ERA-NET Review 2006

The Report of the Expert Review Group

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Chairman's Foreword

Our Group was invited by the Commission to review the ERA-NET scheme, focusing in particular on strategic and policy related matters. The review takes place at a time when FP6 is over and FP7 is about to start – an excellent time to take stock of experiences and lessons learned at both European and Member and Associated State levels.

The political decision to reconfigure the European Research Area as an internal market for research, technological development and innovation constituted a landmark in the development of the European Union. Part of this effort involved reducing the fragmentation of the European research fabric. In FP6, the ERA-NET scheme offered a way for programme owners and managers to contribute to this goal via the coordination and mutual opening of research activities carried out at national and regional levels.

Our group was impressed by the success of the ERA-NET scheme, especially by the enthusiasm shown for participation in the initiative by programme managers and, subsequently, the programme owners of national and regional programmes. The ERA-NET scheme constitutes a new approach to trans-national research cooperation in Europe, one which complements the Framework Programme and other European and international schemes, actions and initiatives.

At the end of FP6, almost 70 ERA-NET projects are running. Many of these have launched joint calls and more are expected to join them. Some are also expected to launch joint programmes. So far, the scheme has followed a 'bottom up' approach, driven by the enthusiasm and interests of independent programme owners and managers. In turn, this has led to a certain diversity in the procedures followed across the scheme, and to a number of overlaps between ERA-NETs in closely related thematic areas. In FP7, the ERA-NET scheme will continue to play an important role in the attempt to realise the European Research Area. There will be a need, however, to ensure consolidation and coherence at a European level and to strengthen the strategic case for involvement at national and regional levels.

As a consequence, we recommend that the Competitive Council establishes a High Level Group, composed of representatives of the ministers responsible for research in the Member States and Associated States, to review the strategic role of transnational research initiatives within national and regional policy portfolios and make recommendations concerning the future involvement of Member and Associated States in both ERA-NETs and similar initiatives based on Article 169. The Group should also reflect on how best to structure and organise ERA-NET activities in the future.

We hope that our report will contribute to the successful further development of the ERA-NET scheme in accordance with the ambitious objectives of the European Research Area initiative.

We thank the Commission for the opportunity to review the ERA-NET scheme and for the extremely open and constructive atmosphere in which it provided support for our endeavours.

Finally, I would like to thank the rapporteur and other members of our Expert Group for their excellent cooperation and contributions. Without their inputs and enthusiasm it would have been impossible to deliver the present report within the very challenging time frame of the exercise.

1 Introduction

This document constitutes the report of an Expert Review Group, constituted in October 2006 in order to review the ERA-NET scheme. The aim of the review was to reflect on the success or otherwise of the initiative and make recommendations concerning future strategies and policies, especially those relevant to the implementation of similar initiatives within the context of the Seventh RTD Framework Programme of the European Community (FP7).

2 ERA-NET in Perspective

The ERA-NET scheme was launched in 2002 as part of the Sixth Framework Programme (FP6). It was designed "to step up the cooperation and coordination of research activities carried out at national and regional level in the Member States and Associated States, through the networking of research activities, including their mutual opening and the development of joint activities". As such it constituted one element in the drive towards the creation of the European Research Area (ERA), helping in particular to restructure the fabric of research in Europe via the improved coordination of national and regional research activities and policies.

The scheme invited programme owners (generally ministries) and programme managers (generally agencies and research councils), to submit proposals for individual ERA-NETs in self-nominated topic areas. Each of these was expected to establish variable geometry networks comprised of the programme owners and managers of RTD programmes in the participating countries or regions. In turn, each of these networks pursued some or all of the elements of a four-step process. These involved:

- The systematic exchange of information and good practices on existing programmes and activities
- The identification and analysis of common strategic issues
- The planning and development of joint activities between national and regional programmes
- The implementation of joint trans-national activities, including joint calls and programmes.

The Commission covered all the additional costs associated with the trans-national aspects of coordination and two types of instrument were deployed: one to help establish new ERA-NETs (Specific Support Actions – SSAs); and one to support the activities of the ERA-NETs themselves (Coordination Actions – CAs).

Overall, 26 SSAs and 71 CAs were selected for funding. These involved over 1000 representatives from 38 countries (25 EU Member States; 8 Candidate and Associated States; and 5 'Third Country' States).   The selected CA Projects spanned four broad 'vertical' areas (Industrial Technologies, Life Sciences, Environment and Energy, and Humanities and Social Sciences) and two cross-cutting, 'horizontal' areas (International Cooperation and Fundamental Research). Representatives were largely drawn from ministries (38%), agencies (28%) and research councils (23%).

In FP7, the European Commission will continue to support the ERA-NET scheme. New ERA-NETs will be expected to follow the same four-steps as before. Participants with prior experience of ERA-NETs will be expected to move straight to the final step, i.e. the implementation of joint calls and programmes. The scheme will also be complemented by a new initiative, ERA-NET PLUS. In this, the Commission will contribute to the costs of the research projects selected as a result of a limited number of 'one-off' joint calls.

3 Achievements and Lessons

3.1 Relevance and Appropriateness

ERA-NET fulfilled a real need within the policy armoury of the EU in that it helped overcome barriers to the coordination of national and regional research activities, a vital step in the creation of a real European Research Area. Benefits included the facilitation of mutual learning; the coordination of policy responses to shared challenges; the establishment of critical research masses in key areas; and the minimisation of unintended duplication and redundancy. Critically, the overwhelming response to the scheme (over 2,000 programme owners and participants applied to be included in ERA-NETs), suggests the release of pent-up demand amongst the research policy community – a demand that was not being satisfied prior to the onset of the scheme.

ERA-NET also satisfied a demand that existed in the research community itself for an instrument capable of marrying the relative advantages enjoyed by national and regional programmes over their international equivalents (e.g. the greater familiarity of researchers with indigenous administrative procedures and personnel) with the corresponding benefits associated with international programmes (e.g. access to broader pools of both complementary expertise and financial resources).

Thirdly, ERA-NET complemented rather than duplicated existing mechanisms facilitating trans-national research, offering a unique opportunity for participants to explore the potential and actual benefits of variable geometry arrangements between research funding bodies supporting both private and public sector research, thus preparing the ground for the more permanent trans-national arrangements likely to emerge as a consequence of Article 169 of the European Treaty.

However, although ERA-NET met a need, the need for ERA-NET still persists. Mutual learning needs to be complemented by a phase of consolidation, marked by a greater emphasis on the launching of joint calls and programmes. It is gratifying to note, therefore, that the ERA-NET related activities being contemplated within FP7 have such a focus.

3.2 Goal Attainment and Impact

There is considerable evidence of the attainment of short-term goals in the face of appreciable practical barriers. Significant numbers of relevant stakeholders were attracted to participate in ERA-NETs and it is evident that mutual learning and strategic analysis and planning took place in all ERA-NETs. Furthermore, by November 2006, trans-national projects resulting from joint calls had been implemented by 7 ERA-NETs; a further 12 had selected or were in the process of selecting projects; and another 20 were preparing calls. Overall, 55% of ERA-

NETs had entered into the final step of the ERA-NET process, with many more – especially those only commencing activities in 2006 – expected to follow suit.

In the longer term, the success of ERA-NETs will be demonstrated if the research community responds positively to the calls and programmes launched under their umbrella and produces research of high quality and relevance. Another indicator of success will be the extent to which trans-national research activities and programmes, or parts of programmes, become more firmly embedded in national and regional policy portfolios. It is too early, however, to comment on these issues, other than to say that adequate monitoring and evaluation mechanisms will need to be in place to assess them.

Steps can be taken, however, to help ensure the acceptance and ultimate success of ERA-NET in these spheres. These include steps to promote a greater awareness in the research community at large of the 'added value' associated with participation in ERA-NET-initiated activities. Steps will also need to be taken to overcome some of the institutional barriers that still ensure that trans-national research activities continue to have a low profile in many national settings. If the ERA is to become a reality, there needs to be a renewed strategy discussion at the highest levels within Member States and Associated States of the relative importance of trans-national activities within the context of national policy portfolios.

3.3   Design, Structure and Composition

There is little doubt that the main design characteristics of ERA-NET were fit for purpose:

- The 'bottom-up' nature of the initiative was much appreciated by the main stakeholders;
- The use of Specific Support Actions as well as Coordination Actions allowed for the possibility of initial exploratory approaches
- The adoption of a four-step process for participants, with the latter two steps non-mandatory, was entirely suitable for this first, experimental phase of ERA-NET
- The flexible approach to the use of different funding regimes for joint calls encouraged participants both to join in and to explore ways of overcoming some of the practical barriers to the implementation of joint actions.

The success of the ERA-NETs also owes much to the inclusion of a wide range of stakeholders. The inclusion of 'programme owners' as well as 'programme managers' was particularly important given the longer-term aim of altering perceptions in ministerial circles about the importance of trans-national research activities. Extending the invitation to participate to regional 'owners' and 'managers' was also astute given the importance of regional R&D governance systems in some national settings and the growing importance of the regional level in European RTD and innovation policies. The only regret here is that more did not accept the invitation. ERA-NETs were also open to participants from all eligible countries (inside and outside of Europe), though one of the key attractions of the scheme was the ability to adopt variable geometry configurations. Smaller numbers avoid high transaction costs and present fewer problems when moving to the operational phase of launching joint calls.

The 'bottom-up' nature of the scheme allowed programme owners and managers to constitute ERA-NETs in areas of their own choosing, unconstrained by the thematic priorities of the Framework Programme. This resulted in a primary

emphasis on ERA-NETs in 'vertical' areas and a secondary emphasis on cross-cutting 'horizontal' ERA-NETs. In future, however it will be necessary to encourage a more strategic 'top-down' approach in order to ensure a primary focus on areas of strategic importance, while still allowing new ERA-NETs to emerge via bottom-up mechanisms.

Within FP7, the budgets for ERA-NETs will be held by the thematic areas of the 'Cooperation' programme. There is thus a danger that 'horizontal' ERA-NETs may be neglected. To avoid this, Member States will need to ensure that demand for ERA-NETs is relayed via national representatives on Programme Committees and incorporated into successive annual work programmes over the course of FP7. It will also be advisable to ring-fence funds for 'horizontal' ERA-NETs and to plan an annual series of separate, dedicated calls for specific 'horizontal' and 'vertical' ERA-NETs, alongside an open, 'bottom-up' call for ERA-NETs of any description.

3.4   Implementation

The procedures in place prior to the selection of an ERA-NET project, e.g. those covering proposal submission, evaluation, contract negotiation and financial matters, were generally appreciated by participants, though there is modest scope for improvement in FP7, particularly in terms of greater consistency in the type, quantity and quality of the information provided on ERA-NETs by different parts of the Commission. The timing and synchronicity of calls for ERA-NETs in the different thematic areas, as well as in 'horizontal' areas, will also be an issue. If Member States are to be encouraged to take a strategic view about participation in ERA-NETs, it will be important to ensure that there are regular, synchronised calls for ERA-NETs. One way of ensuring this is to establish a central unit within the Commission services charged with forming an overview and coordinating ERA-NET activities.

