. Meaningful partnership between countries at different levels of RD&I intensity, wishing to participate in the ERA initiatives (namely JPIs) should be encouraged. An organisational support, extended use of existing funding and incentive funding provided at the EU level could be made available for such undertakings

Annex 1 Background and supporting evidence

A1.1 ERA background

The primary political context for the **ERA Framework** is provided by the **Europe 2020 Strategy's Innovation Union (IU) Flagship Initiative**.

Since the Council endorsed the creation of the ERA in 2000, substantial efforts have been deployed through the initiatives of successive RTD Framework Programme initiatives, the Open Method of Coordination, and as a result of increased political commitment from MSs via the ERA partnership approach since 2008. Despite notable progress achieved over the years in implementing the ERA, especially since 2007 through the impact of inter alia ERANET, ERANET+, Article 185 programmes, Joint Technology Initiatives and Joint Programming Initiatives (JPI), further steps are required to complete the ERA:

- systemic links between MS/AS and between EU are weak and obstacles remain to the free movement of ideas, knowledge and researchers, as well as to the operation of research actors and funders across borders;
- the perception in the Council, the European Parliament and of stakeholders is that European research system of ERA initiatives is a rather fragmented and complex patchwork; and
- the operational steps necessary to deliver the vision set out in the ERA Vision 2020 are not clear.

The Lisbon Treaty identifies the ERA as mean to achieve the objective of strengthening the EU scientific and technological basis and gives the competences to the Commission to propose all measures necessary to realise the ERA, be they binding legislation, policy guidelines, co-ordination measures and of course funding programmes. The size, performance, efficiency and integration of the EU's research system must increase rapidly if it is to be commensurate with the EU aspirations for global excellence and knowledge-based competitiveness and the socio-economic imperatives of its citizens, as set out in Europe 2020.

Based on the Innovation Union (IU) Flagship Initiative adopted by the Commission in October 2010 as part of the Europe 2020 Strategy, and considering the reinforced legal basis for research policy in the Lisbon Treaty (i.e. Art. 179 & 182(5) TFEU), the Commission intends to explore all possible barriers and problems which continue to hamper completion of the ERA and, in turn, all possible actions which could be taken to remove such barriers. The IU Flagship Initiative announces for 2012 the ERA Framework and supporting measures to remove obstacles to mobility and cross-border co-operation, to be in force by the end of 2014, as formally endorsed by the European Council of 4 February 2011.

Following from there, the Competitiveness Council of 31 May 2011¹, while acknowledging the considerable progress achieved in implementing the ERA, stressed that the ERA Framework should result in a continuation of the comprehensive and strategic approach to implement the Ljubljana process of realizing the ERA in line with the ERA 2020 vision and take full advantage of Europe's intellectual capital, that societal challenges should be addressed, while encouraging the competitiveness of Europe's industries and the excellence of its scientific and technological base. Further specific aims for the ERA Framework, relevant to the above general objectives include support for the innovation cycle as a whole – from innovative ideas to new technologies, and the promotion of cross-border operations, mobility, research infrastructures and knowledge circulation.

¹ Council Conclusions on the development of the European Research Area (ERA) through ERA-related Groups of 31 May 2011.

There is a clear need for an overall picture of the ERA; to have a better overview of different initiatives and instruments. These include all ERA instruments as well as Horizon 2020, and national programmes. More links and communication between different ERA initiatives are needed (e.g. between JPIs and infrastructures).

A1.2 Existing mandate for GPC

The existing mandate for the GPC includes:

- responsibility for identifying the themes for JPIs;
- responsibility for assessing whether a proposed JPI conforms with a theme associated with the societal (global) challenges;
- responsibility for contribution to the preparation of Council decisions regarding JPI;
- responsibility for improving governance guidelines (the Voluntary Guideline for Framework Conditions) that have been adopted by the GPC-ERAC, contributing to and taking into account the IU Flagship Initiative.

