Evaluation and impact assessment of the ERA-NET scheme and the related ERA-NET actions under the 6th Framework Programme

[VOLUME 4]

Final Report

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Evaluation for the European Commission

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This evaluation is commissioned by the European Commission, DG RTD, in the context of the framework contract signed between the Directorate General for Budget and Ramboll Management in association with Matrix Insight and Eureval (Lot 3). The evaluation was carried out by a mixed team of experts from Matrix Insight and Rambøll in association with external experts. The team was led by Mrs Mariell Juhlin from Matrix Insight (mariell.juhlin@matrixknowledge.com).

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The opinions expressed in this document represent the authors' points of view which are not necessarily shared by the European Commission.

Status and versions of this document

Report	***Version***	***Status***	***Date***	***Author(s)***	***Feedback***
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Table of Contents

List of Figures

Acronyms

CA	Coordination Actions
DG RTD	Directorate General Research
EC	European Commission
ERA	European Research Area
ERC	European Research Council
ESF	European Social Fund
FP	Community Framework Programme for Research
MS	Member States
SSA	Specific Support Actions
ToR	Terms of Reference
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

Synopsis and contents of this report

This report is the fourth and last Volume of the FP6 ERA-NET Evaluation Draft Final report. It contains evidence and findings matching the Terms of Reference of the study as follows:

SD28-31: Descriptive network analysis, including:

- SD28: FP7 countries vis-à-vis their public spending in RTD – result as sub-deliverable.
- SD29: Various legal entities recorded as ERA-NET participants by their country of origin – result as sub-deliverable.
- SD30: Joint activities of all ERA-NETs (e.g. joint calls/joint programmes and others) – result as sub-deliverable.
- SD31: ERA-NET financed project participants in trans-national projects started (funded transnational projects out of a joint call) – result as sub-deliverable.

SD 25-27: Good practice lessons, including:

- SD25: Guiding principles for strategic decision-making to support policy makers and programme owners in their choices "when to coordinate and/or to open national/regional programmes via ERA-NET".
- SD.26: Guiding principles for all possible joint and trans-national research actions implemented e.g. joint calls and/or for joint programming. A document which summarises the best practices of all real implemented ERA-NET joint calls/programmes so far under FP6. Beside all practical arrangements for joint calls and/or for joint programming this guide should in particular include a part describing best practice solutions concerning IPR issues of joint calls or programmes and solutions for the projects financed out of these joint activities.
- SD.27: Guiding principles for information exchange/sharing (e.g. use of Cerif standard) a document which summarises the best practices of the most commonly implemented ERA-NET information exchange practices so far under FP6.

These sub-deliverables including sub-questions are referred to throughout this Volume of the report.

The study team has adopted a multiple methods approach in order to answer the research questions and to deliver the required deliverables. More detail on this is provided in below.

1.1 Structure of this report

The last Volume of the draft final report is structured as follows:

- *Descriptive network analysis;*
- *Good practice.*

2. Descriptive network analysis

This section provides the findings of the descriptive network analysis and related to sub-deliverables 28 to 31 of the ToR. The findings will provide visualisation of the findings in the form of pictures which are based on relationships between participants and other relevant variables against a European map in the background. Before outlining the findings a brief outline of the methodology and data sources employed to undertake the descriptive network analyses are provided.

2.1 Methodology for descriptive network analyses

The following descriptive network analyses are based on the dataset collected through the coordinator survey from July to December 2008. The Coordinator survey covered all 71 ERA-NETs - although in case of 7 ERA-NETs, the information collected dates back from an earlier survey undertaken by the Commission in 2006. In the 2008, survey 59 ERA-NETs provided information about the calls they have done over the period although it should be noted that it is likely that not all ERA-NETs reported call information in an exhaustive way. 49 ERA-NETs provided a breakdown of funding contributions at country level for calls. However, this is likely to be an underestimate as not all ERA-NET coordinators knew this information[1].

The network maps use mixture of scoping dataset and coordinator survey data. This enables comparative pictures to emerge. For instance, on a map it is possible to show the countries that participated in each ERA-NET theme and compare this to a map of countries that participated in joint calls in these themes. The location of Non-European countries such as Canada and China, have been shown schematically and is not representative of their actual geographical location.

A line joining two countries represents joint participation in one ERA-NET or in joint calls. In the maps where there are different coloured and weighted lines, the thicker and darker the line is, the more ERA-NETs those two countries have participated in together / or the more joint calls they have contributed to together. The number of links each country has does ***not*** reflect the number of ERA-NETs in which it is involved: a country may participate in many ERA-NETs with only a few countries, or with many countries, but each on very few ERA-NETs. Thus the thickness and shaded colour of the line can be seen as representing the strength of the relationship between the countries through their joint participation and funding contribution into ERA-NETs.

In each relationship map, the size of the circle displays in how many ERA-NETs a country has been active; either through their participation or call activity depending on the map. Therefore it is possible to compare overall participation with the relative strength of their relationships with other countries.

2.2 Before and after considerations

The maps shown in this report are the best representation of ERA-NET participation and activities as of end of the year 2008, the date at which the coordinator survey was closed. A picture of prior relationships between countries before the FP6 ERA-NET scheme was given in Volume 1 of the study. The analysis contained in Volume 1 has been reproduced below:

Prior relationships

Overall, 66 per cent of participants indicated that they had had some prior relationships with partners in their ERA-NETs and this was particularly the case for EU-12 countries where 81.9 per cent[2] of participants reported such prior contacts, which suggests that longer-term established networks may have been an important factor for accessing the ERA-NETs. In contrast, associated

[1] The 7 ERA-NETs where data dates back from the 2006 survey only are: CIRCLE, EURPOLAR and CRUE (Environment theme), ERA-AGE and SAFEFOODERA (Life Sciences), ERA-SAGE (Social Sciences and Humanities), EURYI (Fundamental Sciences). Joint call information is missing for the following ERA-NETs ERA-SAGE (Social Sciences and Humanities), PROMEDCHILD (Life Sciences), NEW OSH ERA (Industrial Technologies and SMEs), NET BIOME and CIRCLE (Environment).

[2] This high figure is subject to caution it should be read as "81.9 per cent" of participants had established prior relationships with a minority of partners participating in the ERA-NET.

countries and smaller countries in the EU-15 grouping were less well connected with other ERA-NET participants before the scheme was set up with 39.8 per cent and 33.6 per cent respectively reporting no prior relationships[3]. Across themes, 35.6 per cent of participants in Social Science ERA-NETs indicated that they had had no prior relationships with the other participants in their ERA-NET compared with 25.7 per cent of all participants. In energy, INCO, Industrial Technologies and SMEs and in Regional ERA-NETs, more than 70 per cent of participants had prior relationships with other ERA-NET participants[4].

Prior relationships by type of organisations

Among types of organisations, private not-for-profit organisations stood out as having had the highest levels of prior relationships (87 per cent)[5]. Unsurprisingly, organisations whose status was as an 'associate' in the ERA-NET rather than a contracted partner had a lower level of prior relationships (47 per cent). Contracted partners were slightly above average at 69 per cent[6]. In addition, a larger share of participants from private not-for-profit organisations revealed that they had strengthened their prior relationships (87 per cent) than in the overall sample (63 per cent)[7]. However, only 50 per cent of the associate organisation respondents considered that their prior relationships had strengthened, as opposed to 65 per cent in the case of contractors/partners[8].

In conclusion, the Participant Questionnaire suggested that EU12 countries made more frequent use of pre-existing relationships when it came to participating in FP6 ERA-NET, and so did private non-profit organisations.

Strengthening of relationships by country and thematic grouping

Perhaps one of the most positive messages coming out of the participant survey is the extent to which ERA-NET participation strengthened relationships with other participants. Where prior relationships existed, the majority of participants indicated that at least some of these relationships had strengthened (62.7 per cent), especially for participants from the EU12 (78.9 per cent) and larger EU15 countries (63.4 per cent). Less than 1 per cent of participants reported a weakening of prior relationships over the course of ERA-NET and, very importantly, only 3.9 per cent of participants did not notice any change in their prior relationships over the course of ERA-NET. These figures shows that there is scope for promoting new partner relationships within the ERA-NET scheme since EU12 countries generally did not have as many prior relationships as countries in the EU15 groupings and they reported a significant strengthening of relationships started under ERA-NET.

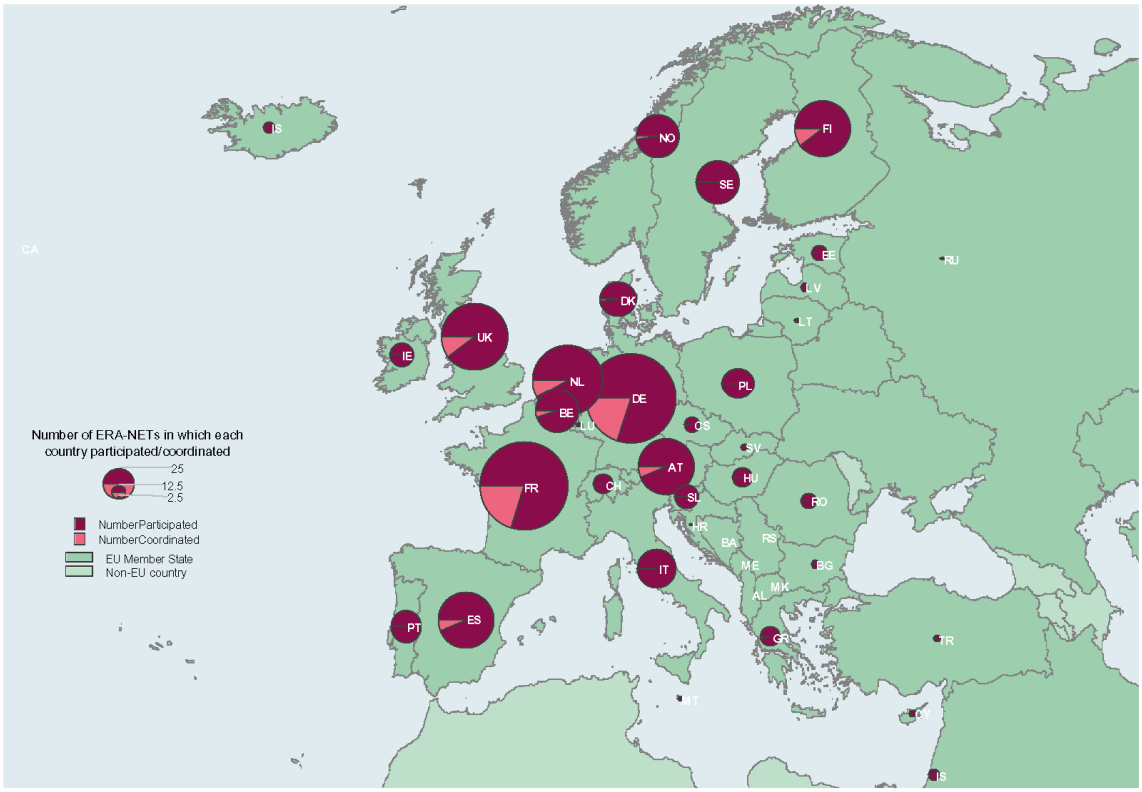
Across thematic areas, there was little variation in how ERA-NET involvement affected prior relationships with all themes clustered closely around the average of 62.7 per cent. However, a strengthening of prior relationships was reported by 71 per cent of participants in INCO ERA-NETs[9].

3 Refer to participant questionnaire - question 5_5.
4 Refer to participant questionnaire - question 5_5.
[5] Refer to participant questionnaire - question 5_5 & question 2_15.
[6] Refer to participant questionnaire - question 5_5 & question 2_2.
[7] Refer to participant questionnaire - question 5_5 & question 2_15.
[8] Refer to participant questionnaire - question 5_6 & question 2_2.
9 Refer to participant questionnaire - question 5_6.

2.3 Overview of ERA-NET participation and coordination

Figure 1 provides an overview of ERA-NET participant and coordinating countries. Member States with a high number of ERA-NET coordination such as France and Germany can be seen as leading countries in transactional R&D cooperation as far as in the ERA-NET scheme is concerned. A high number of ERA-NET coordination could also be an indicator of strategic buy-in into the scheme and an eagerness to coordinate their national programmes with other European countries. EU15 coordinated most of the ERA-NETs over the period. The level and extent of ERA-NET participation appears to have been higher among EU15 than among EU12 Member States. As for Associated Countries, Norway was the country, outside of the EU27, that took part in the most ERA-NETs.

Figure 1: Overview of ERA-NET participation and coordination



2.4 FP7 countries vis-à-vis their public spending in RTD

In 2006, the EU27 spent 1.84% of GDP on Research & Development (R&D) overall, that sums up public and private R&D spending. In 2006, R&D expenditure in the EU27 amounted to more than 210 billion euro, compared with 170 billion euro in 2000[10].

R&D Public spending figures presented in the picture below are defined as R&D spending by the government sector and higher education sector and non-for profit private organisations, excluding private sector spending on R&D. EU27 countries public spending amounted to 0.66% of the EU27 GDP in 2006. In terms of country groupings it represented 0.68% of EU15 GDP and 0.42% of EU12 GDP.

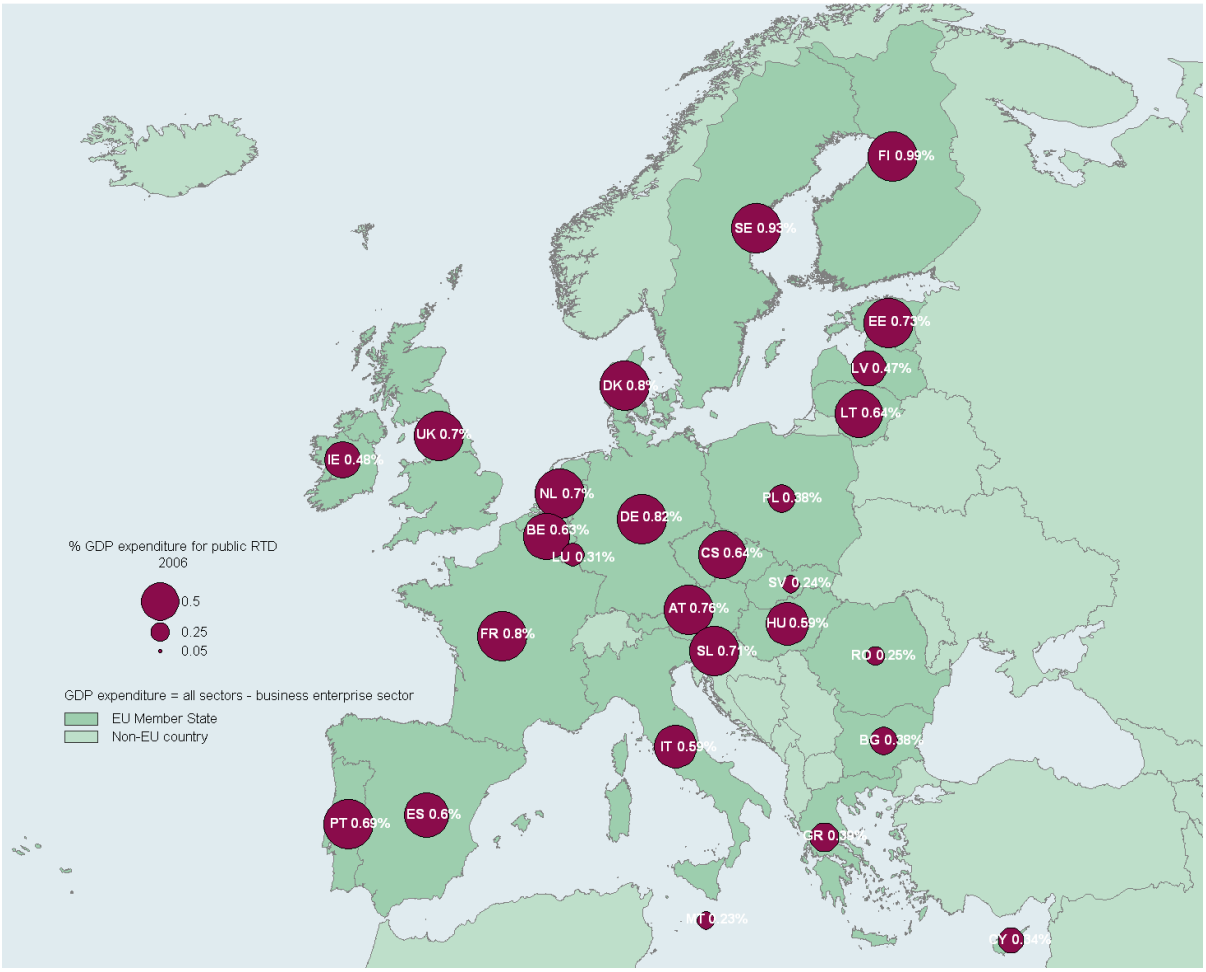
R&D intensity (based on public spending only) varied from 0.23% of GDP in Malta to 0.99%in Finland. In 2006, the highest R&D intensity (based public spending only) in the EU27 was registered in Finland (0.99%) and Sweden, (0.93% of GDP), followed by Germany (0.82 %) and

[10] Source: Eurostat, the Statistical Office of the European Communities, 2008 edition of Science, Technology and Innovation in Europe.

Denmark (0.8%), and Austria (0.76%). The Member States with the lowest R&D intensity (based on public spending only) were Malta (0.23%), Slovakia (0.24%), and Romania (0.25%).

Together, Germany (58 billion euro in 2006), France (38 billion euro in 2006) and the United Kingdom (32 billion euro in 2005) spent around 60% of total R&D expenditure (e.g. Private and public R&D spending) in the EU27.

Figure 2: Share of public spending on RTD in EU27 Member States' GDP



2.5 Various legal entities recorded as ERA-NET participants by their country of origin

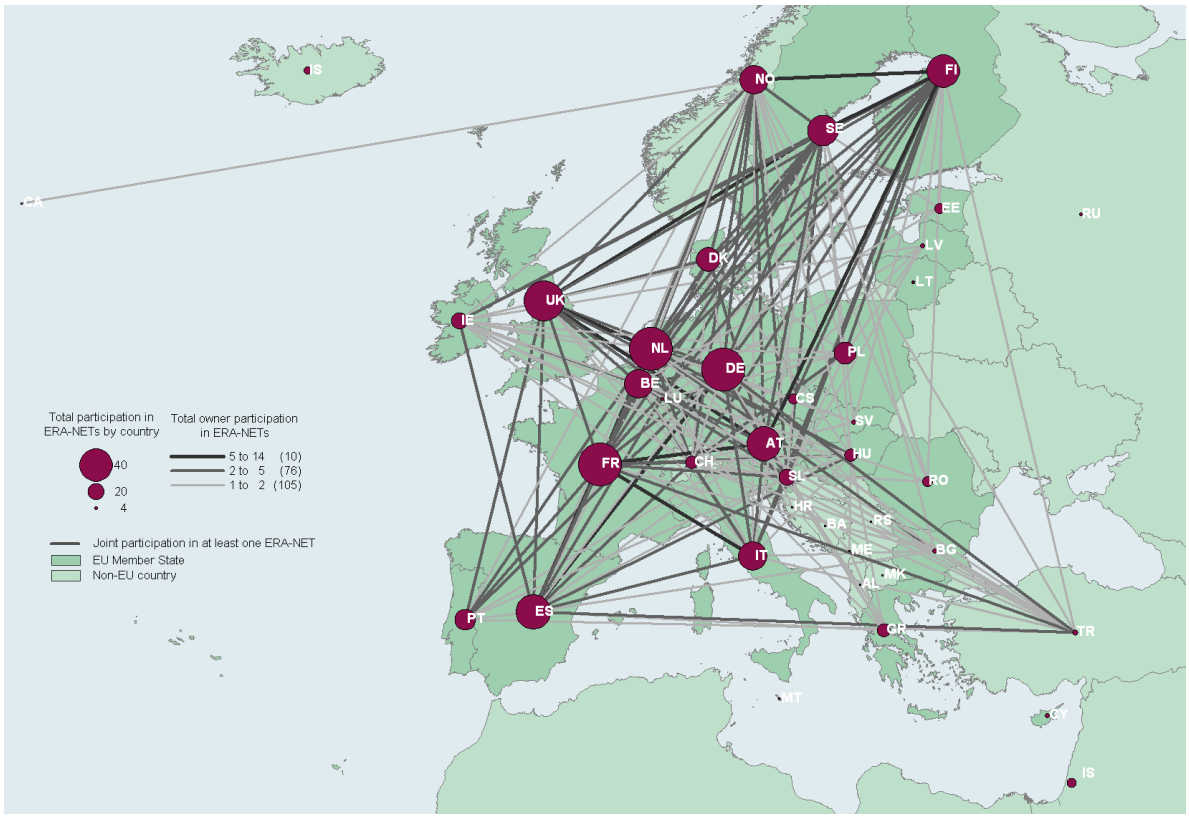
Most ERA-NET participants came from government related organisations as demonstrated by the participant survey. In effect, the vast majority of participants (63%) considered their organisation as having a governmental status. The second and third most reported status were private organisation non-profit for 20% of the participants and others for (10%). Associated countries reported the highest number of organisations with Governmental status (83%), followed by the large and small EU15 Member States (72% and 60%). Interestingly, EU12 Member States reported the highest number of organisations within the private not-for-profit category i.e. 47% of organisations (as opposed to 43% for governmental organisations). Organisations classified under "private not-for-profit category" were namely, research councils, academies of science or science foundations partially or mainly financed by public funds.