In terms of the funding arrangements for joint actions, the ability to choose between different funding models (common pot, virtual pot and mixed mode models) was much appreciated by participants. When barriers to cross-border funding were high, participants tended to go for virtual pot models. These can constrain the selection of all relevant high quality projects, however, and common pot and mixed-mode models offer potential solutions. Within the context of FP7, newcomers to the ERA-NET arena should still be allowed to use virtual pot models if the barriers to cross-border funding are high, but for those with previous experience of ERA-NETs the use of mixed-mode and full common pot models is preferable.

4   Recommendations

Many of the recommendations of the Expert Review Group are highlighted in the main body of the report. The most important are summarised here under three headings. The first set of recommendations is for consideration at the highest political levels across the EU. The second set contains messages primarily aimed at the Commission services concerning activities within FP7. The final set contains recommendations addressed to the main stakeholders involved in ERA-NETs, the programme owners and managers.

4.1 High-Level Recommendations

The planned consolidation of the ERA-NET initiative via a greater focus on the implementation of joint calls and programmes and the addition of the ERA-NET PLUS initiative should be complemented by efforts at the highest political levels along four fronts:

- In the first instance, greater efforts are needed by Member and Associated States to break down some of the remaining institutional barriers to the coordination and mutual opening of national and regional research initiatives;
- Secondly, Member and Associate States need to evolve clear strategies for their involvement in ERA-NETs based on thorough analyses of their national and regional needs and priorities;
- Thirdly, in order to avoid a new type of fragmentation caused by uncoordinated and partially overlapping ERA-NET initiatives, the growth and spread of ERA-NETs should itself take place within the context of a shared, strategic vision of the role of ERA-NETS and other trans-national RTD initiatives in the further development of the European Research Area;
- Fourthly, the coherent development of future ERA-NETs and the joint activities nurtured by them needs to take place within a structural and organisational framework informed by this strategic vision and geared towards the harmonisation of procedures and practices across all joint calls and programmes launched by ERA-NETs.

The Expert Review Group thus recommends that:

- The Competitiveness Council reinforces the primacy of Article 165 (which calls for the Community and Member States to coordinate their RTD activities) by setting up a High Level Group, composed of representatives of the ministries responsible for research within the Member and Associated States, to review the role of trans-national and regional research initiatives within national and regional policy portfolios and make recommendations concerning the future involvement of Member States in both ERA-NETs and similar initiatives based on Article 169;
- Member and Associated States respond to the setting up of the High Level Group by initiating strategic reviews of their own needs and priorities vis-à-vis trans-national R&D activities, with a view towards the development of national and regional strategies for involvement in future ERA-NETs and other trans-national activities, including ways and means of reducing internal barriers to participation;
- The Commission responds to the setting up of the High Level Group by outlining a framework capable of ensuring the harmonious and synergistic development of joint calls, programmes and other activities, including suggestions – to be discussed by the High Level Group – concerning common procedures and practices for the launch and implementation of joint calls, programmes and other RTD-related activities.

4.2 Commission-Level Recommendations

When developing a new framework for ERA-NET, the Expert Review Group recommends that:

- The evolution of a common framework of rules and procedures for the launch of activities under ERA-NETs should be informed by the need to develop a strong ERA-NET 'brand name', easily identifiable by the research community;
- As part of this effort, a common web-site providing easy access to information on all ERA-NET related activities should be constructed;
- Similarly, a central unit within the Commission services should have responsibility for maintaining an overview of ERA-NET developments, ensuring the synchronicity of

calls, the homogeneity of associated procedures and the maintenance of a strong ERA-NET 'brand name';

- This unit should also be responsible for collecting and synthesising the experiences and lessons to be learnt from running ERA-NETs, with a view to the production of both new rules and procedures and sets of guidelines for participants to follow;
- CERIF (the Common European Information Format) should be adopted as a means of collecting and codifying information on ERA-NETs in order to facilitate mutual learning.

Concerning participation in ERA-NET:

- The emphasis on the active participation of 'programme owners' as well as 'programme managers' should be retained, with ministries nominating external agents as representatives only in exceptional and justifiable circumstances;
- Whenever possible, participation in ERA-NETs should be based on existing research programmes, although countries planning new initiatives that take trans-national cooperation into account from the outset should also be allowed to participate, perhaps with observer status. This will be particularly important for new Member States, Candidate countries and potential Candidate countries;
- Specific actions should be contemplated within FP7 to increase the participation of regions, including invitations to national participants to include regional representatives from their own countries;

Concerning the implementation of ERA-NET:

- Fixed proportions of annual FP7 budgets should be ring-fenced for different types of ERA-NETs, with dedicated, synchronised calls for 'vertical', 'horizontal' and 'other' types of ERA-NET;
- In FP7, care should be taken to ensure complementarity between ERA-NETs addressing international cooperation and the international cooperation activities implemented under the 'Cooperation' and 'Capacities' Specific Programmes.
- Entirely new ERA-NETs in FP7 involving newcomers to the scheme should still be allowed to use virtual pot funding arrangements, but those with experience of ERA-NETs in FP6 should move to mixed-mode or common pot models when extending established ERA-NETs or launching calls in new ones;
- In FP7, participants should be encouraged to expand the range of activities tackled by ERA-NETs beyond joint calls for research projects, e.g. the setting up of joint doctoral programmes or the opening up of research laboratories;
- The detailed evaluation of ERA-NET planned during the first year of FP7 should focus in particular on the added-value the initiative brings to the research community and the degree to which trans-national activities become embedded in national and regional policy thinking and practices.

In terms of ERA-NET PLUS;

- The relatively limited funds dedicated to ERA-NET PLUS over the first two years of FP7 suggest a focused approach, with dedicated calls in a select number of high 'value added' strategic areas rather than open calls for proposals spanning all potential areas;
- The initial plans for ERA-NET PLUS to use common pot funding models should be reconsidered, since the ability to use mixed-mode models is potentially more attractive to participants. Moreover, if carefully designed, such models can satisfy all the requirements for Commission contributions (e.g. the avoidance of 'juste retour').
- Plans should be put in place to monitor and evaluate the ERA-NET PLUS initiative during the first two years of FP7, with a view to expanding the scheme if successful or abandoning it if Member States prefer to move direct to Article 169 initiatives or to establish other forms of trans-national ventures.

4.3   Recommendations for Programme Owners and Managers

- Programme owners and managers within individual national contexts should pool information in an effort to evolve a strategic overview of their country's involvement in ERA-NET activities;
- Within the context of overall national strategies, programme owners and managers should communicate their views on potential ERA-NETs to national representatives on Programme Committees in order to influence the contents of FP7 work programmes;
- Programme owners in particular should play an active part in setting the strategic directions for individual ERA-NETs;
- Participants in current ERA-NETs should contribute to the evolution of new guidelines for the implementation of ERA-NETs by sharing information on best practices and codifying information on their activities in a common format (e.g. CERIF).

1 Introduction

1.1 ERA-NET in Brief

The Sixth Framework Programme (FP6) included a specific action dedicated to the coordination of national and regional research programmes: the ERA-NET scheme. This encouraged the programme owners and managers of national and regional research programmes to explore the possibility of joint activities by providing the costs needed to coordinate mutual learning initiatives, strategy development and even the launch of joint calls and trans-national research programmes.

Since its launch in 2002, the scheme has had five calls and involved more than 1,000 programme owners and managers in over 100 ERA-NET projects (26 preparatory actions, 11 of which went on to become full ERA-NETs; and 71 full ERA-NETs, 12 of which had subsequent extensions).

1.2 Objectives of Review

As part of the preparation for the Seventh Framework Programme (FP7), a decision was taken to conduct a review of the ERA-NET scheme. The aim was to reflect on the success or otherwise of the initiative and take stock of the lessons learned, particularly those relevant to the implementation of future initiatives within the context of FP7.

1.3 Task Description

In order to conduct the review, an Expert Review Group was constituted in September 2006 and asked to report by December 2006. It comprised the following members:

Chairman: Professor Manfred Horvat, Vienna University of Technology, Austria

Rapporteur: Mr. Ken Guy, Director, Wise Guys Ltd., UK

Professor Violeta Demonte Barreto, General Director for Research, Ministry of Education and Science, Spain

Professor Jüri Engelbrecht, Vice-President, Estonian Academy of Sciences, Estonia

Mr. Ralf Wilken, Adviser, CIRCES, Germany

The Expert Review Group was asked to concentrate on strategy and policy related matters. As input for its deliberations, it was provided with the summary reports and material presented at a series of workshops conducted over the period from October 2005 to June 2006, each of which elicited the views of different groups of stakeholders on the lessons to be learnt from ERA-NETs. The full list of workshops is shown in Exhibit 1.

Exhibit 1   ERA-NET Workshops as Input to the Review Process

The coordination of national research programmes: opportunities and barriers	Manchester	October 20-21, 2005
ERA-NET as a tool for international scientific cooperation	Brussels	17 February, 2006
The life-cycle of ERA-NET projects: from proposal submission to project contract implementation	Brussels	2 May, 2006
ERA-NET as a tool facilitating cooperation between ministries managing RTD programmes	Brussels	23 May, 2006
ERA-NET as a tool for regional cooperation	Brussels	30 May, 2006
Innovation agencies and ERA-NETs: experiences and challenges	Malmö	1 June, 2006
Networking the European Research Area through joint calls	Brussels	14 June, 2006
The role of EuroHORCs in the development of the European Research Area: ERA-NET as a vehicle for trans-national cooperation and coordination	The Hague	20 June, 2006

1.4   Structure of Report

The remainder of this report is structured into three sections. The first of these contains factual material on the ERA-NET scheme, running through its context, aims and objectives and mode of operation. Basic statistics on the scheme are also provided, as are short descriptions of the plans for ERA-NET within FP7.

The next section constitutes the body of the report. Entitled 'Achievements and Lessons', it comprises the Expert Review Group's commentary on the ERA-NET scheme, based on the material provided to it and discussed in three working meetings held in September, October and November 2006 respectively. It is divided into four sub-sections. The first deals with the overall appropriateness of the scheme and its relevance to the development of the European Research Area (ERA). The second sub-section focuses on the issue of goal attainment and impact, and on ways of improving impacts in the future. Next, the third sub-section concentrates more specifically on aspects of the design, structure and composition of the scheme, while the fourth sub-section deals with the actual implementation of the scheme and suggestions for future improvements.

The final section summarises the main conclusions and recommendations contained in the body of the report.