A1.3 Mandate for ERAC opinion

ERAC (European Research Area Committee, formerly CREST) is a strategic policy advisory body whose function is to assist the European Commission and the Council of the European Union in the sphere of research and technological development. CREST was set up in the early nineteen-seventies. In 1995, the basis for the Committee's work was replaced by a new Resolution from the Council.

In its Resolution of 7 December 2009 the Council has launched the process of redefining the mission of CREST in the context of an enhanced governance of the European Research Area. In its Resolution of 26 May 2010, this resulted in a revised mandate for CREST. CREST was renamed as European Research Area Committee (ERAC) in order to better align its role with the new emphasis given to the ERA by the Treaty on the functioning of the European Union. The new mandate also reflects better the shared competence between the MS and the EU and its strategic policy mission. The mandate of ERAC will be reviewed again by the end of 2012.

ERAC's activities have gained increased importance because of the greater prominence of research and technological development in Europe, which is nowadays acknowledged to be an important element of Europe's competitiveness and economic growth.

At its 6th meeting on 24 May 2011, ERAC decided that its opinion on the development of an ERA Framework which the Commission announced would be tabled in 2012, would be prepared by the ERAC Steering Board in an ad hoc enlarged format (hereafter ERAC SB+).

The SB+ shall base its work on a clear, comprehensive and substantiated overview of the current situation, against the background of the EU's legal and political commitments (ERA Vision 2020, Lisbon Treaty, Europe 2020, Innovation Union, European Council Feb 2011, etc.). The SB+ shall take account of, and consolidate the input from the four ERA related Groups¹ and ESFRI, as requested by the Competitiveness Council.

The draft opinion of ERAC should propose against these background elements of an approach to developing an ERA Framework which aims to address areas of underperformance of European research and exploitation of the knowledge generated by eliminating remaining obstacles to the completion of ERA, focusing in particular on continuing inefficiencies in the European research system, unexploited cross-border synergies and co-ordination failures, taking into account the IU Flagship Initiative.

¹ Apart from the GPC these Groups include: the Strategic Forum for International S&T Cooperation (SFIC), the Steering Group on Human Resources and Mobility (SGHRM) and the Knowledge Transfer Group (GKT).

Based on what is mentioned above, the scope for the ERAC opinion on the ERA Framework shall include:

- to propose an approach to develop the ERA Framework which builds upon its strengths and diminishes existing obstacles;
- focusing on theme-specific issues: researchers' careers, cross-border operations, research infrastructures, knowledge exploitation and circulation, and international dimension;
- focusing on cross-cutting issues: clear definition and objectives for the ERA, developing an inclusive approach and more openness.

A1.4 GPC assignment and the scope of contribution

The GPC assignment and the scope concerning the provision for contribution to the development of ERA Framework follows from the Council Conclusions on the development of the European Research Area (ERA) through ERA-related Groups of 31 May 2011 (doc. 11032/11), the above described scope for the ERAC opinion, and includes specifically an approach to develop the ERA Framework which builds upon its strengths and diminishes existing obstacles:

- focusing on cross-border operations by research institutions in partnership with industry and funding agencies;
- focusing on cross-cutting issues: clear relationship between joint programming and other ERA instruments, effective communication and exchange of experiences between JPIs, gathering satisfactory contribution, and producing relevant deliverables.

A1.5 Key issues

5.1. Aspects specific to JPIs

Legal background

According to the Council Conclusions concerning joint programming of research in Europe in response to major societal challenges of 2 December 2008 (Doc. 16014/08) a dedicated configuration of CREST, the High Level Group for Joint Programming (GPC), was established, with a view to identifying and substantiating a limited number of joint programming themes. After the constitutive meeting of GPC on 13 February 2009 (Doc. 1301/09), it was agreed on 3 April 2009 that the CREST Rules of procedure should apply also to GPC with some modifications (Doc. 1302/09). According to these rules MS representatives and the Commission were required to enable GPC to adopt formal opinions. Thus, these rules were used during the first mandate of GPC (2009-2010) to identify ten JPI themes (see Annex 2) as well as to create the Framework Conditions document.