The following figures are a way of representing the interactions of the various legal entities involved in ERA-NETs. Figure 3 provides a view of the interactions between programme owners, by nature closer to the national policy level (e.g. Ministries). Figure 4 provides a view of the interactions between the programme managers, by nature closer to research councils, research institute or agencies. **On the whole, Programme Managers tended to be more involved in**

ERA-NETs than Programme Owners, implying a lesser degree of involvement at ministerial level. This seems logical since the FP6 ERA-NET programme was a bottom-up scheme where the initiative of engaging in transnational cooperation came mainly from the research community.

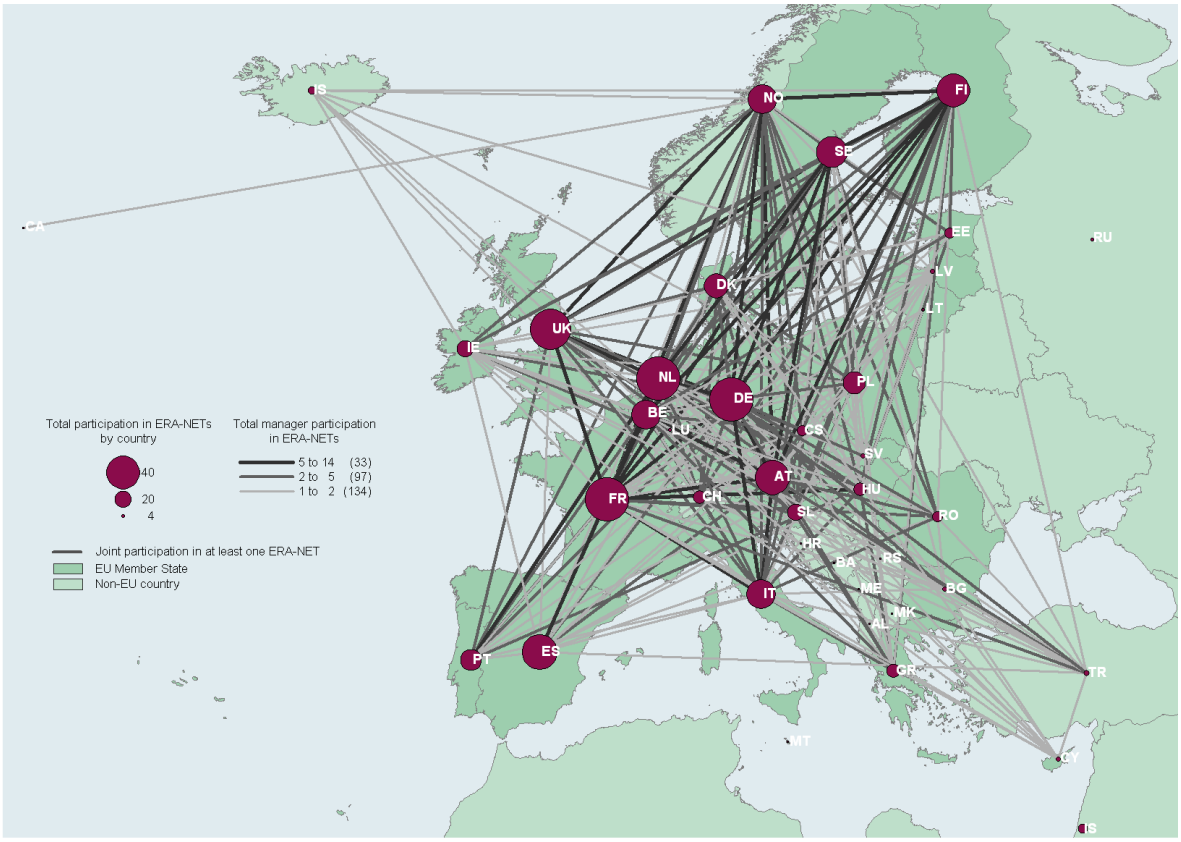
By comparing the two figures, it is to be noticed that EU15 countries tended to involve more programme owners in ERA-NETs than the average[11]. Associated countries tended to engage in ERA-NETs mainly via programme managers (as clearly evidenced in the case of Norway and Island) as well as EU12 Members States (Cyprus, Lithuania) although to a lesser degree.

Figure 3: Programme owner interactions in ERA-NETs



[11] This is also corroborated by the participant survey results which shows that around 18% of EU15 participants were programme managers as opposed to less than 8% for EU12 Member States and 5% for associated countries.

Figure 4: Programme manager interactions in ERA-NETs



2.6 Joint activities of all ERA-NETs (e.g. joint calls/joint programmes and others)

Sections 7.5, 7.6 and 7.7 have touched on joint actions arising from different ERA-NET actions. This section covers:

- the extent of involvement in ERA-NETs at ERA level;
- the degree of involvement in ERA-NETs between countries; and
- joint activities of all ERA-NETs measured through joint call activities.

With regards to the extent of involvement in ERA-NETs at ERA level, Figure 5 shows bilateral interactions between countries in ERA-NETs. This gives an idea of the collaboration between pairs of country in the ERA-NET scheme and hence their involvement in joint activities. It is to be noted that **no EU27 Member States is missing from the picture implying that all EU27 Member States have participated more than once in an ERA-NET and hence in ERA-NET related activities.**

Figure 6 shows the degree of involvement of EU27 countries in ERA-NET activities. When compared to Figure 7, the analysis highlights that **EU15 Member States' participation in multiple ERA-NETs was higher than for EU12 Member States, as demonstrated by the strength of the links between respective EU 15 Member States (e.g. as evidenced by the thickness on the links between pairs of countries).**

Figure 7 represents the number of joint calls countries have participated in across all ERA-NETs. Here again, **EU15 Member States appeared to have participated in more joint calls than other countries**. Among small EU 15 Member States, **Nordic countries the Netherlands and Austria appeared to have been particularly engaged in joint calls** relatively to other Member States (especially when compared to large Member States such as the UK or Italy). Among Associated countries the case of Norway is interesting in the sense that its level of involvement in joint activities is on par with the ones of the Nordic countries and some of the Large EU15 Member States. The latter finding also applies to the Netherlands. As for third

countries like Israel and Turkey, they appear to have participated in joint calls to a high degree when compared to their overall ERA-NET participation. This may show that when these countries approached their participation in ERA-NETs from a strategic perspective, i.e. being in it for funding transnational research projects.

Figure 5: Participation of pair of countries in at least one ERA-NET

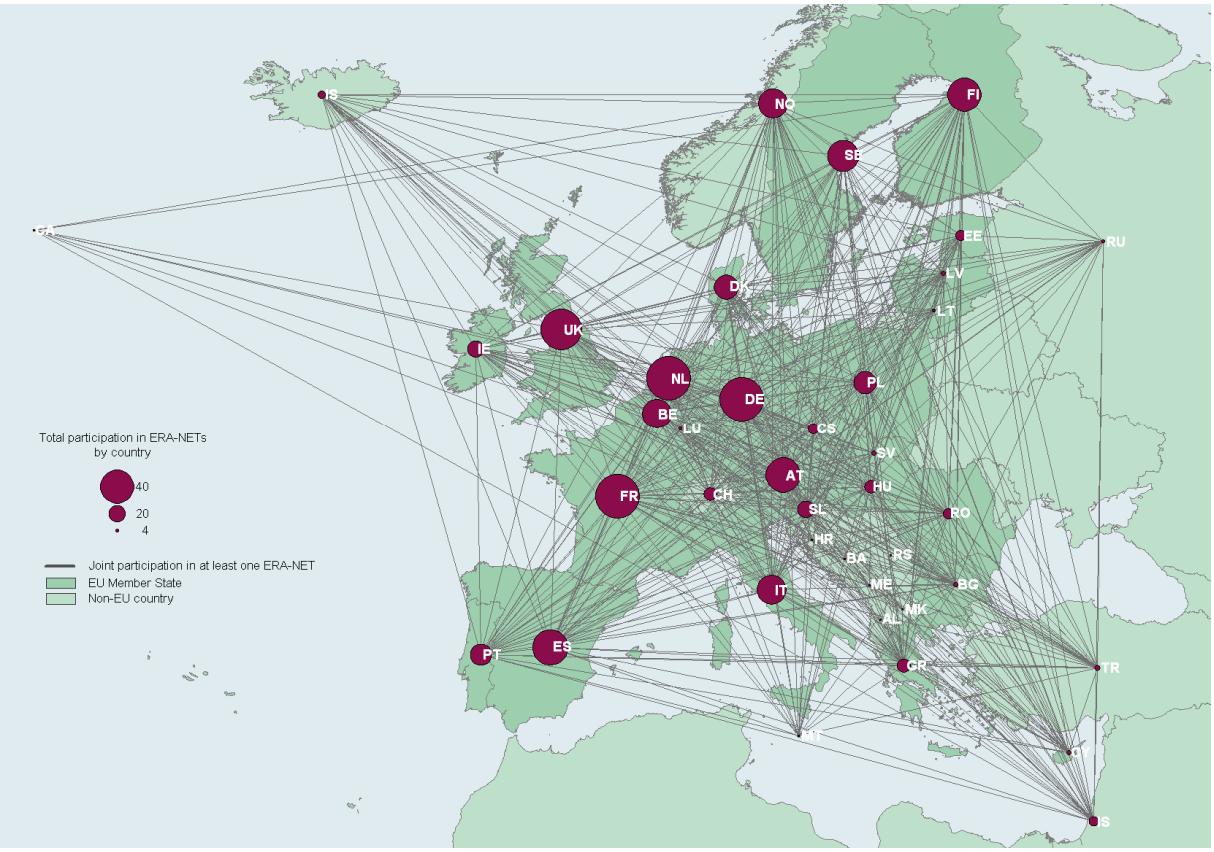


Figure 6: Number of participation in ERA-NETs between pair of countries

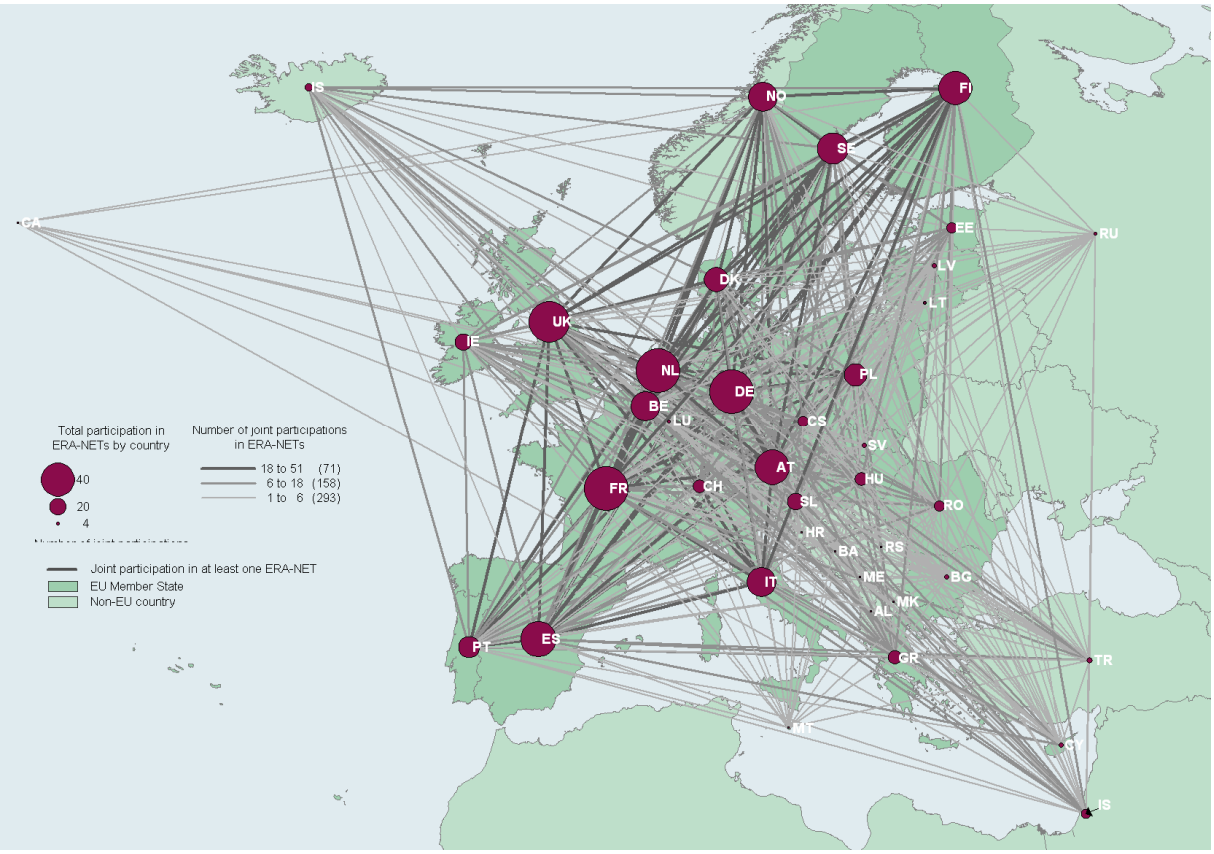
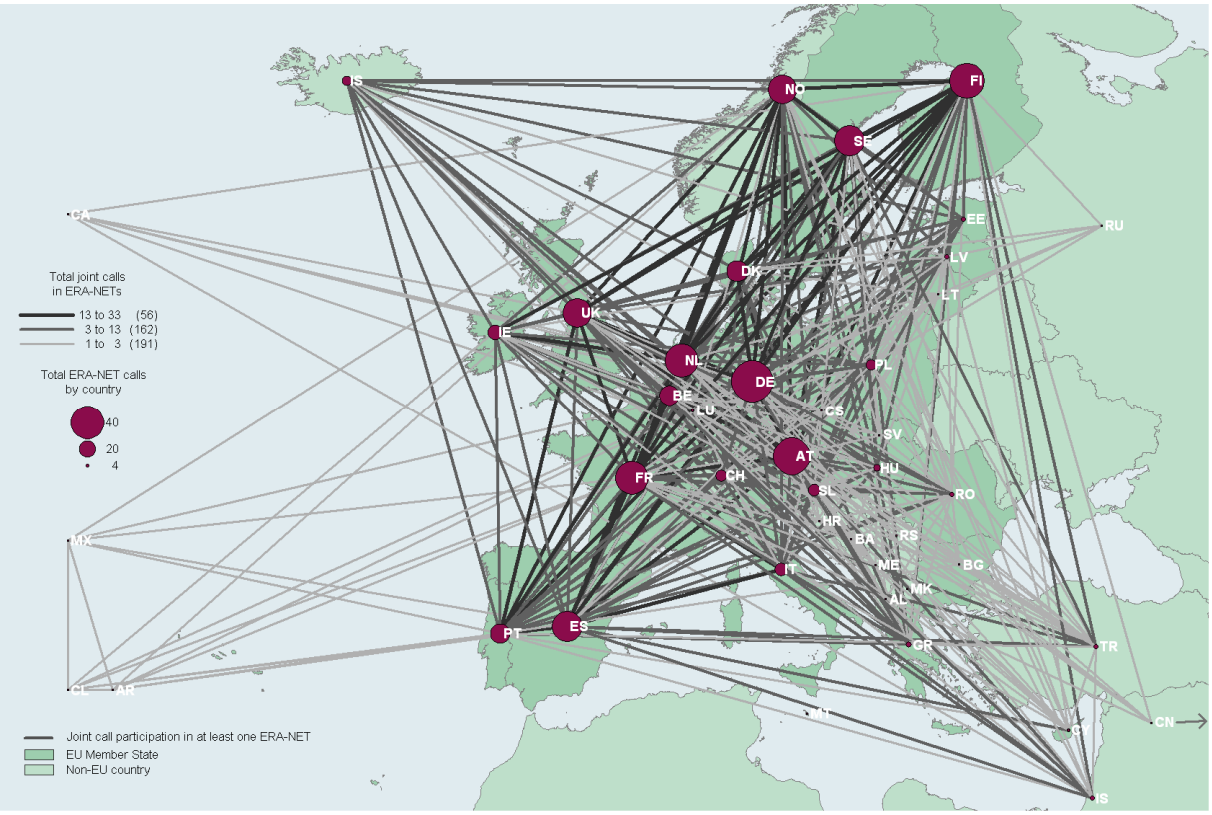


Figure 7: joint activities of all ERA-NETs as measured by joint call activity



2.7 ERA-NET financed project participants in trans-national projects started (funded transnational projects out of a joint call)

The previous section has demonstrated that EU15 Member States, Associated Countries and some third Countries (Israel, Turkey) participated in joint calls to a higher extent than EU12 Member States. However, a more detailed view is needed to highlight trends in various thematic areas and come up with more detailed findings.

The following sections provide an analysis of participation in joint calls by all relevant thematic areas.

Energy

The participation in energy ERA-NETs was relatively evenly distributed across the EU27 Member States although levels of activity across countries differed. EU15 Member States from South of Europe (e.g. Italy, Portugal and Greece) as well as EU12 Member States generally did not participate to the same extent as countries from Northern Europe. The most active Member States in the field were Germany and Austria, Germany coordinating 4 out of 5 ERA-Nets in this Thematic Area (Refer to figure 8 of this Volume).

In terms of joint calls, Energy is a thematic area that has not been extensively invested in compared to other areas (e.g. it ranked sixth in terms of funding contribution to joint calls) [12]. Transnational projects financed mainly included beneficiaries from the Austria, Denmark, Germany, The Netherlands, Sweden and the United Kingdom. Note that Austria and the UK as well as Denmark and Germany, tended to co-financed projects together more than other funders across Europe. Some Member States with relatively high participation (e.g. France, Spain, and Poland) appear not to have funded projects in this thematic area. EU12 Member States experienced a relatively low participation in Energy ERA-NETs and as a result funded transnational projects marginally. No third country appeared to have participated in Energy ERA-NETs (Refer to figure 9 of this Volume).

In sum, ERA-NET participants in the Energy theme have funded a relatively low number of joint projects compared to the level of their participation.

Environment

The extent and degree of participation in Environment ERA-NETs varied among country groups. EU 15 Member states tended to participate in a majority of Environment ERA-NETs with France, United Kingdom and Germany leading in terms of number of participation. EU12 Member States tended to participate in Environment ERA-NETs to a much lesser extent than EU15 countries with the exception of Poland. Associated countries and Third countries were marginally involved with the exception of Norway (Refer to figure 10 of this Volume).

In terms of joint calls, Environment is a thematic area that has been relatively well invested in compared to other thematic areas (e.g. it ranked fourth in terms of funding contribution to joint calls)[13]. Transnational projects financed mainly included beneficiaries from Germany, the Netherlands, and the United Kingdom as well as France, Sweden, Spain and Portugal although to a lesser extent. Note that the level of participation in joint calls appeared to be homogeneous across

[12] There were a total of 10 joint calls for a combined €12.4m and one joint programme with a virtual common pot of €6.4m. There were no real common or mixed mode pots in this thematic area. The overall total amounts as reported by coordinators (i.e. not necessarily broken down or attributed to countries) are slightly higher than these figures: virtual common pots for joint calls €16.4m and for joint programmes €6.5m.

[13] The distribution by type of Joint Call (for the above nine) has been:

- 15 Joint R&D Calls valued at some €50m, of which almost 80% was through the virtual common pot model. Just over €10m was invested in mixed mode calls
- Around €2m has been invested in four Joint Programmes

At around €10m, this thematic area has clearly achieved more success in launching calls using common pot and mixed mode funding models than is the norm. The overall total amounts as reported by coordinators (i.e. not necessarily broken down or attributed to countries) are considerably higher: For joint calls almost €43m have been reported for virtual common pot, € 375,000 for real commen pot and €42m for mixed mode. For joint programmes €2.9m have been reported.