2 ERA-NET in Perspective

2.1 Context

The concept of the European Research Area (ERA) was introduced in the Communication "Towards a European Research Area" in the year 2000[1]. It comprised three main elements:

- The creation of an 'internal market' for research, involving the free movement of knowledge, researchers and technology;
- Restructuring the fabric of research in Europe via the improved coordination of national and regional research activities and policies;
- The development of a European research policy, taking into account other EU and national policies.

Concerning the restructuring and coordination of research activities and policies, the report advocated the reciprocal opening-up of national research programmes. Subsequently, at their informal meeting in Gerona in early 2002, the European Research Ministers acknowledged the importance of the progressive opening of national RTD programmes as an important next step towards the construction and further development of the European Research Area.

FP6 contained a number of lines geared towards the coordination of research activities in Europe. Recognising that networking is one of the most effective and symbolic ways of creating the European Research Area, it promoted networking at a number of levels. At the project level, both new instruments and old were used to promote the collaboration and networking of researchers. At the policy level, the Open Method of Coordination (OMC) was introduced to facilitate mutual learning and coherent policy development. New strategic intelligence resources such as ERAWATCH were also launched.[2] In between these two levels, at the programme level, there were two strands. The first involved a greater effort to promote the joint implementation of trans-national research programmes, with Community support offered in line with Article 169 of the Treaty. The second thrust involved a specific action dedicated to the co-ordination of national and regional programmes: the ERA-NET scheme.

2.2 Aims and Objectives

ERA-NET was designed to provide targeted support for the coordination and mutual opening of both national and regional research programmes. It also aimed at establishing long-term cooperation between national programmes, leading eventually to joint trans-national programmes. Its formal aim was "to step up the cooperation and coordination of research activities carried out at national or regional level in the Member States and Associated States through the

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[1] European Commission, 'Towards a European Research Area, COM(2000) 6 Final
[2] ERAWATCH provides information on national research policies, structures, programmes and organisations. The aim of this service is to support policy making in the research field in Europe, by facilitating a better knowledge and understanding of national research systems, policies and the environments in which they operate. See http://cordis.europa.eu/erawatch/index.cfm

networking of research activities, including their mutual opening and the development and implementation of joint activities".[3]

2.3 Mode of Operation

The scheme was based on a bottom-up approach in that it was open to all areas of research, not just those covered by the Framework Programme. The initiative for ERA-NETs in specific areas thus lay with the prospective partners from the Member and Associated States.

The scheme aimed to involve both the 'owners' and 'managers' of research programmes at national and regional levels and to span academic and industry-oriented research programmes. Participants were primarily expected from ministries, research and technology agencies and research councils, though given the different research and innovation governance systems of countries, some exceptions were anticipated. However, given that the aim was to stimulate networking and coordination within policymaking circles, the participation of other types of organisations (e.g. research organisations) was proscribed.

ERA-NET encouraged a number of different types of networking. Specifically, the scheme encouraged participants to pursue a four-step process, with the expectation that participants would become involved in at least the first two steps and, hopefully, the latter two steps.

Step 1
- The systematic exchange of information and good practices on existing research programmes and activities
    - The goal here was to encourage mutual learning via the exchange of information on national and regional practices

Step 2
- The identification and analysis of common strategic issues
    - In terms of exploring the possibilities for cooperation and coordination, participants were encouraged to identify and analyse:
        § Research activities of mutual interest
        § Practical networking arrangements
        § Barriers to trans-national activities
        § New opportunities and gaps in research

Step 3
- The development of joint activities between national or regional programmes
    - Based on the previous identification and analysis step, these activities were envisaged as including:
        § Mechanisms for clustering national or regional research projects
        § Multinational evaluation mechanisms
        § Schemes for joint training activities
        § Schemes for the mutual opening of facilities or laboratories
        § The development of common schemes for programme monitoring and evaluation
        § Schemes for the exchange of personnel
        § The development of specific cooperation agreements and arrangements for planned trans-national schemes
        § The development of full-blown action plans for such schemes

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[3] European Commission, 2005-6 Work Programme for the 'Support for the Coordination of Activities' line of the FP6 Specific Programme 'Integrating and Strengthening the Foundations of the European Research Area'

Step 4
- The Implementation of joint trans-national research activities
  - o The aim in this step was to set up and implement pilot activities, joint calls and joint programmes, all involving common multinational evaluation systems and common plans for the dissemination of results and experiences. In terms of funding these activities, participants were given a choice between:
    - § A 'virtual pot' model, in which countries and regions paid for their own participants and there were no trans-national flows of national funding
    - § A 'common pot' model, in which countries pool funds and there are trans-national flows
    - § 'Mixed- mode' models of various types, all of which allowed countries to pay for their own researchers and, on occasion, to pay for other countries' researchers

In carrying out these activities, ERA-NET offered to cover all additional costs associated with the trans-national aspects of coordination, but not to contribute to the costs of the planned research activities.

Two types of instrument were deployed:

- Specific Support Actions (SSAs) supported preparatory actions aimed at developing future ERA-NETs;
- Coordination Actions (CAs) supported ERA-NET activities themselves.

2.4 Basic Statistics

2.4.1 Projects, Participants and Budgets

The first open call for proposals for ERA-NET was launched in December 2002, with a cut-off date of June 2003. In all there were five calls, with the final cut-off date in October 2005. The initial indicative budget for the Community contribution was for €148m, rising eventually to €183m to accommodate the large number of high quality proposals received. The Community contribution covered 90% of the total costs associated with the selected proposals.

Major points to note concerning the results of the calls are as follows:

- In total, 229 proposals requesting €393m were received. Of these, 71 were for SSAs and 158 were for full ERA-NETs supported by CAs (18 of which were for extensions of successful proposals in earlier calls);
- Of the proposals selected for funding, 26 were SSAs, 11 of which eventually became full CAs. This made a total of 71 CAs, 12 of which were successful in their bids for extensions;
- In terms of participants, over 2,000 were involved in the proposals submitted, with over 1,000 eventually involved in the successful networks.

2.4.2 Technical Areas

In terms of the technical areas and issues covered by ERA-NETs, no initial preference was given to particular topics. The projects eventually chosen, however, were subsequently clustered into six broad areas: four 'vertical' areas corresponding to particular technological areas and two more 'horizontal' areas.

Vertical Areas
- Humanities and Social Sciences
- Life Sciences
- Environment and Energy
- Industrial Technologies, Aeronautics, Space, IT, Innovation

Horizontal Areas
- Fundamental Research
- International Cooperation

The final distribution of full ERA-NET projects across the vertical and horizontal areas is shown in Exhibit 2.

Exhibit 2   The Distribution of Full ERA-NET Projects Across Vertical and Horizontal Areas
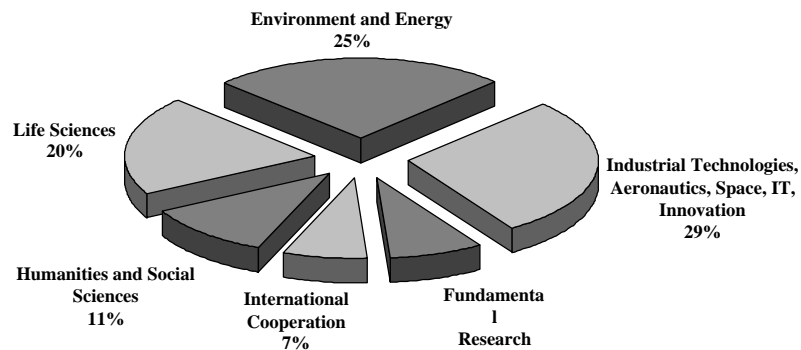
2.4.3 Participating Organisations

In terms of the types of organisations involved in all ERA-NET projects (CAs and SSAs), 86% were government organisations; 1.5% were international organisations (e.g. the Joint Research Centre of the European Commission); 8.7% were private non-profit organisations; and only the remaining 3.8% were public and private commercial organisations. Exhibit 3 describes the situation for CAs in terms of representatives from ministries, agencies and research councils.

Exhibit 3   The Distribution of Participating Organisations in Full ERA-NET Projects
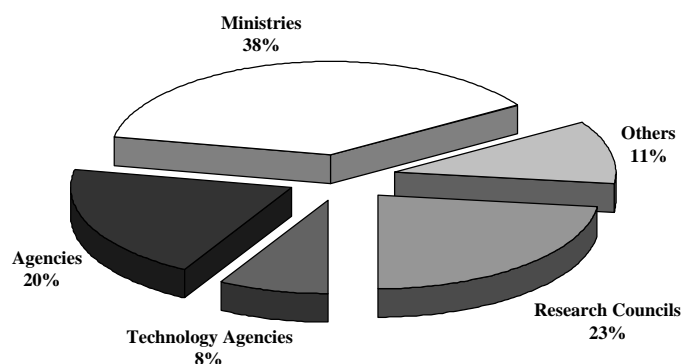
2.4.4   Participating Countries

Not unexpectedly, the vast majority of country representatives came from the EU-25 countries (87%), with many of these (37% of the overall total) coming from the five largest economies (Germany, France, UK, Italy and Spain). Of the smaller economies, the Netherlands, Belgium, Sweden, Austria and Finland also had significant numbers of participants (27% of the total).

The remaining 15 EU-25 countries, however, accounted for just 23% of the total, while the Associated States and Associated Candidate States accounted for 10% and Third Countries for 1% of the total. Exhibit 4 provides further details. It shows the number of representatives from each country participating in ERA-NETs. It also shows the number of ERA-NETs in which each country participated. In these terms, Germany leads the way, having participated in 61 of the 71 full ERA-NETs. It also had the greatest number of representatives per ERA-NET (1.8), presumably a function of the diverse set of national and regional actors involved in the governance of the research system.

2.4.5   Progress in Terms of the Four Steps

The general feeling in the stakeholder workshops conducted over the period from October 2005 to June 2006 was that most, if not all, of the ERA-NETs then underway had made significant progress in terms of the activities associated with the first three steps of the ERA-NET process, namely mutual learning; problem identification and analysis; and strategic planning. Moreover, by November 2006, 55% of the total of 71 had made significant strides in terms of the fourth step – the launching of joint actions. Seven (10%) had actually implemented trans-national projects resulting from joint calls; 12 (17%) had launched calls in which trans-national projects had either been selected or were in the process of being selected; and 20 (28%) had calls under preparation. The figure of 55% is appreciable given that, of the 71 full ERA-NETs, only 51 (72%) had started by the end of 2005, with 17 commencing during 2006 and three still waiting for contracts to be signed in November 2006. Many more ERA-NETs are thus expected to move into the fourth stage of the process.

