NETWATCH - Development of a Central Information Platform on Transnational R&D Programme Collaboration - Operational Phase

Deliverable 3.2.5

NETWATCH Mapping and Monitoring: Fifth Exercise

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Abbreviations and Acronyms

ADEME – Agency for Environment and Energy Management, France

ANR – National Research Agency of France

BMBF – Federal Ministry of Education and Research, Germany

BMBF-HR – Health Research: Scientific Research for the People, Germany.

DG RTD – Directorate General for Research & Innovation

EC – European Commission

EPSRC – Engineering and Physical Sciences Research Council, the United Kingdom

EU – European Union

FP6 – Sixth Framework Programme

FP7 – Seventh Framework Programme

H2020 – HORIZON 2020

HEI – Higher Education Institution

ICT – Information and Communication Technologies

JPI – Joint Programming Initiative

NCBIR – National Centre for Research and Development (Poland)

NCBiR – National Centre for Research and Development of Poland

PRO – Public Research Organisation

PSA – Parent or Stand Alone (when referring to organisations or programmes)

RCN – Research Council of Norway

R&D – Research and Development

RTO – Research Technology Organisations

SME – Small and Medium Sized Enterprises

SRA – Strategic Research Agenda

SVD – Strategic Vision Document

TUBITAK – The Scientific and Technological Research Council of Turkey

EXECUTIVE SUMMARY

The work presented in this report provides a descriptive analysis of the networks included in the NETWATCH database (i.e. ERA-NETs, ERA-NET Plus, Article 169/185s, Joint Programming Initiatives, and self-sustaining networks). The report monitors the landscape of transnational collaboration schemes and provides an analysis of key aspects of research programme cooperation within Europe. This builds on previous reports and includes time series analysis to provide an indication of the evolution of programme cooperation within the European Research Area (ERA). The current report focuses on those networks active in September 2013. The cohort comprises 78 active networks: 43 FP7 funded ERA-NETs; 10 FP7 funded ERA-NET Plus; four FP7 funded Article 169/185 networks; one FP6 funded Article 185 action: 10 self-sustaining networks; and, for the first time, 10 Joint Programming Initiatives (JPIs).

The coordinators of active networks are requested to provide the required information on their networks via the on-line NETWATCH information platform. To address the data deficiencies identified in earlier mapping and monitoring reports, extra efforts to complete and update the information have been made. In addition to coordinator contact, this report incorporates complementary information on joint call budgets collected by the European Commission Directorate General for Research and Innovation.

Highlights:

Network participation patterns

- The number of active networks has remained stable since 2008, ranging between 77 and 82. Although 108 networks have finalised their activities, new networks, including those that are continue the activities of former networks, have been launched.

- The overall level of network participation[1] has also changed very little. While the number of organisations involved in ERA-NETs decreased from 403 to 375 since 2012, the number of organisations involved in ERA-NET Plus actions has increased from 66 to 92 and in Article169/185 networks from 87 to 95. In other words, organisations with experience in European collaborative research continue their activities, often through other network types. Many of these organisations participate in only one network (41 in 2012 and 64 in 2013), and a substantial number of organisations are involved solely in ERA-NET Plus actions.

- The annual increase in the overall number of participations in self-sustaining networks is 17%, while the overall number of organisations involved in these networks has decreased. This suggests that with the accumulation of experience the propensity to participate in self-sustaining networks has increased, but at the same time is becoming more concentrated. For example, the Polish organisation (NCBiR) participates in five self-sustaining networks while 25 organisations from other countries are also involved in more than one self-sustaining network.

- The total numbers of participating countries and organisations have not significantly changed. 470 organisations and 56 countries participated in active networks in 2012, compared with 473 and 52 respectively in 2013. Over the past year, the average number of

[1] Network participation refers to the number of organisations involved in active networks, which can exceed the overall number of organisations as one organisation can participate in different networks.

countries per active network has decreased slightly from 14 to 13.4 although the average number of organisation per active network has increased from 17 to 18.

- The highest levels of country involvement in September 2013 were Germany (88% of networks), France (79%), Spain (72%), the United Kingdom (68%), Austria (66%), Belgium (66%), the Netherlands (63%), Italy (56%), Sweden (54%), Finland (53%) and Poland (53%). The first seven of these countries have continually had this high level of involvement, taking a central role in networks since 2010. Compared to the previous year, national participation is increasing: the average number of networks in which an individual country participates has increased to 17.5 from 15.6 in 2012.

- The involvement of newer Member States and Associated Countries is generally lower than the EU 15 countries. On the one hand, the more experienced countries have intensified their participation: participating in more networks and represented by more organisations. On the other hand, the overall number of participant countries in active networks has decreased. In addition, the maximum number of network participations for a single organisation has also increased from 26 to 30 over the past year. This situation points to differences in the level of experience of organisations in participating in transnational programme collaborations. In addition, some countries may not have the required resources or spread of expertise necessary to participate in all the networks.

- The *variable geometry* of the European research landscape is again evident, as observed in the previous mapping and monitoring exercises. Although national organisations use different structures and strategies, ERA-NETs are designed to provide an adequately flexible framework for different types of organisations to participate in European research programme collaboration. For example, Switzerland is represented by 17 organisations and participated[2] in 32 networks whereas only three Turkish organisations participated in the same amount of networks. This variation was also observed for the top participant countries. The United Kingdom with 29 organisations had 67 network participations while 28 German organisations achieved 111 participations.

- There are 10 JPIs that are newly included in NETWATCH. The composition and operation of JPIs is quite different from the other networks. Firstly, the average number of countries involved in JPIs (19.9) and the average number of organisations (30.4) are much higher than all other schemes. It is notable that 75% of all participant countries (27 out of 36) are represented in JPND. It is followed by JPI-Cultural Heritage (25 countries) and Water-JPI (23 countries). This reflects the number of organisations participating in JPIs, as well; 41 organisation for JPND and 37 for Water-JPI. HDHL includes 37 organisations though there are only 21 countries involved in this initiative.

- Eight EU member states are involved in all 10 current JPIs; namely, Belgium, Denmark, Spain, Italy, the Netherland, Norway, Sweden and the United Kingdom. Four countries followed them with participation in nine JPIs; Germany, Finland, France and Turkey.

- The pattern of organisational participation in JPIs differs from the country involvement. The highest participation observed is 19 for Denmark (with 10 organisations), Italy (16 organisations) and the Netherland (16 organisations). In terms of both country involvement

[2] Country participation refers to the number of organisations from a specific country involved in active networks. As more than one organisation from a country can participate in the same network, the number of country participation can exceed the number of networks in which this country participates.

and participant organisations, the largest Joint Programming Initiative is JPND (27 countries and 41 organisations) while the smallest one is JPI-Demographic (15 countries and 16 organisations).

Network activities

- From January 2010 to September 2013, the key strategic objectives and subsequent joint activities of networks have centred on the implementation of joint calls followed by the exchange of information and good practices. Activities related to the programmes (coordination of national programmes and implementation of joint research programmes) have been given less attention and are cited as the least important joint activities. On the one hand, this suggests that networks prioritise the performance of research through joint calls. On the other hand, this may reflect a greater emphasis on the short-term outcomes, since the calls can create benefits within a limited time frame.

- Environmental issues, energy, health, food, agriculture and fisheries and information and communication technologies (ICT) are the most popular research fields covered by active networks. Environment is a prominent research field for a large proportion of active networks. 26 out of 42 networks (not including 13 further unspecified responses) have undertaken environment-related research even though it is not a stated thematic priority for the network. It is also the most common research area associated with joint call topics. Nonosciences, nanotechnologies and new materials are also cited quite frequently.

- It is notable that the horizontal theme (expressed as "no thematic focus" in the questionnaire) was highly ranked as a FP7 thematic priority[3] (cited by 17% of all active networks) just behind "food, agriculture and fisheries" (19%). As respondents can choose only one thematic priority, this relative concentration in the horizontal approach reflects the multi/trans-disciplinary character of the networks. This multi-disciplinary character can be observed in the section on 'research fields' where multiple choices are possible. Almost half of total respondents cited more than one research field.

- For JPIs, the most common Grand Societal Challenges addressed[4], were "Health and demographic change and wellbeing" and "Climate action, resource efficiency and raw materials" (both addressed by 23% of the respondents where multiple choices are possible). These are followed by "European bioeconomy challenges" (18%), "Secure, clean and efficient energy" (14%) and "Inclusive, innovative and reflective societies" (14%). Similar results were observed for the research fields covered by JPIS. "Health" became more prominent, cited by 16% of all respondents. It was followed by "environment" (14%), "biotechnology" (14%), "food, agriculture and fisheries", "energy", "transport" and "socio-economics and humanities" (9%).

[3] The specific programme on "Cooperation" of the European Commission's Seventh Framework Programme (FP7) is sub-divided into ten themes to reflect what are considered the most important fields for Europe. These thematic areas are included in the NETWATCH template. For more information, please see http://cordis.europa.eu/fp7/cooperation/home_en.html

[4] JPIs are required to address the Grand Societal Challenges, which have come into the European agenda to improve the concentration of research effort to solve major societal problems. The purpose of the Grand Challenges is to pursue research, technological development demonstration and innovation actions to meet the objectives of Europe 2020 and other EU policies. They are divided in seven specific areas; namely, i) Health, demographic change and wellbeing; ii) European bioeconomy challenges; iii) Secure, clean and efficient energy; iv) Smart, green and integrated transport; v) Climate action, resource efficiency and raw materials; vi) Europe in a changing world; and, vii) Secure societies.

- Eight out of 10 JPIs coordinators provided a description of the overall orientation of the network with an emphasis on specific policy areas, e.g. climate change, demographic change, sustainability and so on. Six coordinators also indicated the scientific and technological domains relevant to their JPIs, e.g. health, economics, biotechnology and marine research. A focus on a particular region was indicated by only one coordinator (JPI-Ocean).

- As observed for the other types of networks, JPIs coordinators also brought the joint call activity to the fore within all other possible joint activities. Other featured joint activities are sharing infrastructure and networking (eight out of 10). On the other hand, procurement (programme, planning, option etc.) was cited as important by only two coordinators.

- There seems to be limited appetite for national organisations to fund directly research performed in other countries. Coordinators, in 2013, indicated the virtual pot as the most common funding mechanism: used for 88% of total joint calls (where a response was given). Moreover, in 2013 the common pot was not cited by any coordinator, compared with 6% of total responses in 2012. A similar situation can be observed for JPIs: Eight out of 10 JPIs cited 'virtual pot' where other two expressed that the decision has not been taken yet.

- For FP6 and FP7 funded ERA-NETs, ERA-NET Plus networks and JPIs[5], where data are available, the total public budget[6] for joint calls has steadily increased since 2004. It reached almost €295 million in 2009. After a slight decrease in 2010 (around €264 million), the figures have increased each year, with the most recent observation (€456 million in 2013).

- Although the total public budget of the joint calls for FP7-funded networks has, over the past year, slightly decreased, an increase of 41% was observed in terms of the total public budget of joint calls. This leap is related to the rises in the overall budgets of ERA-NET Plus calls (an increase of 185%) and JPI calls (an increase of 310%).

- Between 2006 and 2010, the average public budget per joint call for ERA-NETs and ERA-NET plus networks ranged from €6 to 8 million. While the JPI joint calls have been added to the analysis after 2011, the average budget did not change significantly in 2011 and 2012 (around €7.5-8 million). However, in 2013, it increased to €11.4 million, due largely to the increased public budgets of the ERA-NET Plus and JPI calls. Since 2007, the public contribution[7] to ERA-NET Plus calls has always been higher than that for ERA-NET calls. A similar situation can be observed for the JPIs calls launched since 2011.

- The number of joint calls steadily increased in the early years of ERA-NETs: two calls in 2004; 10 in 2005 and 25 in 2006. Then, from 2007 to 2013, around 35-45 joint calls were launched per year with a total of €250-450 million public budget. The maximum, so far, was in 2012, when there were 43 joint calls with a total budget of €325 million. The overall number of joint calls in 2013 (40) is very close to the previous year. However, the annual public budget notably increased to €456 million

- The number of proposals submitted and funded varied between schemes and funding sources (FP6 and FP7). For FP6 ERA-NETs, the maximum number of proposals actually

[5] Information on the 2013 calls is based on the calls that were planned by active networks in 2012 and early 2013.
[6] Public budget refers to the EC and national contribution to the joint calls launched by ERA-NETs, ERA-NET Plus, Article 185 and JPIs.
[7] Public contribution involves European funds and national contributions.

funded was 282 (with an average contribution of €505K per project in 2007). For FP7 funded ERA-NETs, this figure is 295 (with an average contribution of €665K per project in 2011). For ERA-NET Plus actions, the peak was 79 proposals with the lowest average funding observed for this scheme, €723K. Comparable information unfortunately is not yet available for 2013.

- The average public funding per proposal remained stable after 2007. The average amount was in the range of €650-850 thousand from 2008 to 2012. For ERA-NET plus actions, this amount exceeded €1 million for six observations out of seven.

1. INTRODUCTION

This report builds on previous NETWATCH work: it continues the trajectory of work established in the previous four NETWATCH mapping and monitoring exercises[8], as well as the project reports: *"*D3.1.3. *Mapping ERA-NETs across Europe: overview of the ERA-NET scheme and its results"* and "D3.1.2. *A battery of indicators' of the NETWATCH Operational Phase Specific Support Action*'

The mapping and monitoring reports present statistical data on selected European research networks; namely, ERA-NET, ERA-NET Plus, Article 169/185, self-sustaining networks, and, in the current report, JPIs. As in previous exercises, the fifth mapping and monitoring exercise provides a static picture of the landscape as of September 2013. Through periodic collection and analysis of the data, Europe-wide research programme collaboration is mapped and monitored. Monitoring aims to provide support to strategic decision-making in relation to participation at national and organisational levels, typically by programme owners and other strategic stakeholders such as policy analysts, and policymakers at regional, national and European levels.

Although information on the NETWATCH web platform can be updated at any time, a pro-active approach is taken prior to the periodic analysis to encourage project coordinators to access the system and systematically update the information on their networks and related organisations, programmes and joint calls. Table 1 shows the timing of the information updates and the cut-off months for determining the cohort of active networks, which defines the analysis periods.

Table 1. Schedule for information update & mapping and monitoring exercises

Deliverable	Information update	Active Networks[9]
Mapping Report	Dec 2009	December 2010
1st Mapping and Monitoring Exercise	Nov 2010	December 2010
2nd Mapping and Monitoring Exercise	April 2011	June 2011
3rd Mapping and Monitoring Exercise	Nov 2011	December 2011
4th Mapping and Monitoring Exercise	July-August 2012	September 2012
5th Mapping and Monitoring Exercise	July-August 2013	September 2013

The information collected through these six update exercises has led to one mapping exercise and five mapping and monitoring exercises. Since the first mapping and monitoring report, published in August 2011, the information collected has been analysed comprehensively and the scope and range of the reports have been progressively enhanced. [10]

Scope:

The analyses are based on data provided for active networks. For this report, these are defined as all those networks still running in September 2013 (see Table 1 and Annex III). The cohort for the analysis was thus composed of 78 active networks:

[8] For first four mapping and monitoring exercises, please visit http://netwatch.jrc.ec.europa.eu/strategic-analysis/mapping-and-monitoring

[9] The cohort of analysis covers only active networks, which are running at least until the specific month mentioned in the table.

[10] During the analysis period, desk research and data from other European Commission services are used to complement the NETWATCH database.

- 43 Seventh Framework Programme (FP7) funded ERA-NETs;,
- 10 FP7 funded ERA-NET Plus actions;
- four FP7 funded Article 185 networks:,
- one FP6 funded Article 185 network,
- 10 self-sustaining networks; and
- 10 Joint Programming Initiatives (JPIs).

Methodology:

In July and August 2013, network coordinators were invited to complete a data collection template accessible online via the NETWATCH information platform. Telephone guidance on questionnaire completion was available to all coordinators. Subsequent reminder emails were sent to the coordinators of participating networks. For the 2013 exercise, the scope was extended to cover JPIs. The information template was prepared and developed with a close cooperation with three pilot JPIs (FACCE, HDHL and CULTURAL HERITAGE). Afterwards the dedicated template was disseminated to all JPIs coordinators and the most updated information has since been included. Section 2.6 presents the first mapping exercise of JPIs.