EU 15 Member states with the exception of Italy. EU12 Member States, despite their relatively high participation (e.g. Poland, Estonia, and Hungary), appear not to have funded relatively less projects than their participation in Environment ERA-NETs would have suggested.

Russia and Turkey are the only non-EU Members to have funded transnational projects as a result of their participation (Refer to figure 11 of this Volume).

In summary, initial ambitions as shown by high levels of participation have not been matched by the overall number of funding contributions committed to transnational research projects in the Environment thematic area. However, the amount committed by countries that participated in joint calls was substantial.

Fundamental Sciences

Participation in Fundamental ERA-NETs was geographically narrower than for other themes. Fundamental Sciences ERA-NETs covered most of the EU15 Members States, although particular countries like Belgium, France, Germany, Italy, Portugal, Spain, the Netherlands and the United Kingdom were more frequently involved than other countries. Only three EU12 countries were involved as participants in Fundamental Sciences ERA-NETs, of which two, Hungary and Poland were significantly involved in Joint Calls. Associated countries involved in Fundamental Sciences ERA-NETs, either as participant or funders, included Switzerland and Turkey (Refer to figure 12 of this Volume).

In terms of joint calls, the Fundamental Sciences thematic area has been extremely well invested in compared to other thematic areas (e.g. it ranked third in terms of funding contribution to joint calls)[14] despite a lower number of ERA-NETs in this thematic area. Funding contributions mainly came from Austria, Germany, the Netherlands, Belgium, Finland, France, Spain, Portugal and Hungary as well as the United Kingdom, Ireland, Italy, Sweden and Greece but to a lesser extent. Note that the level of participation in joint calls appeared to be homogeneous across EU15 Member states with some exceptions such as Italy, Ireland, and the UK**. All ERA-NET participants, despite the relatively low number of Fundamental Sciences ERA-NETs, appear to have funded relatively more projects than their participation would have suggested.** Turkey and Norway are the only associated countries to have funded transnational projects as a result of their participation (Refer to figure 13 of this Volume).

In sum, ERA-NET participants in the Fundamental Sciences theme have funded a relatively high number of joint projects compared to the extent of their overall participation and the relatively low number of ERA-NETs in this theme.

Industrial Technologies and SMEs

Participation in Industrial Technologies and SMEs ERA-NETs was large across Europe as evidenced by the relatively large number of ERA-NET participations compared to other theme. Only two EU12 Member States appear not to have participated in this theme. Associated and third countries tended to be relatively less involved in this theme, compared to EU27 Member States, with the exception of Norway (Refer to figure 14 of this Volume).

In terms of joint calls the Industrial Technologies and SMEs thematic area has been well invested in compared to other thematic areas (e.g. it ranked first in terms of numbers of funding contributions to joint calls, and second in terms of the value of these contributions)[15]. Funding contributions mainly came from Austria, Belgium, Denmark, Finland, France, Germany, Spain and Sweden. Interestingly Greece, Italy, the Netherlands and the United Kingdom have not contributed to joint calls as much as their participation in ERA-NETs in the theme would have suggested. EU12

[14] A key feature of Fundamental Sciences ERA-NETs was their high degree of openness. This was demonstrated by the amount of funding contributions channelled in the thematic area via real common pots (i.e. more than €104m). Real common pots represented 90% of all funding contributions received in the theme. The overall total amounts reported by coordinators (i.e. not necessarily broken down or attributed to countries) are in line with these figures.

[15] A total of more than €137.4m funding contribution was channelled to 37 joint calls with more than 90 % usage of virtual pots. The overall total amounts reported by coordinators (i.e. not necessarily broken down or attributed to countries) are a total amount of €204.2m for joint calls and €20m for joint programmes considerably higher.

Member States' and Associated Countries' contributions to joint calls appeared to be broadly in line with their overall levels of participation (Refer to figure 15 of this Volume).

In sum, initial ambitions shown by the level of participations in the Industrial Technologies and SMEs theme appeared to have been matched by the number and level of funding contributions committed to transnational research projects in this theme.

International Cooperation

EU27 Member States participated evenly in the International Cooperation ERA-NETs. Exceptions included France and Germany which participated in all INCO ERA-NET. 5 Eastern European Member States (Latvia, Estonia, Slovakia and Czech Republic), Sweden, as well as some associated countries (Turkey, Israel, and Iceland) did not take part. Interestingly, INCO-ERA NETs secured the participation of Balkan states (mainly via SEE-ERA-NET) (Refer to figure 16 of this Volume).

In terms of contribution to joint calls, INCO ERA-NETs have received the least funding contributions compared to all other themes[16]. However, funding contributions reflected the level and extent of participation in INCO ERA-NETs with the exception of Ireland, Italy and Bulgaria. A distinctive feature of INCO ERA-NETs was the participation of third countries in the funding of transnational research projects such as Mexico, Chile, Argentina, and China (Refer to figure 17 of this Volume).

In sum, initial ambitions shown by the level of participations in INCO ERA-NETs appeared to have been matched by the number and level of funding contributions committed to transnational research projects in the theme.

Life Sciences

ERA-NETs in this thematic area attracted a large number of participants from EU27 Member States and Associated countries (e.g. around 30 countries). Countries with large participation included EU15 countries (e.g. Austria, Belgium, Finland, France, Germany, Italy, Spain, the Netherlands, and the UK) and among Associated countries, Israel. EU12 Member States participated in Life Science ERA-NETs to a much smaller extent than their EU15 counterparts (Refer to figure 18 of this Volume).

In terms of contributions to joint calls, Life Science ERA-NETs have been very well invested in compared to other thematic areas (e.g. it ranked second in terms of number of funding contributions to joint calls, and first in terms of the value of these contributions)[17]. The extent of countries participation in ERA-NETs was matched by their funding contributions to research projects for the following countries: Austria, France, Germany, the Netherlands, Norway, Portugal and Spain. For some countries the number of contributions to joint calls did not match the extent of their participation, especially for Italy, Israel, Turkey, the United Kingdom as well as all the EU12 countries (Refer to figure 19 of this Volume).

In sum, ERA-NET participants in the Life Sciences theme have participated in a relatively lower number of joint calls compared to the level of their overall participation. The countries that have participated in joint calls tended to invest a significant amount of funds to transnational research project in the thematic area.

Social Sciences and Humanities

ERA-NETs in this thematic area included participants from most EU27 Member States and Associated countries. Countries with relatively larger participation than their EU27 counterparts included Northern European countries (e.g. Austria, Denmark, Finland, Germany, Ireland, the Netherlands, Norway, Sweden, and the UK) (Refer to figure 20 of this Volume).

[16] A total of €7.8m funding contribution was channelled via virtual common pots to fund research projects. The overall total amounts reported by coordinators (i.e. not necessarily broken down or attributed to countries) are in line with these figures.

[17] A total of more than €276m funding contribution was channelled mostly via Virtual common pots to fund research projects. The overall total amounts reported by coordinators (i.e. not necessarily broken down or attributed to countries) are in line with these figures.

In terms of funding contributions to transnational projects, participation in joint calls was subscribed to by Northern European countries, as previously mentioned, in addition to Portugal and Slovenia. This thematic area ranked last in terms of numbers of funding contributions to joint calls, and fifth in terms of the value of these contributions)[18] (Refer to figure 21 of this Volume).

In sum, most of ERA-NET participants in the Social Science and Humanities theme did not participate in the funding of transnational research projects. However, for the countries that participated in joint calls, they tended to invest a significant amount of funds via a real common pot model. This showed a real eagerness for cooperation but only for a relatively small number of, for the most part, Northern European countries.

Transport

Transport ERA-NETs mobilised the participation of most EU27 countries (e.g. up to 24 countries). EU12 Member States and Associated countries tended to be less involved than other Member States. Countries with relatively high engagement came mainly from the EU15 country grouping and Northern Europe (Refer to figure 22 of this Volume).

In terms of funding contributions to transnational projects, joint calls were subscribed to mainly by Northern European country, as previously mentioned, in addition to Italy, Slovenia and Spain. This thematic area ranked 6th in terms of number of funding contributions to joint calls, and second to last in terms of the value of these contributions[19] (Refer to figure 23 of this Volume).

In sum, initial ambitions as shown by the relatively good level of participation in the Transport theme have not been matched by the overall number of funding contributions committed to transnational research projects in this thematic area. Moreover, the amount committed by countries that participated in joint calls was limited.

[18] A total of almost €29m funding contribution to joint calls was channelled entirely via real common pots to fund. The overall total amounts reported by coordinators (i.e. not necessarily broken down or attributed to countries) are considerably higher: €41m for joint calls and €28m for joint programmes.

[19] A total of €10m funding contribution to joint calls was channelled via virtual common pots to fund transnational research projects. The overall total amount reported by coordinators (i.e. not necessarily broken down or attributed to countries) is the double amount: €20m.