Exhibit 4 Country Participations in Full ERA-NETs

Country	Number of Participations	%	Frequency of Participation	%
EU 25				
Germany	109	10.6%	61	86%
France	101	9.8%	57	80%
Netherlands	69	6.7%	56	79%
United Kingdom	65	6.3%	52	73%
Spain	61	5.9%	44	62%
Austria	58	5.6%	42	59%
Finland	50	4.9%	40	56%
Sweden	51	5.0%	40	56%
Belgium	50	4.9%	38	54%
Italy	48	4.7%	36	51%
Denmark (+ Greenland)	30 (+1)	3.0%	28	39%
Portugal	29	2.8%	28	39%
Poland	42	4.1%	27	38%
Ireland	20	1.9%	20	28%
Slovenia	20	1.9%	20	28%
Greece	22	2.1%	18	25%
Hungary	17	1.7%	17	24%
Czech Republic	16	1.6%	14	20%
Estonia	12	1.2%	12	17%
Cyprus	6	0.6%	6	8%
Slovakia	8	0.8%	5	7%
Latvia	5	0.5%	5	7%
Luxembourg	4	0.4%	4	6%
Lithuania	3	0.3%	3	4%
Malta	2	0.2%	2	3%
Subtotal	899	87.5%		
Associated Candidate States				
Romania	14	1.4%	13	18%
Turkey	7	0.7%	7	1%
Bulgaria	5	0.5%	5	7%
Croatia	2	0.2%	2	3%
Subtotal	28	2.7%		
Associated States				
Norway	39	3.8%	36	51%
Switzerland	17	1.7%	16	23%
Israel	13	1.3%	11	15%
Iceland	9	0.9%	9	13%
Subtotal	78	7.6%		
Third Countries				
Russian Federation	3	0.3%	3	4%
Republic of Montenegro	1	0.1%	1	1%
Bosnia and Herzegovina	1	0.1%	1	1%
Republic of Macedonia	1	0.1%	1	1%
Canada	1	0.1%	1	1%
Subtotal	7	0.7%		
International Organisations	16	1.6%	13	18%
TOTAL	1028	100%		

(1) The term 'Number of Participations' signifies the number of participations of each country in the total number of full ERA-NETs – with the accompanying frequency expressed as a percentage of the total number of participations (1028). When the total number of participations is greater than the total number of ERA-NETs, this indicates that representatives of more than one organisation were involved in some ERA-NETs.

(2) The term 'Frequency of Participation' signifies the number of ERA-NETs in which a country is represented (albeit by one or several organisations) – with the accompanying frequency given as a percentage of the total number of ERA-NETs (71)

(3) 'International Organisations' include 2 UN agencies; 7 European Organisations; 6 representing the Nordic countries and linked to the Nordic Council of Ministers; and one participation by the JRC of the EC

2.5 ERA-NET in FP7

2.5.1 ERA-NET

Based on the response of the stakeholder community to the calls for ERA-NETs under FP6, and to the perception that the objectives and modes of implementation of the ERA-NET scheme have become widely accepted amongst programme owners and managers, the Commission intends to continue ERA-NET within the context of the FP7.

The major proposed change to the scheme will be the setting of mandatory ambitious objectives. New ERA-NETs will be allowed to follow the same 'four-step' process as in FP6, but with the expectation that all four steps will be implemented. ERA-NETs based on experiences gained within FP6 ERA-NETs will be expected to move straight to the fourth step – the implementation of joint calls and programmes.

Another key change is that the thematic areas of the 'Coordination' programme in FP7 will act as budget holders for ERA-NETs.

2.5.2 ERA-NET PLUS

To complement ERA-NET, a new scheme entitled ERA-NET PLUS will be launched. This will allow a Community contribution to joint calls organised between participating programmes of the order of 25-33% of the total. In turn, this will facilitate the cross-border flows of money needed for the support of trans-national activities not based on the concept of 'juste retour' – a pre-condition for any Community funding. The ERA-NET PLUS modules provide an operational strategy for cooperation. They are designed to allow a Community contribution to a limited number of joint calls (one per ERA-NET PLUS initiative), as long as they are specified within FP7 work programmes. Current plans are to sanction two ERA-NET PLUS calls per year over the first two years of FP7, each with a minimum budget of 5m €. ERA-NET PLUS initiatives should offer EU value-added and conform with the budgetary principles of the Community. As such they differ from Article 169 initiatives, which call for the setting up of strategic cooperation programmes and require a heavy co-decision procedure.

3 Achievements and Lessons

3.1 Relevance and Appropriateness

3.1.1 Did the ERA-NET scheme fulfil a need?

In a formal sense, the ERA-NET scheme was entirely appropriate since it responded to a specific request of the ministers responsible for research in the Member and Associated States to encourage the progressive opening-up of national and regional programmes as part of the overall drive to create the European Research Area. However, the evaluation of any programme usually requires a subtler look at whether the initiative satisfied a generic policy need, based on an analysis of the policy context at the time.

When first conceived, the strategic case for a scheme such as ERA-NET was premised on three things:

- The potential benefits of coordinating national research programmes, especially in terms of restructuring the European Research Area by countering the fragmentation of research effort across the EU;
- The existence of barriers to such coordination;
- The need for some form of intervention to help overcome these barriers.

With hindsight, it is now possible to argue that the estimate of potential benefits and the impact on restructuring was correct; that barriers certainly did exist; and that a mechanism such as ERA-NET was needed for these barriers to be overcome.

The potential and real benefits of the ERA-NET scheme, for example, are now much clearer. Experience testifies that:

- Coordination allows common policy challenges in spheres as diverse as fisheries, agriculture and climate change to be addressed through joint research initiatives;
- Unintended duplication and redundancy are minimised via the exploitation of complementary strengths in national and regional programmes;
- Critical mass in strategic areas can be attained via large-scale, trans-national research programmes;
- ERA-NETs facilitate mutual learning amongst national and regional programme owners and managers concerning the design and implementation of research programmes;
- Joint schemes amongst EU Member and Associated States can be a useful platform for the launch of broader, global schemes involving non-Member States;
- ERA-NETs allow countries to launch calls and programmes with variable geometry, providing participating countries with a welcome degree of flexibility.

Similarly, experience has testified to the fact that the barriers to coordination were very real. These included practical barriers stemming from, for example, the heterogeneity of national and regional rules, laws and regulations governing domestic research spending, as well as the more mundane barriers created by language and currency differences. They also included more entrenched cultural or institutional barriers related to the low priority given at the highest political levels to international cooperation and to the coordination of national and regional programmes. To be successful, ERA-NETs demand the active participation of 'programme owners' as well as 'programme managers', especially in terms of participation in Steering Groups, whereas in reality the involvement and commitment of some 'programme owners' did not live up to expectations.

Critically, the need for some form of intervention to help overcome these barriers and attain potential benefits was also amply demonstrated by the overwhelming response to the ERA-NET calls, with over 2000 organisations submitting applications for Specific Support Actions (SSAs - 71 submitted, 26 successful) and Coordination Actions (CAs - 168 submitted, 83 of them successful). These included a number of extensions to existing ERA-NETs (18 submitted, 12 successful).

Taken together, all these factors support the argument that ERA-NET fulfilled a real policy need within the EU research arena.

Satisfying the needs of policymakers, however, is not enough. At the end of the day, initiatives such as ERA-NETs also have to satisfy end users, i.e. the research community itself. Across Europe, the various parts of this community are well served by national and regional programmes and by Europe wide programmes such as the Framework Programmes. However, ERA-NET did satisfy a demand that existed in the research community for an instrument capable of marrying the relative advantages enjoyed by national and regional programmes over their international equivalents (e.g. the greater familiarity of researchers with indigenous administrative procedures and personnel) with the corresponding benefits associated with international programmes (e.g. access to broader pools of both complementary expertise and financial resources). ERA-NET also provided access to research funds in areas not well covered by either national or international funding schemes, often in areas of interest to only a small group of countries or in technical areas not prioritised by the Framework Programmes (both within and external to the main thematic areas).

3.1.2 Did ERA-NET fill a gap not covered by other initiatives?

Policy instruments facilitating trans-national R&D across Europe do exist. Country contributions support the operation of the EU Framework Programmes and COST, for example, and mechanisms such as bilateral and multilateral agreements between governments and initiatives such as EUREKA and EUROCORES all allow bodies such as national (and regional) ministries, agencies and research councils to contribute directly to the conduct of research carried out by partners from different countries. EUROCORES, for instance, enables research councils across Europe to support joint actions in scientific areas suggested either by researchers themselves or by national research councils, with the final selection made by the ESF Executive Board, while EUREKA encourages ministries and agencies to support work in areas determined primarily by industry. Article 169 of the EU Treaty also allows groups of countries and funding bodies to tackle common research problems via contributions to a common pot, though in practice the opportunity to exploit this instrument has rarely been grasped.

Across Europe, however, the predominant mode of operation has been for funding bodies to act independently, often with little awareness of the arrangements in place in other countries to tackle similar sets of issues. EUROCORES has allowed research councils to support trans-national activities since 2000, and at a sub-EU level the Nordic Council of Ministers for Education and Research promotes Nordic cooperation in research, but prior to the launch of ERA-NET there was little to facilitate the launch of joint actions determined by the needs of ministries and agencies as well as research councils. Article 169 provides a framework for 'variable geometry' groupings to launch joint actions if they are prepared to establish a common funding pot, but for many bodies this was a step too far given their relative unfamiliarity with the needs, aspirations

and protocols of their counterparts in other countries. A gap existed, therefore, for a mechanism that could alter this situation, primarily by:

- Facilitating mutual learning between a broad spectrum of funding bodies spanning programme owners and programme implementers, e.g. ministries, agencies and research councils;
- Encouraging funding bodies to explore the possibility of developing joint strategies based on their mutually agreed collective and/or complementary needs and priorities;
- Facilitating the development of the action plans needed for these joint activities;
- Providing flexible ways of implementing experimental joint calls, programmes and other initiatives, thus paving the way towards the launch of true trans-national initiatives either outside or within the context of frameworks such as Article 169.

The ERA-NET scheme, via its adoption of a four-step scheme tackling each of these issues, has promoted awareness of the benefits of greater cooperation between national and regional research programmes and helped fill this gap.

Although ERA-NET helped fill a gap not covered by other instruments geared towards the promotion and facilitation of trans-national research activities, there will be a growing need in the future to identify other gaps and overlaps as and when they occur in the further development of the European Research Area. Greater monitoring and information sharing concerning the scope and extent of policy efforts and activities in this sphere is needed.

The Commission is therefore invited to launch a platform for the discussion of these issues in order to stimulate the coherent development of compatible schemes supporting trans-national research cooperation both in Europe and with the rest of the world.

3.1.3   Is there still a need for ERA-NET?

Although ERA-NETs have allowed programme owners and managers to interact and explore the potential benefits of greater cooperation between national and regional programmes, the existence of joint initiatives in the European Research Area is still comparatively rare. It is also unlikely that the true benefits of trans-national research initiatives have been fully comprehended at the highest strategic and political levels within national settings. In such circumstances, there is still a need for a mechanism that continues to promote mutual learning and provides a route towards the greater spread of joint initiatives, i.e. there is still a place for ERA-NET within FP7.