Once the JPI themes were identified, the first pilot joint programming initiative on combating neurodegenerative diseases, in particular Alzheimer's was launched on 8 December 2009 according to the Council Conclusions (Doc. 17226/09) taking into account the Proposal of the Commission for a Council Recommendation on measures to combat neurodegenerative diseases, in particular Alzheimer's, through joint programming of research activities (Doc. 12382/09). This document invites the MS to cooperate with the Commission with a view to exploring possible Commission initiatives to assist Member States in developing and implementing the common research agenda and invites the Commission to explore how best to contribute with complementary measures to the strategic research agenda and its innovation activities if needed, and to its implementation plan via EU funding instruments.

The first wave of three actual JPIs, identified by GPC during 2009, were launched in 2010 through Council conclusions following Commission input in the form of a Commission Recommendation. The same procedure is followed in 2011 for launching the six JPIs identified by GPC during 2010 (second wave).

This procedure has lastly been confirmed by the Council conclusions of 26 November 2010 on Progress in Joint Programming (doc. 17166/10), where the Council invited the Commission, "within the remit of its competence, to further contribute to the preparation of JPIs ... with a view to adopting Recommendations...".

Identification of themes for major (societal) challenges

The selection and prioritisation of themes for major (societal) challenges could have significant influence on the future of the ERA, if considerable resources will be mobilised for associated research.

In the recent past and in other fields of EU governance the open method of co-ordination (OMC) produced quite satisfactory results. The opportunity of using the OMC, a set of 'minimal common denominators' or 'voluntary common framework conditions', could be considered when dealing with major challenges, with the objective to achieve a better co-ordination of research and innovation policies and activities among the MS/AS.

The ERA related Groups, according to their respective mandates (namely: the GPC dealing with Joint Programming of EU research on major societal challenges, the SFIC dealing with international collaboration, the SGHRM dealing with human resources, the GKT dealing with knowledge transfer and the ESFRI dealing with research infrastructures), represent the appropriate *forums* to provide opportunities for discussion, common prioritisations and to fulfil these tasks. In addition forward looking activities may prove useful.

Principles for establishment of JPIs

The individual JPIs are established on the legal basis stated above and according to the general principle that MS decide on voluntary bases about their participation, the strategic research agenda and its innovation activities and the governance and financing models of individual JPIs.

Due to the novel nature of this initiative, the development of governance arrangements, strategic research agendas, funding methodologies and commitment of funding has taken considerable time and effort. This problem has been initially solved by creating the roles of partners and observers. This approach provides the opportunity to the MS that are not able to formulate a clear decision on its participation to keep the contact with the JPI activities.

The European Commission has a facilitating role and provides support as necessary.

Recommendations

- Ensure retaining the general principle of variable geometry, i.e. that the participation in research activities of JPI should always be open to all MS/AS either as partners or observers. To this aim a specific and clear statement should be included in the Framework Conditions.
- The EC is invited to improve clarity of its role in the strategic level of JPIs so it will be the same regarding all the initiatives, at the same time bearing in mind that JPIs are Member States driven and the Commission should not participate in JPIs operative management.
- The Member States participating in a JPI should use innovative procedures for implementation, while the Commission should provide financial support for coordination as early as possible.

Partnership between participating MS

There is a significant degree of collaboration and cooperation amongst MS with high level of R&D intensity, both larger and smaller ones. Such relationship provides good breeding conditions for high quality and relevance of research results. On the other hand less RD&I intensive MS/AS and regions are significantly less active in various forms of transnational collaboration. This situation could have the consequence that these countries do not fully exploit their intellectual potential and is detrimental to their future prospect for increasing levels of RD&I intensity. Use of EU funding, such as the structural funds, could help address this problem.

Recommendations

- Meaningfully encourage active participation of small and less RD&I intensive MS/AS and regions in the development of shared strategic research agendas and innovation related activities, providing, where appropriate, incentives via structural funds or other mechanisms. This should be done taking into account, on the one hand, the existing national programmes and, on the other, the research activities in MS/AS which do not have formalised programmes but support research in the field in question.