Figure 8: Joint participation in Energy ERA-NETs

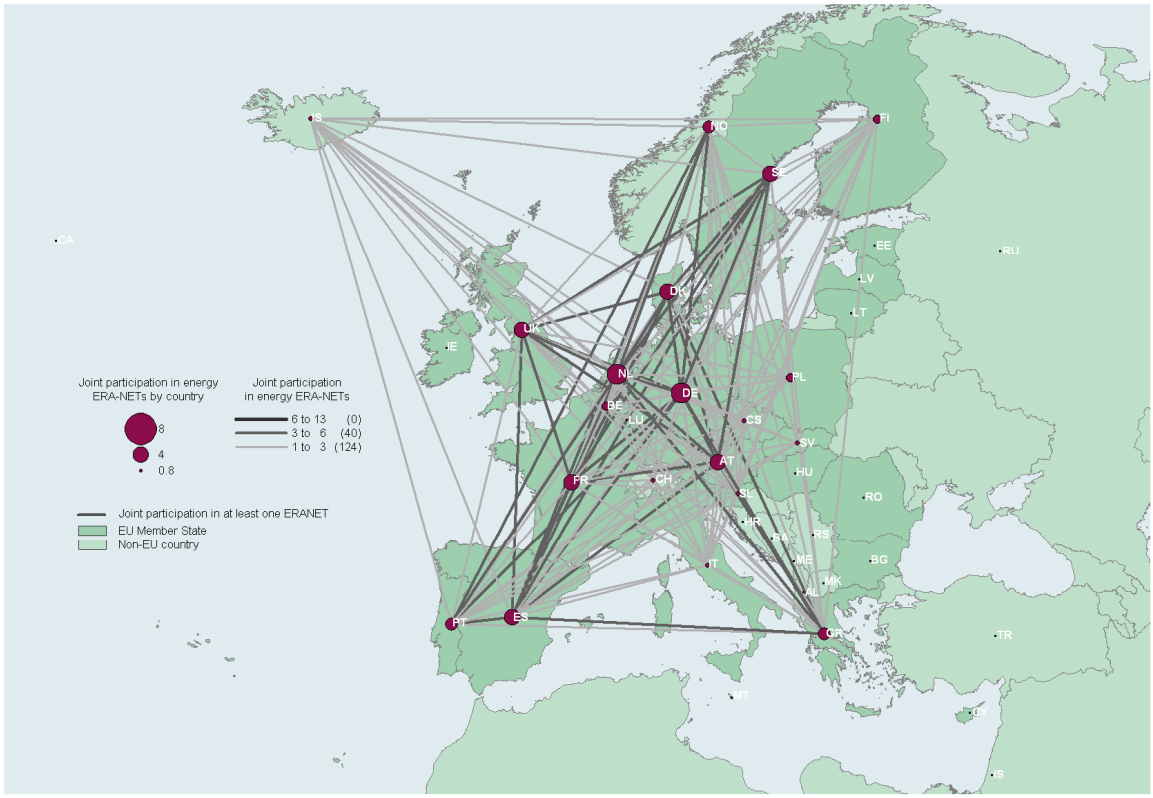


Figure 9: Joint call participation in Energy ERA-NETs

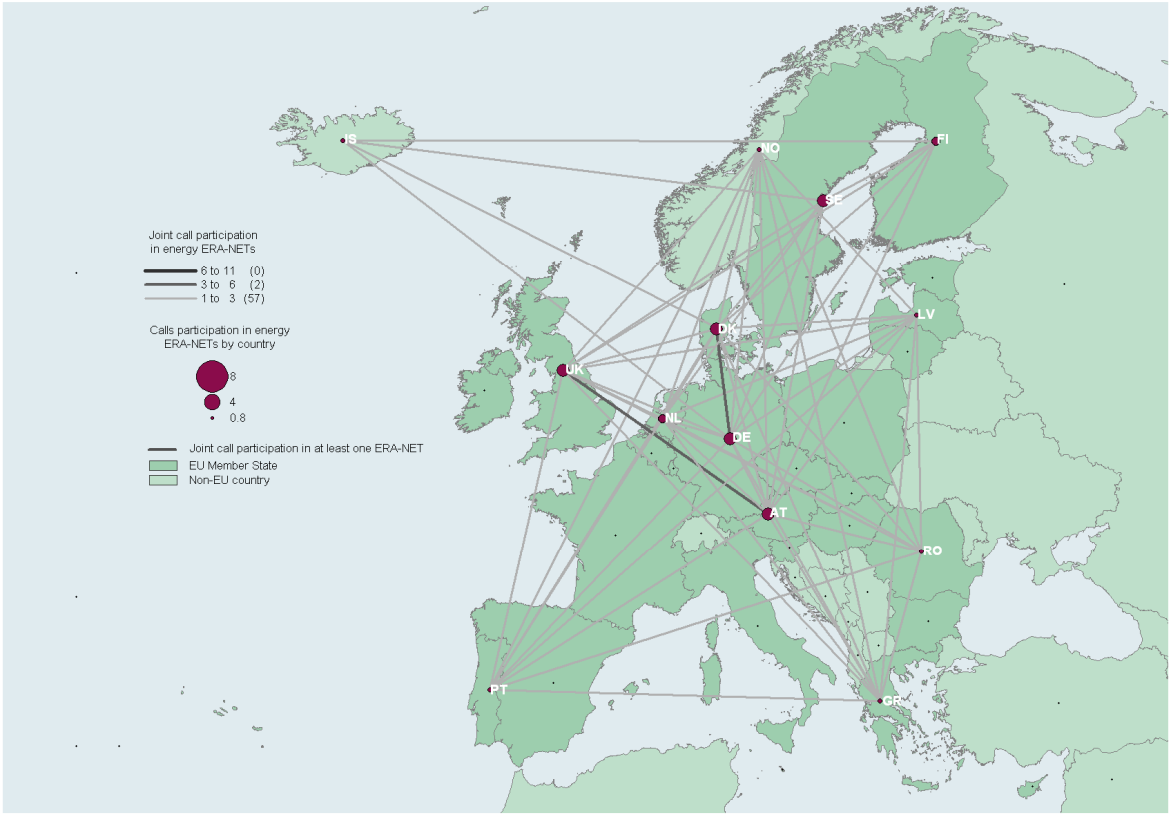


Figure 10: Joint participation in Environment ERA-NETs

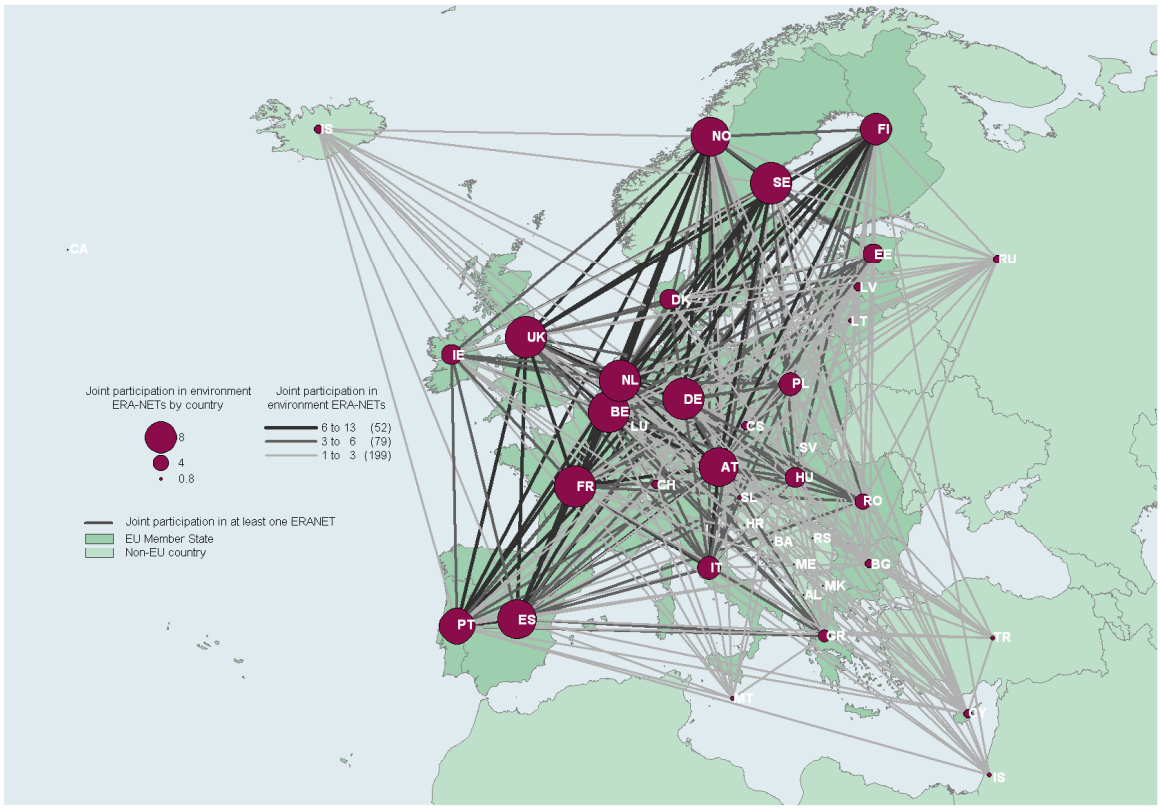


Figure 11: Joint call participation in Environment ERA-NETs

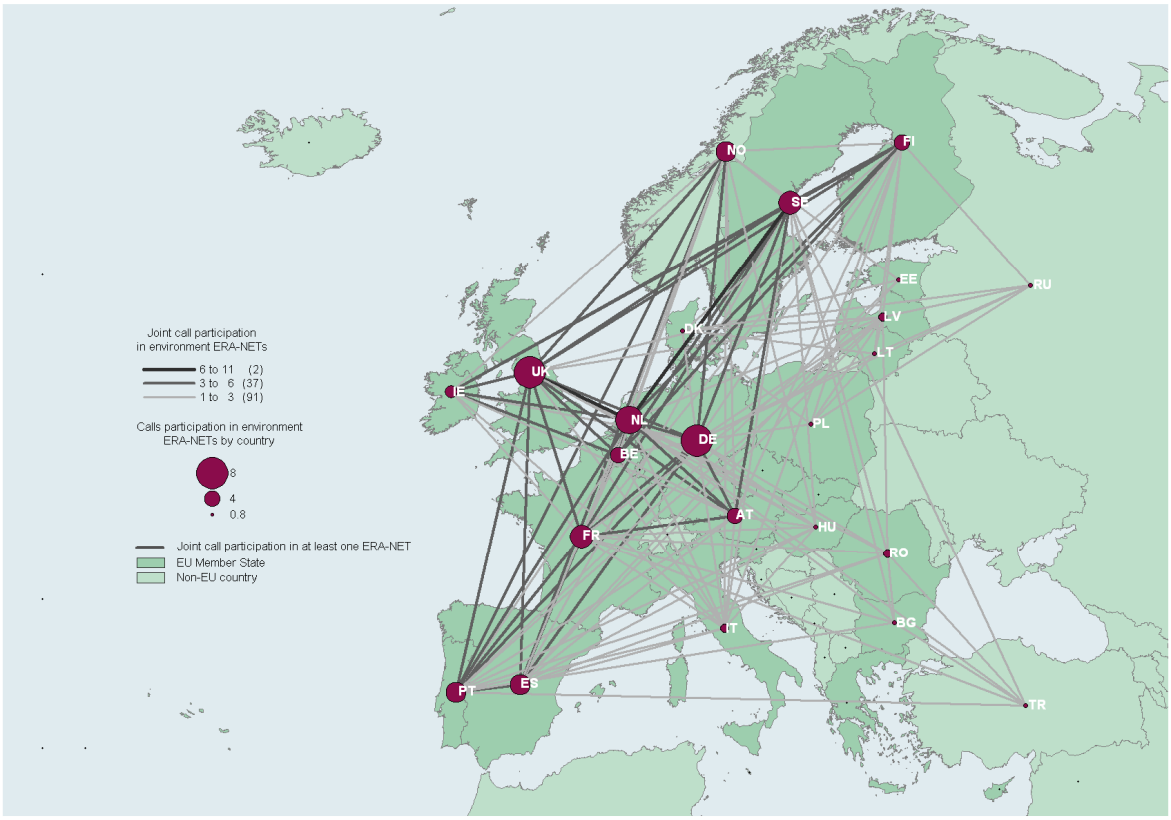


Figure 12: Joint participation in Fundamental Sciences ERA-NETs

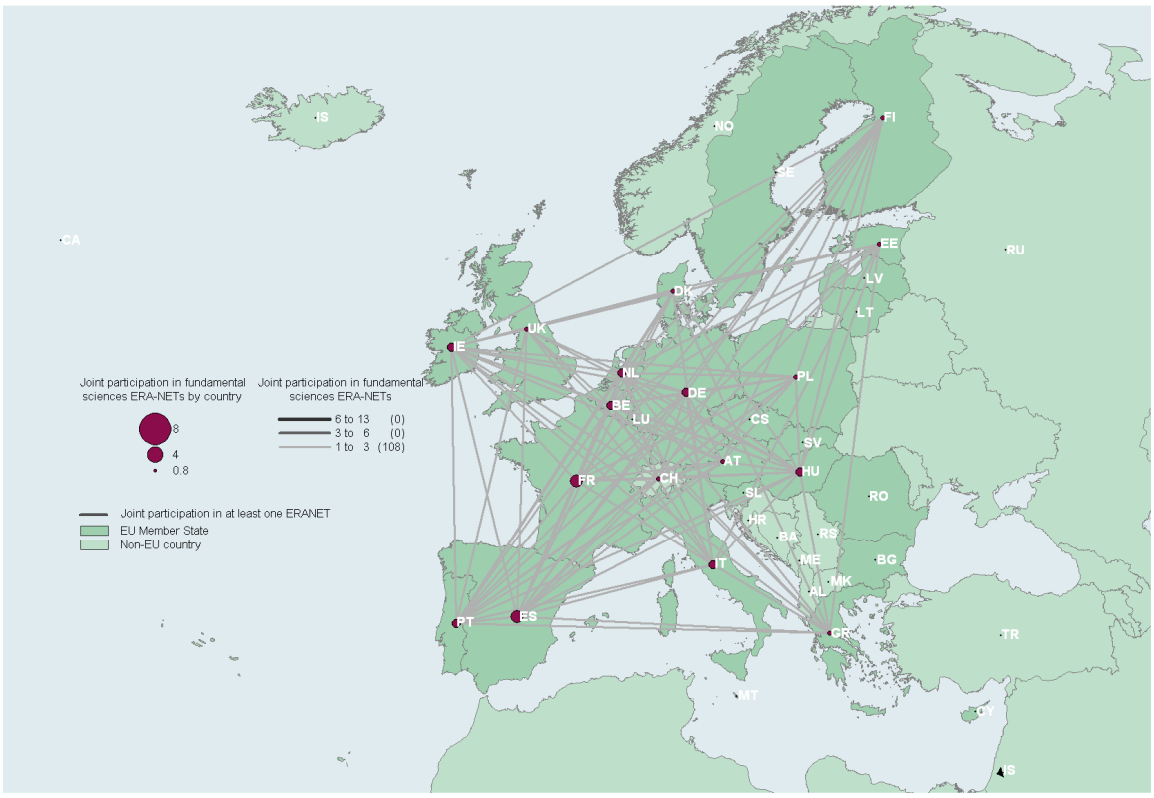


Figure 13: Joint call participation in Fundamental Sciences ERA-NETs

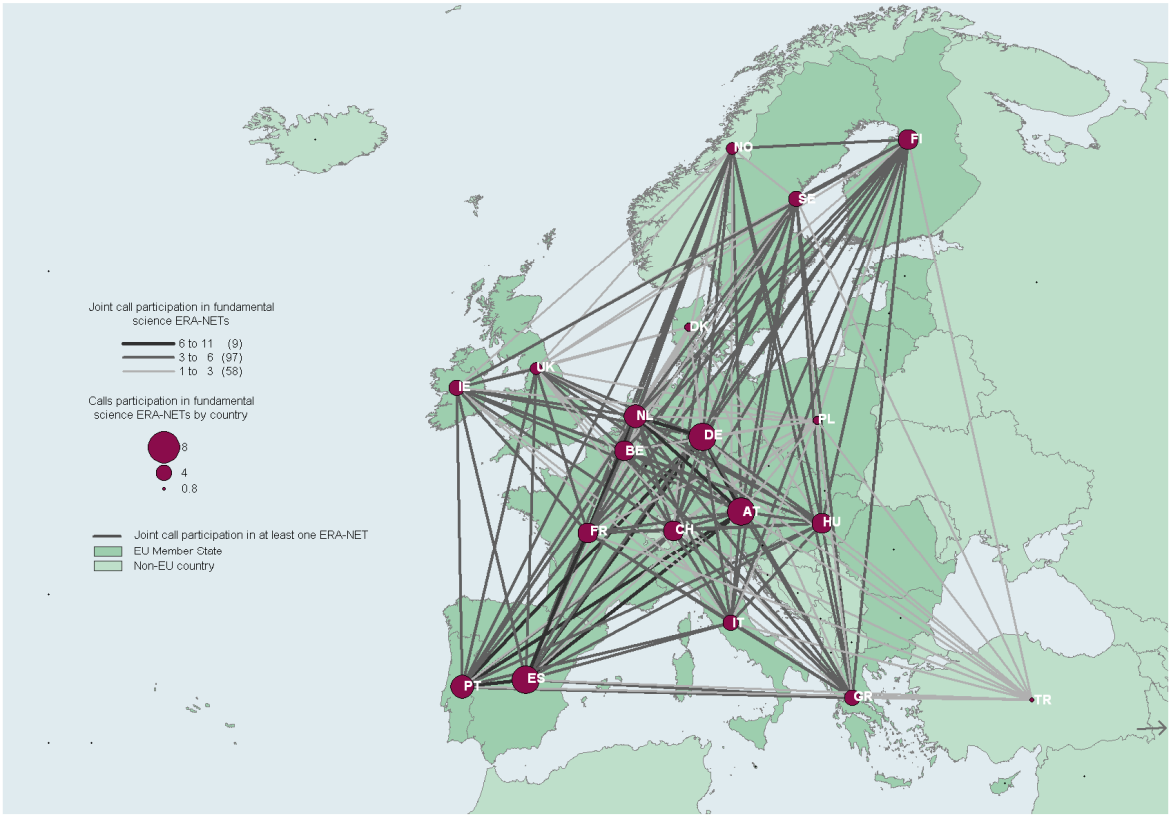

Joint call participation in fundamental science ERA-NETs
6 to 11 (9)
3 to 6 (97)
1 to 3 (58)
Calls participation in fundamental science ERA-NETs by country
8
4
0.8
Joint call participation in at least one ERA-NET
EU Member State
Non-EU country
NO
FI
SE
DK
UK
IE
NL
DE
PL
BE
AT
HU
FR
CH
IT
PT
ES
GR
TR