There is a case, however, for shifting the focus of the initiative within FP7. In its initial phase, the primary aim was to involve programme owners and managers in a process of information exchange and consideration of joint options via a focus on the first two steps in the process noted above, i.e. mutual learning and options analysis. Progress towards the last two steps (strategy development and the implementation of joint calls and trans-national research programmes) was encouraged but not obligatory. Given the success of the initiative in terms of the involvement of large numbers of programme owners and managers within individual national settings, however, the emphasis on the first two or three stages should be complemented by a greater focus on the actual implementation of joint calls and trans-national programmes. There should still be scope for 'new entrants' to benefit from the mutual learning, analysis and strategy development phases, but for the many institutions with

prior experience of ERA-NETs, the emphasis should now be on the fourth step, i.e. the implementation of joint activities.

Within FP7, the intention is to cater for such a shift by making the implementation of the fourth step of the ERA-NET process obligatory for proposals stemming from existing ERA-NETs, whilst still allowing proposals for new entrants to aim for a four-step process without making the latter steps mandatory. In addition, a new ERA-NET PLUS scheme will further encourage the implementation of a limited number of trans-national activities in areas of strategic significance and European 'added value' via the provision of a 'topping-up' contribution from the Community to joint calls organised between participating programmes.

There is also scope for expanding the range of activities tackled by ERA-NETs beyond joint calls for research projects, e.g. the setting up of joint doctoral programmes or the opening up of research laboratories. These were not proscribed within the FP6 ERA-NETs, but they did not constitute a major preoccupation of participants. In FP7, participants should be encouraged to broaden horizons and explore other possibilities for strengthening research capacity.

The continuation of ERA-NET and the introduction of an ERA-NET PLUS scheme are welcome steps. It should be noted, however, that current plans only envisage one or two ERA-NET PLUS initiatives per year over 2007 and 2008. In essence, this is a pilot phase for ERA-NET PLUS. Adequate monitoring and evaluation arrangements will therefore have to be put in place in order to judge the success and continued need for the ERA-NET PLUS scheme and to make plans for its expansion or otherwise over the remainder of FP7, since it will be possible to cater for such changes in the future work programmes for FP7. This could be especially important given the expected popularity of the ERA-NET PLUS scheme as an alternative or precursor to full 169 schemes.

In addition to the continuation of ERA-NET and the introduction of ERA-NET PLUS, both steps likely to facilitate an increased emphasis on the implementation of joint activities, other complementary actions will be needed in order to improve recognition of the benefits of cooperation at the highest levels. To date, ERA-NET has stimulated a marked interest in trans-national research amongst programme owners and managers, particularly amongst programme managers. There is still a recognition amongst stakeholders in existing ERA-NETs, however, that the visibility and perceived importance of participation in trans-national initiatives is still relatively low within the higher reaches of many ministries. There is still a need to counteract some of the institutional barriers to the implementation of coordinated actions by raising the profile of trans-national initiatives in the formulation of national policies and strategies for research and the design of appropriate sets of programmes and regulations.

Further measures are therefore needed to prepare the ground for trans-national cooperation. Critically, these are likely to involve the development of coherent national strategies for participation in ERA-NET, based on informed analyses of national needs and priorities, the 'added-value' of participation in ERA-NETs, and the barriers to be overcome if trans-national initiatives are to become further embedded in national and regional policy portfolios. Few programme owners and managers entered the first exploratory phase of ERA-NET informed by such strategic perspectives. In future, this situation has to change.

3.2 Goal Attainment and Impact

3.2.1 What evidence is needed to assess whether ERA-NET has achieved its goals?

As noted earlier, the overall goal of ERA-NET was to improve the coordination of national and regional research initiatives and lead to more sustained forms of collaboration, including the strategic planning and design of joint research programmes and the mutual opening of national research programmes. Together with Article 169, it was one of the instruments intended to affect the coordination of research in Europe at the programme level, a necessary step in the attempt to restructure the fabric of European research, itself part of the broader political drive to create a genuine European Research Area.

Indicators of successful goal attainment thus include:

In the short-term
- Evidence that significant numbers of relevant stakeholders were attracted to participate in ERA-NETs;
- Evidence that mutual learning took place;
- Evidence that strategic planning occurred;
- Evidence that joint actions were launched.

In the longer-term
- Evidence that joint actions have themselves been successful in terms of attracting and satisfying the needs of the research community;
- Evidence that joint actions have become more firmly embedded in the policymaking consciousness of national and regional administrations, and that these administrations are better equipped to deal with them.

In a full evaluation of the ERA-NET scheme[4], these aspects of goal attainment will need to be examined alongside many other indicators and many other issues, e.g. the issue of attribution (ERA-NET was only one of many initiatives contributing to the restructuring of the ERA); economic efficiency (e.g. in terms of cost-benefit ratios); implementation efficiency (i.e. how well the programme was implemented); additionality (e.g. the 'added value' of the scheme for both policymakers and the research community); and impact (both in terms of impact on the level and reallocation of research funding across the EU, and in terms of the eventual impact of the research supported).

In this strategic review, however, we focus only on the indicators of goal attainment noted above.

3.2 2 Did ERA-NET achieve its short-term goals

There is no doubt that ERA-NET successfully stimulated interest amongst its intended target audiences. Proposals for ERA-NET projects were submitted by over 2,000 potential participants and over 1000 of these eventually took part in ERA-NETs. Nearly 40% of the participants involved in full CAs were from ministries, while just over a quarter were from agencies and just under a quarter were from research councils. It is also evident from the

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[4] Plans for an evaluation study are pencilled into the work programme for the first year of FP7.

reported activities of the individual ERA-NETs and the comments made by participants that mutual learning, the identification of common strategic issues and strategic planning involving the development of plans for a whole range of activities took place in all of the CAs supported, though the major focus was on the potential for joint calls for research projects.

There has also been considerable progress in terms of moving towards the fourth and final step in the ERA-NET process – the launch of joint calls and activities. As noted earlier, by November 2006, 10% had implemented trans-national projects resulting from joint calls; 17% had launched calls in which trans-national projects had either been selected or were in the process of being selected; and 28% had calls under preparation. This number was also expected to increase since a number of ERA-NETs had only commenced operation during 2006.

All these achievements were attained in the face of considerable practical barriers. These included:

- Unfamiliarity with research funding organisations and mechanisms in other countries and regions;
- Unfamiliarity with trans-national research initiatives amongst programme owners and managers on the one hand and amongst research communities on the other;
- Lack of awareness of the EU commitment to coordination, as expressed in Article 165 of the European Treaty, which states that:

> "1. The Community and the Member States shall coordinate their research and technological development activities so as to ensure that national policies and Community policy are mutually consistent.
>
> 2. In close cooperation with the Member State, the Commission may take any useful initiative to promote the coordination referred to in paragraph 1." [5]

- Unfamiliarity with catalytic actions such as ERA-NET, which was designed only to cover coordination costs and not the costs of the actual research itself;
- Unfamiliarity with the expected outputs of such catalytic actions;
- Widespread differences in the rules, procedures and legal frameworks governing the allocation and administration of research funding in different settings;
- The partial incompatibility of existing legal and regulatory frameworks with the practical requirements of trans-national initiatives;
- Unfamiliarity with the ways in which these differences can be transcended using 'virtual pot', 'common pot' and 'mixed mode' funding models;
- Constraints on the availability of suitable staff, exacerbated by high staff turnover rates within many administrations;
- The increased overheads and transaction costs associated with trans-national endeavours;
- Difficulties persuading senior policymakers of the wisdom of opening up national and regional programmes.

In the event, however, the challenges presented by these barriers stimulated many creative ways of overcoming them. Those that still need to be confronted in future initiatives are dealt with in the subsequent sections on the design and implementation of the ERA-NET scheme.

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[5] The Consolidated Version of the Treaty Establishing the European Community, Official Journal of the European Communities, C325/33, 24.12.2002, p74

3.2.3 Is ERA-NET likely to achieve its longer-term goals?

While it is correct to conclude that ERA-NET has made significant progress in terms of its short-term goals, it is still too early to say whether the expected longer-term impacts will materialise. The research activities specified in joint calls were only just beginning to start in a handful of instances by late 2006. It will be important in the future, however, to monitor the success of these activities, both in terms of attracting proposals from the research community and – even more importantly – in terms of satisfying its needs.

In order to be truly successful, ERA-NET-stimulated joint programmes have to offer 'added-value' to the research community, i.e. they have to present opportunities to conduct research in a different way or with a different focus than would be possible in other programmes. They have to allow researchers to conduct work that would be difficult or impossible to realise in the context of either national programmes alone or in contexts such as the normal collaborative research programmes of the EU Framework Programmes. It is too early to say whether researchers perceive ERA-NETs in this way, but it will be important to address the issues of complementarity and 'added-value' in the evaluation scheduled for the first year of FP7.

Whether or not the research community perceives the 'added value' of ERA-NET initiatives is to some extent a function of the way joint programmes are presented and 'sold' to researchers. It will be important for the national and regional authorities involved to differentiate their 'product' from other initiatives by stressing the added-value elements, e.g. the ability to access the complementary assets of researchers in other countries in areas considered to be strategically important, or in areas not covered by the Framework Programmes. In this sense the issue of 'branding' is crucial. The prospects for success for the ERA-NET initiative as a whole will be greatly enhanced if the label 'ERA-NET' becomes synonymous with this type of added-value. A determined effort to differentiate ERA-NET initiatives from other initiatives via the promotion a highly visible 'ERA-NET' label is thus recommended.

In terms of the longer-term goal of raising the profile of trans-national research programmes in national research policy portfolios, the short-term achievements of ERA-NET have had both positive and potentially negative effects. On the positive side of the equation, awareness of the potential role of trans-national programmes has certainly been raised significantly at an operational and tactical level. ERA-NET attracted many programme managers and owners within individual national settings. Germany alone had over 100 participations in ERA-NET projects. This in itself is a remarkable achievement and testimony to the short-term impact of the scheme on the behaviour of programme owners and managers.

There is also a need for some caution, however, as the very success of the scheme could prove counterproductive in the longer-term if remedial action is not taken. The bottom-up approach adopted in the scheme sparked the enthusiasm of individual programme managers and drove the process of mutual learning and the development of plans for joint actions. Centralised decisions at a national level concerning which ERA-NETs to join, based on overviews of national needs and priorities, were rare. In consequence, the preponderance of ERA-NET projects and the involvement of significant numbers of staff has only latterly been perceived by some senior policymakers, leading in some instances to criticism that there are now too many ERA-NETs, with little focus on items of true strategic importance to individual nations. Resistance to

the concept of even greater involvement in trans-national research initiatives may also have increased because of this.