The regular information updates (see Table 1) are intended to maximise the accuracy of the information prior to analysis, but the information can be updated at any time. The original template was designed to obtain a set of indicators characterising the status of the networks. Variables have been distinguished according to the policy relevance and a distinction has been made between "core indicators" and "complementary indicators". The classification of core and complementary variables is presented in Annex II.

This report centres on the core indicators that support the policy-relevant questions elaborated in the concluding section. While focusing on core variables ensures greater comparability, it also provides a basis for other analytical work carried out by NETWATCH such as impact assessments and policy briefs. Complementary information on the joint calls from other European Commission services has been used in this report to enhance coverage and budget details of the joint calls.[11]

This report builds on the last two mapping and monitoring reports and focuses on the following selected research questions:

- Which objectives, activities and research have been addressed by network activities?
- How has the composition of networks (countries, organisation and programmes) changed over time?
- In what ways have national programmes been involved in networks?
- How have the scope, participants and budget of joint calls changed?

[11] As data provided by coordinators are not adequate to analytical work, the complementary information is collected by the European Commission, Directorate General for Research & Innovation; namely, Radka Jekova and Jörg Niehoff (2012), "The ERA-NET scheme under FP6 and FP7: Statistics on ERA-NET and ERA-NET Plus actions and their joint calls", Brussels: June 2012.

These questions have been defined in relation to the evolution of network activities, characterised in terms of the core variables listed in Annex II. The evolution of basic indicators (network types, funding sources, participant organisations and joint call information) is also analysed in this report. The coverage provided by the NETWATCH database has been enhanced over time.

Report structure

In order to examine the NETWATCH database comprehensively, the analyses have five main dimensions: networks, organisations, countries, programmes and joint calls. The report addresses each of these dimensions in turn, while also considering their interaction. Core and complementary variables are presented separately. Core variables are included in the main body of the report, while the complementary variables are presented in Annex III. This report includes, for the first time, an additional section focused on JPIs.

The first section presents the networks, detailing their type and funding source, the relative importance of strategic objectives and the activities they undertake, thematic orientation and size. The report also includes an examination of the organisations participating, such as their role in the network, the type of network they are involved in, and the type of organisation. Additionally there is an examination of the countries involved, the geographic dimension, and a section on the programmes related to the active networks, which together with the organisations' information constitutes the participant dimension. There is a section on the joint calls implemented by the active networks in the NETWATCH database[12]. Finally, a dedicated chapter presents a landscape of JPIs with regard to different dimensions such as 'basic information', 'strategic and scientific orientation' and 'joint activities'. In the last section, the concluding remarks and findings of the report are summarised, together with reflections on the implications for NETWATCH.

[12] This integrates complementary information on joint calls collected by DG RTD.

2. ANALYSIS

2.1. NETWORKS

2.1.1 Active Networks

	Jan-10		Dec-10		Jun-11		Dec-11		Sep-12		Sep-13	
	No	**Share**	**No**	**Share**	**No**	**Share**	**No**	**Share**	**No**	**Share**	**No**	**Share**
Number of active networks in the NETWATCH database*	**47**	**100%**	**82**	**100%**	**68**	**100%**	**67**	**100%**	**72**	**100%**	**68**	**100%**
Number receiving FP7 funding	40	85%	59	72%	57	84%	56	84%	60	83%	57	84%
Number receiving FP6 funding	7	15%	12	15%	3	4%	3	4%	1	1%	1	1%
Number not receiving FP funding	0	0%	7	9%	8	12%	8	12%	11	15%	10	15%
Number of network with unspecified funding	0	0%	4	5%	0	0%	0	0%	0	0%	0	0%
Number of inactive networks in the NETWATCH database	**68**	**100%**	**58**	**100%**	**77**	**100%**	**78**	**100%**	**91**	**100%**	**108**	**100%**
Number that previously received FP7 funding	6	9%	0	0%	10	13%	11	14%	21	23%	37	34%
Number that previously received FP6 funding	62	91%	57	98%	67	87%	67	86%	70	77%	71	66%
Number that did not receive FP funding	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Number of network with unspecified funding	0	0%	1	2%	0	0%	0	0%	0	0%	0	0%

* NETWATCH currently covers 10 Joint programming Initiatives (JPIs) but this table does not include them as to keep consistency of monitoring and to provide comparable statistics. For further information please see Chapter 2.6 that focuses on the JPIs.

The total number of networks (active and inactive)[13] covered by NETWATCH is 176, an increase of 13 over the previous year. To these can also be added the 10 JPIs also now covered by NETWATCH, which are discussed below[14]. Over the same period, the number of active networks[15] decreased by four from 72 to 68 and the inactive networks increased from 91 to 108.

Of the 68 active networks, the majority (57) were funded through FP7, while one was still funded through FP6 (EDCTP an Article 185). The remaining 10 are self-sustaining networks; namely, BIOENERGY, CORNET, CRUE, ECORD, ERA-CHEMISTRY, ERASME, FENCO-NET, PV-ERANET 2, SKEP and SNOWMAN.

[13] Unless otherwise stated, active networks, for June 2011, December 2011, September 2012 and September 2013 are those networks that were active at the mentioned date. The term 'networks' refer to ERA-NETs, ERA-NET Plus initiatives, Article 169/185s and self-sustaining networks. This report also involves a separate dedicated section on the Joint Programming Initiatives.

[14] This table does not include the Joint programming Initiatives (JPIs) as to keep consistency of monitoring and to provide comparable statistics. For further information please see Chapter 2.6 that focuses on the JPIs and provides an overview of their landscape.

[15] There are twelve networks with very little information in NETWATCH database. These networks are excluded from the scope; namely, BESTF2, C-IPM, ERA-MBT, FACCE Era Net Plus, GENDER-NET, HERITAGE Plus, ICT-AGRI 2, INFRAVATION, NEWA, OCEANERA-NET, SUMFOREST and WSF. Meanwhile four networks were not launched at the reference date, September 2013. Even though these networks (ERA-Net RUS Plus, ERANETMED, INCOMERA and INNO INDIGO) may currently be active, they are not included to the scope.

2.1.2. Types of Active Network (I)

	Jan-10	Share	Dec-10	Share	Jun-11	Share	Dec-11	Share	Sep-12	Share	Sep-13	Share[16]
Number of active ERA-NETs in the NETWATCH database	**39**	**83%**	**61**	**74%**	**49**	**72%**	**49**	**73%**	**49**	**68%**	**45**	**66% (58%)**
Number receiving FP7 funding	32	68%	49	60%	43	63%	43	64%	46	64%	43	63% (55%)
Number receiving FP6 funding	7	15%	12	15%	3	4%	3	4%	0	–	0	–
Number not receiving FP funding	0	–	0	–	3	4%	3	4%	3	4%	2	**3% (3%)**
Number of active ERA-NET Plus in the NETWATCH database	**8**	**17%**	**8**	**10%**	**8**	**12%**	**8**	**12%**	**9**	**13%**	**10**	**15% (13%)**
Number receiving FP7 funding	8	17%	8	10%	8	12%	8	12%	9	13%	10	15% (13%)
Number receiving FP6 funding	0	–	0	–	0	–	0	–	0	–	0	–
Number not receiving FP funding	0	–	0	–	0	–	0	–	0	–	0	–
Number of active 169/185 networks in the NETWATCH database	**0**	–	**4**	**5%**	**4**	**6%**	**4**	**6%**	**5**	**7%**	**5**	**7% (6%)**
Number receiving FP7 funding	0	–	2	2%	4	6%	4	6%	4	6%	4	6% (5%)
Number receiving FP6 funding	0	–	0	–	0	–	0	–	1	1%	1	1% (1%)
Number not receiving FP funding	0	–	0	–	0	–	0	–	0	–	0	–
Number of network with unspecified funding	0	–	2	2%	0	–	0	–	0	–	0	–
Number of active other networks in the NETWATCH database	**0**	–	**7**	**9%**	**7**	**10%**	**6**	**9%**	**9**	**13%**	**8**	**12% (10%)**
Number receiving FP7 funding	0	–	0	–	2	3%	1	1%	1	1%	0	–
Number receiving FP6 funding	0	–	0	–	0	–	0	–	0	–	0	–
Number not receiving FP funding	0	–	7	9%	5	7%	5	7%	8	11%	8	12% (10%)
Number of active JPIs in the NETWATCH database	**0**	**–**	**0**	–	**0**	**–**	**0**	**–**	**0**	**–**	**10**	0% (13%)
Number receiving FP7 funding	0	–	0	–	0	–	0	–	0	–	10	0% (13%)
Number receiving FP6 funding	0	–	0	–	0	–	0	–	0	–	0	–
Number not receiving FP funding	0	–	0	–	0	–	0	–	0	–	0	–
Number of network with unspecified funding	0	–	0	–	0	–	0	–	0	–	0	–

[16] Shares of active networks are significantly changed in September 2013 as the cohort has been enlarged with the inclusion of JPIs. As to keep consistency, both shares (with and without JPIs) are shown in the column.

2.1.2. Types of Active Network (II)

As the NETWATCH database now includes the 10 Joint Programming Initiatives (JPIs), this report includes an additional dedicated section (Chapter 2.6). This provides a first mapping of these networks and their main dimensions: 'basic information', 'strategic orientation' and 'joint activities'.

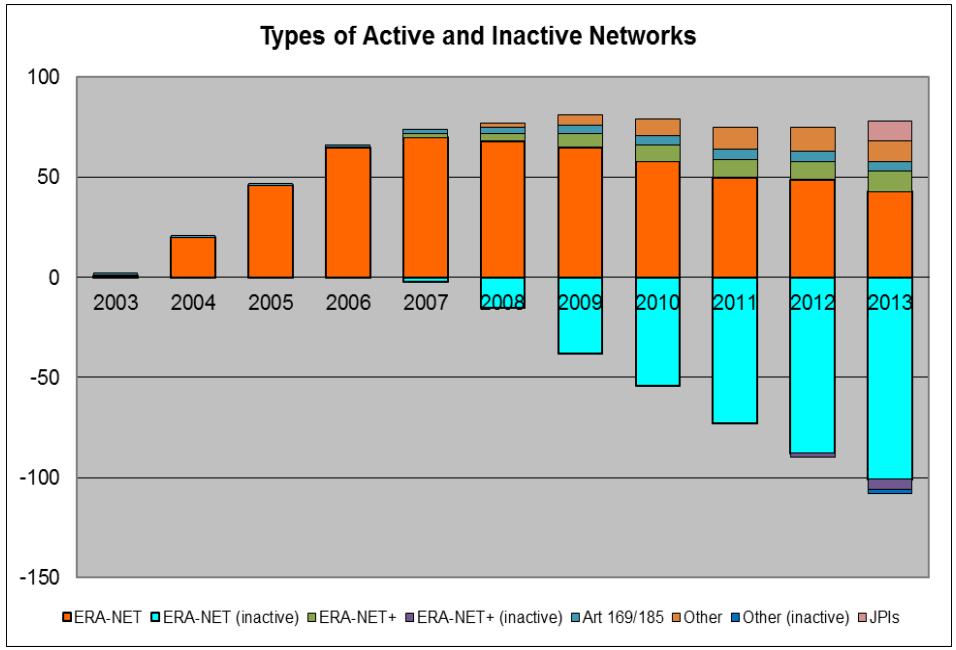
In order to keep retain consistency with prior monitoring activity, the shares for September 2013 are shown with two percentages: the first one shows the share of active networks in the cohort excluding the JPIs and the second one presents the actual share including them. Excluding JPIs, the largest proportion of active networks analysed were FP7 ERA-NETs, 63% in September 2013 (68% in January 2010, 60% in December 2010, 63% in June 2011, 64% in December 2011 and 64% in September 2012). This share decreases 58% when the JPIs are taken into account. While the total number of networks in the cohort scope has changed over the periods analysed, the core networks have always remained FP7 ERA-NETs.

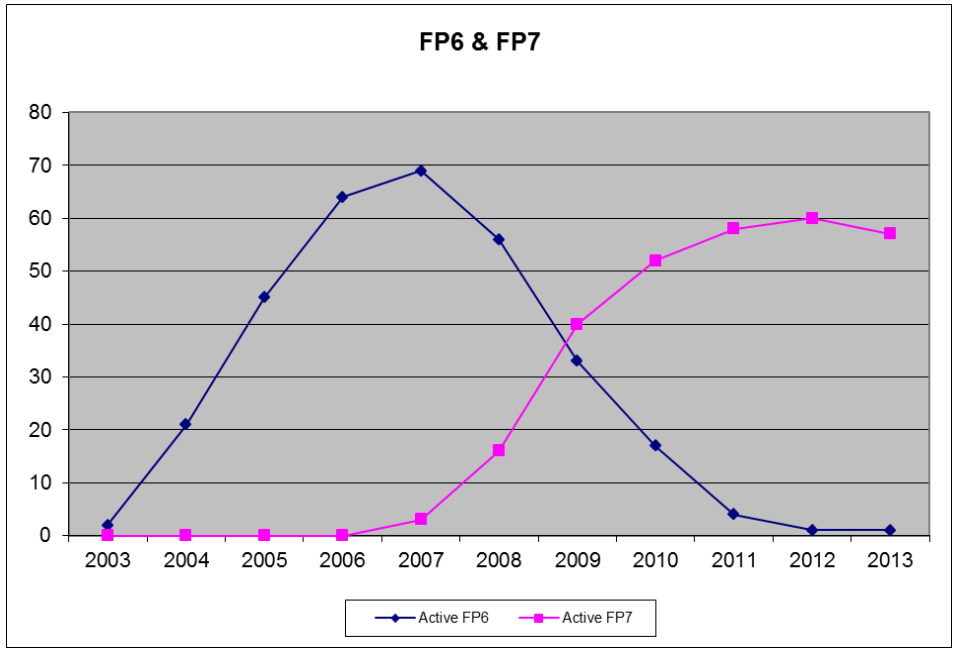
There were only five Article 185s and all are included in NETWATCH. The 10 networks not receiving FP funding were the self-sustaining networks; namely, BIOENERGY, CORNET, CRUE, ECORD, ERA-CHEMISTRY, ERASME, FENCO-NET, PV-ERANET 2, SKEP and SNOWMAN.[17]

In September 2012, there was one active *coordination and support action* (NORFACE II) classified as 'other network without FP funding'. Since NORFACE II ceased activity on 28/02/2013, there are now no active coordination and support actions in the NETWATCH database.

[17] There are inconsistencies with the coordinators' descriptions on how they interpreted the network classification as the table solely presents the results reported by the coordinators. Two of self-sustaining networks, CRUE and PV-ERANET 2, were classified as "ERA-NETs without FP funding" while other eight were classified as "other types of networks not receiving FP funding".