Figure 14: Joint participation in Industrial Technologies and SMEs ERA-NETs

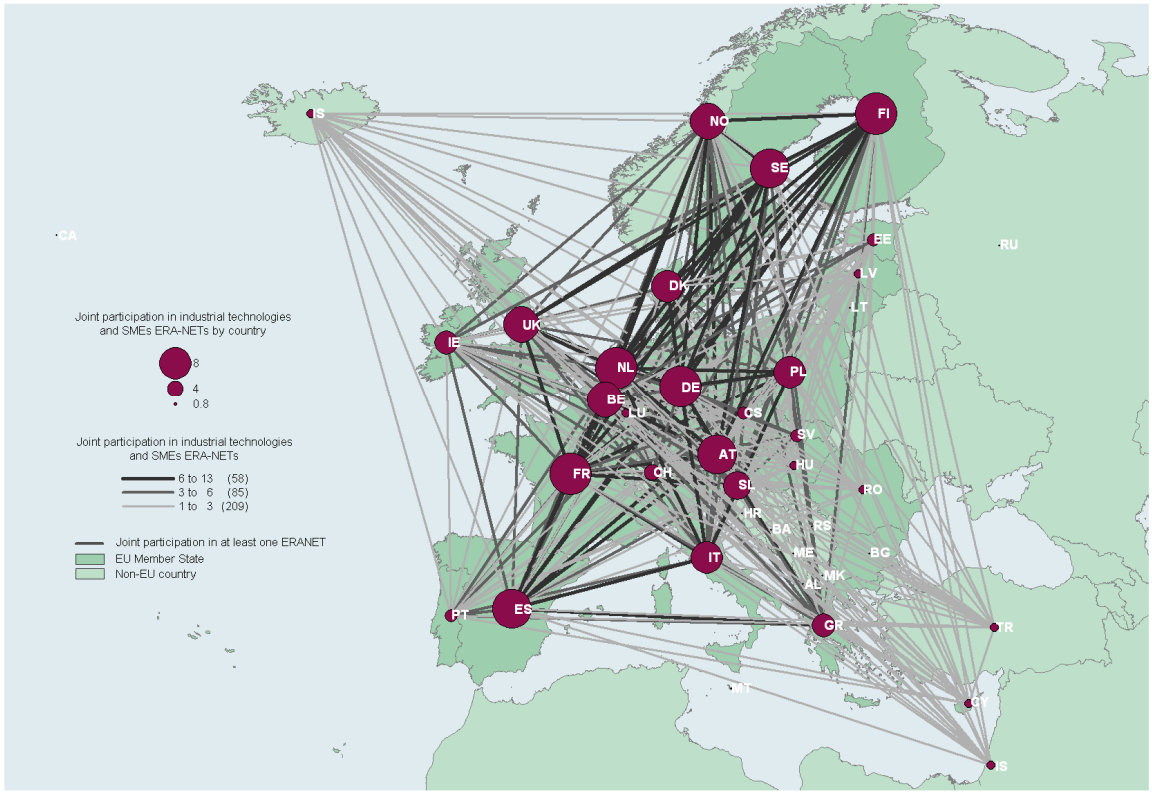


Figure 15: Joint call participation in Industrial Technologies and SMEs ERA-NETs

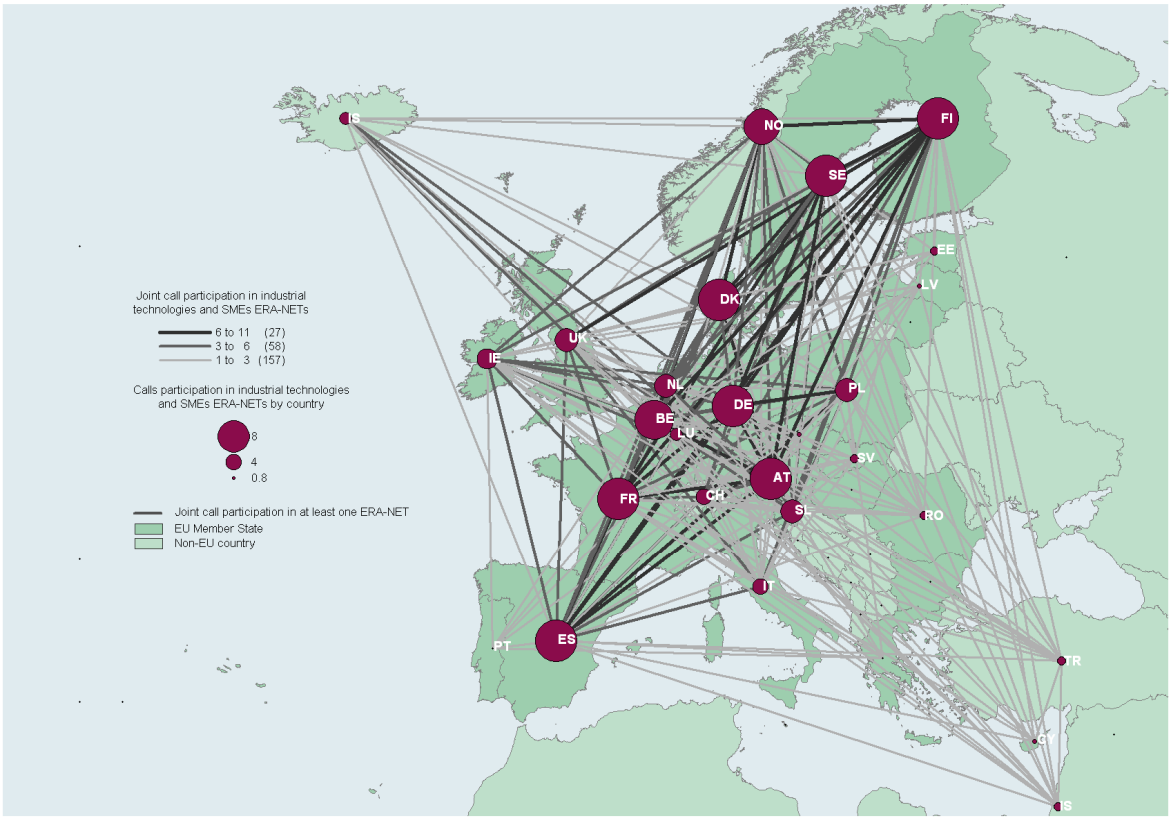


Figure 16: Joint participation in International Cooperation ERA-NETs

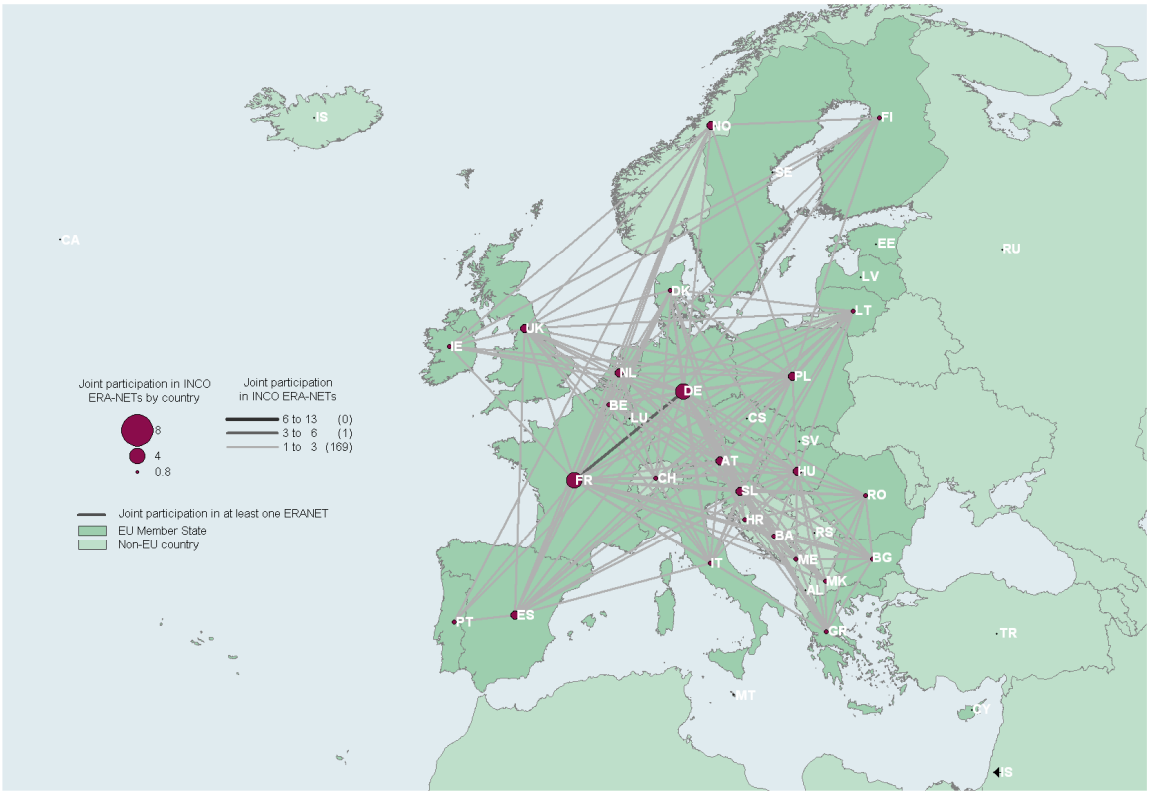


Figure 17: Joint call participation in International cooperation ERA-NETs

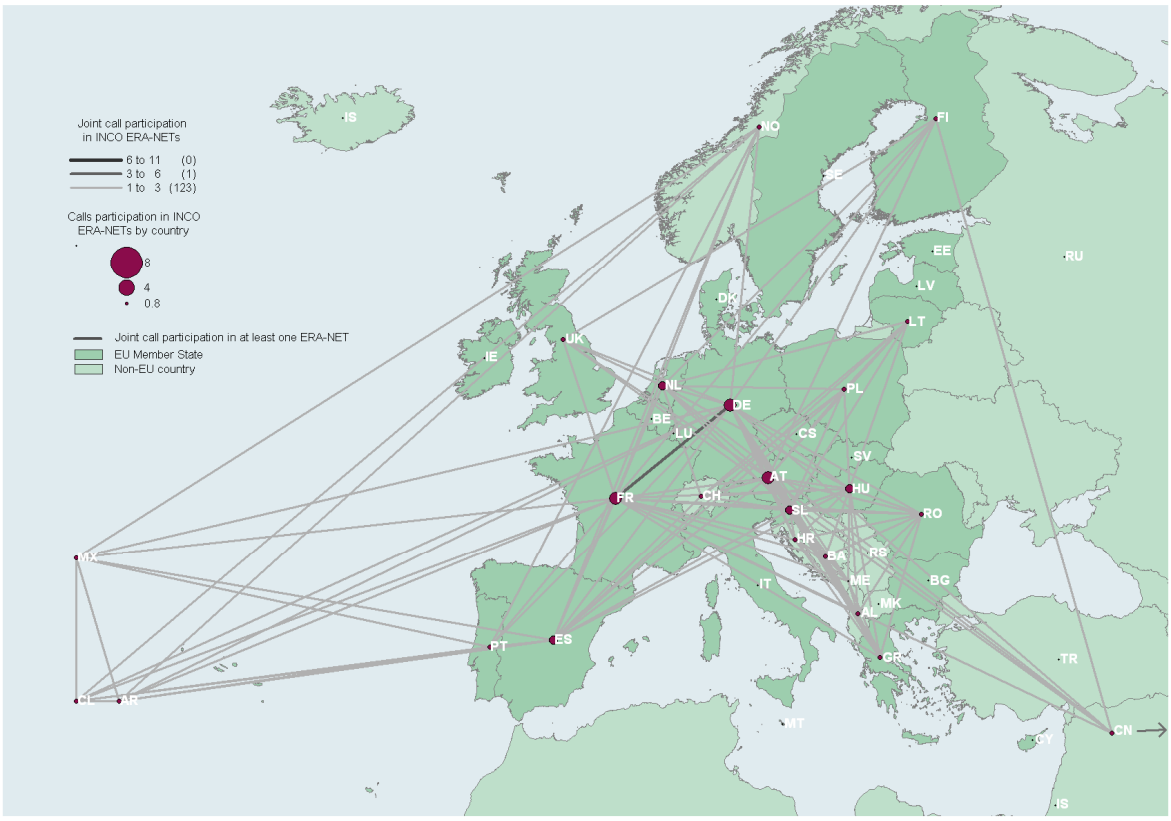


Figure 18: Joint participation in Life Sciences ERA-NETs

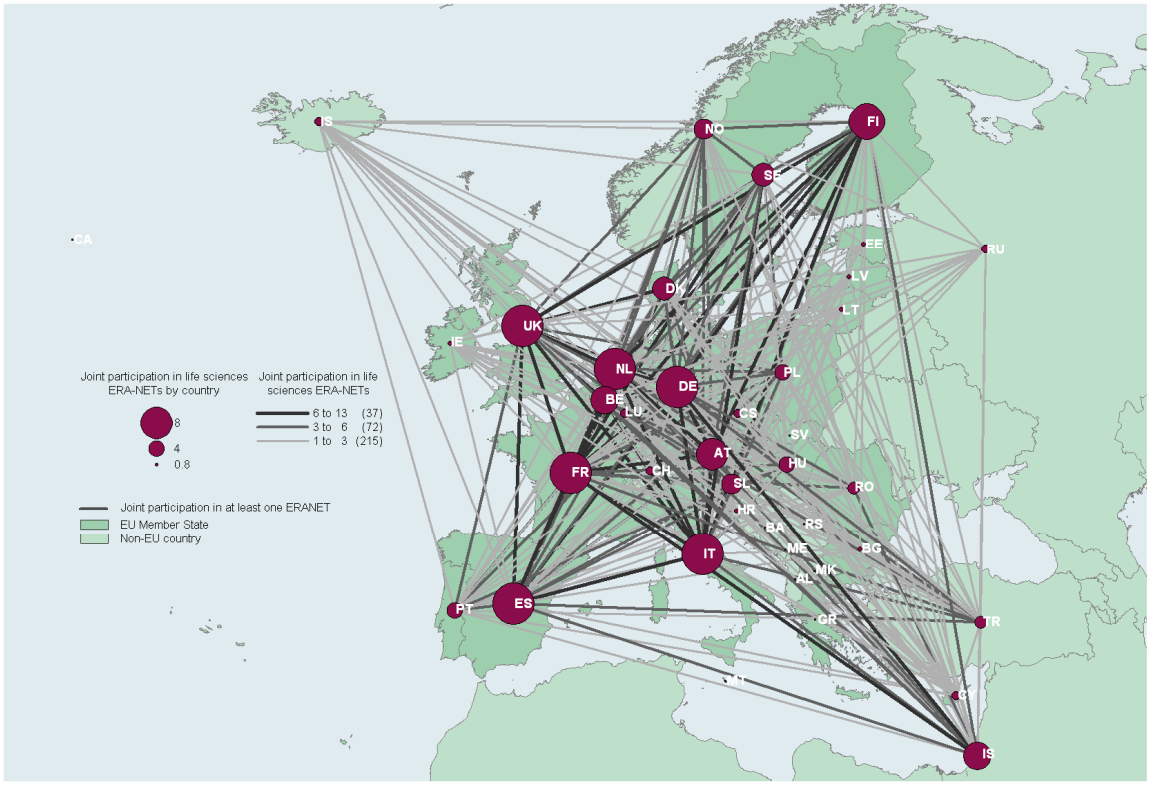


Figure 19: Joint call participation in Life Sciences ERA-NETs

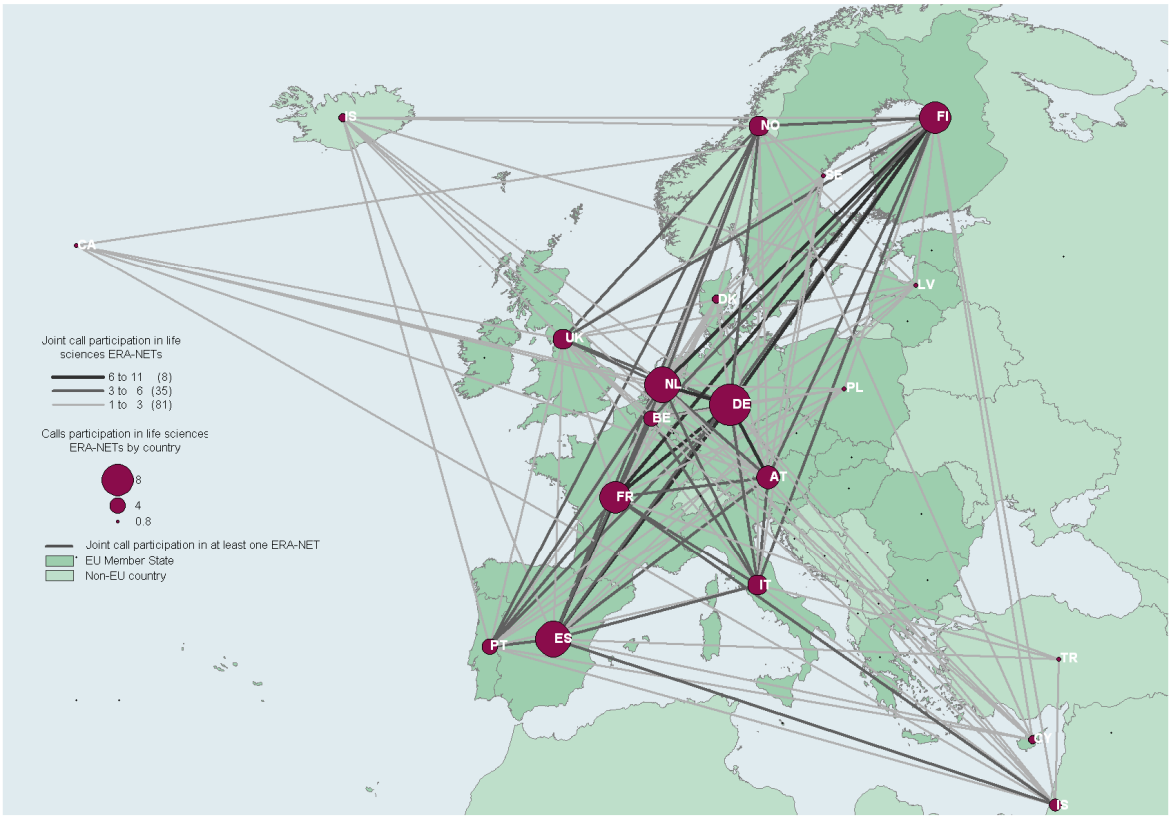

Joint call participation in life sciences ERA-NETs
6 to 11 (8)
3 to 6 (35)
1 to 3 (81)
Calls participation in life sciences ERA-NETs by country
8
4
0.8
Joint call participation in at least one ERA-NET
EU Member State
Non-EU country
IS
NO
FI
SE
LV
DK
UK
NL
DE
PL
BE
AT
FR
IT
PT
ES
TR
IS

Figure 20: Joint participation in Social Sciences and Humanities ERA-NETs

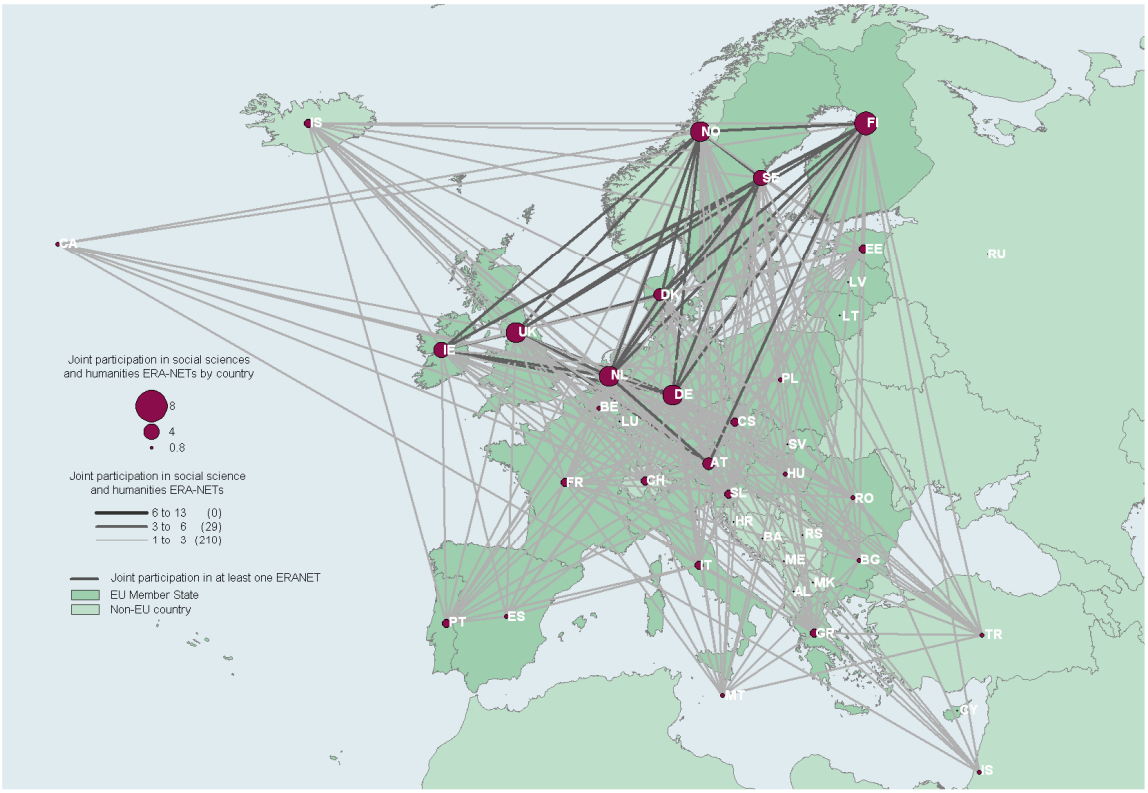


Figure 21: Joint call participation in Social Sciences and Humanities ERA-NETs

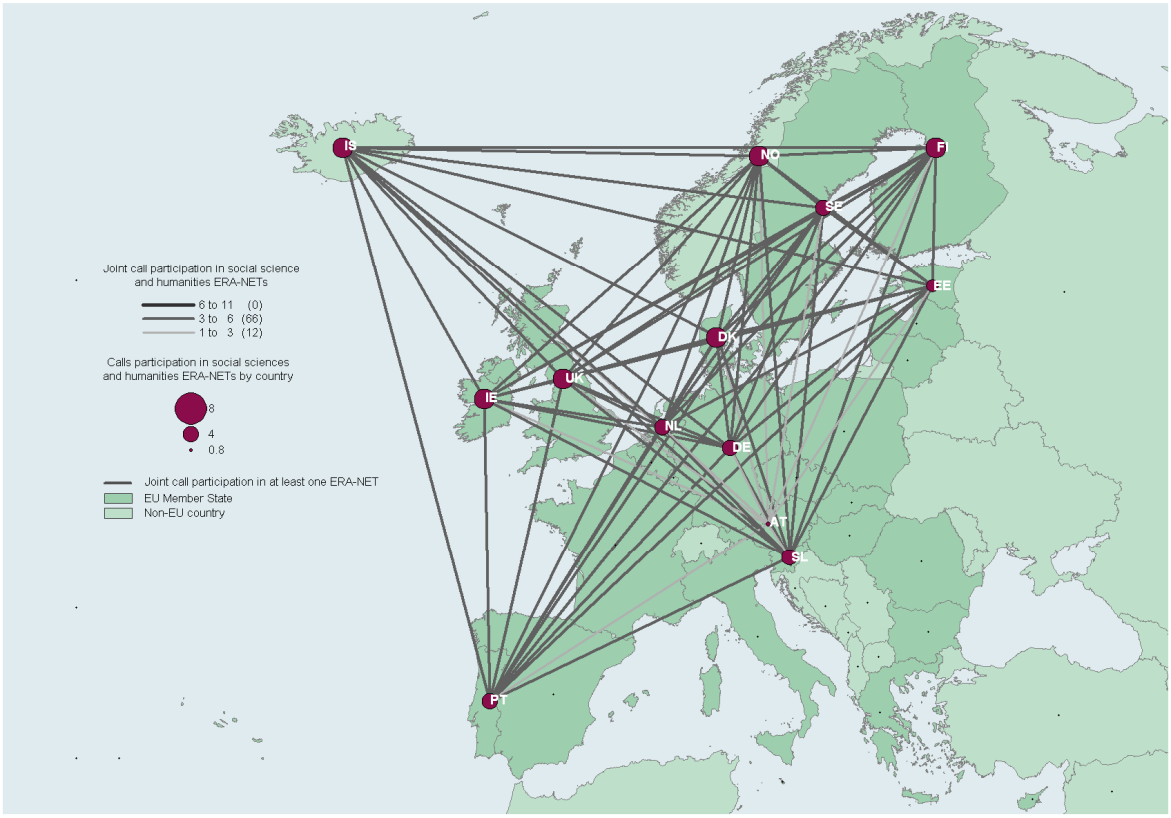


Figure 22: Joint participation in Transport ERA-NETs

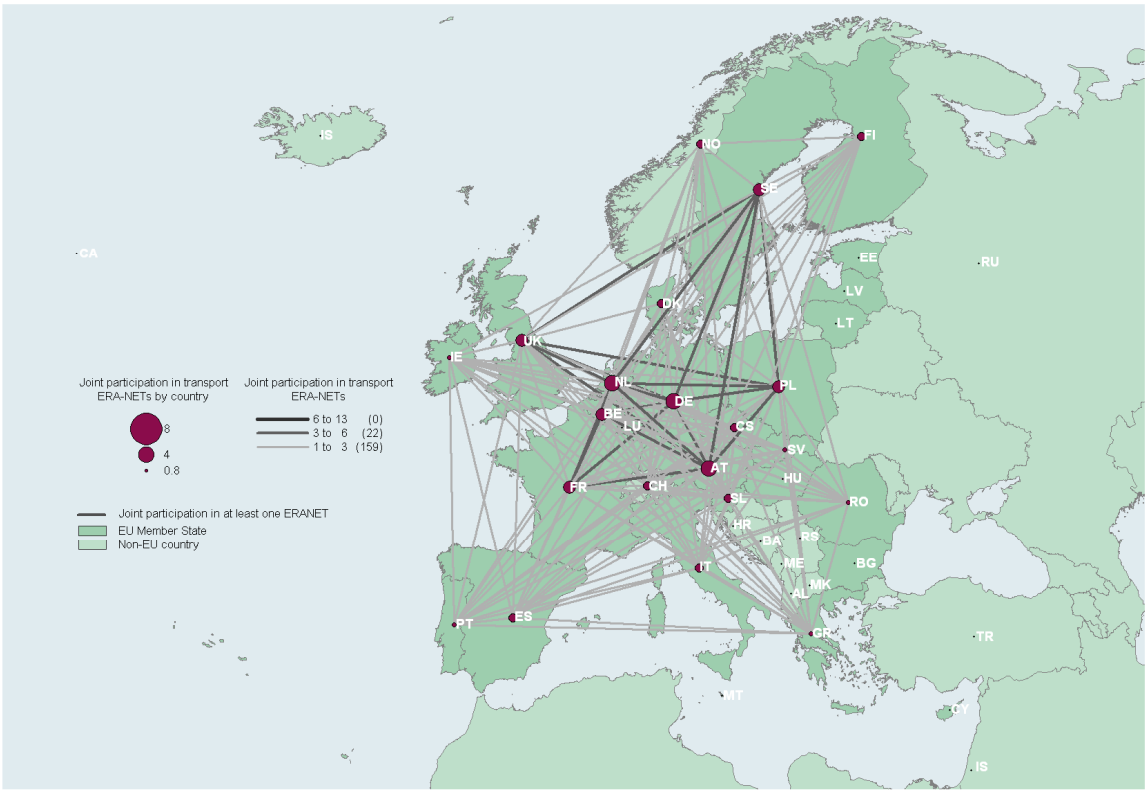


Figure 23: Joint call participation in Transport ERA-NETs


Joint call participation
in transport ERA-NETs
6 to 11 (0)
3 to 6 (5)
1 to 3 (64)
Calls participation in transport
ERA-NETs by country
8
4
0.8
Joint call participation in at least one ERA-NET
EU Member State
Non-EU country
NO
FI
SE
DK
UK
NL
DE
BE
CS
AT
FR
CH
SL
IT
ES

3. Good practice

This section provides the findings of the analyses of good practice and lessons learnt emerging from the evaluation. It is structured to provide answers to sub-deliverables 25 to 27 of the ToR. Before outlining the good practices that have emerged, a short background to what the scheme expected to deliver as well as the information sources upon which findings are based, are provided in order to contextualise the findings.

3.1 Background to the scheme

In order to understand the way participants worked together as part of the ERA-NET scheme it is important to outline the "bottom-up" nature of the scheme. The scheme provided an opportunity for funders to get together at the transnational level for networking and coordination of activities with funding from the European Commission in so called ERA-NETs. In some thematic areas the ERA-NET provided an opportunity for funders to extend already existing bilateral collaborations or networks, in other areas it meant creating entirely new networks.

At the highest level, the overall objectives supporting the creation of the scheme were to reduce perceived fragmentation and duplication of research efforts made a national and regional level with a view to strengthen the European Research Area.

The mechanisms through which these higher level objectives were to be achieved were through a four step process which ERA-NETs were encouraged to follow. These were:

i. Systematic exchange of information and good practices on existing programmes (i.e. networking).
ii. Identification and analysis of common strategic issues (i.e. analysis).
iii. Development of joint activities between national and regional programmes (i.e. planning).
iv. Implementation of joint trans-national research activities (i.e. doing).

The idea was that the exchange of good practices would help to build expertise and a common understanding and that, this in turn, would help to identify common strategic issues for which a common response could be developed which would then help to structure and open up certain fields to avoid overlaps and duplication.

This report provides a window into the experience of ERA-NET participants with particular focus on lessons learnt from participation and how the experience was regarded overall. The focus of the report is to draw out the good, and sometimes less good, practices identified in response to sub-deliverables 25 to 27 of the Terms of Reference including what can be learnt about strategic planning (when to coordinate and/or to open national/regional programmes via ERA-NETs); how best to implement ERA-NET joint calls/programmes; and how best to exchange information as part of the ERA-NETs.

3.2 Information sources informing the report

The material outlined in this report is principally based on qualitative inputs received through face-to-face and telephone interviews with participants during field work. It can therefore not be seen as a representative picture off all participants' experience of the scheme given that not all participants were interviewed. However, it does provide a summary of all the feedback received from those participants and coordinators consulted.

3.3 Executive Summary

This section provides the headline findings in relation to good practice before going into details about findings according to each sub-deliverable.

Overview

- The ERA-NET scheme was fundamentally bottom-up in its nature although often based on pre-existing relationships.
- Achieving effective buy-in from senior policy-makers, whilst maintaining a bottom-up approach, is to be considered good practice.

- Good practices were adopted for assessing and evaluating proposals. With regard to funding models, the national research landscape (including the Member State's funding policies and political constraints) defined practices. In the majority of cases this meant funding joint calls via virtual pots and targeting primarily participant countries' own researchers.

- Many good practices for information sharing and exchange were identified.

Good practices around strategic planning (SD25)

- Successful participation in the ERA-NET scheme requires a mandate and ongoing support from the policy-makers in the participant country.

- Careful selection of participants with a high level of expertise and knowledge, and commitment to the ERA-NET aids the success of the ERA-NET.

- Where coordinator or participants are constrained in their workload to conduct the ERA-NET tasks outsourcing the daily operations of their participation to a third party could be an effective option.

- The creation of a clear management structure in which trust is built and mutual responsibility is assured within the consortium will lay a firm foundation for the running and performance of the ERA-NET.

- The practice of extending participation to non-EU Member States should continue.

- An important pre-condition for success with an ERA-NET is that a good coordinator has a suite of competencies. These include management, diplomatic, problem-solving and communication skills.

Good practices around transnational research activities (SD26)

- To improve the possibility of using real common pots it would be useful for the coordinator to gather intelligence on how keen funding agencies are to fund research projects via a real common pot in a specific thematic area, what is their room for manoeuvre for doing so and whether this fits in their existing work programme and overall strategy. Such information could be obtained at the outset of the ERA-NET from participants or through early visits to the relevant agencies.

- Only a handful of research institutions or funding agencies with similar focus, strategies and work programmes may be able to use real common pots to fund transnational projects. The coordinators and participants in ERA-NETs should be clear about the overall objective of their ERA-Net in terms of the level of participation in joint calls. That is if the objective is the broad inclusion of all relevant participant in order to ensure a wide geographic coverage then a virtual pot mode of financing transnational R&D projects may be more adequate to ensure wide participation from across Europe. Otherwise, if the priority is given to fund research excellence and innovation then real common pots may be favoured and promoted.

- Reaching consensus on principles and procedures between participants on other issues than funding is paramount. For instance, joint guidelines, common evaluation procedures, common application form, joined up dissemination strategies, common language, and Intellectual property rights should be clarified right from the outset. Not doing so adds a level of uncertainty from the point of view of participants and can hamper the full realisation of the benefits by each participant.

- Narrowing and better targeting the focus of the calls can reduce the number of applications from researchers and the time currently taken for the evaluation of proposals.

- For joint calls, the construction of a criterion for drafting joint calls, which should include clarity of their objectives and terms of reference, is good practice.