There is a growing sense, therefore, that the time is ripe to progress from an exploratory phase to one of consolidation. The fear that things are in danger of getting out of control has led to increased pressure for strategic reviews of the role of trans-national programmes in national portfolios. In a very real sense, this is precisely what is needed if trans-national programmes are to become more firmly embedded within national policy portfolios. However, in order to prevent knee-jerk reactions of a negative nature, there is an urgent need to take a number of precautionary steps. These include:

- Widespread dissemination and discussion of the new direction ERA-NET is to take within the context of FP7, with a strong focus on consolidation and the launch of joint initiatives in strategic areas rather than on an ever-expanding set of new, mutual-learning oriented ERA-NETs;
- Steps to encourage a widespread discussion at the highest levels of the importance of trans-national initiatives within the context of national policy portfolios if the European Research Area is to become a reality;
- The evolution of coherent national and regional strategies for involvement in ERA-NETs;
- Greater efforts at the highest political levels to break down the institutional barriers to the coordination and mutual opening of national and regional research initiatives.

In terms of the latter steps, a number of possibilities spring to mind:

- Given the primacy of Article 165 (which calls for the Community and Member States to co-ordinate their RTD activities), the Competitiveness Council should consider setting up a High Level Group, composed of representatives of the ministries responsible for research in the Member and Associated States, to review the role of trans-national research initiatives within national and regional policy portfolios and make recommendations concerning the future involvement of Member States in both ERA-NETs and similar initiatives based on Article 169;
- This should involve strategic reviews within each country prior to a discussion of future directions by the High Level Group itself. The overall aims would be to stimulate a top-down strategic approach by Member States and their regions to cooperation and coordination activities, and to facilitate an evidence-based approach to policymaking and strategies in this area;
- A recommendation that a section of the annual National Reform Programme reports are dedicated to an appraisal of the role of trans-national programmes in national and regional policy portfolios.

There will also be a need for a body such as the Commission to maintain a keen overview of the ERA-NET scheme and facilitate its coherent development across Europe if a new kind of fragmentation is to be avoided. Overlap and incoherence between the multiple and growing number of ERA-NETs in existence has to be minimised. Thematic coverage needs to be consistent with strategic needs, and greater harmonisation in terms of the procedures followed within ERA-NETs is needed if the research community is not to become understandably confused. Actions are needed to rationalise the overall development of ERA-NETs via mergers of networks, cross-network coordination and the development of shared procedural guidelines.

- The Commission should respond to the setting up of a High Level Group by outlining a framework capable of ensuring the harmonious and synergistic development of joint calls, programmes and other activities, including

suggestions – to be discussed by the High Level Group – concerning common procedures and practices for the launch and implementation of joint calls, programmes and other RTD-related activities.

3.3   Design, Structure and Composition

3.3.1   Was the overall design of the ERA-NET scheme fit for purpose?

One of the main aims of ERA-NET was to help restructure the fabric of research in Europe by catalysing changes in the structure and organisation of research funding across the continent, facilitating a shift from the largely independent funding of research within national contexts by national bodies to a new status quo characterised by a greater awareness of the benefits of trans-national coordination and complementarity.

In theory, this could have been tackled via a top-down approach involving directives issued from the highest levels of governance in Member States. In reality, it is unlikely that such an approach would have yielded benefits given the unfamiliarity of many national funding bodies with the advantages of coordinated activities and trans-national research programmes. A more exploratory approach was needed, i.e. one which 'tested the market' for trans-national initiatives and then allowed participants first to learn more about the potential of such activities and subsequently to experiment with different ways of designing and implementing them. In this sense, the main design characteristics of ERA-NET were well suited to the task. In particular:

- The bottom-up nature of the initiative presented a window of opportunity to programme managers and owners which many grasped;
- The use of Specific Support Actions as well as Coordination Actions allowed for the possibility of initial exploratory approaches;
- The four step ERA-NET process, especially the initial emphasis on the first two stages of the process and the non-mandatory status of the last two stages, also encouraged people to participate and explore new opportunities;
- The non-insistence on rigid funding structures (e.g. 'common pots') and a flexible attitude to the adoption of other, exploratory and funding structures customised to the needs of different participants and ERA-NETs encouraged participants to find ingenious ways of overcoming many of the practical barriers to the launch of joint initiatives.

3.3.2   Were the right stakeholders targeted and involved in ERA-NET?

In some national settings, there is no distinction between 'programme owners' and 'programme managers', e.g. when ministry staff are themselves responsible for the implementation of programmes. In other settings, there is a separation between 'programme owners' (ministries) and 'programme managers' (agencies and research councils). One possibility would have been for ERA-NET to target only 'programme managers'. Instead, given their influence on national and regional policies and strategies, the primary focus was on the inclusion of 'programme owners'.

There can be little doubt that the rationale for including programme owners was sound, especially given the importance of including them in challenging discussions of a strategic nature concerning not only the choice of research areas but also the advantages of complementing national programmes with trans-national activities.

In the event, however, there were some practical barriers to their participation due to the difficulty of establishing appropriate financial and administrative arrangements for the participation of ministry staff. There were also other problems concerning the hiring of staff to manage new ERA-NETs.

Although inclusive enough to embrace 'programme owners', the ERA-NET scheme deliberately set out to exclude the involvement of other parties such as members of the research community or intermediaries hired in to represent the interests of designated stakeholder groups, particularly ministries or programme owners. Whilst important from the point of view of 'winning the hearts and minds' of strategic decision-makers, this exclusion principle did create problems for some ministries, especially those accustomed to appointing external bodies to perform certain of their functions.

In future, one way to overcome this problem would be to allow ministries to nominate external agents as their representatives, with the rider that arrangements must be in place to ensure that ministry officials are involved in discussions of a strategic nature. Such a solution, however, could ultimately be counterproductive, since active participation in ERA-NETs is crucial to the task of changing mind-sets amongst programme owners. In order to maintain the primary focus on the inclusion of programme owners, amendments allowing the nomination of external agents as representatives of ministries are thus not recommended, unless there are exceptional and justifiable circumstances.

3.3.3 Is there an optimal size for an ERA-NET in terms of number of partners?

The average number of participants per ERA-NET (CAs and SSAs) was around 10, though some included less and others included many more. In terms of mutual learning and 'spreading the word' about the benefits of trans-national activities, the involvement of many partners has theoretical attractions. These have to be balanced, however, against the increased transaction costs associated with larger numbers of partners and the lower heterogeneity hurdles to be overcome when establishing common operating principles between lower numbers of participants.

All the evidence to date suggests that ERA-NETs with larger numbers of partners experience more difficulties and delays than more compact ones. Experience suggests that the number of partners involved at the outset of an ERA-NET should be guided by expectations of the number considered desirable to involve in eventual joint actions. Some allowance should certainly be made for a modest degree of attrition when the implementation plans for joint activities are drawn up, but opening the doors at the outset to partners concerned solely or primarily with 'mutual learning' and not with the eventual implementation of joint activities should be avoided given the associated increase in transaction costs. Furthermore, ERA-NETs should be based on existing programmes, although countries planning new initiatives should also be allowed to participate, perhaps with observer status. This will be particularly important for new Member States, Candidate countries and potential Candidate countries.

3.3.4 Was the decision to involve regional authorities beneficial?

The balance between national and regional RTD programmes varies from country to country. In some, most programmes are formulated and implemented at a

national level. In countries with strong regional authorities and identities, however, many programmes are implemented on a regional basis. Many regional authorities, especially those with strong research capabilities, are also seeking to strengthen their links with other research actors in different regional and national settings.

Including regional RTD programme owners and managers within the scope of ERA-NET, therefore, was a wise move. Not doing so would have missed out on an opportunity to foster greater collaboration between national and regional authorities, both within individual countries and across borders. In determining strategic alliances and potential partners in trans-national activities, the natural partners for some countries are regions within other countries, and ERA-NET provided an opportunity for such alliances to be forged.

Within the FP6 ERA-NETs, the participation of regional authorities was not pronounced. For example, they constituted less than 20% of the representatives from Germany, despite the strong presence of the German Länder in the research governance system of the country. Within FP7, specific actions may be needed to increase the participation of regions with an interest in strengthening their research capabilities. At the very least, national participants should be invited to include regional representatives from their own country in ERA-NETs, since such configurations seemed to work well in FP6 ERA-NETs.

3.3.5   Did the design of ERA-NET encourage broader international scientific cooperation?

The inclusive nature of ERA-NET allowed for the participation of programme owners and managers from outside of the EU. Five ERA-NETs promoting broader international scientific cooperation were launched during the initial phase of ERA-NET, two of which were extended. Three of these included partners from specific regions (South-East Europe, China and Latin America respectively), and two were targeted at specific themes (security and agriculture) of interest to EU and non-EU participants.

ERA-NET provided a new way for participants to explore opportunities for international cooperation. In some cases, it compensated for a lack of similar initiatives at a national level. In others, it complemented existing policy formulation mechanisms by allowing participants to gain an overview of national bilateral programmes and to improve coordination and consider joint actions. It thus played an important role in the creation of new policy dialogues between the EU, the Member and Associated States and the target countries. ERA-NET also provided a way of increasing the visibility of R&D activities in participant countries, not only in these countries themselves but also in the rest of the world.

In FP6, ERA-NET ran in parallel with the INCO programme, which encouraged the participation of researchers and research institutions from 'third countries' in specific research fields supported by the Framework Programme. Greater complementarity with INCO might have helped overcome some of the problems encountered within the ERA-NETs concerned with international scientific cooperation, especially the identification of programme owners and managers in 'third countries'.

In future, within FP7, the complementarity of such ERA-NETs with other activities meant to encourage international scientific cooperation needs to be ensured. In particular, ERA-NET could contribute to the

attainment of three of the main objectives for international policy under the 'Capacities' programme. These are:

- To enhance European competitiveness via strategic partnerships with third countries in select fields of science and technology;
- To address specific problems in third countries that have a global character;
- To join forces for the solution of problems in third countries which require the efforts of more than one Member State.

Achieving these objectives requires the identification of priority areas of research of mutual interest to both EU and non-EU countries. ERA-NETs have the potential to contribute greatly to the establishment of such priorities. They also have the potential to contribute to the shape and contents of the FP7 work programmes in the 'Cooperation' programme, since specific calls for international cooperation are allowed for in the different thematic areas of the programme.

It will also be advisable to continue to focus on ERA-NETs of relevance both to specific themes and, alternatively, to specific geographic regions or locations. In addition, ERA-NETs could be used to explore and launch joint programmes in strategically important research areas in collaboration with programme owners and managers in other technologically advanced countries such as the USA and Japan. Dedicated ERA-NET PLUS calls involving countries such as these could become a convenient way of 'building bridges' in key areas by establishing joint calls and programmes capable of evolving into long-term platforms for global collaboration.