2.1.3. Evolution of Networks in Terms of Type of Network and Funding Source

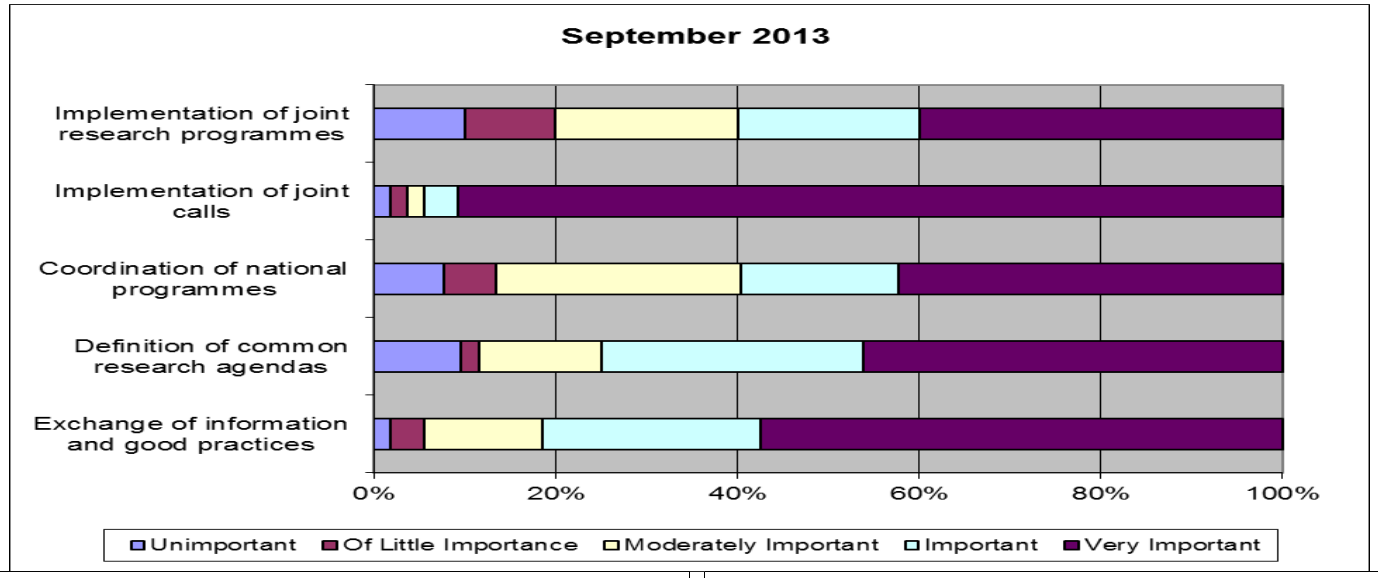


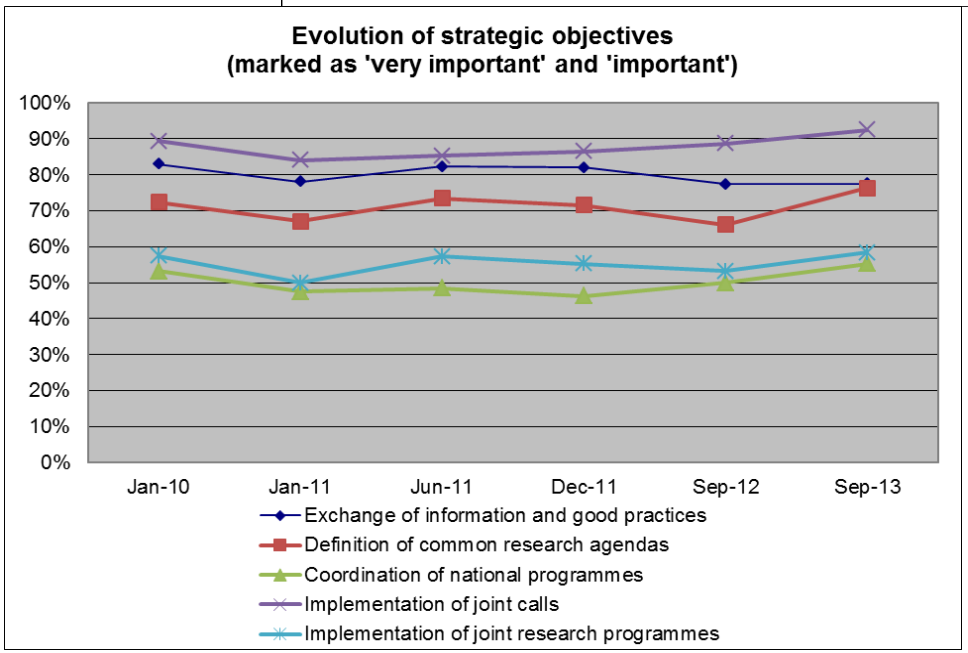


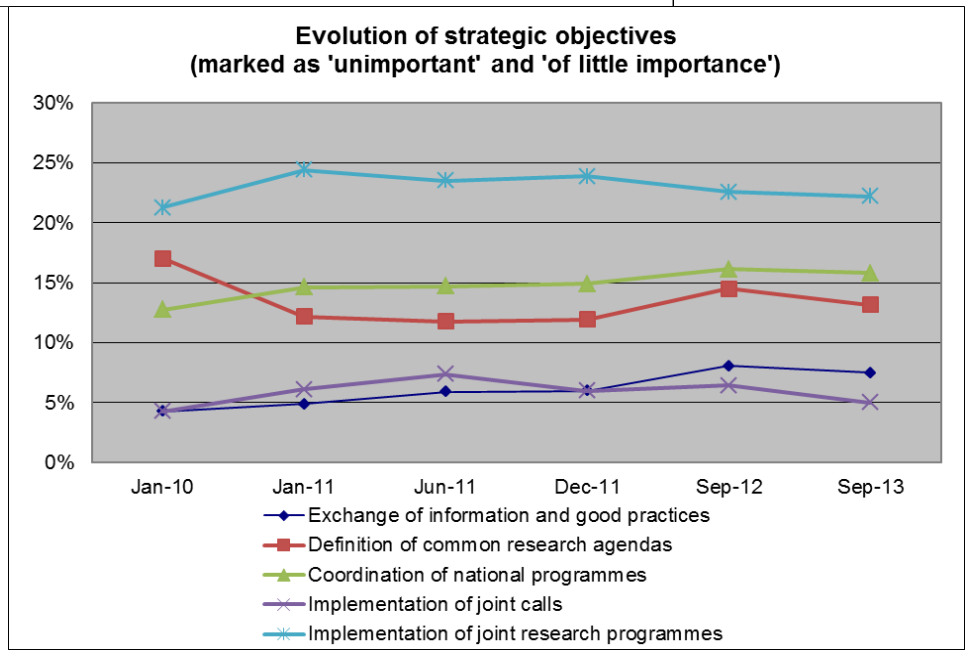
The chart and graph above show the evolution of the NETWATCH database, and therefore provide an indication of the development of research programme cooperation in Europe. The reference date is the number and status of networks (active, inactive, FP6/7 and type) in the September of the year indicated.

Calls for ERA-NETs were launched in FP6, which began in 2002 and lasted until 2007 when FP7 replaced it. Clearly, there should be a steady increase in FP6 ERA-NETs from 2003 to a peak in 2007 when FP7 networks started and increased in numbers, surpassing FP6 networks around 2009. As they move through their life cycle, networks cease activity; this began with ERA-NETs in 2007, followed more recently, by ERA-NET Plus in 2012 and other types of networks in 2013. However, the total number of active networks, which has been ranging between 77 and 82, has not significantly decreased since 2007, although many networks have ceased activity over time. Within the same period, new networks, which also include those that continue the activities of former networks, have been launched.

2.1.4. The Strategic Objectives of Active Networks (I)







2.1.4. The Strategic Objectives of Active Networks (II)

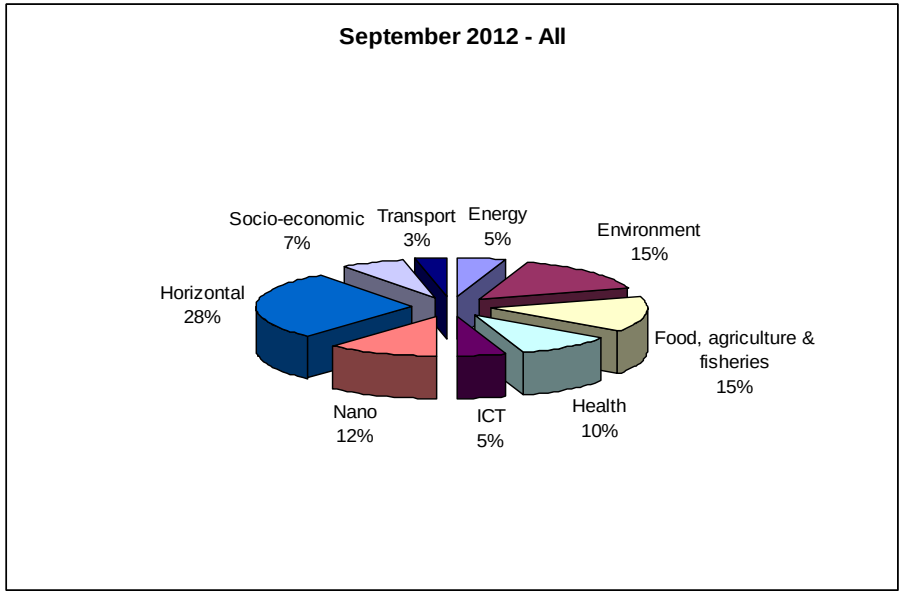
The strategic objectives of networks are closely aligned to the four ERA-NET steps.[18] Coordinators are requested to grade each of these objectives according to a five point Likert scale, from "*unimportant*" to "*very important*". The results for September 2013[19] are very similar to those of the previous periods. It is notable that the strategic objective "implementation of joint calls' was rated 'very important' or 'important' by 94% of respondents. This was followed by "exchange of information and goof practices" (81%) and "definition of common research agenda" (75%). Previously, in September 2012, "Exchange of information and good practices" had 77% of respondents citing it as "very important" or "important", and was at 82% for December 2011. The share of importance again increased in the current period, September 2013, with 81% of total coordinators scoring information exchange as 'very important' or 'important'.

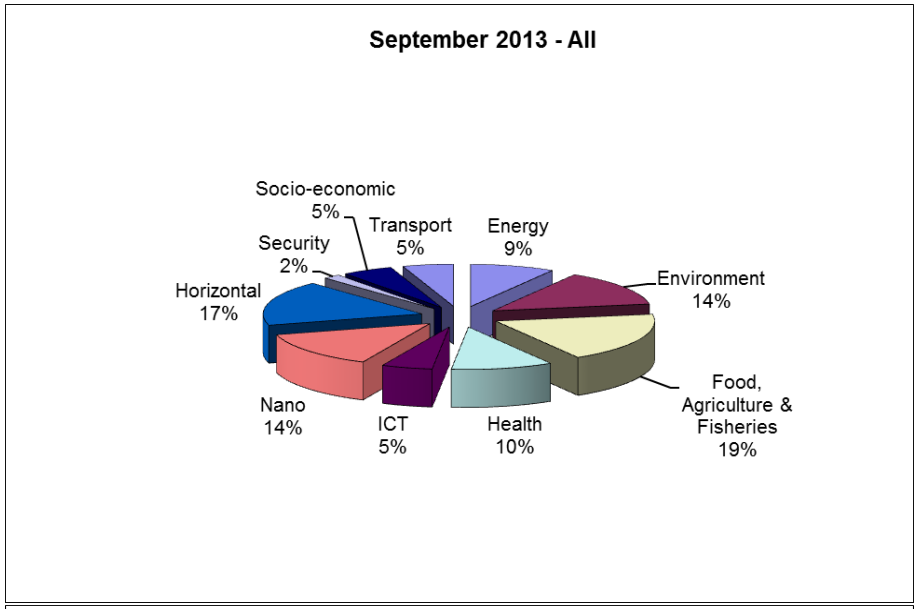
The two strategic objectives, "coordination of national programmes" and "exchange of information and good practices" are ranked as the least important objectives: 60% of total respondents consider these objectives are 'very important' or 'important'.

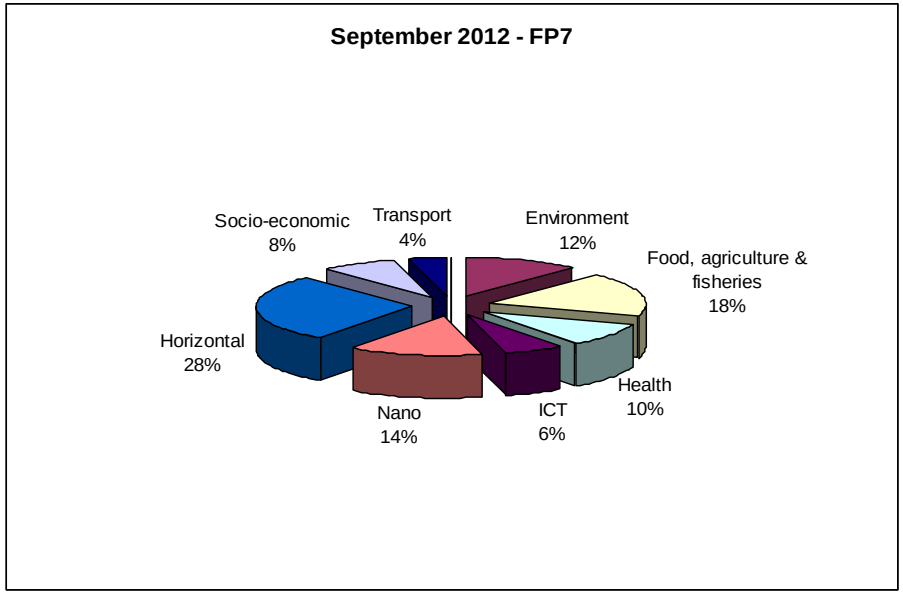
[18] The four ERA-NET steps are: Systematic exchange of information and good practices on existing programmes; Identification and analysis of common strategic issues; Development of joint activities between national or regional programmes; and Implementation of joint transnational research activities

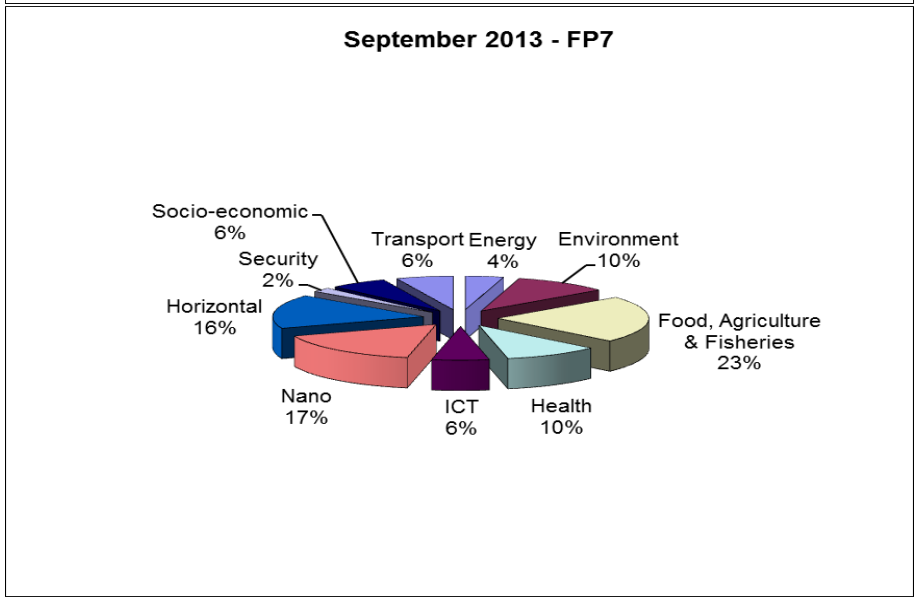
[19] For "Exchange of information and good practices" and "implementation of joint calls" there were 14 unspecified responses, for "Definition of common research agendas" and "coordination of national programmes" there were 16, and 18 unspecified responses for "Implementation of joint research programmes".

2.1.5. The FP7 Thematic Priorities Covered by Active Networks (I)









2.1.5. The FP7 Thematic Priorities Covered by Active Networks (II)

The specific programme on "Cooperation" of the European Commission's Seventh Framework Programme (FP7) is sub-divided into ten themes, intended to reflect the most important fields for Europe[20]. These thematic areas are included in the NETWATCH template. However, ERA-NET calls in FP7 were more closely linked to the thematic areas than FP6. Consequently, the thematic areas result from a process that is less "bottom-up" and more "top-down". When all networks are considered, 84% of the active networks are funded through FP7. Therefore, care should be taken as the number, and size, of calls launched in the different thematic areas of the Cooperation Specific Programme of FP7 can influence the results of the analysis.