- The standardisation and simplification of information on applicant forms will make it easier for applicants responding to the joint calls and reduce the time spent on responding to their questions.

- The suggestion for the introduction of a consistent and well-designed format and procedure for feedback to unsuccessful candidates in the joint calls was well noted. Systematic feedback is a normal procedure for the bidding process as unsuccessful candidates benefit from such feedback.

- A rigorous peer review criterion had been found to be immensely helpful in evaluating proposals for joint calls. This criterion should be uniformly used by all the ERA-NETs and coordinators could agree on the "final" version which could then be adopted by the various ERA-NETs.

- IPR issues in collaborative projects can be tricky if not managed adequately. These issues are best clarified before launching a joint call for instance through making it clear in the application process. Rules could be made to reflect the Framework Programme IPR conditions which thus could avoid varying versions of IPR rules among the ERA-NETs. It could also be a commonly agreed framework by the ERA-NETs. Compliance with an agreed IPR framework could be made mandatory.

- Glossaries of common terms are necessary in order to ensure that definitions used in the ERA-NETs are the same.

Good practices around ERA-NET information sharing and exchange (SD27)

- Some form of more guidelines from the Commission towards harmonisation of procedures would help to make sure that the diversity in systems between Member States does not transformed into a diversity of systems between thematic areas.

- Continue with the practice of regular meetings as this facilitates communication, fosters close working relations, and helps to create personal contacts.

- Continue with the practice of mapping research activities of participating countries as this provides knowledge of mutual research interests as well as themes for future research.

- Continue with the construction of websites as a dissemination and information exchange tool but ensure that websites is well-designed, regularly updated and provide clear and comprehensive information about the ERA-NET. A website is a passive tool for dissemination, and unless it is well-constructed, it will not receive many "hits."

- The creation of roadmaps of research activities, national surveys and directories of experts were found to be beneficial as these provided knowledge of mutual research interests as well as themes for future research and collaboration.

- The introduction of visits to partnering countries as a standard measure to learn more about the relevant/corresponding organisation of these countries could be introduced to all the ERA-NETs. Such visits were reported as having being particularly useful to participants as they allowed direct insight into the operating procedures of other participant organisations, knowledge which then helped decisions around appropriate funding models to adopt.

- Holding national open days for the ERA-NETs, and through a well-designed website, have the potential to attract international researchers outside the EU.

3.4 Good practices around strategic planning (SD25)[20]

Achieving effective buy-in from senior policy-makers, whilst maintaining a bottom-up approach, is to be considered good practice.

This section of the report focuses on understanding the principles that guided participation in the ERA-NET and the extent to which there was overall strategic backing for this within the national administrations.

3.4.1 Strategic planning and national context

Overall, given the 'bottom-up' nature of the scheme, planning in preparation for the ERA-NET was mainly done at the programme manager level where links were made with funders in other countries, sometimes through pre-existing networks, other times through pressure from researchers or through seeking-out other funders for which there was a desire to collaborate with.

At the more strategic policy and governmental level, there was generally less up-front strategic planning partly as a consequence of the bottom-up nature of the scheme. However there were exceptions. What is clear is that the degree to which strategic planning was undertaken was a function of the national context, familiarity with transnational R&D, the policy-making process, policy objectives in specific R&D areas, and existing R&D areas at national level.

The way in which the national context & structure, familiarity with transnational R&D, the policy-making process, the policy objectives and the existing R&D areas influenced strategic planning will be explained below using examples.

National context and structure

The national R&D context and the structure of national funding bodies were some of the main factors defining the degree of strategic planning made at national level and at what level (Ministry, Research Council, etc.). In countries where research councils had a high degree of autonomy to set their own research agendas with respect to research domains and transnational collaboration (e.g. the UK and Finland), decisions to participate, and pre-planning associated with this, was mainly undertaken at the Programme Manager level. In other countries, where R&D programming was more centralised and/or intertwined with policy-making (e.g. Slovenia, Romania), the decision to participate and planning would have been undertaken mostly at Programme Owner level.

The advantage of the former model was that ERA-NET themes that did not already appear be on the agendas for transnational collaboration of these agencies could effectively be considered. Furthermore, these research councils had the latitude to allocate monies from their research budgets to fund joint calls.

Some countries that worked with longer time horizons for programming (e.g. France and Germany), were considerably constrained in their freedom of action to take part in the actual funding of calls where this could not be justified through existing programmes and priorities.

Familiarity with transnational R&D

As reported by the various national participants, no specific good practice with respect to strategic planning had been adopted or considered for participation in the ERA-NET Scheme by a majority of the EU-15 national government representatives interviewed (e.g. the UK, Italy, Austria, Portugal and Germany). This was also the case for Norway. The reason for this was that transnational collaborative research activity already existed as part of their research agenda in which monies had already been allocated or committed in most cases. In other words, if the country already had a well-established process and long history of transnational collaboration in R&D, then the ERA-NET was regarded as just another route to collaboration and no particular strategic planning for deploying this channel was seen to be required.

The French participant suggested that "future EU instruments could build on existing bilateral agreements" as a way of planning more strategically. Furthermore, identified EU countries could take the lead on ERA-NETs that focus on specific regions/countries. The participant also added that the U.S. National Science Foundation could be considered as a model to shape a transnational research organisation at European level as it could help to bring together the EU's research funding organizations and research public organisations. It is not clear why this particular

[20] The aim of sub-deliverable 25 (SD25) is to provide: guiding principles for strategic decision-making to support policy makers and programme owners in their choices i.e. "when to coordinate and/or to open national/regional programmes via ERA-NET".

interviewee did not refer to, or see a role for, the European Science Foundation is this instance. Overall, it is not clear which of these suggestions could be commonly implemented.

A German participant explained that while ERA-NET provided an "apolitical platform" to show that research co-operation across borders could be valuable, strategic planning needed to be undertaken in order to avoid overlaps across the ERA-NETs, implying that little such activity had been undertaken prior to the ERA-NET Scheme regarding Germany's participation. One French participant also suggested that briefing the regional governments on the ERA-NET Scheme is essential to ensure the participation of SMEs.

Policy-making process

Some participants, including one from Slovenia explained that the "co-operation with the National Ministry was difficult in the field [international co-operation] – it did not suit the needs nor the remit of such an organisation…" Hence, an understanding of how governments allocate monies to transnational collaborative activities was seen as important, as was awareness of the funding schemes directly under the ERA-NET participants' control.

Some participants stressed the importance of support "from the home base." While in most cases, participation in ERA-NET was well supported by the department, ministry, research agency or funding agency, it was apparent that this was not the case with all participants. One participant suggested that one good practice for creating "buy-in" from senior policy-makers was to "operate the ERA-NETs in parallel" with European Commission Directives/Regulations, thereby obtaining for ministers and senior officials, a better opportunity to take note of the ERA-NET Scheme.

Lessons learnt from Vision ERA-NET also emphasised the importance of Ministries as a partner for these precise reasons. The conclusion was that the more the Ministry was made aware of demonstrable benefits, the longer-term their buy-in for the scheme would become[21].

Policy R&D objectives

Similarly, knowledge of the research domains of a country's research agenda was seen as useful, as alignment between these and the ERA-NETs' themes may reflect the lack of need of any specific strategic planning, a point already noted above. For instance, UK policy-makers described the Framework Programme as a "bolt on" to the country's research agenda. From this one could infer that no strategic planning was undertaken, and in fact was not undertaken, for participation in the ERA-NET Scheme.

On the other hand, in Slovenia and Romania, strategic planning was influenced by a clear desire to align national R&D with the overall Framework Programme, although not specifically the ERA-NET scheme.

Existing and new R&D areas

The level of strategic planning differed according to many variables. This makes working out a coherent pattern of behaviour difficult. For instance, in some well-defined, existing areas in which a country had a strong position it did not necessarily mean that it would automatically want to take the lead. As a consequence, the level of strategic planning varied hugely. For instance, whereas in Germany the Ministry of Education and Research defined the strategy for engaging in transnational research funding in conjunction with the Ministry of Foreign Affairs, in the UK the process did not suggest any high-level strategic planning underpinning participation. In stead the overall position seemed to be down to the view that "it was better to be in than out". In some cases participation in transnational collaborative R&D activities was done on ad hoc basis, often in response to the perceived value that the participation might engender, particularly in relation to specific R&D areas. In the Netherlands and Portugal, participants very much seized opportunities for participation in a bottom-up, case-by-case basis. In Finland participants adopted a flexible and receptive approach in participating in joint activities under the ERA-NETs. It seems, in some instances participation was driven by a strong interest in an existing area in which Finland was seen as competitive, in other instances Finland took part in areas where they saw potential for strengthening a weaker area. The Academy of Finland established a group that coordinated ERA-NET activities in-house with the purpose of disseminating information on the latest calls.

[21] P.Honkanen, Ministry of Trade and Industry, FI: SUMMARY REPORT OF WORKSHOP: "ERA-NET as a tool for facilitating Cooperation between Ministries Managing RTD Programmes", Brussels 23 May 2006.

In the case of Poland, the country had only begun to design its research agenda in 2008 and participation in the ERA-NET Scheme was largely motivated by research centres that were interested in some of the ERA-NET themes.

In general, participants recognised the importance of strategic planning for ERA-NET participation. One Austrian policy-maker declared that more strategic planning would have generated more benefits for Austrian participation. In Italy, there was the political ambition to be more strategic, thematic and international about investment in R&D when the ERA-NET call was first published in 2004, but this was not properly carried through to the operational level because of frequent changes in Government.

Suggested good practices for strategic planning[22]

- Ensuring effective involvement of senior policy-makers (e.g. programme owners) whilst keeping the bottom-up approach helps to bridge the gap between the strategic layers of the national R&D landscape and the operative, programme manager level where the former vets the involvement of the latter which then helps the latter to become fully involved at the operational, ERA-NET level.
- For research councils and public research organisations, an understanding of their degree of autonomy to set their own research agendas with respect to research domains and transnational collaboration, and "budgetary freedom" are important to enable functioning ERA-NETs, in particular joint calls.

3.4.2 Setting up the right organisational structure at national level

The organisational structures put in place in participant organisations varied widely which was also a function of the bottom-up nature of the scheme. Solutions included 'ear-marking' existing staff for handling participation; hiring new staff to deal exclusively with the ERA-NET; outsourcing the day-to-day management of the scheme to a third party (university, research organisation or private sector); and a mix of hiring, 'ear-marking' and/or outsourcing.

Examples of these approaches are outlined below with the mixed approach featuring under the other headings where applicable.

Ear-making of existing staff

Most participants made use of existing staff for managing the involvement in the ERA-NET scheme to some degree. The level of involvement of existing staff varied from relatively low levels right up to a full-time commitment. Among the EU15 Member State participants, Germany, Portugal, Italy, and the Netherlands made do largely with existing staff. Among the third countries Turkey made use of existing staff and in Croatia, the ministry trained five members of staff to become the National Contact Points for FP6 of which two dealt with the ERA-NET scheme.

Hiring new Staff

In Slovenia, the Ministry of Higher Education, Science and Technology (MHEST) hired eight new staff to deal with the management of the ERA-Net scheme and a three-man working group was established to deal with questions related to ERA-NETs. 16 out of the 20 Slovenian participants were based in the Ministry. Although new staff was recruited, existing staff also had their workloads increased. This was seen as necessary to respond to, and deal with, the ERA-NET tasks and its operation. In Austria additional staff was recruited specifically for some ERA-NETs, in many cases on a part-time basis. Additional, new staff was recruited both in Finland and France.

Outsourcing

In the case of the UK, a mixed approach was adopted with minimal input from existing staff and outsourcing of daily management. Participants from UK Government departments allocated about five per cent of their time from their workload to ERA-NET tasks. These participants attested that this minimal time, nonetheless, was used productively. Management and daily operations of ERA-NETs were outsourced to third parties. This was allegedly done by all the UK department participants. All interviewees claimed that this outsourcing proved to be effective and efficient and recommended it as a possible "good practice."

Suggested good practices for strategic planning

[22] Note that all the suggested good practices are based on their "practicability."

- Policy stakeholders could provide additional support to the participants from their own country. Additional support could come in the form of an appointment of a national point of contact from a department/ministry. It could also be in the form of flexibility by facilitating more time for the participant, if from a department/ministry, to conduct ERA-NET tasks properly. In the words of one applicant, "receive a mandate from the home base."
- Where participants are constrained in their workload to conduct the ERA-NET tasks outsourcing the daily operations of their participation to a third party could be an effective option.
- Availability of time so that coordinators can meet to exchange information and to discuss common problems, the solutions of which may help to improve (if needed) the running of the ERA-NET, is crucial to the success of ERA-NETs.

3.4.3 Setting up the right organisational structure at ERA-NET level

Even though the sub-deliverable focuses on the national structure for supporting ERA-NET participation, another area where there is scope for good practice dissemination and learning is around how best to structure the actual ERA-NETs.

During the field work interviews, several participants remarked on the composition of ERA-NET participants, stressing in particular, the commitment and knowledge of participants as both necessary and sufficient conditions for good practice. The problem of late deliverables and slow communication were identified as "annoyances" which contributed to less than optimal performance of some ERA-NETs. While in general most of the participants commented that members worked well together there was certainly a need for better practice in the selection of the "right" kind of partners.

Problems associated with the structuring of the ERA-NETs were exacerbated by the size of the consortia, which tended to be on the whole, rather large. Some participants admitted that a consortium of 19 or more had the high likelihood to suffer from a very mixed group of expertise, commitment and understanding of what collaborative research entails. Many participants suggested that clearer objectives of joint actions, calls or programmes, and "standardised rules" would follow more easily from a smaller sized ERA-NET. Several participants also asserted that more time at the outset of the ERA-NET should be set aside for setting up these common procedures.

Associated with the issue discussed above, the Austrian participant maintained that the flexibility to organise parallel calls in specific sub-themes and with variable partnerships in "broad theme" ERA-NETs, would have increased the effectiveness of Austrian participation by reducing the number of ERA-NETs in which the country was involved. The participant claimed that the small contributions and the resulting value of calls in some ERA-NETs were too small to recover the initial Commission contribution.

Suggested good practices for structuring ERA-NETs

- Careful selection of participants with a high level of expertise and knowledge, and commitment to the ERA-NET will help some way to the success of the ERA-NET.
- The creation of a clear management structure in which trust is built and mutual responsibility is assured within the consortium will lay a firm foundation for the running and performance of the ERA-NET.
- A smaller number of members seemed to allow for more optimum performance and better coordination of efforts, as smaller ERA-NETs were more able to deliver tasks in a timely fashion and importantly, facilitate better coordination and design of tasks, work plans and joint calls.
- The practice of extending participation to non-EU Member States should continue.
- An important pre-condition for success with an ERA-NET is that a good coordinator has a suite of competencies. These include management, diplomatic, problem-solving and communication skills.

3.5 Good practices around transnational research actions (SD26)[23]

Good practices were adopted for assessing and evaluating proposals. With regard to funding models, the national research landscape (including the Member State's funding policies and political constraints) defined practices. In the majority of cases this meant funding joint calls via virtual pots and targeting primarily participant countries' own researchers.

This section looks in particular at the guiding principles for, and good practice stemming out of, participation in joint calls and programmes including best solutions regarding topic formulation, length of calls, IPR and project financing.

Topic formulation

A well-defined procedure for developing topics was seen as a good practice by participants. The actual procedure and the emphasis on what mattered varied between types of ERA-NETs. Several participants saw a formalised procedure for defining call topics and the factoring in of common issues at European level, as well as taking into account complex interdisciplinary problems, as necessary. In essence, in the topic formulation it was seen as important to define the added value of doing 'this' at European level rather than channelling efforts through national programmes.
Best practice in matching programme objectives and project selection criteria included ensuring that Research Programmes combines both science and policy relevance so that it is socially responsible[24].

Moreover, Environmental ERA-NETs for instance involved users to a great extent in the formulation of topics which then had the additional benefit of maintaining a link between researchers and policy[25]. In one particular case under CRUE Flooding ERA-NET, it meant that researchers could support policy-makers with a response to flooding[26]. This was reinforced in the interviewees where a Finnish representative claimed that in at least two ERA-NETs, knowledge sharing between funding agencies and researchers had helped to define key future research topics.

Common language

Participants frequently listed differences in language and definitions as a barrier to understanding and collaboration. For example, the meaning of project, programme and R&D funding differed between participants and caused some confusion. For one partner, project meant the same as programme. For another R&D only meant funding of "home base" personnel; for another, R&D funding meant funding "15+ researchers' salaries." Some ERA-NETs realised this during implementation and developed glossaries of common terms.

The importance of a common language was not only important in terms of having a common understanding of definitions but also in communicating with potential beneficiaries. English was commonly used across and seemed to work well. Given the transnational nature of the projects funded, there was an expectation that researchers working together would be able to communicate in a common language such as English.

[23] The aim of sub-deliverable 26 (SD26) is to provide: guiding principles for all possible joint and trans-national research actions implemented e.g. joint calls and/or for joint programming, and best practices of implemented ERA-NET joint calls/programmes so far under FP6. Beside all practical arrangements for joint calls and/or for joint programming this should include a part describing best practice solutions concerning IPR issues of joint calls or programmes and solutions for the projects financed out of these joint activities.

[24] Dr Simon Gardener: The SKEP ERA-NET – a Commission-funded project working at the interface between Science and Policy.

[25] Olga Mashkina, SYKE, "Experiences of the environmental ERA-Nets in joint calls/transnational research programs", ERA-Net Helsinki Workshop, Oct 2008.

[26] Integrate, Consolidate and Disseminate European Flood Risk Management Research, D6-3: Review of experiences in the 1st CRUE Funding Initiative (1st Common Call) 2008.

Evaluation procedures

Good practice promoted by participants included using a two-step procedure for evaluation of proposals[27], particularly for larger funding. The first round of applications can then help to highlight what is being done in a field before the more promising projects are invited to submit a full proposal in round two[28].

Explicit selection criteria to encourage transnationality and the use of evaluators from other countries were seen as two key enablers for transnational cooperation in a survey of 127 national programmes[29].

In CIRCLE ERA-NET the Nordic and the Mediterranean countries took a different approach to their evaluation panels. Whereas the Nordic partners paid a fee for their evaluators, the Mediterranean partners did not[30].
When funding was assigned to specific topics of a call, good practice would be to restrict the evaluation by experts to the applications in the topic for which they were experts.

Some ERA-NETs have used preparatory information meetings prior to the expert panel meeting in order to discuss the evaluation criteria.

The evaluation process links to some extent to the timing of calls. Implementing calls were generally seen as a lengthy process where not always sufficient time was allocated for the application, particularly in the case of a 2 step process, but also for the actual evaluation, selection, the contract and funding phases.

Another conflict that arose in the actual implementation had to do with finding the right balance between openly formulated versus more restricted calls. Some ERA-NETs were in favour of restricted calls in order to reduce the number of applications whereas others favoured a more open approach. There were pros and cons of both approaches although the experience suggests that more restricted calls may help to structure the evaluation and selection process better.

Length of projects

Good practice was identified in terms of harmonising the length of calls to the same duration. This happened in response to some confusion by researchers and the standard duration of projects in one ERA-NET was set to 24 months after initially allowing free-reign.

Communication and information to applicants regarding the application process

ERA-NET participants underlined the need to maintain transparency about the application process with researchers and to provide applicants with timely and clear feedback (e.g. why applications were unsuccessful) but also to make sure that the call information is as clear as possible. Suggestions for improvements put forward by ERA-NET participants themselves included providing more information about national calls to applicants both in the call documentation and on the web site as well as using milestones and deliverables in application documents. Another good practice identified included providing Frequently Asked Questions (FAQs) to applicants on the web site. Were electronic application systems were provided, the feedback from beneficiaries was mixed although where these systems work they have the potential of streamlining the application process substantially.

[27] Ulrikka Geber, SLU (SE), Manuela Kienegger & Anita Silmbrod, BMLFUW (AT), "Coordination and implementation of future research topics with joint funding (WP 7)", CORE ORGANIC Meeting, Vienna, Sep 2007.
[28] Dr Simon Gardener: The SKEP ERA-NET – a Commission-funded project working at the interface between Science and Policy.
[29] VDI and Optimat: "Increasing the Impact of National Research Programmes through Transnational Cooperation and Opening - GOOD PRACTICE GUIDE".
[30] Markus Leitner, UBA-A,: "CIRCLE - Lessons learned".