In terms of a focus on specific geographic regions, ERA-NETs should continue to focus on cooperation with specific countries or geographic regions. In particular, an ERA-NET focused on countries with the potential to be considered for EU candidacy could offer an opportunity for learning and familiarisation with EU expectations in the research field. Via the provision of policy advice and the opportunity for mutual learning, ERA-NET can play a vanguard role in any future enlargement of the EU.

3.3.6   Was the balance between 'vertical' areas and 'horizontal' themes correct?

The question of the balance between 'vertical' and 'horizontal' ERA-NETs is inextricably bound up with the balance between the 'bottom-up' and 'top-down' character of the initiative.

In FP6, ERA-NET was a bottom-up initiative in which an open invitation was extended to programme owners and managers to constitute ERA-NETs in areas of their own choosing. As such, there was no preconceived idea about the eventual constitution of the ERA-NET portfolio in terms of the range and type of ERA-NETs contained within it. The grouping of ERA-NETs into four 'vertical' clusters (Life Sciences; Environment and Energy; Industrial Technologies; and Humanities and Social Sciences) and two 'horizontal' clusters (Fundamental Research and International Cooperation) was a post hoc construction.

In future, however, it will be necessary to impose a more strategic 'top-down' element on the initiative whilst maintaining much of the 'bottom-up' character so appreciated by programme owners and managers . The bottom-up approach allowed stakeholders to explore an impressive range of possibilities for trans-national calls and programmes. The emphasis now, however, should be on consolidation – ensuring that these activities take place in strategically important

areas not covered by other initiatives, yet still allowing space for new exploratory ERA-NETs in other domains.

Within FP7, in order to ensure a more strategic approach, the funding for ERA-NETs will stem from the budgets of the thematic areas in the 'Cooperation' programme. This can be justified in terms of the strong grouping of ERA-NETs in 'vertical' areas, since 85% of accepted CAs fell into these 'vertical' categories. Provisionally, however, a decision has been taken not to 'ring fence' funds for either 'horizontal' ERA-NETs (e.g. those dealing with international cooperation, fundamental research, SMEs etc.) or for ERA-NETs falling outside the scope of FP7 (e.g. those focused on technology areas falling outside the FP7 themes, or those focused on areas located within these themes but not considered a priority within FP7 work programmes). In future, the funding for both 'horizontal' and 'other' ERA-NETs will also stem from the budgets of the thematic areas.

In such a situation, there is an obvious danger that 'horizontal' and 'other' interests will be given a lower priority than ERA-NETs in mainstream thematic areas. There is provision for a certain number of 'horizontal' ERA-NETs in the draft work programmes for the first two years of FP7, but the balance between 'horizontal', 'vertical' and 'other' ERA-NETs could change over time. If it does, it will be important to ensure that the new balance is not solely or even primarily the outcome of internal bureaucratic processes within the Commission. In essence, it should be the outcome of a political process, with programme owners and managers in different countries influencing decisions over the content of work programmes via their national representatives on the Programme Committees. If programme owners and managers exert pressure for their priorities ('horizontal', 'vertical' and 'other') in this way, the 'bottom-up' flavour of the ERA-NET initiative as a whole should be preserved.

However, in order to further strengthen the prospects for a healthy balance between 'horizontal', 'vertical' and 'other' ERA-NETs, fixed proportions of annual budgets should be ring-fenced for 'horizontal' and 'other' ERA-NETs. It should then become common practice, on an annual or regular basis, to have three types of calls for ERA-NETs:

- Dedicated calls for ERA-NETs within over-arching thematic areas, primarily aimed at catalysing trans-national initiatives on 'hot topics' within these domains;
- Dedicated calls for ERA-NETs in strategic horizontal areas, e.g. calls aimed at promoting international cooperation or stimulating R&D amongst SMEs;
- Open calls for ERA-NETs of any description, but especially for ERA-NETs focusing on technological areas lying outside the FP thematic areas or on topics within these areas but not prioritised by them.

Concerning ERA-NET PLUS, the pilot nature of this and the relatively limited amount of funds dedicated to the initiative over the first two years of FP7 suggest a focused approach, with dedicated calls in a select number of high 'value added' strategic areas rather than open calls for proposals spanning all potential areas. Again, however, communication between programme owners and managers and Programme Committee representatives is the route to influence the choice of these strategic areas if ERA-NET PLUS continues over the whole course of FP7.

3.3.7 Was the focus on 'coordination' rather than 'research' correct?

New initiatives at an EU level demand that the requirements of subsidiarity and additionality are met. Prior to its establishment, it was possible to make a case for the subsidiarity and additionality of ERA-NET in terms of the absence of

similar trans-national coordination mechanisms both at national and regional levels. EU support for coordination costs was thus justified.

Potential contributions to the costs of the research funded via the joint calls and joint programmes constituting the latter two stages of the ERA-NET process, however, could not be justified until the feasibility or otherwise of these had been demonstrated. In theory, EU contributions to the costs of trans-national research activities are only justified if it can be demonstrated that joint actions will not proceed without such support. Conversely, such contributions are not justified if nations are prepared to launch such schemes irrespective of the existence of Community contributions.

The justification for a new scheme such as ERA-NET PLUS, which provides a Community contribution for research performed in joint activities, is based on the view that subsidiarity and additionality can be demonstrated and European 'added value' is high. While it is certainly true to say that joint activities have been and will continue to be launched without any Community contributions to the costs of the research, the view within the ERA-NET stakeholder community is that Community support is likely to improve the prospects for the launch of joint activities and trans-national research programmes dramatically, and that this support will be particularly welcome in areas of high European 'added value'.

In practice, however, this situation will need to be reviewed carefully over time. In order to kick-start the spread of trans-national activities, Community contributions of the order of one third of total costs may be justified. If the practice gains a momentum of its own, however, there may be an argument for decreasing the Community contribution to 25% and even less as the subsidiarity and additionality of the scheme diminishes.

3.4 Implementation

3.4.1 What lessons can be learnt about procedures prior to the start of an ERA-NET project?

Procedures prior to the start of an ERA-NET project involved:

- Proposal submission and evaluation;
- Negotiation, contractual and financial issues.

Participants in ERA-NET projects were generally very positive about these procedures. Concerning proposal submission and evaluation procedures, they appreciated:

- The quality of the information packages provided and the guidance given to potential participants;
- The use of national information days attended by Commission representatives;
- The information and assistance provided by National Contact Points;
- The use of the Electronic Proposal Submission System (after the first call);
- The overall clarity of the evaluation criteria used (with some modest exceptions);
- The quality of the feedback provided to those submitting proposals.

Concerning negotiation, contractual and financial issues, they appreciated:

- The requirement to establish a consortium agreement, considered vital in order to avoid subsequent conflicts over funding and funding arrangements;
- The opportunity to participate in SSAs prior to subsequent participation in full CAs;

- The flexibility and autonomy accorded to them over the establishment of funding regimes and the distribution of budgets across partners;
- The provision to involve new partners after the start of networks, provided no modifications to the overall budget were required.

There is room for improvement in some areas, however. Within FP7, the following items in particular need to be addressed:

- The definitions of both eligible participants (essentially programme owners and managers) and of eligible activities (essentially programmes) need to be carefully phrased in order to encourage the participation of new Member States and non-EU partners, many of whom have R&D and innovation governance structures, processes and activities which do not always correspond with those in existence in many of the established Member States;
- There needs to be greater consistency in the type, quantity and quality of the information provided on ERA-NETs by different parts of the Commission. This will be particularly important once the budgets for ERA-NETs become the responsibility of the thematic areas.

The timing and synchronicity of calls for ERA-NETs in the different thematic areas, as well as in 'horizontal' and 'other' areas, will also be an issue in FP7. One of the key objectives of the ERA-NET scheme has been and will be to raise the profile of trans-national research programmes within national policymaking circles. At the highest levels, this will involve taking a broad view across all scientific and technological domains in order to identify the need for trans-national activities and establish priorities. This will become increasingly difficult if the calls for ERA-NETs in different domains are out of step with each other. One strong recommendation, therefore, is that there are regular, harmonised and synchronised calls for ERA-NETs.

In order to ensure the synchronicity of calls, the harmonisation of the accompanying information and the consistency of procedures in place for proposal submission, evaluation and contract negotiation, there is a continued role for a central unit within DG RTD to form an overview of ERA-NET activities and play a part in their coordination within the Commission services and across existing ERA-NETs. The existence of a dedicated unit managing ERA-NETs was much appreciated by national and regional stakeholders in FP6. In FP7, it will be even more important to ensure that activities are coordinated simply because funding will stem from the different thematic areas. Such a central unit should also take responsibility for the development of calls for ERA-NETs in 'horizontal' and 'other' areas. This will safeguard their existence and ensure the synchronicity with calls specified by the thematic areas. The unit should also be responsible for collecting and synthesising the experiences to be learnt from running ERA-NETs, with a view to the production of both new rules and procedures and sets of guidelines for participants to follow.

3.4.2 What lessons can be learnt about virtual and common pots?

In terms of funding joint calls and trans-national research activities, ERA-NETs employed common pots, in which participants contributed set amounts to a separate common pool; virtual pots, in which participants made their own arrangements to fund participants from their own countries or regions; and mixed mode-mechanisms, where various combinations of virtual and common pot regimes were deployed.

From a pragmatic perspective, virtual pots are relatively easy for participating programme owners and managers to implement, since they involve few changes of significance to internal structures and procedures, whereas common pots can involve major changes and present real difficulties to some administrations, especially in terms of cross-border money transfers.

Conversely, common pots have a number of distinct theoretical advantages, the most important being that all the best projects can be funded until the pot runs out. In contrast, when virtual pots are used, good projects can fail to be funded if they include a research team from a country or region whose individual contributions to the scheme are exhausted.

Mixed-mode schemes offer a compromise. For example, virtual pots can be used until problems arise concerning projects containing partners from a country or region whose funds are exhausted. Contingency plans of a common pot nature facilitating the transfer of money across borders can then come into play.

Establishing trans-national initiatives using common pots is a long-term goal within the context of the drive to constitute a truly European Research Area. The experience of ERA-NET, however, suggests that the establishment of common pots was rare. For most stakeholders it was a step too far, and for these the ability to initiate joint activities using virtual pots played a significant role in getting their activities off the ground. Furthermore, some of the ingenious ways found to rectify the deficiencies of the virtual pot model using mixed-mode approaches suggest that mixed-mode models have a useful role to play in future ERA-NETs. In this context, it would be useful to prepare a set of guidelines concerning the operation of mixed-mode schemes based on the experiences of ERA-NETs to date. Similar guidelines for virtual and common pot schemes should also be developed.

Mixed-mode approaches are preferable to pure virtual pot arrangements not only because they overcome some of the difficulties associated with funding all the best projects, but also because they help prepare the ground for the break from the use of virtual pots, which is unavoidable if more permanent structures for trans-national R&D programmes are to be built within the European Research Area. Within the context of FP7, therefore, the use of virtual pots should still be possible for newcomers to the ERA-NET arena, but for those with previous experience the use of mixed-mode schemes and full common pot models is advised.