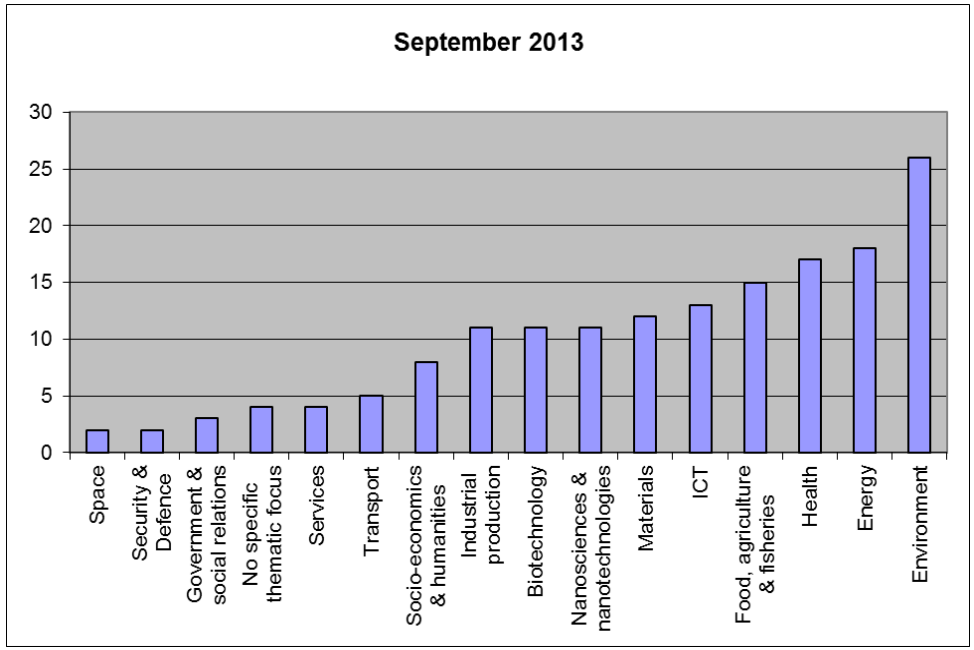
The largest proportion of the coordinators that answered this question,[21] with 19% in 2013, selected "food, agriculture and fisheries," an increase of 15% over the past year. The highest ranked priority in 2012 was "no thematic focus" (or horizontal) with 28%, although this drastically decreased to 17% in 2013. It should be noted that coordinators were reminded to update specifically this information during the last information update (July-August 2013) as the ERA-NETs are expected to be focused on a thematic priority.

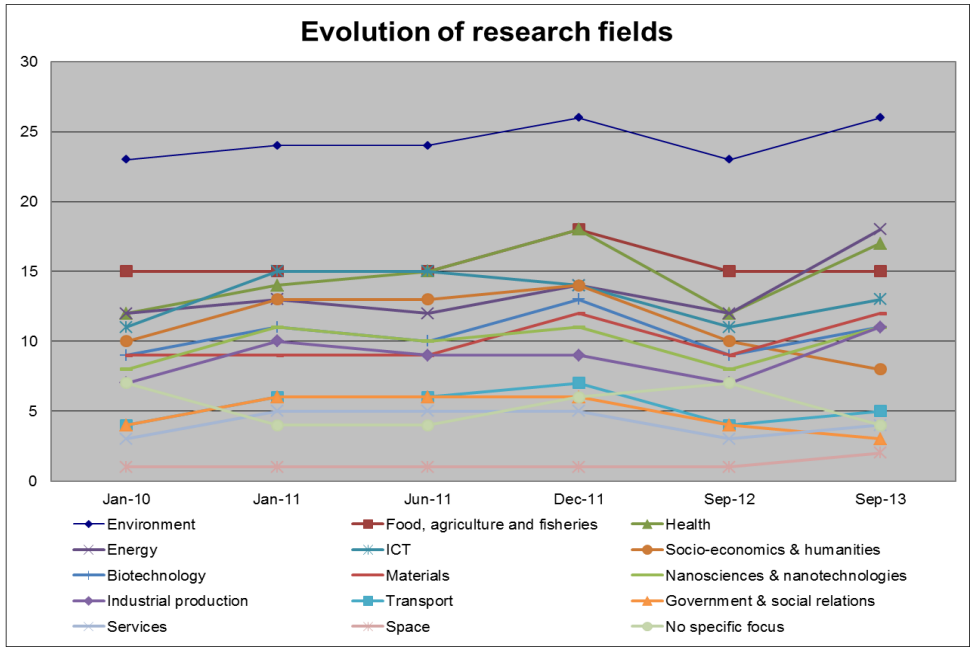
A similar change can be observed when only FP7 networks are considered. The proportion of networks focused on the thematic priority "food, agriculture and fisheries" increased from 18% to 23% while "horizontal" decreased from 28% to 16%.

As respondents can only choose one option in this section, the analysis of research fields presented in the next section enhances our understanding of the actual research areas of the networks. This section principally provides an indication of the influence that EC funding priorities may have on the research areas of the networks.

[20] See the EC Cooperation website for more information: http://cordis.europa.eu/fp7/cooperation/home_en.html
[21] Information was not available for 10 networks (two self-sustaining networks, three ERA-NET Plus actions and five ERA-Nets).

2.1.6. The Research Fields Covered by Active Networks



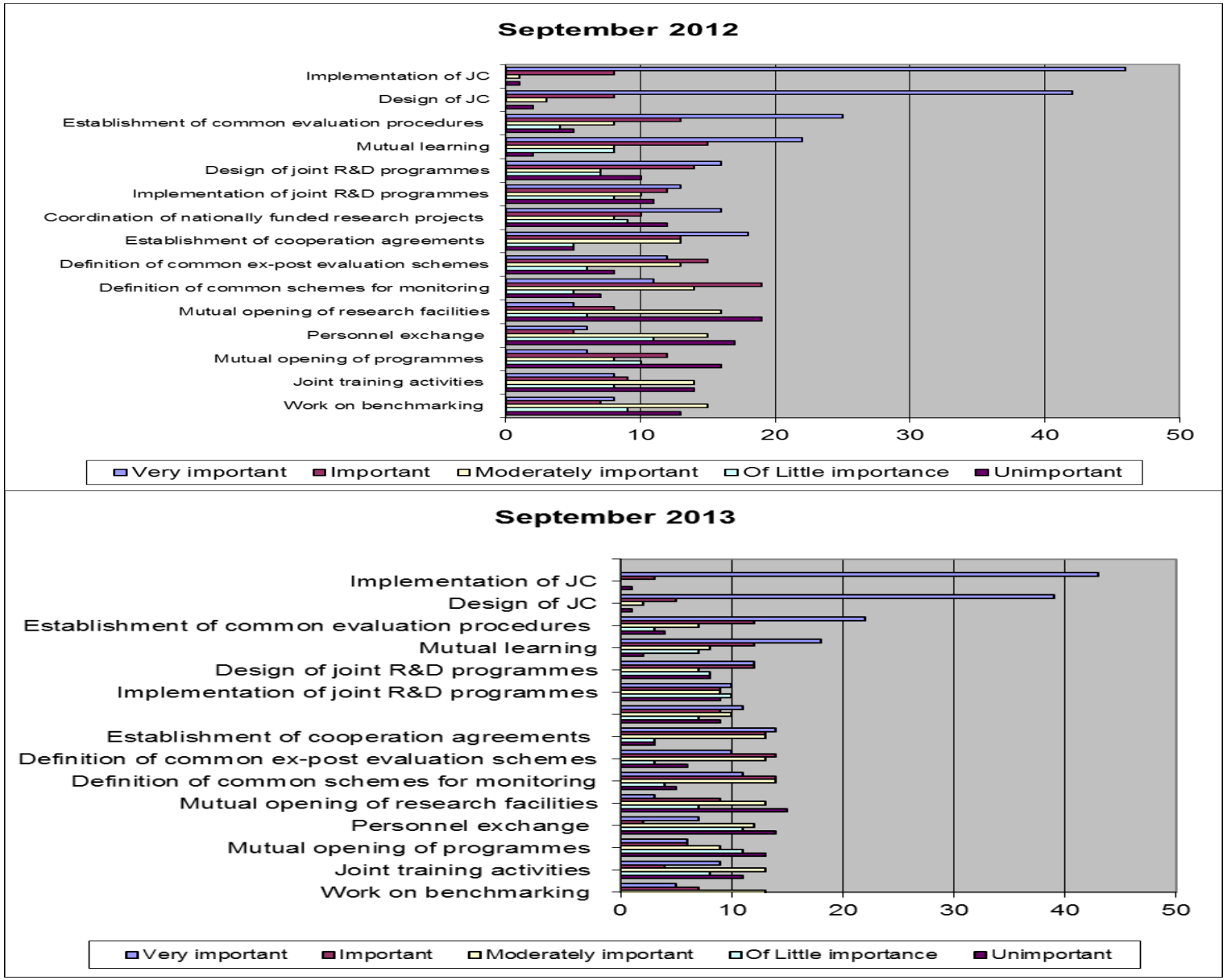


The research fields[22] represent the research that the networks actually support, with the possibility to indicate activity in more than one field.[23] This multiple-choice option provides a more comprehensive reflection of network activity as the coordinators are able to mark secondary or tertiary related research fields. For example, while the largest proportion of networks cited "food, agriculture and fisheries" as the appropriate FP7 horizontal theme, "environment" has become the most prominent research field. As a large proportion of networks (26 out of 55, where specific responses were given) undertakes environment-related research though it is not a primary field for the network. Therefore, it is clear that many networks are trans-disciplinary and perform in more than one specific domain. For 55 active networks, there were 171 different responses. Of these, around 50% of the total responses indicated more than one research field.

While environment has remained the most important research field, followed by energy, health and food, agriculture and fisheries. These top-ranked research fields have remained stable since 2010[24].

[22] The research fields used are those included in the ERAWATCH Research Inventory to classify the support measures.
[23] Care should be taken on FP7 thematic areas (section 2.1.4). For the FP7 thematic areas, Food, Agriculture and Fisheries actually include biotechnology, but that is a separate category for the research fields. Similarly, Nanosciences and nanotechnologies includes materials in the FP7 thematic areas
[24] Please also see the previous mapping and monitoring reports, available at: http://netwatch.jrc.ec.europa.eu/strategic-analysis/mapping-and-monitoring

2.1.7. The Joint Activities Undertaken by Active Networks (I)



2.1.7. The Joint Activities Undertaken by Active Networks (II)

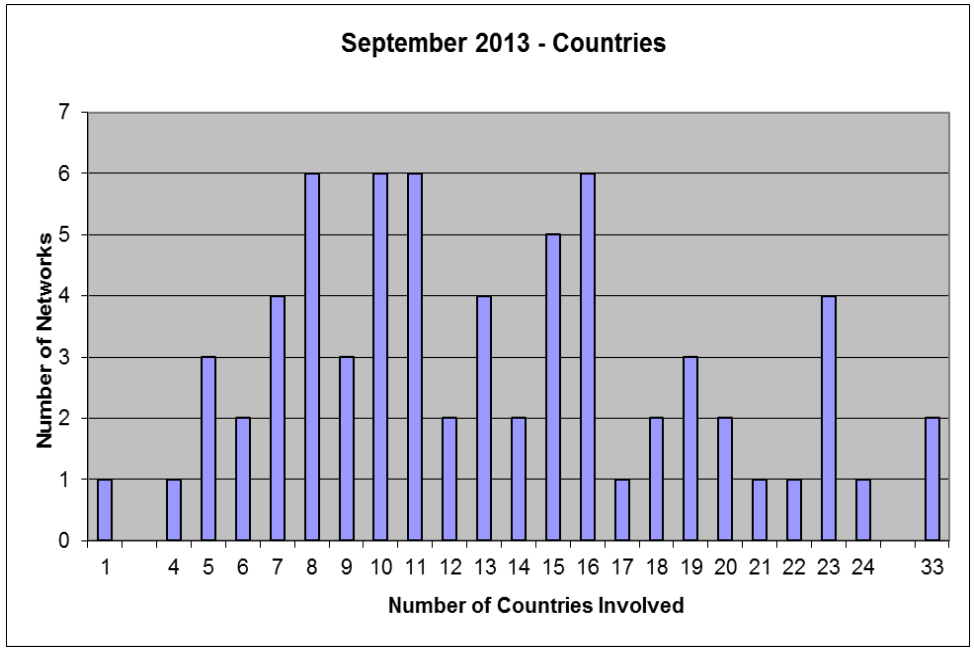
As observed in the previous periods, in 2011 and 2012, the two joint activities rated as the most important in 2013 were the design and the implementation of joint calls. These activities also correspond to the most important strategic objectives of the networks described earlier. The next most important activities were the establishment of common evaluation procedures and mutual learning. They were followed by several different types of activities, e.g. design and implementation of joint R&D programmes, coordination of national projects, establishment of cooperation agreements, definition of common evaluation schemes, and schemes for monitoring.

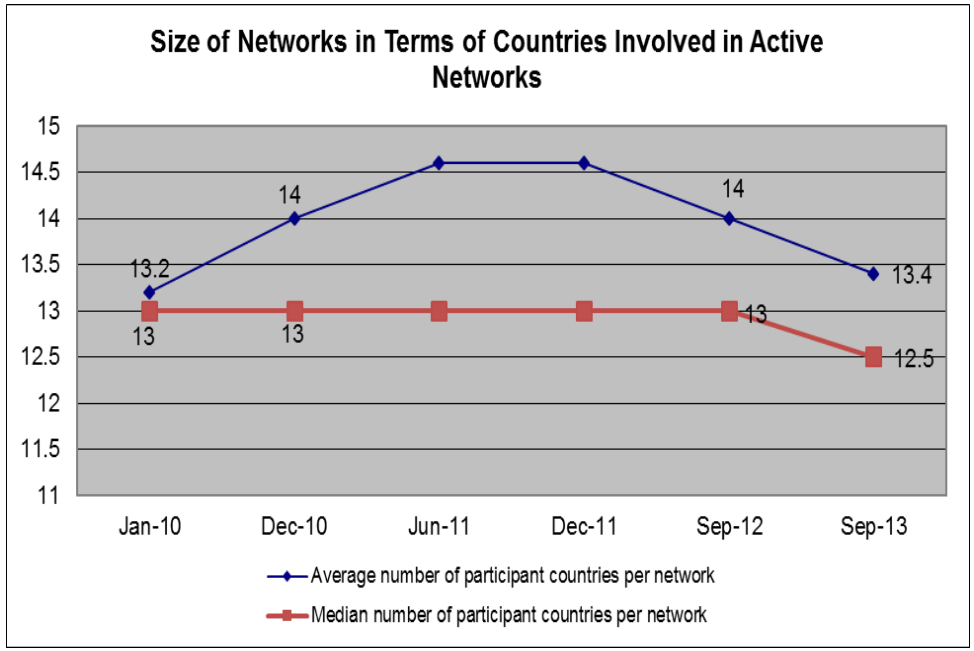
The activities that were not considered important were personnel exchange, mutual opening of programmes, mutual opening of research facilities, and joint training. They were rated frequently as being 'unimportant' or 'of little importance'. Joint training activities and work on benchmarking followed these activities as being of little importance relative to the other activities.