Cross-cutting JPI governance issues

Although it is generally accepted that some common rules should be implemented in order to harmonize the governance of the ERA activities, care must be taken that the resulting regulatory approach is not too heavy (these MS/AC which have already adopted good practices should be given the role of standard setters). Instead, the rules should encourage the development of new cooperation models and innovative solutions. The possible incentive funding available at the EU level could be dependent on the degree of transnational cooperation especially, if it includes some harmonising elements in order to remove barriers of cooperation.

To fulfil this aim the Framework Conditions for Joint Programming described in the 2010 Guidelines are in the process of being tested for the development of JPIs. These guidelines aim to enhance the efficiency and the transparency in the evaluation process, establish a system capable of forward looking, and propose the creation of well-accepted mechanisms for monitoring the programmes and their objectives, ensure that relevant information is exploited as needed are well-organised and easily accessible, and establish adequate treatment of IPR issues.

Nevertheless, to fully implement the JPIs some problems still remain to be solved in the definition of the terms of reference used for their governance. For instance, JPIs, like other ERA activities, are mainly based in voluntary financial and scientific contributions of MS/AC and thus, it would probably not be realistic to develop governance procedures that provide the same decision making opportunities when it comes to joint activities and the implementation of the strategic research agenda, independently of their respective contributions, either financial or in-kind. However, such decisions should remain in the competences of the individual JPIs.

A sustainable governance system should take into account the relative contribution levels of the funding agencies. The existence of imbalances could hamper the viability of the collaborations and could reduce the budgetary contributions of the countries.

The Community funding may have a significant influence on facilitating the coordination process of JPIs. The strategic research agendas and its related innovation activities of JPIs and in general of the ERA programmes should take into account the activities supported by FP. It is therefore important to define the adequate role of the EC in the governance system of the JPIs, recognizing joint programming as a Member States driven process.

In addition, some kind of incentive EU funding may prove useful for individual JPIs trying to set up a ‘common pot’ funding mechanism, as such funding could reduce financial risk that individual member states otherwise face if joining a common pot system.

Furthermore, it would be important to define the role, when appropriate, for countries outside Europe to take part in Joint Programmes addressing global challenges. Here, the relevant ERA related group, particularly the SFIC, could play an active role, if deemed necessary by the JPIs.

An additional problem that should be taken into account when considering the governance structures and the strategic research agendas of JPI is their relationships with other JPIs and with other related ERA activities (e.g. HORIZON 2020), and in general their integration in the framework of the Innovation Union. In the very beginning, JPIs appeared to be oriented mainly to align the national academic research programmes, but now the scenario is more complex because the Innovation Union suggests that it could be necessary to align both academic and industrial national programmes, which is by far a more difficult task.

While some evidence suggests that certain JPIs may share certain common objectives, either between themselves or with other European large initiatives or industrial platforms, the care in developing and implementing strategic research agendas is required in order to avoid risk of duplication.

Recommendations

- The Guidelines on Framework Conditions for Joint Programming is a living document that should be adapted according to the progress of JPIs and with the implementation of IU Flagship Initiative in order to create flexible governance scenarios to facilitate cooperation, but these governance scenarios should not be so dispersed that they would increase the confusion within the research community (as has happened with other initiatives). Future revisions of the Guidelines will need to better take into account the difference in the needs of actors (RPOs and RFOs) in the fields of both, basic research and applied research.

- Following the recommendations of the Council¹ so far the Commission delivers a limited financial support for launching the JPI governance structure. However, its role for providing support to administrative issues and/or for coordinating/integrating some FP activities on the JPI research agenda should be more clearly defined.
- Some overlapping in the research initiatives and diversification in the governance rules of the ERA programmes is not necessarily negative. However to increase the efficiency, the transparency and the coordination of all European initiatives inside ERA it would be necessary to improve the communication channels across the different initiatives, for instance, by creating a unique information window to follow the development of the initiatives practically in real time (web open access window). In this context the Commission should support further development of NETWATCH and ERAWATCH.
- The relation between the prioritisation process leading to identification of JP themes and the prioritisation process leading to identification of grand challenges in the FP context also need to be clarified in order to reduce duplication, and instead contribute towards complementarity.
- The MS which have already adopted good governance practices should be given the role of standard setters, and not to be forced to accept a harmonized system based on a lowest common denominator.
- Communication between the individual JPIs should be improved in order to avoid the risk of duplication of research effort.