Procedure for final selection including funding

This was seen as one of the trickiest areas for the implementation of joint calls by participants. It is also one area where practices varied substantially between ERA-NETs and sometimes even within individual ERA-NETs. For instance, in CIRCLE ERA-NET, the Nordic countries used an MoU as the guide for the calls whereas the Mediterranean countries in the same ERA-NET developed a specific framework to guide the call from start to finish[31].

Regarding funding of joint calls and programmes, it would appear that a good practice for funding is firstly to be aware of how government departments and research councils allocate research funding as this varied between participants. Often the funding of programmes was centralised to the Ministerial level overseeing the research area relevant to a particular ERA-NET. They were seldom able to contribute directly to the ERA-NETs joint calls, instead the bulk of funding channelled into these was made via contributions from research councils existing programme budgets. The extent to which they could contribute was often dependent on the level of flexibility and leverage these research councils had over their existing budgets.

Another good practice for funding collaborative research requires an understanding of the objectives of the research councils and their "budgetary freedom." This also requires knowledge of whether the funding of non-resident countries is permitted in such transnational collaborations. For instance, some UK Research Councils are beginning to fund non-resident researchers, primarily the travel and subsistence costs of the non-resident researcher. In certain cases, if a compelling case can be made, the salaries of the non-resident researcher may be funded as well. In France, some research institute could fund non-resident researchers or organisation if their research activities contributed to their own research priorities. The Netherlands and Belgian Flanders, given the shared language and proximity, non-national participants were made eligible for funding.

Moreover good practice for funding also suggests the need to understand the organisational structure of the research council of a participating country as well as levels of government. Are there research councils for the whole country? Or are there regional research councils that report to the "central" research council as in Germany? Such knowledge is important as it will then help to identify the appropriate research council for taking part in the ERA-NET. In other words, if there are regional research councils whose budgets are determined at the central level, then the participation of these regional councils may not be the right ERA-NET partner. A participant raised this issue in the context of selecting appropriate members for the ERA-NET. He explained that by careful selection of research councils the chances of knowing whether earmarked budgets is forthcoming for joint calls would be enhanced. This point echoes the need for careful selection of partners as noted elsewhere in the report.

In the UK there is only one "level" of research councils that served the whole country. UK research councils also have autonomy over their research budgets. This has facilitated the contribution of funding commitments to a real common pot for joint calls. In Norway, resources were set aside for administration and a limited amount was set aside for funding. The funding resource, however, increased over time.

In Finland, allocation of funding was based on national criteria in most of the cases. For ERA-NET, however, the Academy of Finland was able to contribute to and supported a common pot because legal obstacles, obstacles in funding decisions and monitoring. Regarding the virtual common pot model, Tekes (Finnish Funding Agency for Technology and Innovation) suggested that the best approach for funding in this model is to launch the calls nationally in every participating country, them run them in parallel, but not to integrate them. Whether this could be realistically implemented remained to be seen.

The Research Council of Norway reported that " a common pot could sometimes be the preferred collaboration model for Joint Calls, as it can be more efficient than a distributed pot" [virtual pot]." Several participants had suggested that the common pot model would be the most effective form of funding although they all recognised the difficulties in implementing it, largely in part, due to national laws, policies and organisational structures of funding agencies.

Portugal had no flexibility in allocating ring-fenced or specified funds to ERA-NETs. However in its contribution to the ERA-NET Scheme, it first obtained a pre-funding commitment from the board of

[31] Markus Leitner, UBA-A,: "CIRCLE - Lessons learned".

the funding agency. It was then able to receive the funding for ERA-NET. The Romanian participant suggested that narrowing the field of research could help avoid oversubscription of the call.

Hence good practice here would be considered some formalised procedure that covers the selection of criteria to be used and what will be fed back to applicants, even if the actual content may vary between ERA-NETs.
The role of a capable coordinator was reflected in the initial problem of devising a "formula" for contribution to a common pot for NORFACE in particular. Participants were at the outset unhappy with their designated portion of the contribution which was originally based on a percentage of R&D budgets as reported by Eurostat. Some EU15 Member States decried that this method for contribution biased them as they would have had to contribute a disproportionate share. A solution was eventually devised in which the GDP and the size of the population of each participating country were instead used to calculate the contribution. This resulted in a more equitable distribution of contribution. For instance, the UK contributed 24 per cent and Germany 27 per cent to the pot.

One way that ERA-NETs have tackled the problems surrounding the funding of calls has been to reduce the number of players involved. This has of course had the undesired consequence of limiting the funds being channelled into joint calls however, it is important to remember that there may be conflict between inclusion (involving as many as possible) and simplicity (the more partners involved, the more complex the funding becomes). The choice of funding model has been subject to the same kind of conflict between, on the one hand, a real common pot and on the other, complexity. In the majority of calls, a virtual post was used and was considered the best possible mode of funding given the structural and political problems associated with real common pots.

In addition to problems associated with the funding model or unclear procedures, too little time to discuss the calls nationally was seen as a hindrance to effective implementation.
Some themes, especially the more cross-cutting ones like Environment also struggled to get out of a vicious circle of "lack of themes no budget, without budget no involvement in theme development"[32].

Where suggestions were made with improving the operations of joint calls they were found in:

- the amount of time required to review the proposals;
- the tendency of some participants to withhold information or be reluctant to provide information ("piling up documents on a hidden extranet ");
- the lack of flexibility to revise plans when faced with unforeseen problems, for instance, in the objectives of a joint call when they become apparent that they may not be readily met by prospective bidders because of the breadth of the objectives or when original plans for the ERA-NET have changed because of participants' limitations/constraints ("revising plans according to the reality you meet - everything is not foreseen");
- the usefulness of providing feedback to unsuccessful bidders. This was not adopted by a majority of the ERA-NETs although MNT ERA-NET, for instance, had implemented the practice of doing so.

IPR

Dealing with the IPR issue appeared to be rather tricky as companies, for instance, SMEs, may not be willing to participate because of concerns over appropriation of their IP through participation in the ERA-NET scheme. This is not an unusual problem in collaborative research projects. However, some participants have said that Framework Programme IPR rules could apply while others have suggested that the project consortium should decide on what the rules should be. Other participants pointed out that IPR rules varied from ERA-NET to ERA-NET. For example, in Matera the decisions were made between the funding organisations whereas Bio-Energy and MNT ERA-NETs required an agreement from the research partners, which was a condition to obtain the funding.

Interviewees from France, Finland, Austria, and Slovenia reported problems to do with solving IPR-issues as having been important and something that could block transnational research and

[32] Olga Mashkina, SYKE, "Experiences of the environmental ERA-Nets in joint calls/transnational research programs", ERA-Net Helsinki Workshop, Oct 2008.

development activities. Examples included some private companies not being willing to participate in projects because of complex IPR issues and that reaching an agreement between funders was difficulty because of a lack of guidelines on how to treat this in the calls for instance with respect to the applications. On the other hand, an interviewee from ERASME as well as from Germany, Poland, and Romania thought that issues around IPR had been overstated and that it could be dealt with at within the consortia and/or the project level. An interviewee in the Netherlands took the view that subcontracting was an existing measure that provided a good means of maintaining clear accountability in terms of IPR. This was the practice in joint projects between Dutch and Flemish researchers where subcontracting ensured that IPR would benefit the Flemish side.

From the other sources it emerged that Road ERA-NET took the view that IPR should be equal across participants in the same ways as rights and responsibilities should be equal. They did not however press for equal shares of funding for calls[33].

Learning from other ERA-NETs and feedback from beneficiaries

The feedback from participants and in reviewing information posted on the web, it seems that ERA-NETs have looked at experiences of other ERA-NETs and tried to take into account lessons learnt elsewhere.

Also, as expressed by a Dutch beneficiary during fieldwork, one particular benefit of participating in a joint call was the opportunity to share know-how on a special technique available in other countries.

In the main, joint activities were conducted co-operatively by participants in the ERA-NETs. Participants in these activities remarked that in some ERA-NETs, for instance, in the International Co-operation ones such as ERA ARD (agriculture research for development) and EULANEST (European-Latin American Network for Science and Technology), the joint activities effectively broadened the scope of participation and activities because the former were able to include Southern countries (Africa and Asia), and the latter, the Latin American countries. Participants in these ERA-NETs claimed that the inclusion of these invited participants was beneficial to the ERA-NET and the invited participants. For instance, ERA ARD participants learnt about the concerns of the invitees who in turn learnt more about agriculture research. Participants in NORFACE launched a joint call on migration, a topic that would otherwise have been researched at the national level.

Many participants "judged" that ERA-NET joint activities worked best when their themes reflected national research priorities, where there were national experts on those areas of research, and when funding was secured from the outset of the ERA-NET. CO-REACH, which extended participation to leading Chinese research organisations and relevant Ministries, revealed the wide interest of the majority of EU15 Member States. "[I]t is possible to say that the output generated is the best when the theme is of great interest to all, when the mandate is clear, when the funding is available." In contrast, the Romanian expressed that it would be a good idea "to focus on applied research not covered by national programmes." This suggestion clearly implies the potential reduction of duplication but the overall views of participants seem to point to the importance of the alignment of national priorities with ERA-NET themes. Such congruence with national R&D interests seems to be a significant factor for participation in the ERA-NETs.

Several participants also suggested that clarity of objectives of the ERA-NET and those of the joint calls would reduce the time involved in eventual joint activities. Related to this suggestion, realistic time tables for delivery of ERA-NET deliverables and research findings from the joint calls was another idea advanced by these participants. Furthermore participants added that a good practice is to allow time for participants "to digest the wealth of information generated" in order for a common strategy for the ERA-NET (in this case, EULANEST) to be devised.

Clear processes for evaluation of proposals (peer review), and the organisation and administration of joint calls and other activities, were also identified as vital to their performance. Participants had pointed out that the varying procedures and application forms for joint calls were confusing particularly if they were involved in many ERA-NETs. This comment echoes the importance of standardised procedures. Associated with the management of joint calls participants also emphasised that application forms should be clear and unambiguous.

[33] Tom Warras, Finnish Road Administration Finnra: "Collaboration between National Road Administrations on Road Research Projects and Lessons Learnt Deliverable 11b", February 2008.

In conjunction with standardised procedures, several participants also noted that, given the diversity of actors in research funding across Europe, good practice guidelines should be developed across (a) clarity of objectives, (b) evaluation, (c) criterion for drafting and (d) administration of joint calls would help to mitigate conflicts of interest. Similarly, these participants suggested that guidelines for *managing* conflicts of interest should also be considered.

Suggested good practices around transnational research actions

- To improve the possibility of using real common pots it would be useful for the coordinator to understand how funding agencies are organised and how funds are made available for collaborative projects. Such information could be obtained at the outset of the ERA-NET from participants or through early visits to the relevant agencies.

- Associated with the recommendation on the choice of partners above, the coordinator should select the right "level" of research council to participate so as to enhance the possibility of contributions to a common pot.

- A handful of institutions with similar tasks and foci may well be able to use real common pots but if the objective is broad inclusion of countries and themes, the principle to push for harmonisation of rules is not as practicable as a virtual pot for which each country finances its institutions.

- The Coordinator and participants, via a management structure, should endeavour to establish clear objectives for joint activities and operational procedures to facilitate optimal performance. This should help to also remove confusion and time for administration.

- Common agreement on principles and procedures between participants on other issues than funding is paramount (e.g. joint guidelines, common evaluation procedures, common application form, joined up dissemination strategies, common language).

- Reduce the time currently taken for the evaluation of proposals, which could be helped by narrowing the focus of the calls.

- Reduce the European Commission bureaucracy required for the reporting and auditing procedures so as to allow time better spent directly on ERA-NET tasks.

- Attempt to reflect national research themes in themes for joint calls.

- Standardise the evaluation (peer review) criterion and processes.

- Build a realistic time table for delivery of ERA-NET deliverables and research findings from the joint calls.

- Keep the deliverables to a reasonable limit and not be too ambitious. Over extension of deliverables can result in non delivery or low quality outputs.

- Develop guidelines to manage conflict of interests.

- The suggestion for the introduction of a consistent and well-designed format and procedure for feedback to unsuccessful candidates in the joint calls was well noted. Systematic feedback is a normal procedure for the bidding process as unsuccessful candidates benefit from such feedback.

- For joint calls, the construction of a criterion for drafting joint calls, which should include clarity of their objectives and terms of reference, is good practice.

- The standardisation and simplification of information on applicant forms will make it easier for applicants responding to the joint calls and reduce the time spent on responding to their questions.

- A rigorous peer review criterion had been found to be immensely helpful in evaluating proposals for joint calls. This criterion should be uniformly used by all the ERA-NETs and

coordinators could agree on the "final" version which could then be adopted by the various ERA-NETs.

- IPR issues in collaborative projects can be tricky if not managed adequately. These issues are best clarified before launching a joint call for instance through making it clear in the application process. Rules could be made to reflect the Framework Programme IPR conditions which thus could avoid varying versions of IPR rules among the ERA-NETs. It could also be a commonly agreed framework by the ERA-NETs. Compliance with an agreed IPR framework could be made mandatory.

- Glossaries of common terms are necessary in order to ensure that definitions used in the ERA-NETs are the same.

3.6 Good practices around ERA-NET information sharing and exchange (SD27)[34]

Many good practices for information sharing and exchange were identified.

This section looks at the guiding principles for information sharing and exchange and what good practice has come out of the FP6 ERA-NET scheme.

Several key issues pertaining to the exchange of practices and information have been identified as being important. The main levels at which communication was important involved intra-NET communication between members of the same ERA-NET, communication between ERA-NET participants in the same country and between ERA-NETs and beneficiaries.

Overall, participants expressed satisfaction with the operation of the ERA-NETs and emphasised the importance of careful selection of participating members. Satisfaction primarily referred to the regular meetings, the willingness to co-operate and the distribution of tasks according to the interests, capabilities and priorities of the national participants of the individual members[35].

Associated with the deliberated assignment of tasks was the role of the ERA-NET coordinator. Here too participants attested to the importance of a capable coordinator who had "the ability to communicate, ensure the proper information dissemination, identify and resolve problems and overlaps, plan, prepare proposals and to push the agenda when needed." This, however, was not a uniform characteristic of the ERA-NETs, but where it was, the ERA-NET performed smoothly.

Effective Intra-NET communication

One of the main drivers for participating in the ERA-NET scheme, as has been explored in other sections of the report and by interviewees in e.g. Italy, France, the UK and Austria, was the opportunity it provided for learning and sharing of best practice between funders in different countries.

Once the scheme got off the ground, it was very much down to the consortia in every ERA-NET to decide how best to communicate internally including how often to meet and what to focus on. Between participants', activities to enable communication and exchange of information hence ranged from more legalistic and formal solutions (e.g. Memoranda of Understanding (MoUs), formats or processes for collecting information, synthesising it and sharing it in a common format) to more informal sharing of knowledge and expertise through networking and learning from each other through interaction.

According to a UK interviewee, within AirTN there is a Memorandum of Understanding between seven European Countries to promote collaboration in military and civil aerospace research. Moreover, Croatia's cooperation in the SEE-ERA-NET led to acknowledgement and further commitment to European R&D activities by the government including a Memorandum of Understanding between the Ministers Responsible for Education, Science and Research in 5 South Eastern European Countries.

Regarding systematic exchanges and synthesis of information, ERA-NET participants have commonly used surveys to determine the structures of national systems of other participants. Initially this was often done in an uncoordinated way putting strain on other participants to respond to multiple surveys. Over time it seems that lessons were learnt and survey and/or comparative data collection exercises have been undertaken in a more coordinated way and information synthesised into common formats. For instance, mapping and benchmarking exercises such as a survey of the networking landscape (for instance, AirTN ERA-NET) and comparative analyses of partner organisations (several ERA-NETs, such as ASPERA-NET, NORFACE and PV ERA-NET) were found to be useful by interviewees. Similarly a directory of national activities in each country (again several ERA-NETs such as CO-REACH) greatly contributed to knowledge of the R&D

[34] The aim of sub-deliverable 27 (SD27) is to provide: guiding principles for information exchange/sharing (e.g. use of CERIF standard) summarising the best practices of the most commonly implemented ERA-NET information exchange practices so far under FP6.

[35] For instance, in one case, an expert from one country had to give up a certain task and hand it over to an expert in Slovenia who had more expertise and capacity to undertake it. In other cases some UK participants were tasked with the design of the peer review criterion and process to which all participants had attested a need and their learning from it. Participants suggested that these good practices should be continued.

activities of participating countries. These were identified as good practices and should be adopted for the next generation of ERA-NETs as such information would also help with the identification of future themes.

Despite this, more can be done to further synthesise information more consistently, particularly across ERA-NETs. Hopefully the learning platform will play an important role in this.
Some ERA-NETs benefited from a comprehensive, well prepared, common information sharing website where all relevant information was stored and well organised. This ensured a high level of information accessible to participants. Some ERA-NETS were established with the specific intention of finding good practice, for instance, in NORFACE, where several reports had been produced showing differences in administrative procedures and discussions on possible good administrative practices. Likewise FORSOCIETY was established for mutual learning on foresight activities in different countries.

A well designed website also acted as a document management tool, for example, in the preparation of the roadmaps, and participants who felt that their ERA-NET had such a website, for instance, ASPERA-NET, admitted that it was most useful for information exchanges and document control. Furthermore, a website publicises research activities to the EU and beyond and also promotes the visibility of the particular ERA-NET.

One participant expressly remarked that he was "not impressed by CERIF as this is controlled by one of two companies, expensive and does the same thing as many others." He further explained that CERIF is not a cost-effective approach to sharing information because there are other available options, including the Internet. However, most interviewees had no knowledge of CERIF.
Regular meetings were unanimously identified as a condition for necessary information sharing. One participant suggested an increased use of video conference facilities to allow more frequent meetings for information sharing. Another interviewee suggested meetings between coordinators could help further information exchange.

A few participants suggested that a national open day to publicise the ERA-NET's activities proved very helpful. In one particular case, ASPERA-NET, this event attracted key international players, for instance, China, Japan and the U.S. and resulted in fruitful discussions for possible collaboration between the ERA-NET's participants and these countries.

Many participants attested to the value of a national directory of experts in the various participating countries and research programmes in addition to roadmaps of research areas and surveys of activities in the thematic area. Participants explained that a national directory of experts was helpful for identification of partners/researchers for future collaborative research projects/programmes, whether it be for the ERA-NET scheme or any other collaborative initiative.

Visits to partner countries were also found to be particularly useful as this helped participants better understand the different organisations' procedures and build trust between the partners. Such visits also provided an opportunity to learn more about the "sister-organisations" which was seen as useful for direct learning more about national regulations and policies for funding. Research councils and funding agencies who introduced this practice of visiting other countries declared that this good practice should continue into the next generation of ERA-NETs. Understanding of how such funding agencies operate is an underpinning condition for effective joint calls. It was also found that ERA-NETs which had been built on pre-existing collaboration had been particularly influential in the better running of the ERA-NET. Examples of these included Bonus, NORFACE and WoodWisdom NET.

Effective communication between participants at National level

Through the face-to-face interviews, it became clear that coordination at national level in terms of sharing of information and knowledge between national participants in different ERA-NETs left a lot to desire particularly where participation was highly decentralised and/or compartmentalised by themes. According to one Austrian interviewee, the bottom-up nature of the scheme meant that Austrian participants developed guidelines for participation largely in isolation of one another. Sharing of knowledge and a more strategic view of ERA-NET participation only emerged several years into implementation. It is perhaps not surprising that fragmentation within national structures reflect the degree of fragmentation across themes.

Effective external communication

Good practices have also been identified in terms of channels for communicating effectively with beneficiaries. There are examples of ERA-NETs studying who their stakeholders were in order to maximise outreach via the 'right' kinds of communication channels[36]. For instance, researchers that were new to transnational cooperation or advisers benefitting from the research undertaken could not as easily be reached via the Internet or web-based international networks as researchers who were already well-networked internationally. Hence different kinds of outreach mechanisms needed to be considered.

A good practice that emerged from the ERA-NETs involved setting up of a central contact point (e.g. call secretariat) and, when this was not practicable, to at least ensure communication and information exchange between individual National Contact Points and Frequently Asked Questions.

More streamlined web-sites on all ERA-NET activities have been called for by the Commission[37] and participants. This is an area where quality and consistence has varied significantly with some ERA-NETs providing fully adapted web-based application system via their webs whereas others have provided only static information portals.

Benefits of effective communication

As important as communication in itself, is what can actually be achieved through effective communication. One German participant highlighted this during the field work by saying that ERA-NETs helped to build up trust and foment cooperation so that for instance in the life sciences area, in one particular instance, funding agencies had started to collaborate under ERA-NET when they had primarily been competing with one another beforehand. This increased notion of cooperation between funders and the larger size of calls were directly attributable to the ERA-NET scheme. Development of trust as a direct benefit was also mentioned by an Austrian interviewee.