Overall, the relative importance of the joint activities has remained stable with little change since 2010.[25]

[25] Also see previous mapping and monitoring reports available at http://netwatch.jrc.ec.europa.eu/strategic-analysis/mapping-and-monitoring

2.1.8. Size of Active Networks in Terms of Number of Countries Involved





The country of origin of the participating organisations determines the country designation, and country involvement is therefore only counted once. International organisations (EU, non-EU European and beyond Europe) have been removed as they cannot be assigned to one country. The total number of international organisations in September 2013 was 26 and 15 of them participate in active networks. The transnational organisations acting on the regional level, which participate in active networks at the reference date, September 2013, are replaced by the constituent countries for the purpose of analysis[26]

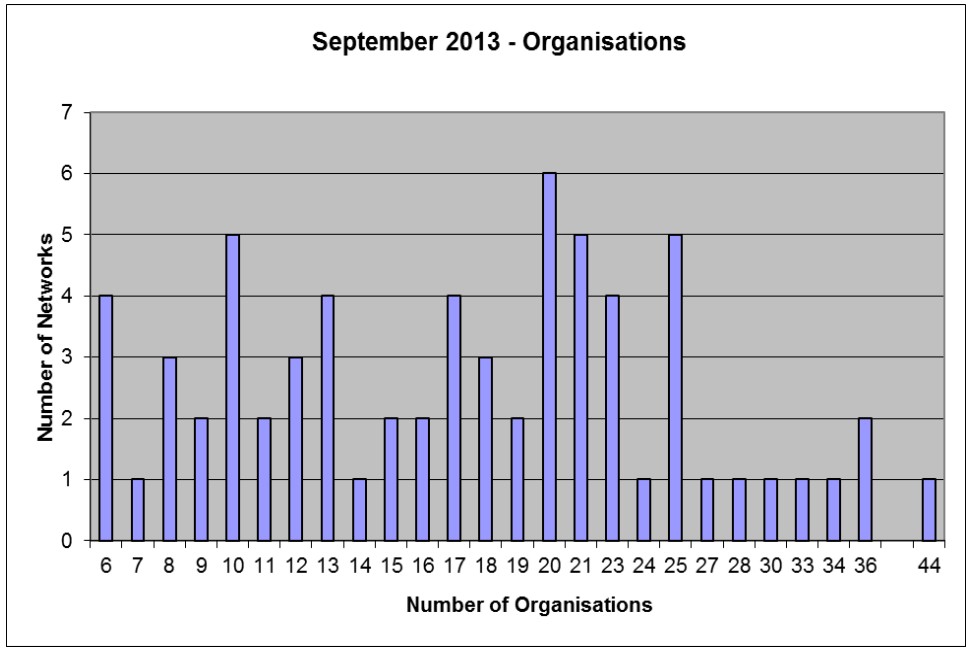
Based on the number of countries, the most frequent network sizes, with six networks each, were those networks with 8, 10, 11, 15 and 16 countries participating. The highest number of the countries involved in an active network was 33, which occurs twice (EUROSTARS and EUPHRESCO II).

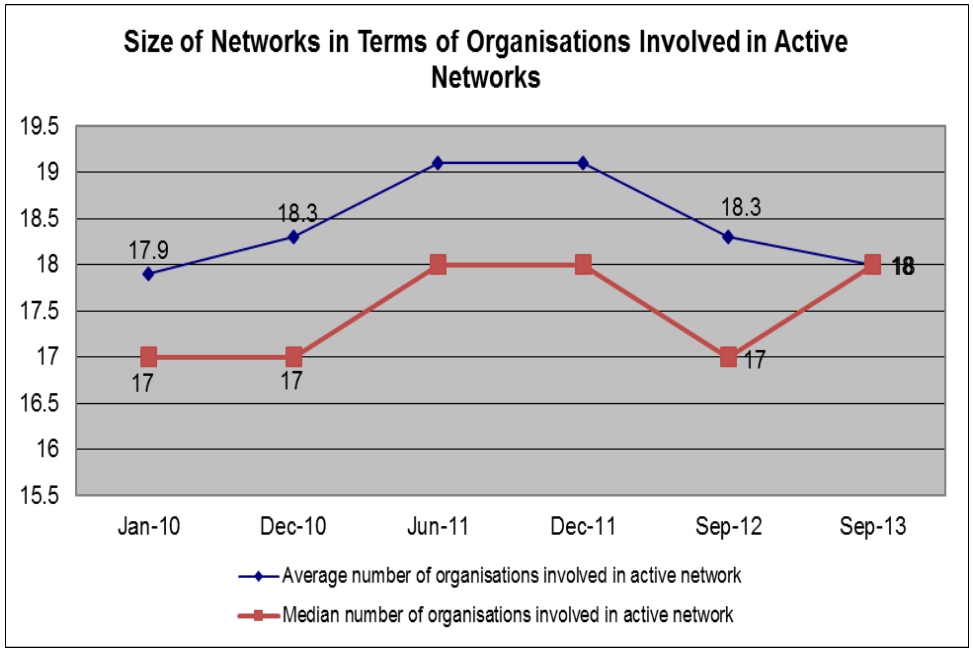
In 2013[27], the average number of countries involved in the networks was 13.4 with a median of 12.5. In 2012, the average and median were higher at 14 and 13. The median decreased from 13 to 12.5 at the first time over the course of five periods.

[26] These regional organisations are counted with the constituent counties; namely, BONUS EEIG involves eight countries (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Switzerland) and Nordic Forest Research Co-operation Committee, Nordic Energy Research, Nordic Innovation Centre, Nordic Council of Ministers, and Nordic Optical Telescope Scientific Association involve five countries (Denmark, Finland, Iceland, Norway and Sweden).

[27] An active network, BiophotonicsPlus, lacking information did not have country participation information. It is excluded from the cohort in this section.

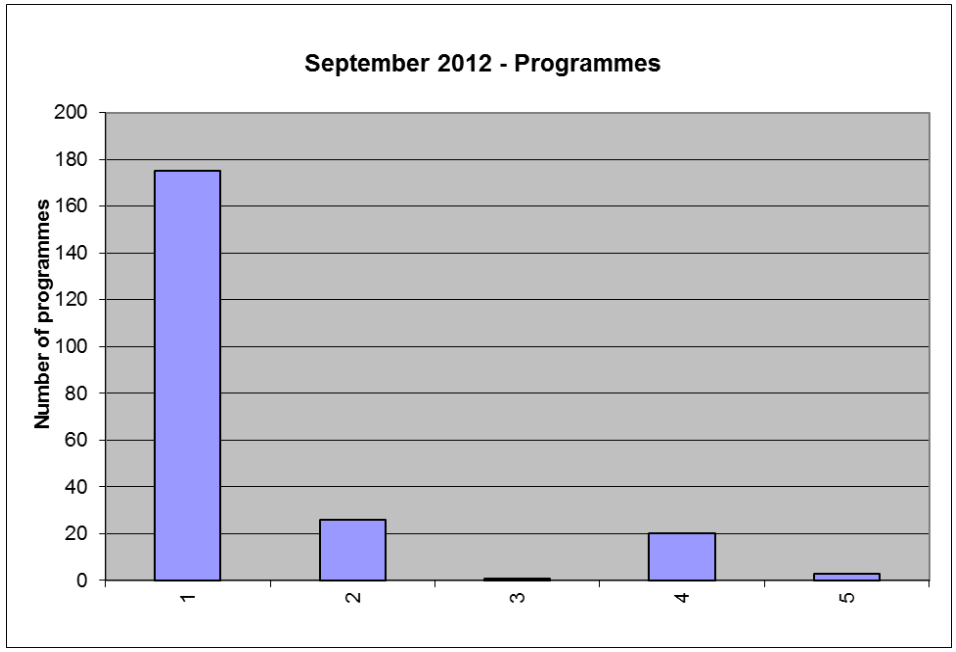
2.1.9. Size of Active Networks in Terms of Participants Involved

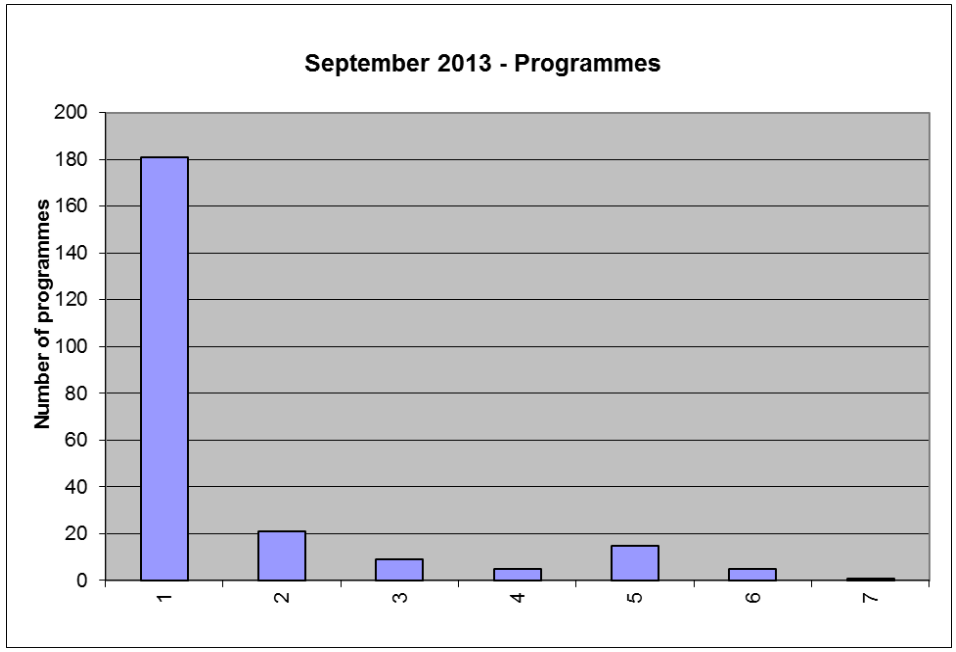




Slight changes are observed related to the number of organisations participating in active networks. Considering the charts above a reduction in the number of networks with 6, 8, 15, 16, 17, 21 and 23 participants and an increase in networks with 10, 12, 19, 20, 25 and 36 participants can be observed. In 2013, the average and median numbers of organisations involved in the networks were 18. In 2012, the average had been 18.3 and the median was 17. The average of active networks in terms of participant organisations has decreased over last three periods, since December 2011, from 19.1 to 18. The median value has followed a more fluctuating course between two values, 17 (in January and December 2010 and September 2012) and 18 (in June and December 2011 and September 2013). Both have reached the same value (18) at the first time over six periods.

2.1.10. Size of Active Networks in Terms of Number of Related Programme

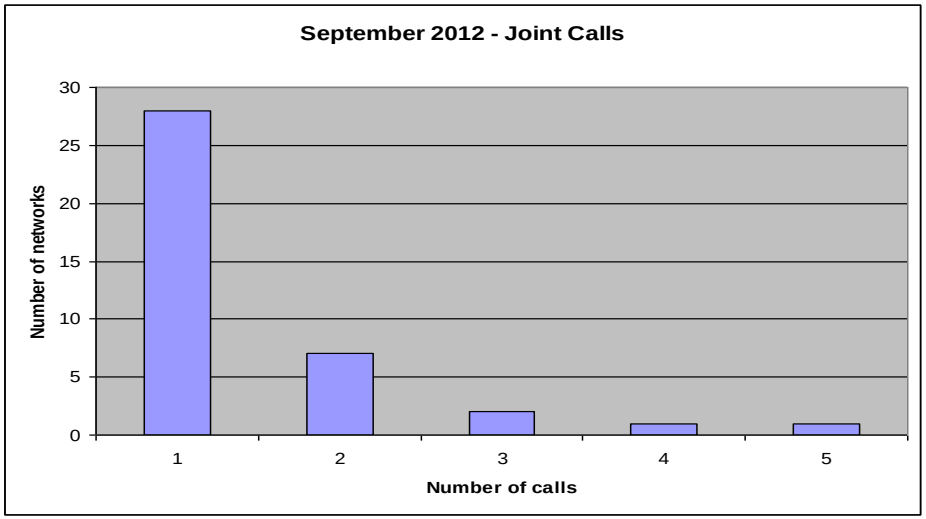


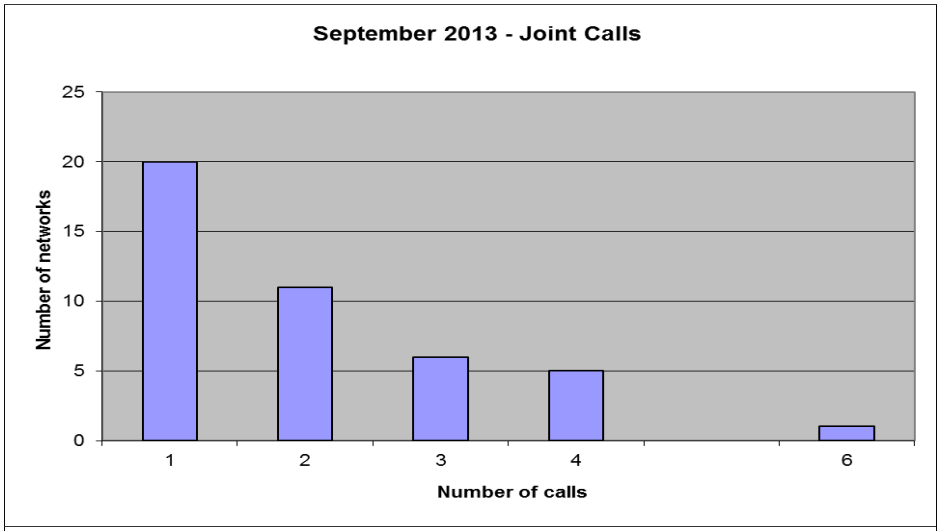


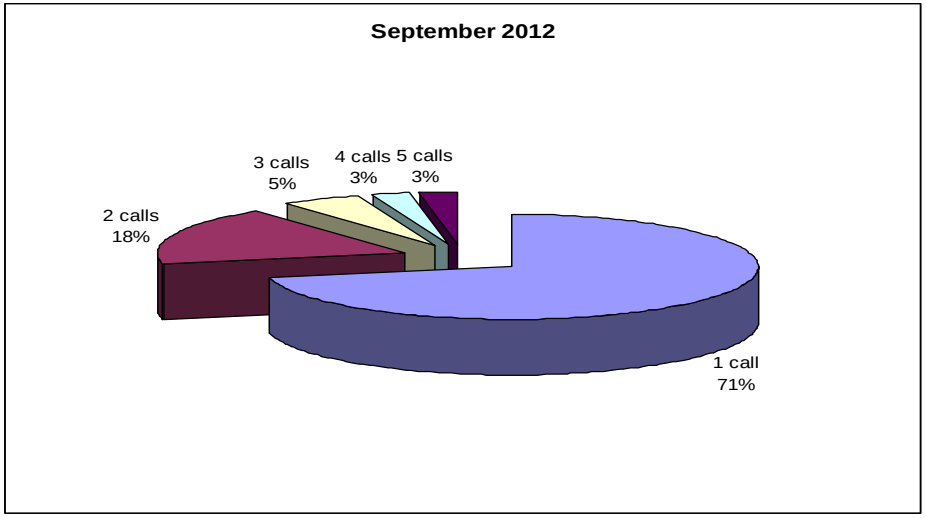
There are differences between the two periods in terms of the number of related programmes that participated in active networks. In September 2012, the average number of related programmes was 11.6 and a median of 5 while the average was 13.6 and the median was nine in September 2013. In addition, while 28 networks had programmes associated to them in 2012, it decreased to 22 in 2013.

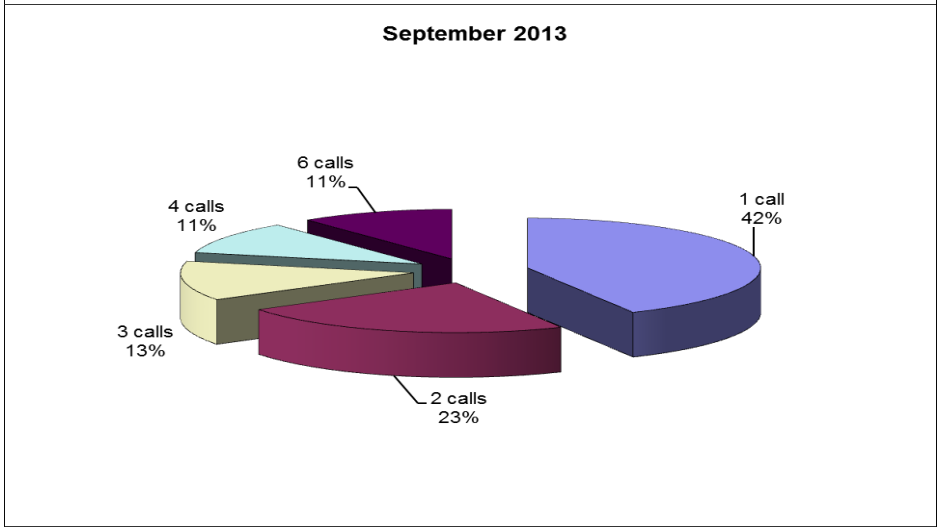
The most of the programmes participated in only one network; 175 in 2012 and 181 in 2013. The maximum number of network that one organisation participated was seven in 2013, observed for the "Health Research: Scientific Research for the People" (BMBF-HR). Meanwhile, the one network with 63 associated programmes was ICT-AGRI.