¹ Council Conclusions on Joint Programming of December 2008, December 2009 and October 2010.

5.2 Issues of general nature

Issues of general nature concern the broad spectrum of GPC topics of interest, in particular cross-border operations and transnational cooperation, which are going beyond aspects specific to JPIs. Following the mandate for GPC contribution and taking into account that:

- nearly 5% of the national research spending of MS is trans-nationally coordinated,
- further development of existing processes, including NETWATCH and ERAWATCH, is needed whereby all MS would meaningfully engaged in systematic exchange of information on possible national programmes or initiatives which might be suitable for cross border operation,
- the quality and relevance of research carried out in transnational consortia selected by international peer review is usually higher, according to a common perception¹, than that achieved in purely nationally selected and funded projects,
- the IU Flagship Initiative facilitates taking full advantage of the knowledge generated in Europe in favour of society and competitiveness,
- the process to formulate the HORIZON 2020 is under way, providing an opportunity for alignment of EU, national and regional RTD and innovation efforts,

certain issues of general nature are discussed below in greater detail.

¹ The Impact of Collaboration on Europe's Scientific and Technological Performance, Fraunhofer ISI, Idea Consult, SPRU (2009), a study commissioned by the European Commission.

Cross-border operations

Cross-border operations represent an important element of the ERA. From the GPC perspective two types of cross-border operations can be distinguished:

- activities of a scientific nature, involving research-performing organisations (RPO) and industry,
- activities of organisational and financial nature, involving research and innovation funding organisations (RFO).

The factors that hamper a more effective cross-border research are specific to these two types. For RPO they include:

- resistance of local scientific communities and industry against aligning national programmes with JPIs or opening them for international competition, due to an assumed difficulty to obtain grants as more competitive foreign research teams could propose better solutions,
- demand for the principle of “juste retour” to be used in managing the international programmes, especially when applied research is concerned.

Factors concerned with RFO operations include:

- a parallel to the above mentioned resistance by local scientific communities and industries,
- difficulty to obtain long term financial commitment required from a relatively large number of countries (particularly in the time of economic crisis), due to restrictions on annual budgets and the date of the final negotiations of the budget,

- lack of relevant national programmes, due to different science and innovation policy cultures or inefficiency of its administration,
- high diversity of funding agencies that are addressing different types of RD&I in the innovation cycle, and are subject to different ministries, administrative rules and laws,
- existence of long term national funding programmes, which do not include ERA activities (like JPIs), and are not flexible enough to accommodate easily these new financial requirements,
- a risk to cause many political problems if the exposure of national programmes to international competition, which acts as a mirror to monitor the quality of both the national programme and the domestic research teams, results in negative outcome; this could be particularly critical if these national programmes involve large budgets and large numbers of research teams in strategic areas (agriculture, health, food, and others).

Recommendations

- Promote formulation of national programmes in a flexible way, allowing for future alignment with future Joint Programmes and EU programmes.
- Intensify coordination and integration of existing national (or regional) research programmes and its innovation activities based on available coordination measures (rather than setting up entirely new joint programmes that would require new dedicated national funds apart from the current ones). This should be done with a clear view on matching programmes, which address similar phases in the innovation cycle (e.g. basic research, applied research, or even demonstration => see the experiences of the Industrial Initiatives of the SET-Plan). Implementation of JPIs should include not only opening new competitive calls; but also focus on increased cooperation in strategic level (for example cooperation between existing research centres, infrastructures etc, see the positive experiences of SET-Plan).