The shared view of Portuguese interviewees was that the flexibility and light administration of the scheme had stimulated dialogue and articulation between agencies, and deepened relations between agencies, as well as encouraged new bilateral / multilateral agreements beyond the scheme. An example given was an Iberian collaboration on a nano-technology lab.

Interviewees also found that learning about potential legal barriers in different countries and how funding is made available for collaborative research had helped participants to understand how best to collaborate. The establishment of personal contacts via participation was also noted as a significant contribution to the performance of the ERA-NET.

Suggested good practice recommendations

- Some form of more guidelines from the Commission towards harmonisation of procedures would help to make sure that the diversity in systems between Member States does not transformed into a diversity of systems between thematic areas.
- Continue with the practice of regular meetings as this facilitates communication, fosters close working relations, and helps to create personal contacts.
- Continue with the practice of mapping research activities of participating countries as this provides knowledge of mutual research interests as well as themes for future research.
- Continue with the construction of websites as a dissemination and information exchange tool but ensure that websites is well-designed, regularly updated and provide clear and comprehensive information about the ERA-NET. A website is a passive tool for dissemination, and unless it is well-constructed, it will not receive many "hits."

[36] Signe Herbers Poulsen, DARCOF/Institute for Information and Media Studies, University of Aarhus: "What are the challenges of communicating research projects trans-nationally and how do you manage this communication?", CORE ORGANIC Meeting, Vienna Sep 2007.
[37] Robert Jan-Smits, Diretcor DG RTD: "Launching Event ERA-NET Learning Platform & NetWatch".

- Use the website as a document management tool, for instance, for the preparation of roadmaps.

- Continue with the production of roadmaps, surveys and directories of national research activity, programmes and experts.

- Institute stringent procedures for timely deliverables and provision of information that is deemed essential to the running of the ERA-NET.

- Introduce flexibility into objectives or work plans as rigidity has the potential to produce sub-optimal results or activities.

- Explain to SMEs the benefits of participating in the ERA-NET Scheme with the aim of encouraging their participation.

- The creation of roadmaps of research activities, national surveys and directories of experts were found to be beneficial as these provided knowledge of mutual research interests as well as themes for future research and collaboration.

- The introduction of visits to partnering countries as a standard measure to learn more about the relevant/corresponding organisation of these countries could be introduced to all the ERA-NETs. Such visits were reported as having being particularly useful to participants as they allowed direct insight into the operating procedures of other participant organisations, knowledge which then helped decisions around appropriate funding models to adopt.

- Holding national open days for the ERA-NETs, and through a well-designed website, have the potential to attract international researchers outside the EU.

Summary of key recommendations

Recommendations are targeted at the national policy stakeholder, coordinator and participants.

*Title of recommendation***:** *Real support from policy-makers*

Target audience: National policy stakeholders

Purpose of recommendation: Allows confidence to participate fully in the ERA-NET

Policy stakeholders could provide additional support to the participants from their own country. Additional support could come in the form of an appointment of a national point of contact from a department/ministry. It could also be in the form of flexibility by facilitating more time for the participant, if from a department/ministry, to conduct ERA-NET tasks properly. In the words of one applicant, "receive a mandate from home base."

Title of recommendation: The need for competencies and time

Target audience: Coordinator

Purpose of recommendation: To set the basis for optimal performance of the ERA-NET

An important pre-condition for success with an ERA-NET is that a good coordinator has a suite of competencies. These include management, diplomatic, problem-solving and communication skills.

Availability of time so that coordinators can meet to exchange information and to discuss common problems, the solutions of which may help to improve (if needed) the running of the ERA-NET, is crucial to the success of ERA-NETs.

Title of recommendation: Selection of partners/participants

Target audience: Coordinator

Purpose of recommendation: To ensure optimal performance of the ERA-NET

Careful selection of participants with a high level of expertise and knowledge, and commitment to the ERA-NET may help some ways to the success of the ERA-NET.

Title of recommendation: Forming a smaller than 19 member ERA-NET

Target audience: Coordinator

Purpose of recommendation: To ensure optimal performance of the ERA-NET

A smaller ERA-NET has the greater potential to deliver tasks in a timely fashion and importantly, facilitates better coordination and design of tasks, work plans and joint calls.

Title of recommendation: Funding model

Target audience: Coordinator

Purpose of recommendation: To optimise collaboration

To improve the possibility of using real common pots it would be useful for the coordinator to understand how funding agencies are organised and how funds are made available for collaborative projects. Such information could be obtained at the outset of the ERA-NET from participants or through early visits to the relevant agencies.

Associated with the recommendation on the choice of partners above, the coordinator should select the right "level" of research council to participate so as to enhance the possibility of contributions to a common pot.

Title of recommendation: Structural organisation of the ERA-NET

Target audience: Coordinator and participants

Purpose of recommendation: To ensure optimal performance of the ERA-NET

The creation of a clear management structure in which trust is built and mutual responsibility is assured within the consortium will lay a firm foundation for the running and performance of the ERA-NET.

The Coordinator and participants, via a management structure, should endeavour to establish clear objectives for joint activities and operational procedures to facilitate optimal performance.

The Coordinator and participants, via a management structure, should standardise procedures for joint activities to remove confusion and time for their administration.

Where participants are constrained in their workload to conduct the ERA-NET tasks outsourcing the daily operations of their participation to a third party could be an effective option.

Title of recommendation: Operational efficiency

Target audience: Coordinators and participants

Purpose of recommendation: To ensure optimal performance of the ERA-NET

The practice of visits to relevant organisations of participating countries by some participants was unanimously reported as being very useful as they allowed direct learning of the operating procedures of these organisations. Such knowledge also helps the decision on the funding model.

The creation of roadmaps of research activities, national surveys and directories of experts were found to be beneficial as these provided knowledge of mutual research interests as well as themes for future research and collaboration.

Title of recommendation: Joint activities

Target audience: Coordinators and participants

Purpose of recommendation: To improve the performance of joint activities

The suggestion for the introduction of a consistent and well-designed format and procedure for feedback to unsuccessful candidates in the joint calls was well noted. Systematic feedback is a normal procedure for the bidding process as unsuccessful candidates benefit from such feedback.

For joint calls, the construction of a criterion for drafting joint calls, which should include clarity of their objectives and terms of reference, is good practice.

The standardisation and simplification of information on applicant forms will make it easier for applicants responding to the joint calls and reduce the time spent on responding to their questions.

A rigorous peer review criterion had been found to be immensely helpful in evaluating proposals for joint calls. This criterion should be uniformly used by all the ERA-NETs and coordinators could agree on the "final" version which could then be adopted by the various ERA-NETs.

IPR issues in collaborative projects can be tricky if not managed adequately. These issues are best clarified before launching a joint call for instance through making it clear in the application process. Rules could be made to reflect the Framework Programme IPR conditions which thus could avoid varying versions of IPR rules among the ERA-NETs. It could also be a commonly agreed framework by the ERA-NETs. Compliance with an agreed IPR framework could be made mandatory.

Title of recommendation: Information and expertise exchange

Target audience: Coordinator and participants

Purpose of recommendation: To ensure a cost efficient and high level of information and expertise exchange

The construction of a well-designed website is useful as a dissemination and information exchange tool. The website has to be "user-friendly" and contain clear and comprehensive information about the ERA-NET. It also needs to be refreshed regularly. A website is a passive tool for dissemination and unless it is well-constructed and up-to-date, it will not receive many "hits."

The introduction of visits to partnering countries as a standard measure to learn more about the relevant/corresponding organisation of these countries could be introduced to all the ERA-NETs. Such visits have been found to be particularly useful. As noted in the recommendation for "funding model" and "operational efficiency" such visits can yield valuable information on how funds are allocated for collaborative projects.

Holding national open days for the ERA-NETs, and through a well-designed website, have the potential to attract international researchers outside the EU.

Annexes: Stakeholders and materials consulted

Field work inputs

The following table shows the organisations, ERA-NETs, and thematic areas associated with ERA-NET coordinators, participants, and beneficiaries interviewed during the country visits[38].

Table 1– Coordinators, participants, and beneficiaries interviewed as part of the fieldwork

Country	Organisation	ERA-NET	Theme
Austria	Austrian Energy Agency	ERA-NET BIOENERGY	Energy
Austria	BMVIT	ERA-STAR REGIONS	Transport
Austria	BMVIT	ERABUILD	Industrial Technologies and SMEs
Austria	FFG	AirTN	Transport
Austria	FFG	PV-ERA-NET	Energy
Austria	FWF	ERA-CHEMISTRY	Fundamental Sciences
Austria	FWF	PathoGenoMics	Life Sciences
Austria	Umweltbundesamt (Federal Environment Agency, Austria)	IWRM.Net-CA	Environment
Croatia	HIT	ERA-IB	Life Sciences
Croatia	MZOS	SEE-ERA-NET	INCO
Croatia	University Zagreb	SEE-ERA-NET	INCO
Finland	Academy of Finland	NORFACE	Social Sciences and Humanities
Finland	Academy of Finland	CO-REACH	INCO
Finland	Academy of Finland	ERA-CHEMISTRY	Fundamental Sciences
Finland	AKA	HERA	Social Sciences and Humanities
Finland	Baltic Organisations Network for Funding Science	BONUS	Environment
Finland	Church Research Institute, Finland	NORFACE	Social Sciences and Humanities
Finland	Finnish Ministry of Transport and Communications	ERA-NET TRANSPORT	Transport
Finland	Technical research Centre of Finland	MATERA	Industrial Technologies and SMEs
Finland	Tekes	MNT ERA-NET	Industrial Technologies and SMEs
Finland	Tekes	ERA-NET BIOENERGY	Energy
Finland	Tekes	MATERA	Industrial Technologies and SMEs
Finland	The Finnish Environment Institute	CIRCLE	Environment
France	Agence de l'Environnement et de la Maitrise de l'Energie	PV-ERA-NET	Energy

[38] It is important to note that the number of entries in the table does not necessarily represent the number of interviews completed, since it is sometimes the case that a single individual is involved in more than one ERA-NET, while in some cases a number of individuals in the same organisation could be involved in the same ERA-NET. This is not reflected in the table.

Country	Organisation	ERA-NET	Theme
France	Agence Nationale de la Recherche	NEURON	Life Sciences
France	Agricultural Research Centre for International Development	ERA-ARD	INCO
France	CNRS	ASPERA	Fundamental Sciences
France	CNRS	ERA-CHEMISTRY	Fundamental Sciences
France	Ifremer	ECORD	Environment
France	Institut Francais de Recherche pour l'Exploration de la Mer	MARINERA	Environment
France	Ministere des Affaires Etrangeres	ERA-ARD	INCO
France	OSEO	EUROTRANS-BIO	Life Sciences
France	Université de Bordeaux	ERA-CHEMISTRY	Fundamental Sciences
Germany	Bundesministerium für Bildung und Forschung	ASPERA	Fundamental Sciences
Germany	Bundesministerium für Bildung und Forschung	EULANEST	INCO
Germany	Bundesministerium für Wirtschaft und Technologie	HY-CO	Energy
Germany	Bundesministerium für Wirtschaft und Technologie	AirTN	Transport
Germany	DFG	ERA-CHEMISTRY	Fundamental Sciences
Germany	DFG	NORFACE	Social Sciences and Humanities
Germany	DLR	AirTN	Transport
Germany	DLR	EULANEST	INCO
Germany	Forschungszentrum Juelich GmbH	INNER	Energy
Germany	Forschungszentrum Juelich GmbH	ERASysBio	Life Sciences
Germany	Forschungszentrum Juelich GmbH	WOODWISDOM	Industrial Technologies and SMEs
Germany	VDI/VDE Innovation + Technik GmbH	EraSME	Industrial Technologies and SMEs
Italy	Agenzia per la Protezione dell'Ambiente e per i Servizi Tecnici'	CRUE	Environment
Italy	Centre of Culture for Engineering of the Plastics	MANUNET	Industrial Technologies and SMEs
Italy	Instituto Nazionale di Astrofisica	ASTRONET	Fundamental Sciences
Italy	Istituto Nazionale di Ricerca Metrologica	iMERA	Industrial Technologies and SMEs
Italy	Istituto Superiore di Sanita	PRIOMEDCHILD	Life Sciences
Italy	Ministero dell'Ambiente e della Tutela del Territorio e del Mare	SKEP	Environment
Italy	Ministero dell'Universita e della Ricerca	HY-CO	Energy
Italy	Ministero dell'Universita e della Ricerca	MATERA	Industrial Technologies and SMEs
Italy	Ministero dell'Universita e della Ricerca	ACENET ERA-NET	Industrial Technologies and SMEs
Italy	Ministero dell'Universita e della Ricerca	BIODIVERSA	Environment
Italy	Ministero dell'Universita e della	AirTN	Transport

Country	Organisation	ERA-NET	Theme
	Ricerca		
Italy	Ministero dell'Universita e della Ricerca	ERA-PG	Life Sciences
Italy	Ministero dell'Universita e della Ricerca	EUROPOLAR	Environment
Italy	Regione Emilia Romagna - Agenzia Sanitaria Regionale	CoCanCPG	Life Sciences
Italy	Regione Piemonte - Productive Activities Directorate	MANUNET	Industrial Technologies and SMEs
Italy	Regione Toscana	ERA-STAR REGIONS	Transport
Italy	United Nations Interregional Crime and Justice Research Institute	EU-SEC	Social Sciences and Humanities
Netherlands	Ministry of Economic Affairs	ERA-NET BIOENERGY	Energy
Netherlands	Ministry of Economic Affairs	AirTN	Transport
Netherlands	Nederlandse Organisatie voor Wetenschappelijk Onderzoek	NORFACE	Social Sciences and Humanities
Netherlands	Raad van Geneeskundig Functionarissen/Geneeskundige Hulpverlening bij Ongevallen en Rampen in Nederland	HESCULAEP	Life Sciences
Netherlands	SenterNovem	SUSPRISE	Industrial Technologies and SMEs
Netherlands	Stiching voor Fundamenteel Onderzoek der Materie	ASPERA	Fundamental Sciences
Netherlands	The Royal Netherlands Academy of Arts and Sciences	HERA	Social Sciences and Humanities
Netherlands	The Royal Netherlands Academy of Arts and Sciences	CO-REACH	INCO
Norway	Norwegian Public Roads Administration	ERA-NET ROAD	Transport
Norway	The Research Council of Norway	NORFACE	Social Sciences and Humanities
Norway	The Research Council of Norway	FORSOCIETY	Social Sciences and Humanities
Norway	The Research Council of Norway	ETRANET	Industrial Technologies and SMEs
Norway	The Research Council of Norway	MARINERA	Environment
Norway	The Research Council of Norway	AMPERA	Environment
Norway	The Research Council of Norway	MNT ERA-NET	Industrial Technologies and SMEs
Norway	The Research Council of Norway	CO-REACH	INCO
Norway	The Research Council of Norway	FENCO-ERA	Energy
Poland	Cracow University of Technology	MNT ERA-NET	Industrial Technologies and SMEs
Poland	National Centre for Research and Development	ASTRONET	Fundamental Sciences
Poland	National Centre for Research and Development	MARINERA	Environment
Poland	National Centre for Research and Development	NEURON	Life Sciences
Poland	National Centre for Research and Development	CRUE	Environment
Poland	National Centre for Research and Development	MARTEC	Industrial Technologies and

Country	Organisation	ERA-NET	Theme
			SMEs
Poland	National Centre for Research and Development	MNT ERA-NET	Industrial Technologies and SMEs
Poland	National Centre for Research and Development	ERA-NET TRANSPORT	Transport
Poland	National Centre for Research and Development	AirTN	Transport
Poland	National Centre for Research and Development	WORK-IN-NET	Social Sciences and Humanities
Poland	National Centre for Research and Development	CORNET	Industrial Technologies and SMEs
Poland	Technical University of Lodz	MNT ERA-NET	Industrial Technologies and SMEs
Portugal	Cabinet of the Ministry of the Interior	EU-SEC	Social Sciences and Humanities
Portugal	Foundation of the Faculty of Sciences of the University of Lisbon	CIRCLE	Environment
Portugal	Foundation of the Faculty of Sciences of the University of Lisbon	AirTN	Transport
Portugal	Fundacao para a Ciencia e a Tecnologia (FCT)	PathoGenoMics	Life Sciences
Portugal	Fundacao para a Ciencia e a Tecnologia (FCT)	FENCO-ERA	Energy
Portugal	Fundacao para a Ciencia e a Tecnologia (FCT)	EULANEST	INCO
Portugal	Fundacao para a Ciencia e a Tecnologia (FCT)	ASPERA	Fundamental Sciences
Portugal	Fundacao para a Ciencia e a Tecnologia (FCT)	BIODIVERSA	Environment
Portugal	IPATIMUP	PathoGenoMics	Life Sciences
Portugal	IST	CIRCLE	Environment
Romania	National Authority for Scientific Research (ANCS)	SEE-ERA-NET	INCO
Romania	National Center for Management Programmes (CNMP/NCPM)	NEURON	Life Sciences
Romania	National Center for Management Programmes (CNMP/NCPM)	EUROPOLAR	Environment
Romania	National Center for Management Programmes (CNMP/NCPM)	MANUNET	Industrial Technologies and SMEs
Romania	Politehnica University of Bucharest	MNT ERA-NET	Industrial Technologies and SMEs
Romania	Romanian Academy	FORSOCIETY	Social Sciences and Humanities
Romania	Romanian Space Agency	AirTN	Transport
Russia	Arctic And Antarctic Research Institute Of Roshydromet (AARI)	EUROPOLAR	Environment
Russia	RFBR	BONUS	Environment
Slovenia	Ministry of Higher Education, Science and Technology	HY-CO	Energy
Slovenia	Ministry of Higher Education, Science and Technology	MNT ERA-NET	Industrial Technologies and SMEs
Slovenia	Ministry of Higher Education, Science and Technology	MATERA	Industrial Technologies and SMEs

Country	Organisation	ERA-NET	Theme
Slovenia	Ministry of Higher Education, Science and Technology	ERA-STAR REGIONS	Transport
Slovenia	Ministry of Higher Education, Science and Technology	ERA-SPOT	Industrial Technologies and SMEs
Slovenia	Ministry of Higher Education, Science and Technology	CORNET	Industrial Technologies and SMEs
Slovenia	Ministry of Higher Education, Science and Technology	ERA-SME	Industrial Technologies and SMEs
Slovenia	Ministry of Higher Education, Science and Technology	SEE-ERA-NET	INCO
Slovenia	Public Health Institute of Ljubljana	HESCULAEP	Life Sciences
Slovenia	University of Ljubljana	iMERA	Industrial Technologies and SMEs
Turkey	Middle East Technical University	FORSOCIETY	Social sciences and humanities
Turkey	Ministry of Agriculture and Rural Affairs, General Directorate of Agricultural Research	EUPHRESCO	Life Sciences
Turkey	Scientific and Technical Research Council of Turkey (TUBITAK)	ETRANET	Industrial technologies and SMEs
Turkey	Scientific and Technical Research Council of Turkey (TUBITAK)	URBAN-NET	Environment
UK	Department for Business, Enterprise & Regulatory Reform	PV-ERA-NET	Energy
UK	Department for Business, Enterprise & Regulatory Reform	AirTN	Transport
UK	Department for Environment, Food and Rural Affairs	CORE-ORGANIC	Life Sciences
UK	Department for International Development	ERA-ARD	INCO
UK	Department of Communities and Local Government	FORSOCIETY	Social Sciences and Humanities
UK	Economic and Social Research Council	NORFACE	Social Sciences and Humanities
UK	Engineering and Physical Sciences Research Council	COMPLEXITY NET	Fundamental Sciences
UK	Natural Environment Research Council	INNER	Energy
UK	Science and Technology Facilities Council	ASPERA	Fundamental Sciences
UK	The Royal Society of London for Improving Natural Knowledge	CO-REACH	INCO

The table below reflects the national policy stakeholders interviewed during the fieldwork.

Table 2 - National policy stakeholders interviewed as part of the fieldwork

Country	Number of stakeholders
Austria	3
Croatia	1
Finland	3
France	3
Germany	2

Country	Number of stakeholders
Italy	3
Netherlands	3
Norway	2
Poland	2
Portugal	3
Romania	1
Russia	1
Slovenia	2
Turkey	2
UK	3

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