2.1.11. Performance of Active Networks in Terms of Number of Joint Calls Launched







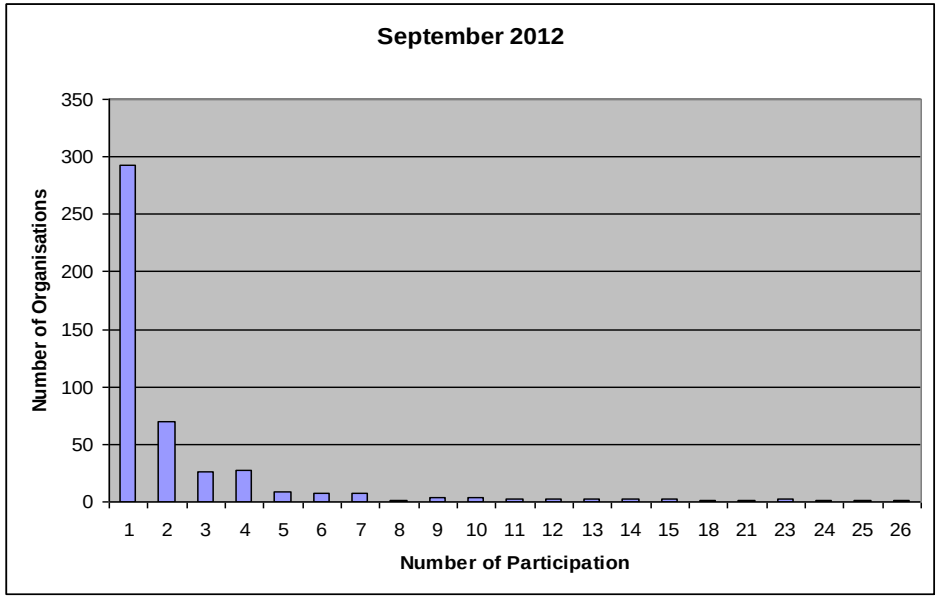


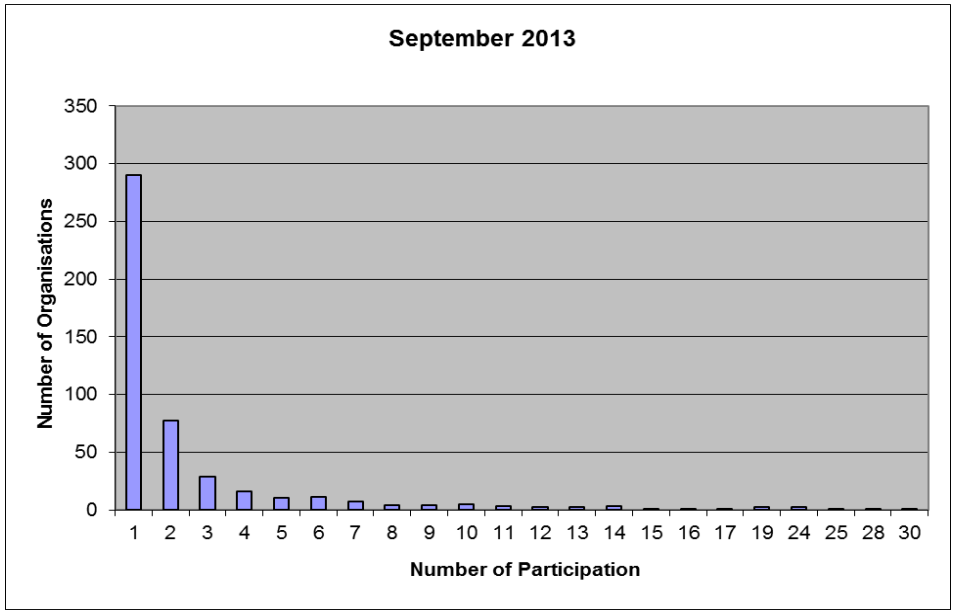
Of the networks active at the end of September 2013, 43 networks (out of 68) had implemented at least one call during the lifetime of the network. For September 2013, the proportion of networks that had only ever implemented one call decreased substantially from 71% to 42% over the past year.

2.2. ORGANISATIONS

2.2.1 All Organisations – Number Involved and Involvement in Multiple Networks

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473





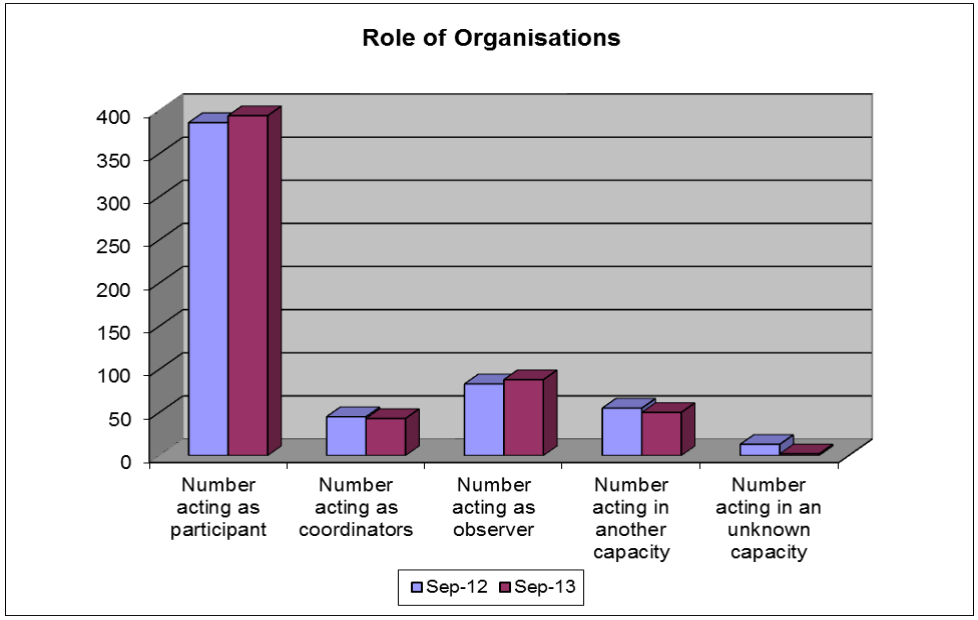
The total number of organisations involved in active networks in the NETWATCH database has changed little: 470 in 2012 and 473 in 2013. Considering that the number of active networks has almost remained quite stable, minimal change in the number of total participant organisations is unsurprising.

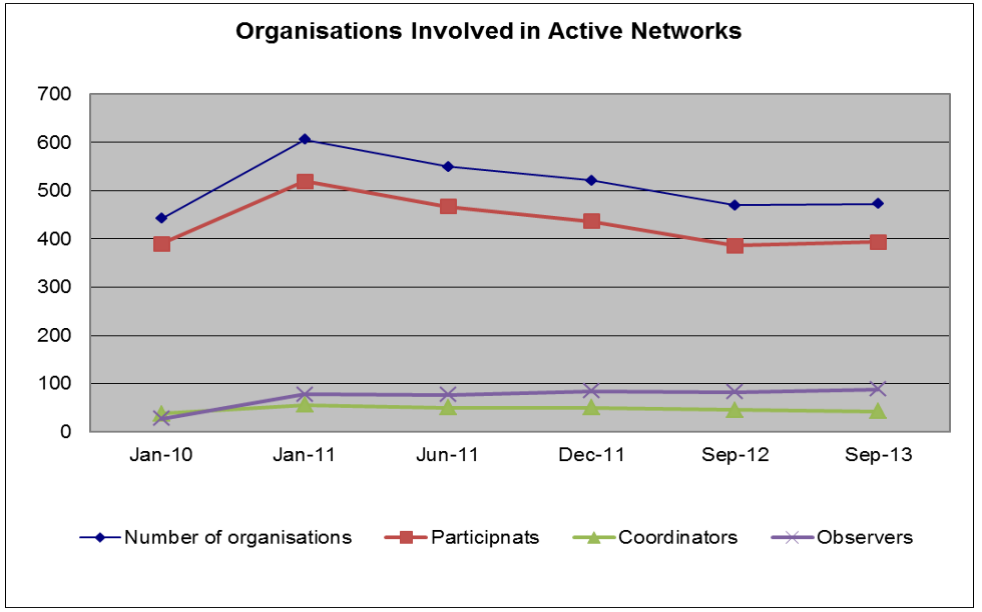
As observed for the previous periods, most organisations, in 2013, only participated in one network. Over the past year, from September 2012 to September 2013, there have been few changes observed. For example, the maximum number of network participations by a single organisation increased from 26 to 30, namely the "National Centre for Research and Development" of Poland.

The scope of network participation by organisations, and the frequency of participation by certain organisations, could be influenced by the administrative structures of the countries. While some countries have a greater division of labour between national structures, other countries may have overarching structures responsible for multiple areas. For example, in 2013, Switzerland was represented by 17 organisations and participated in 32 networks whereas only three Turkish organisations participated in the same number of networks.

2.2.2. Roles of Organisations

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number acting as coordinator	38	56	50	50	45	43
Number acting as participant	390	519	467	436	386	394
Number acting as observer	27	78	77	84	83	88
Number acting in another capacity	8	38	36	37	55	50
Number with unspecified role of involvement	0	3	15	15	13	2



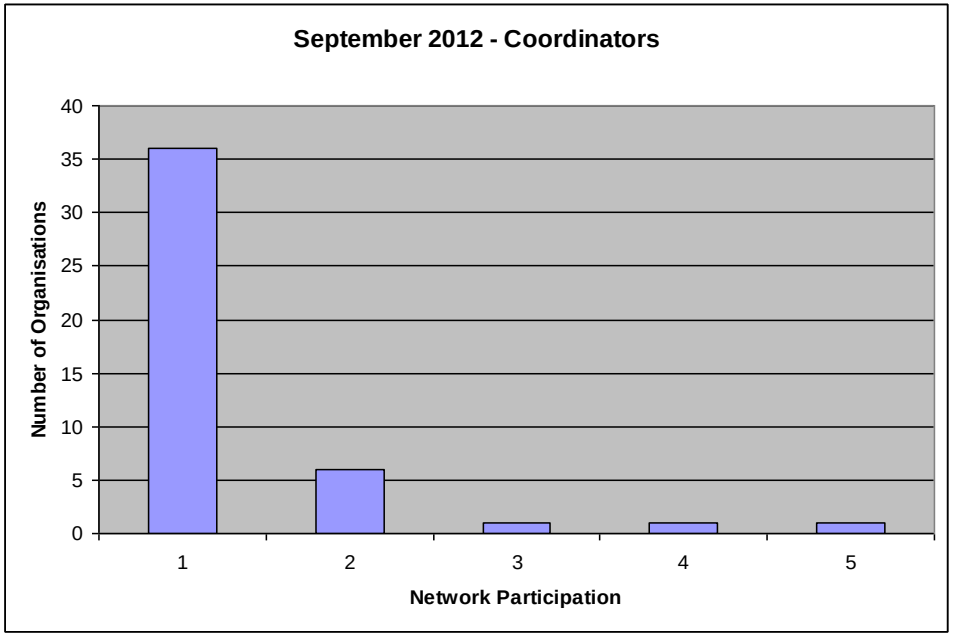


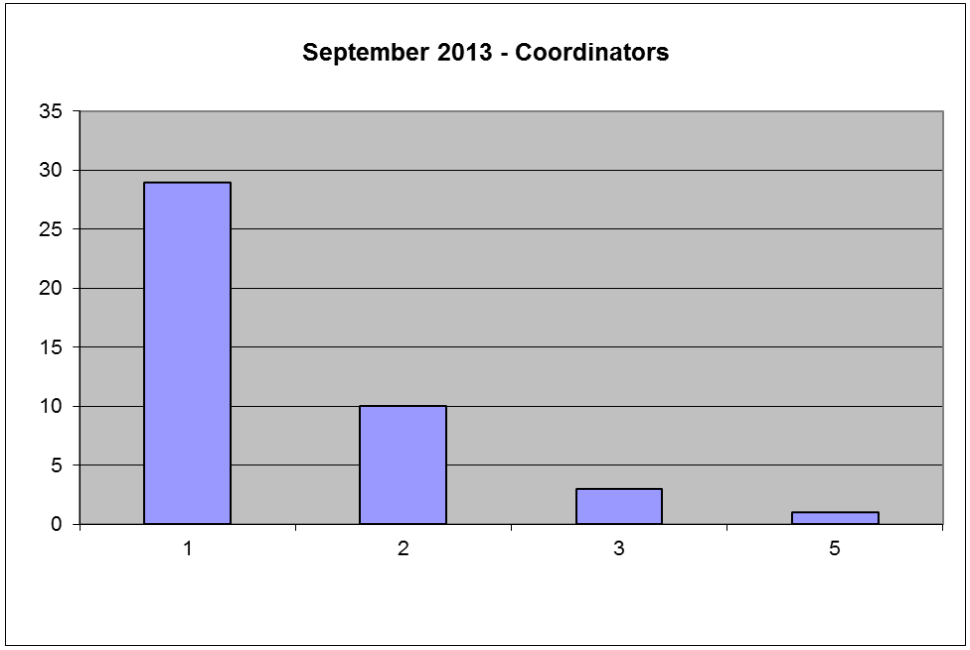
As mentioned above, total number of organisations involved in active networks has changed little, increasing by three to 473 in 2013. However, considering the longer term, over all six monitoring periods, the total number of organisations participating in active networks has decreased quite notably, from 606 to 473. Similarly, the number of organisations acting as participants in active networks decreased from 519 in 2010 to 394 in 2013, while the number of coordinators decreased from 56 to 43.

The organisations acting in another capacity refers to those acting as an associated partner, those organisations only participating in certain calls, and steering committee members. The number of these types of organisations decreased very little, from 55 to 50, over the past year.