- Promote harmonisation of implementation of JP in the MS/AC participating in cross-border operations, through a further development of the Guidelines for Framework Conditions of the GPC. Include however adequate flexibility in such rules (otherwise funding organisations might prefer not participate if they are obligated to change already well-organised existing procedures).
- Use the experiences gathered so far and building on existing networks, including instruments such as ERANETs, PPPs and other under FPs 6 & 7, as well as EUROCORES of ESF give good foundation to develop further calls for proposals, common evaluation procedures and monitoring (ex-ante and ex-post evaluation).
- Meaningfully encourage participation in cross-border operations of MS/AC with different levels of R&D intensity, providing, where appropriate, measures to promote such activities. Explore the opportunities for using structural funds for such purposes.
- Undertake steps to overcome challenges with national strategies (e.g. reluctance of researchers to share data and cooperate with the industry) in reference to knowledge exploitation, transfer and more specifically open access, building on good examples of where there is open access on a European level.
- Recognise, that in some cases there are good reasons to establish barriers to unregulated cross-border research (e.g. in biomedical research there are barriers arising from the regulations surrounding patient confidentiality and access to clinical samples and records; these regulations exist for protection of patients, but they are a barriers to cross border clinical research).
- Ensure that progress and knowledge obtained from research activities is measured by research outcomes and impact on competitiveness and the society, not by counting numbers of joint initiatives. The objective should be to do more/better research, development and innovation taking full advantage of the generated knowledge and the requirements for delivering this vary between discipline and ‘challenge’.

Opening-up of national programmes

The opening-up of national programmes constitutes an opportunity for foreign researchers to apply to national research and innovation funding agencies in collaboration with national researchers and the industry, and receiving in some occasions financial grants directly from the programme or indirectly via sub-contracting arrangements. It is an excellent way to increase the trust between researchers from different countries and regions facilitating the creation of a truly integrated ERA.

The main drivers for opening-up are:

- to use foreign excellence to compensate for capabilities / skills / capacities (infrastructures, human resources), which might be missing on national level,
- to strengthen existing indigenous R&D capacity and innovation environments via collaboration,
- to exploit foreign capabilities in the pursuit of indigenous goals.

Two different options in implementation of the opening-up concept can be considered, *i.e.*, with or without the provision of funds to foreign research teams. In each of these cases two further possibilities can be identified.

In the first case:

- opening exclusively to foreign researchers and companies that shall undertake funded research in the founder country,
- opening to foreign researchers, allowing conducting the funded research in a foreign country.

In the second case:

- cooperation with matching co-funding schemes (e. g., bi-or multi-lateral cooperation, Joint Programming, ERANETs, etc., that is treated separately here),
- stimulating the participation of foreign researchers as observers and/or advisors with a low provision of travel funds to facilitate common meetings, sporadic visits, seminars, etc.

Barriers to opening-up the national programmes to the participation of foreign researchers are different depending of the schemes described above. On particular, the participation of foreign researchers and companies is more problematic when a transfer of funds is involved, as:

- there are various levels of local resistance to providing grants to foreign researchers and companies (even if they are affiliated), when the benefits of research are not going to be captured domestically,
- domestic researchers can be opposed to such grant provisions, because this reduces their own research budgets, a factor that appears to be specially critical under the economic crisis,
- concerns about IPR arrangements is a particular barrier affecting the participation of foreign-based firms,
- the fear, that technologies or innovations created by funding researchers or companies from other countries may not lead to investments and market implementation in the funding country,
- legal constrains to transfer money to other countries (due to problems concerning the signature of specific agreements for such money transfers as well as concerning the capacity for monitoring the budget management in a foreign country),

- concerns about administrative work-load and transactional costs in all stages: during evaluation and decision process for funding agencies and especially during the funding period for both funding agencies and funding recipients (i.e. efficiency of R&D funding),
- commitment to use national languages in the calls for proposals and in the implementation of the projects,
- difficulties to get on time and in a simple way the information about the open-up national calls for proposals.

Recommendations

- Meaningfully encourage opening-up of the national programmes by providing, where appropriate, incentive funding at the EU level. The scale of Community involvement shall depend on the degree of such opening. A clear view is needed, however, on the differences in the needs of basic research vs. applied research and innovation.
- Support a better fitting of national rules and administrative practises related to RD&I funding, according to the principle of voluntariness.
- Facilitate timely diffusion and in the appropriate languages of these open national programs by adopting the tools provided, for example by Cordis or using portals such as NETWATCH and EURAXESS as the proper web space where the open national programmes should be advertised.