In terms of ERA-NET PLUS, the use of mixed-mode schemes is also advisable. Current plans are to create a real pool of joint funds for ERA-NET PLUS calls to which the Community contribution can be added, i.e. to utilise a common pot model in conjunction with selection criteria designed to avoid the problem of 'juste retour'. Any strict requirement to use a common pot model, however, might act as a deterrent to many potential participants. The possibility of using mixed-mode schemes which fall within the legal framework of the Community, specifically those which avoid the problem of 'juste retour,' should thus be explored.

If mixed-mode mechanisms can be found, the possibility of conducting trans-national initiatives in a more flexible way than is currently possible within Article 169 initiatives would be very attractive. Indeed, if operated in this flexible manner, ERA-NET PLUS initiatives could become a bridge or precursor to the eventual use of more permanent Article 169 initiatives.

3.4.3 What other steps can be taken to improve the future implementation of ERA-NETs?

There is now a substantial community of programme owners and managers with experience of ERA-NETs. This should stand them in good stead in terms of their involvement in similar initiatives in the future. There is still tremendous scope, however, for these experiences to be shared, not only for the benefit of past participants, but also for newcomers to ERA-NET projects. Opportunities for mutual learning and the exchange of good practice should be grasped. These could take the form of workshops or seminars, but there is also room for the development of guidelines and handbooks of best practice that attempt to codify the tacit knowledge of both participants in ERA-NETs and of project managers within the Commission.

Three topics in particular would be of especial interest to future participants, namely:

- Guidelines for the conduct of joint calls, including suggestions for harmonised selection criteria and evaluation protocols;
- The elaboration of guidelines concerning the operation of different funding modes (common pot, virtual pot, mixed-mode). Examples of some of the mixed-mode models used to date, with some indication of their advantages and disadvantages, would be especially welcome;
- Guidelines for the future elaboration of joint programmes.

The formulation of these guidelines should take place within the context of the development of a new structural and organisational framework for the ERA-NET scheme, specifically one geared towards the harmonisation of procedures and practices across all joint calls and programmes launched by ERA-NETs.

Within such a framework, there will also be a need for a common web-site providing easy access to information on all ERA-NET rules, procedures and activities. The establishment of an ERA-NET web-site, which interested parties could use to access both learning material about ERA-NETs and general information about the scheme and individual ERA-NETs, would thus be beneficial. One possibility would be for this to be hosted on CORDIS by ERAWATCH, the new service established to provide information on research policies, structures, programmes and organisations in the European Research Area and elsewhere (see http://cordis.europa.eu/erawatch/).

Another step that would facilitate learning across both past and future ERA-NETs would be the adoption of a standard means of collecting and codifying information on individual ERA-NET projects. One possibility would be to adopt a standard such as CERIF (the Common European Research Information Format) and implement a CRIS (Common Research Information System), as advocated by EuroCRIS, the body now charged with the implementation of CERIF. This would not only enhance the collection, collation and dissemination of material on ERA-NETs but would contribute immeasurably to the better management of individual ERA-NETs. It would also greatly enhance efforts to monitor and subsequently evaluate the success of both individual ERA-NETs and the ERA-NET scheme as a whole.

Conclusions and Next Steps

The main conclusions and recommendations of the Expert Review Group can be summarised under three headings:

- Messages concerning the contribution of ERA-NET to the attainment of the ERA
- Messages to the Commission concerning the design and implementation of ERA-NET and, in future, ERA-NET PLUS
- Messages concerning mutual learning and good practice

4.1 ERA-NET and the ERA

Historically, national and regional research funding systems have evolved to meet the needs of both indigenous research communities and policymakers keen to support work deemed to be in the national or regional interest. From the point of view of the EU research community, however, the existence of multiple, independent and heterogeneous research systems in the EU has constituted a barrier to the open accessibility of research funds and the opportunity to conduct research, especially in areas not prioritised within their own research systems. A compromise was needed which allowed national and regional research needs to be prioritised and yet still facilitated access to broader pools of research funds.

The ERA, with its emphasis on the coordination, coherence and mutual opening of national and regional R&D programmes, offered such a future, with the ERA-NET scheme as one of the main vehicles facilitating increased access. In turn, the response of research funding authorities across Europe to the introduction of the scheme demonstrated their collective enthusiasm to explore the possibility of an increased focus on trans-national R&D schemes as a complement to existing national and regional schemes.

If progress towards the realisation of the ERA is to be maintained, however, this enthusiasm has to be translated into a real commitment to raise the profile of trans-national research within national and regional R&D policy portfolios. This will require a shift from an emphasis on exploration to one on consolidation, with ERA-NET participants committing themselves to the full implementation of joint calls in strategic areas decided on the basis of clearly articulated national and regional strategies. There are promising signs that many existing participants are committed to this path, but there are also some signs of reluctance amongst programme owners and senior ministerial circles to acknowledge the importance of trans-national initiatives and take the steps needed to make the ERA a reality. One such step necessarily involves the formulation of strategic overviews of the role of trans-national R&D initiatives in national and regional contexts. Another involves the clear articulation of an EU-wide vision of the role of ERA-NETs in the development of the European Research Area. The Expert Review Group thus recommends that:

> The Competitiveness Council reinforces the primacy of Article 165 (which calls for the Community and Member States to co-ordinate their RTD activities) by setting up a High Level Group, composed of representatives from the ministries responsible for research in the Member and Associated States, to review the role of trans-national research initiatives within national and regional policy portfolios and make recommendations concerning the future involvement of Member States in both ERA-NETs and similar initiatives based on Article 169.

Member and Associated States respond to the setting up of the High Level Group by initiating strategic reviews of their own needs and priorities vis-à-vis trans-national R&D activities, with a view towards the development of national and regional strategies for involvement in future ERA-NETs and other trans-national activities, including ways and means of reducing internal barriers to participation.

The Commission responds to the setting up of the High Level Group by outlining a framework capable of ensuring the harmonious and synergistic development of joint calls, programmes and other activities, including suggestions – to be discussed by the High Level Group – concerning common procedures and practices for the launch and implementation of joint calls, programmes and other RTD-related activities.

4.2 Design and Implementation

The success of the first, exploratory phase of ERA-NET owed much to its overall design and the flexible way in which participants were allowed to implement the action. In particular, the four-step process and the non-mandatory nature of the last two steps encouraged many to 'test the water'. Similarly, the flexibility accorded to participants concerning the use of common pot, virtual pot and mixed-mode funding mechanisms was an attractive feature of the initiative. Taken together, features such as these stimulated participation in the scheme and led to the bottom-up evolution of a broad range of ERA-NETs spanning 'vertical' themes in areas corresponding to the thematic areas of FP6, cross-cutting 'horizontal' initiatives (e.g. those conducting research of relevance to SMEs, or focused on international cooperation with countries outside of the EU), and other areas not covered by the FP6 priorities (e.g. basic research in chemistry).

In the next phase of ERA-NET, however, the budgets for new ERA-NETs will flow from the Thematic Areas rather than from a central ERA-NET unit. In such a situation there is danger that ERA-NETs in 'horizontal' and 'other' areas are neglected. To avoid this, the Expert Review Group recommends that:

Fixed proportions of annual budgets are ring-fenced for 'vertical', 'horizontal' and 'other' ERA-NETs.

Member States communicate their desire for 'vertical', 'horizontal' and 'other' initiatives via national representatives on Programme Committees.

Dedicated, synchronised calls are held annually for:
- 'Vertical' ERA-NETs focusing on strategic topics within each of the Thematic Areas of FP7;
- 'Horizontal' ERA-NETs addressing strategic, cross-cutting concerns.

> These are complemented by annual open calls – again synchronised with the dedicated calls – for ERA-NETs of any description, but especially for those considered strategic by some Member States but not prioritised within the FP7 themes.

> A central unit should have responsibility for maintaining an overview of ERA-NET developments, coordinating ERA-NET activities, ensuring the synchronicity of calls and the homogeneity of associated procedures, and developing and maintaining a strong ERA-NET 'brand'.

In terms of implementation, while the free choice between common pot, virtual pot and mixed-mode funding models was suited to an exploratory phase, the longer term need to prepare the ground for more harmonised funding regimes capable of dealing with the cross-border flows of truly trans-national initiatives should be encouraged. The Expert Review Group thus recommends that:

> Entirely new ERA-NETs in FP7 involving newcomers to the scheme should still be allowed to use virtual pot funding arrangements, but those with experience of ERA-NETs in FP6 should move to mixed-mode or common pot models when extending established ERA-NETs or launching calls in new ones.

Turning now to the new ERA-NET PLUS scheme, in which the Community makes a contribution to the research facilitated by joint 'one-off' calls, the Expert Review Group was convinced of the wisdom of implementing such a scheme in FP7 as a means of further consolidating the achievements of the first phase in FP6. They have a legal base under Article 165 of the Treaty and offer a foretaste of longer-term and more enduring Article 169 initiatives, but without the need to follow the same co-decision procedures. In terms of their implementation, however, the Expert Review Group has a number of recommendations:

> The first two years of FP7 constitute a pilot phase for ERA-NET PLUS, since only a limited number of initiatives will be launched each year in strategic areas of high European 'added-value'. Plans should be put in place to monitor and evaluate this phase, with a view to expanding the scheme if successful or abandoning it if Member States prefer to move direct to Article 169 initiatives or to establish other forms of trans-national ventures.

> Initial plans for ERA-NET PLUS envisaged the use of common pot funding models. This should be reconsidered, since the ability to use mixed-mode models is potentially more attractive to participants. Moreover, if carefully designed, such models can satisfy all the requirements for Commission contributions (e.g. the avoidance of 'juste retour').

> The suggested minimum budget for ERA-NET PLUS initiative is 5m€. This is a realistic figure that should be maintained, though lower budgets should be allowable in exceptional circumstances, e.g. in the case of ERA-NETs involving international cooperation with Third Countries.

4.3 Mutual Learning and Good Practice

The ERA-NET scheme has allowed a considerable number of programme owners and managers across the EU to explore the possibility of designing and implementing trans-national research calls and programmes. A significant amount of tacit learning has taken place. There is still a need, however, for this to be codified and communicated to others, especially to newcomers to the scheme, and for this knowledge to inform their behaviour via the development of homogenous procedures, helpful guidelines and models of best practice. Amongst other things, the Expert Review Group recommends:

> The establishment of a website dedicated to information about the implementation, conduct and even impact of ERA-NETs.

> The adoption of CERIF (the Common European Information Format) as a means of collecting and codifying information on ERA-NETs in order to facilitate mutual learning.

> The development of guidelines concerning the relative advantages and disadvantages of different funding regimes, with particular emphasis on the implementation of mixed-mode funding models.