2.2.3. Role of Organisations – Involvement of Organisations in Multiple Networks (I)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number acting as coordinator	38	56	50	50	45	43





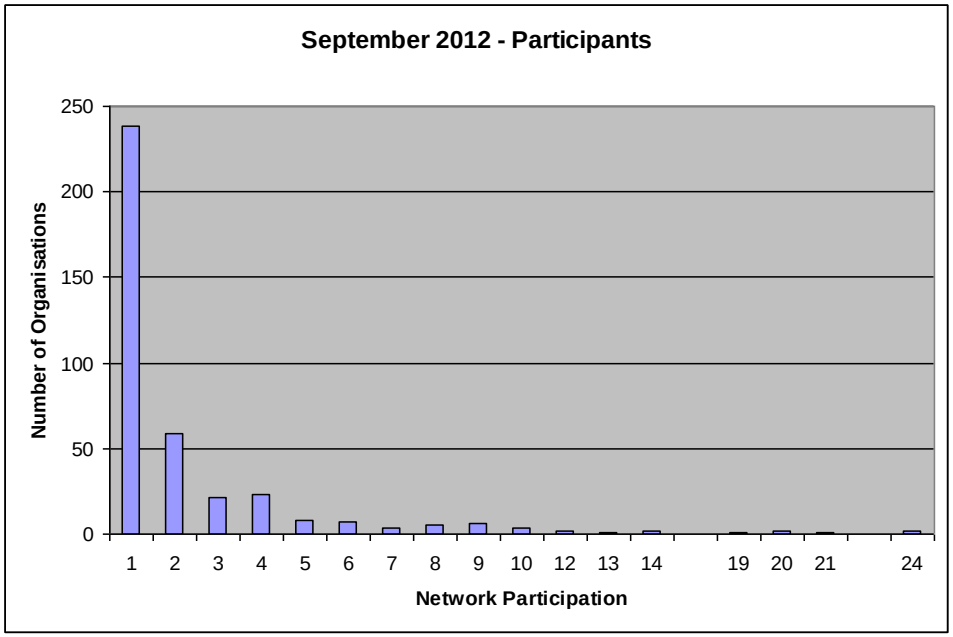
There were 43 organisations acting as coordinators in in September 2013, which is less than the number of networks in the cohort (68) as certain organisations coordinate or have coordinated more than one network. While most organisations (29 of them) were a network coordinator only once, 10 coordinated two networks, three organisations for three networks. The only organisation coordinating five networks is the Project Management & Research Centre Juelich (PTJ/FZJ), in Germany.[28]

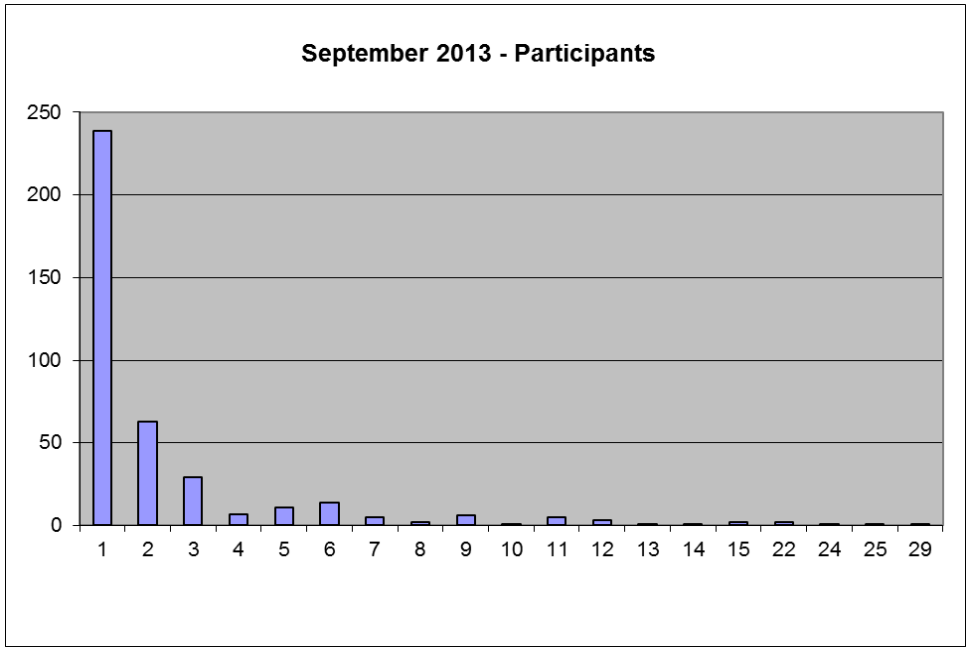
Although the overall number of organisations taking a coordinator role has not changed much (45 in 2012 and 43 in 2013), there is a slight change in the overall distribution of the roles. While the number of organisations coordinating only one network decreased from 36 to 29, the number coordinating two networks increased from six to 10. This supports the view that more experienced organisations tend to coordinate more networks.

[28] The organisation is the coordinator of ECO-INNOVERA, ERASynBio, ERASysAPP, MARTEC II and SIINN.

2.2.3. Role of Organisations – Involvement of Organisations in Multiple Networks (II)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number acting as participant	390	519	467	436	386	394



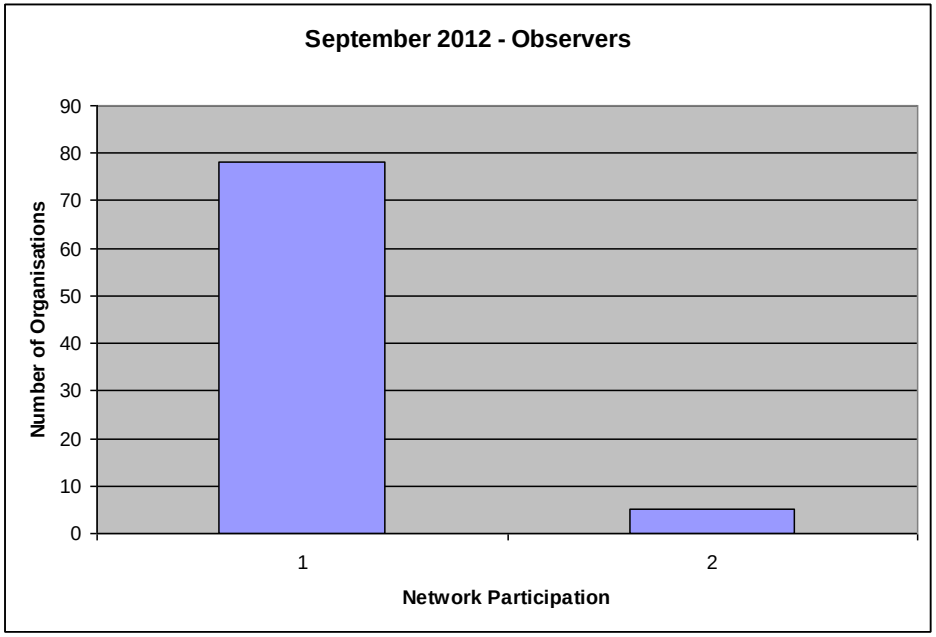


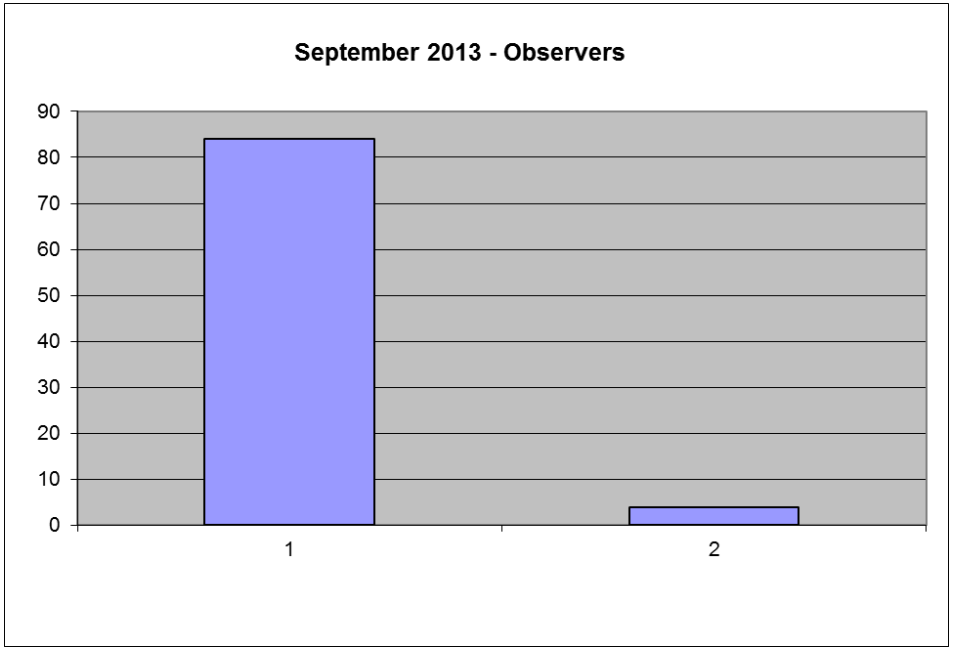
The number of organisations acting as participants has fluctuated: decreasing from 436 in 2011 to 386 in 2012 and increasing to 394 in 2013.

Those organisations that acted as a participant mostly participated in only one network (62% in both 2012 and 2013). Consequently, the number of organisations participating in multiple networks also remained the same over this period.

2.2.3. Role of Organisations – Involvement of Organisations in Multiple Networks (III)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number acting as observer	27	78	77	84	83	88

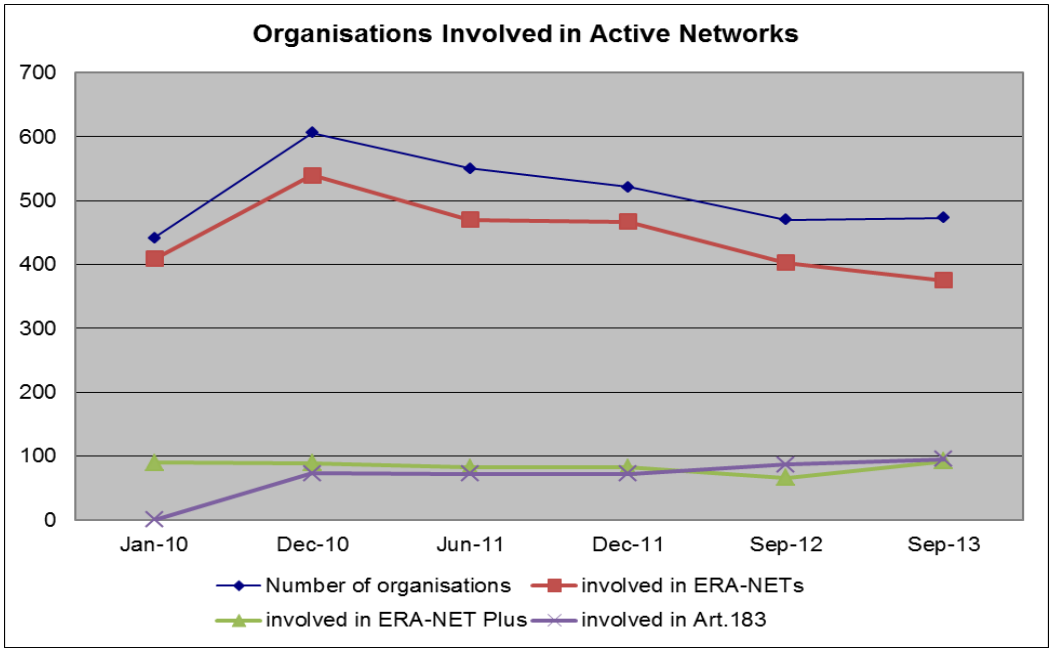




The number of organisations acting as observers increased slightly from 83 to 88 over the past year. As with organisations acting as coordinator or participant, organisations generally participated as an observer in only one network (95%).

2.2.4. Types of Network – Numbers Involved

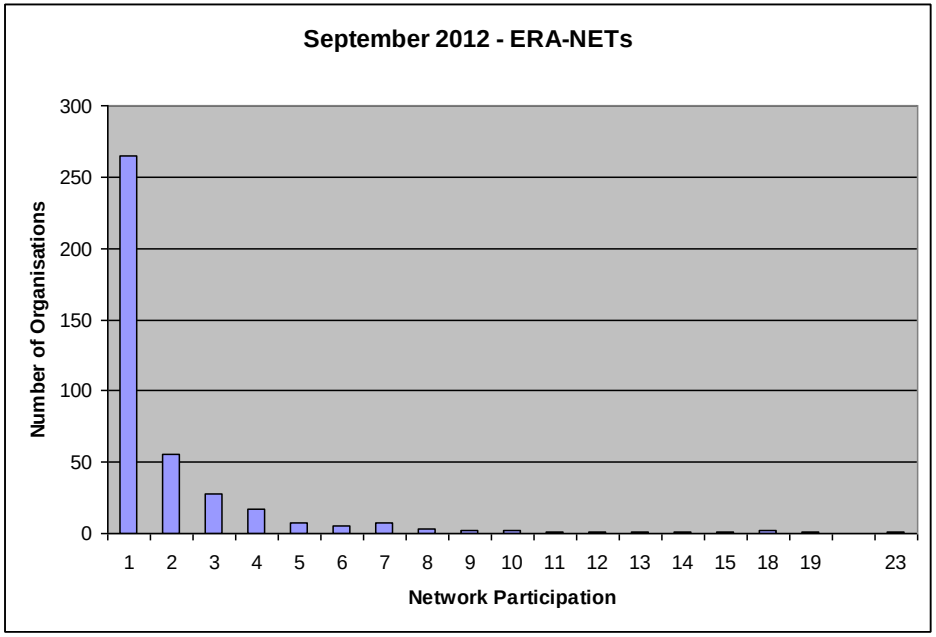
	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number involved in ERA-NETs	409	540	470	467	403	375
Number involved in ERA-NET Plus networks	90	89	82	82	66	92
Number involved in Article 169/185 networks	-	73	72	72	87	95
Number involved in other (self-sustaining) types of networks	-	75	77	54	97	85
Number of organisations with unspecified networks	-	15	-	-	-	-

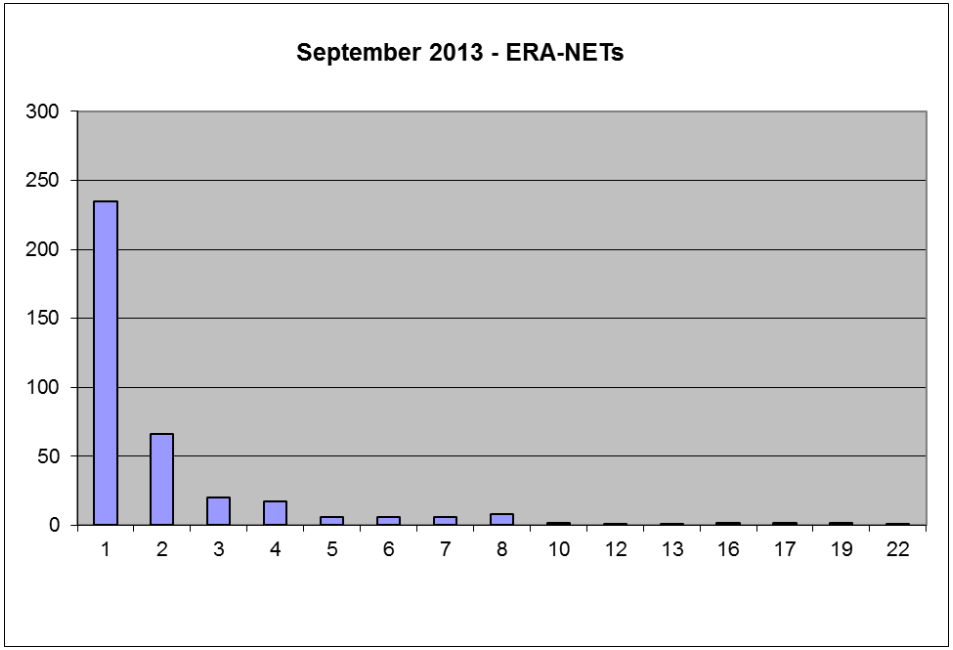


The largest group of networks for all periods was the ERA-NETs (90% in 2011, 86% in 2012 and 79% in 2013). The ongoing decrease of the share of ERA-NETs is related to the increase in the number of organisations participating in ERA-NET Plus actions, which increased 39% over the past year while the number of organisations involved in ERA-NETs went down 7% (from 403 to 375).