Cooperation and coordination at programme level

It is recognised that transnational cooperation and coordination at programme level is the best way to tackle major societal challenges facing the EU¹.

¹ Commission Communication on Joint Programming, C(2008)468 July 2008.

The impact of collaborative research and open innovation is higher than non-collaborative ones – clearly this means that where collaboration occurs it is usually successful. And while the engagement in research collaboration across Europe, either through participation in joint research and technological development or the use of shared facilities, takes effort to organise and to coordinate the partners, but delivers collaborative projects and usually better quality results than those obtained on purely national scale.

One of the obstacles in such coordinating effort is a significant gap in levels RD&I intensity between MS/AC. The two borderline cases include:

- MS/AC with high intensity RD&I, well engaged in transnational cooperation, which are able to contribute to these major challenges keeping high scientific standards,
- small MS/AC or less RD&I intensive MS/AC which are not able, at least initially, to contribute significantly to these challenges.

However, there are many cases in between, and in practice limited resources lead most countries to selectively participate in such initiatives that are most highly prioritised by themselves. While all MS/AC should seek to increase their transnational cooperation, the degree of such increase will vary from country to country and the procedures used for the cooperation will not be necessarily those adequate to tackle the big challenges.

In addition, one important issue that should be considered to determine the budget that the countries could be able to invest for supporting the cooperation in competitive international activities is the fact, not always well documented, that in many EU countries, the contribution to FP might account for 30% or more of their total budget devoted to support competitive RTD programmes in their respective countries. Therefore, some countries have a rather low margin to develop competitive cooperation activities using the remaining funds earmarked for competitive national programmes which not necessarily fit the joint programmes of ERA, without compromising their domestic research needs. Furthermore, joint programmes of ERA sometimes arise when all the national funds have been already earmarked for other purposes.

This low margin can be due to still low level of investments in science and technology and/or to the development of political initiatives that give priority to non competitive research activities. Thus, to be able to collaborate in ERA initiatives these countries should find the way either to increase their budgets for competitive programmes or to reallocate part of the non-competitive funds for these international cooperation activities.

It should be accepted that ERA initiatives would engage countries collaborating at different rates and therefore, this means that not all the initiatives should involve all the countries depending of the rate and skills required to reach the challenge. Indeed, variable geometry allows different countries to take into account differing preferences as well as resource endowments.

Recommendations

- Alongside ERA activities addressing the major societal challenges consider also other types of transnational collaborative programmes that could enhance participation of different MS/AC, in particular small or less RD&I intensive.
- Promote setting the research and innovation objectives at the EU level, *i.e.*, at the FP level (only) in those areas that have European added-value.
- Taking into account that JPIs, through the development of strategic research agendas and its related innovation activities by the participating MS/AC, address the major challenges not adequately dealt with by the FP encourage the open partnership approach that will lead to the evolutionary alignment of national programmes, and if necessary, of modification of the strategic research agendas.
- Setting long-term objectives (7-10 years) for the FP and ERA programmes would facilitate harmonisation of the national research programmes and innovation related activities with the EU objectives.

- Promote efforts to show the added value of joint activities, keeping in mind that there are two different things: commitment to preparation of strategic research agenda (strategic level) and commitment to implement the plan (financial commitments). Financial commitments can come only if the joint strategic plan is attractive and brings clear added value.
- Encourage inclusion in national science and technology development budgets funds for participation in the collaborative research tackling the grand societal challenges and alignment of existing national programmes for joint programmes of ERA, while taking national priorities of MS/AC into account.
- Encourage the use of common standard rules for operating national and regional programmes. In particular using commonly agreed management standards and procedures could be eligibility criteria for receiving incentive funding at the EU level.
- Although participation should always be open, consider adoption of some minimum resource thresholds provided by the MS/AC in order to gain participation in the governance of research and innovation programmes tackling the major societal challenges.