2.2.5. Types of Network – Involvement of organisations in Multiple Networks (I)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number of participations in ERA-NETs	409	540	470	467	403	375

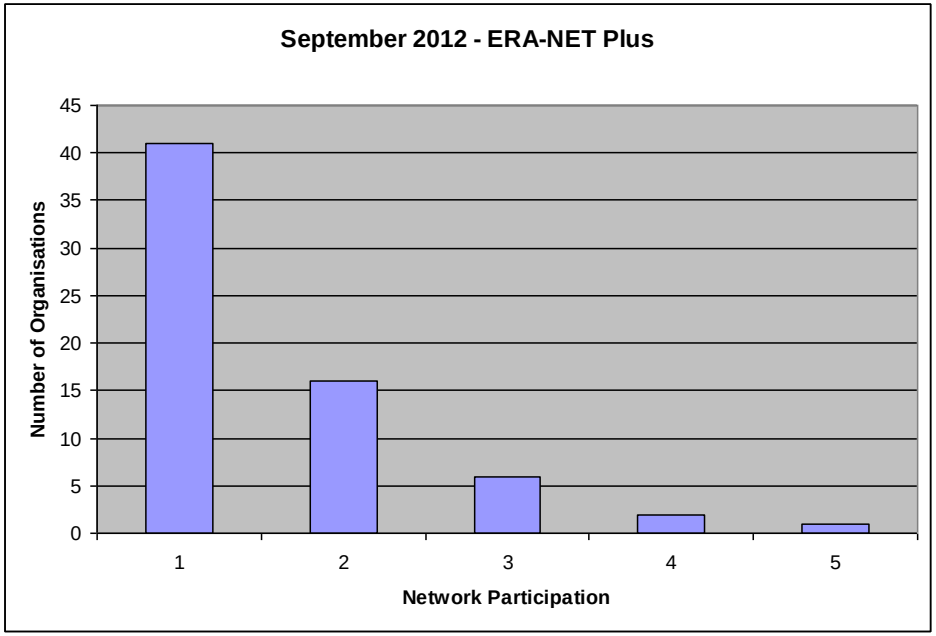


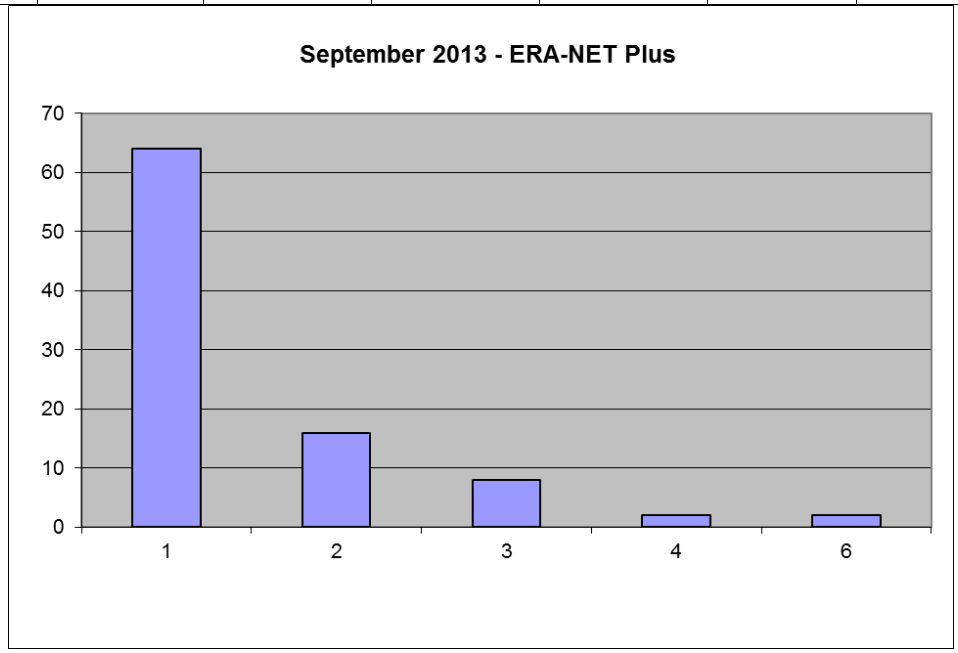


Organisations involved in ERA-NETs have generally participated in a single network (290 in September 2013). One organisation that participated in 22 ERA-NETs (23 in 2012) was TUBITAK (The Scientific and Technological Research Council of Turkey). The Turkish institution was followed by the Federal Ministry of Education and Research of Germany (BMBF) with 19 ERA-NET participations and National Research Agency of France (ANR) with 17 ERA-NET participations.

2.2.5. Types of Network – Involvement of organisations in Multiple Networks (II)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number of participations in ERA-NET Plus	90	89	82	82	66	92





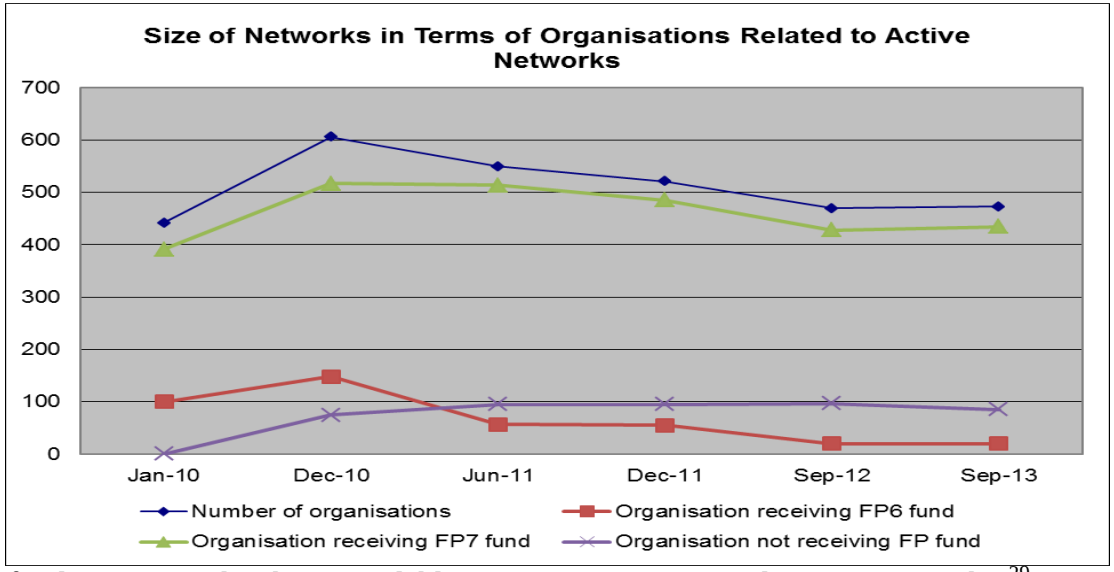
The number of organisations involved the ERA-NET Plus networks increased notably over the past year, while there was a slight increase in the total number of organisations participating in active networks. These organisations mostly participate in one network (41 in 2012 and 64 in 2013). Two organisations, Polish National Centre for Research and Development (NCBiR) and Research Council of Norway (RCN), participate in six ERA-NET Plus actions. It is notable that a large proportion of organisations participated in ERA-NET Plus actions (72 out of 92 organisations, corresponding to 78%) also participated in ERA-NETs. This may show that the experience of organisations gained in the ERA-NET participation is also practical for ERA-NET plus.

There are also 'other types of network' in the NETWATCH database, which actually correspond to the self-sustaining networks. In December 2010, 75 organisations participated in self-sustaining networks increasing to 77 in June 2011, 54 in December 2011, 97 in September 2012 and 85 in September 2013.

The number of organisations involved in Article 185 networks has remained the same since December 2010 while the number of participant organisations increased to 95 over five periods.

2.2.6. Funding Sources – Numbers Involved

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisation involved in active networks in the NETWATCH database	442	606	550	521	470	473
Number utilising programme funding	0	61	92	94	94	113
Number utilising institutional funding	0	21	44	44	30	24
Number utilising other funding sources	0	14	22	22	37	7
Number of organisation with unspecified sources of funding	0	531	404	375	440	441



Only limited information on the funding sources has been available since January 2010 and it remains patchy.[29] Most organisations did not provide an answer to this question: 88% of information was missing in 2010, 72% in 2011, 94% in 2012 and 441 out of 473 organisations (93%) did not indicate the funding source in 2013.

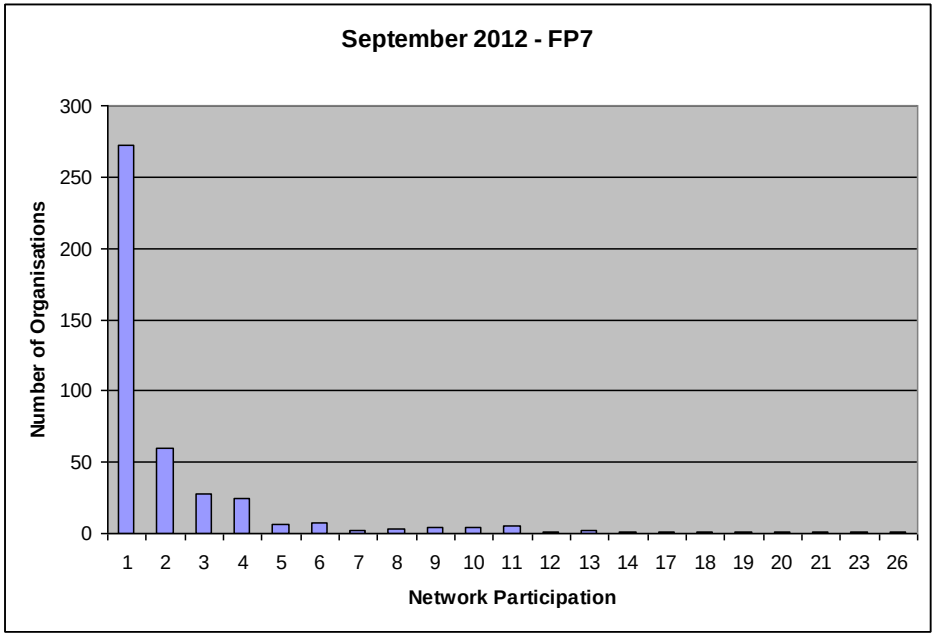
Where responses are given, the number of organisations utilising programme funding always had the largest proportion. Programme funding was also the only variable that increased from 94 to 113 while all other types of funding sources decreased. The number utilising institutional funding decreased from 30 to 24 and the number of other funding sources went down from 37 to seven.

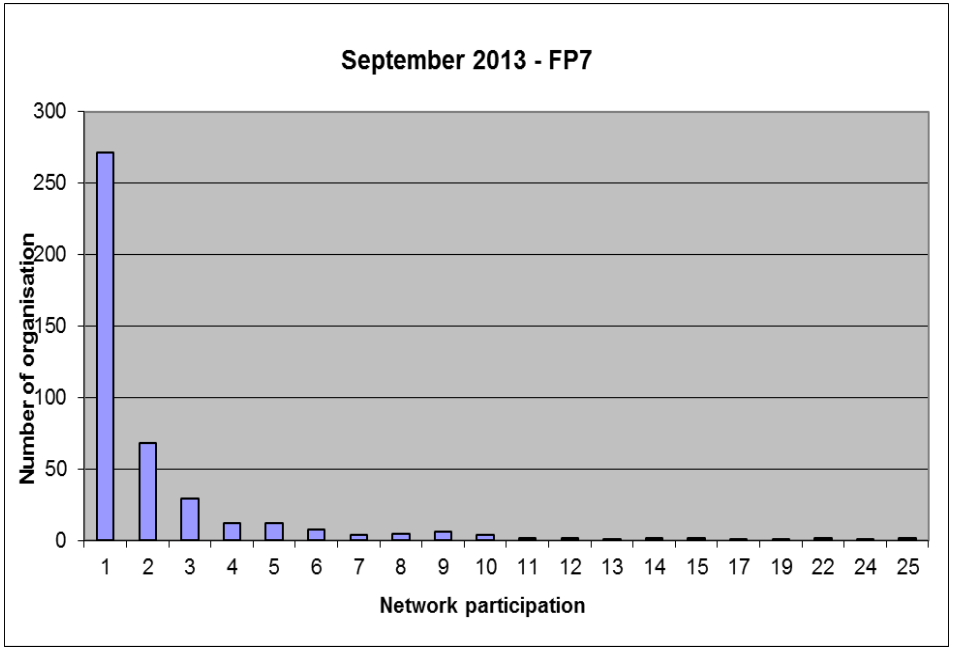
The number of organisations receiving FP6 funding decreased significantly, as there was only one active FP6 funded network in 2013. A decrease can also be observed for the organisations not receiving FP funding, from 97 to 85.

[29] The organisations provided information on the funding sources did not always provide a single response; for example, they may have indicated programme and institutional funding together.

2.2.7. Funding Sources – Involvement in Multiple Networks (I)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Total number of organisations receiving FP7 funding	391	517	514	485	428	435



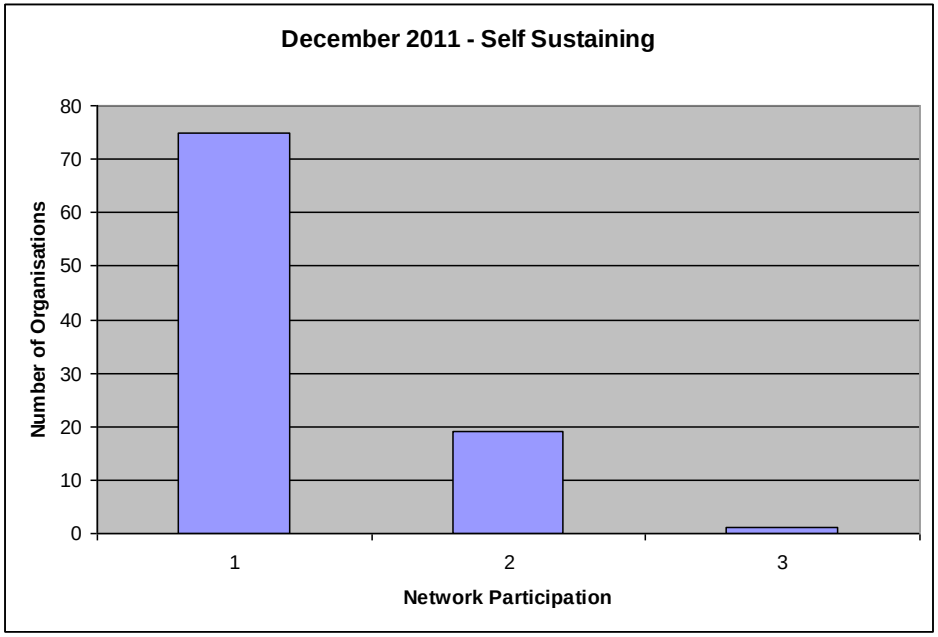


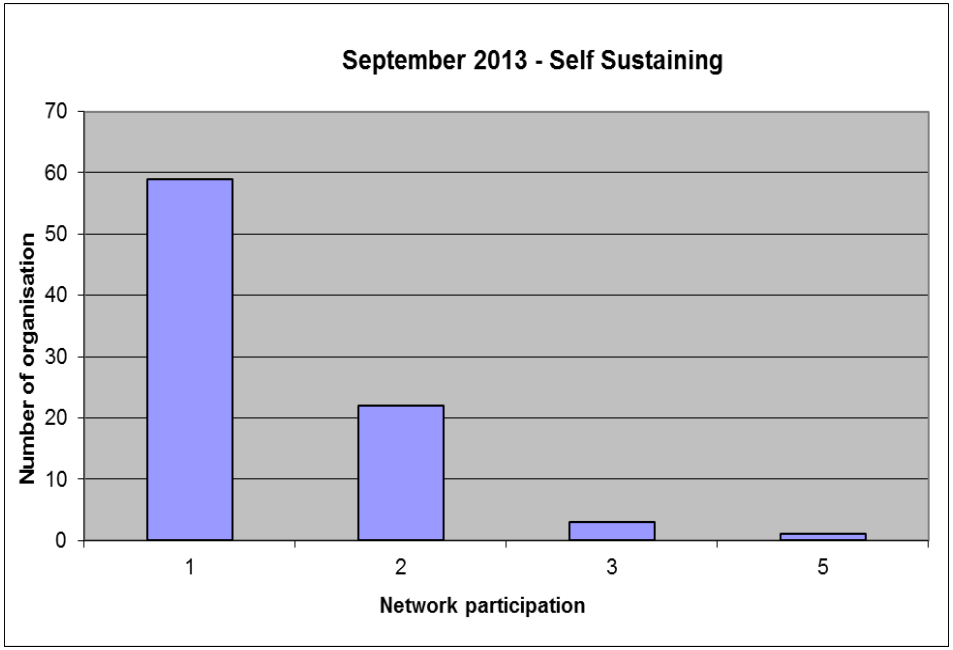
Of the 435 organisations receiving FP7 funding in 2013, 271 participated in only one network (compared to 323 out of 485 organisations in 2011 and 272 out of 470 in 2012). Over the early period, from 2010 to 2011, the scale of network participation has changed; the maximum number of network participations was 14 in 2010 and 27 in 2011. Afterwards, since 2011, the scale more or less remained stable at 26 for 2012 and 25 for 2013.

In both years 2012 and 2013, there was only one FP6 network (EDCTP) with 20 participating organisations.

2.2.7. Funding Sources – Involvement in Multiple Networks (II)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of organisations involved in active networks in the NETWATCH database	442	606	550	521	470	473
Total number of organisations not receiving FP funding	-	75	95	95	97	85



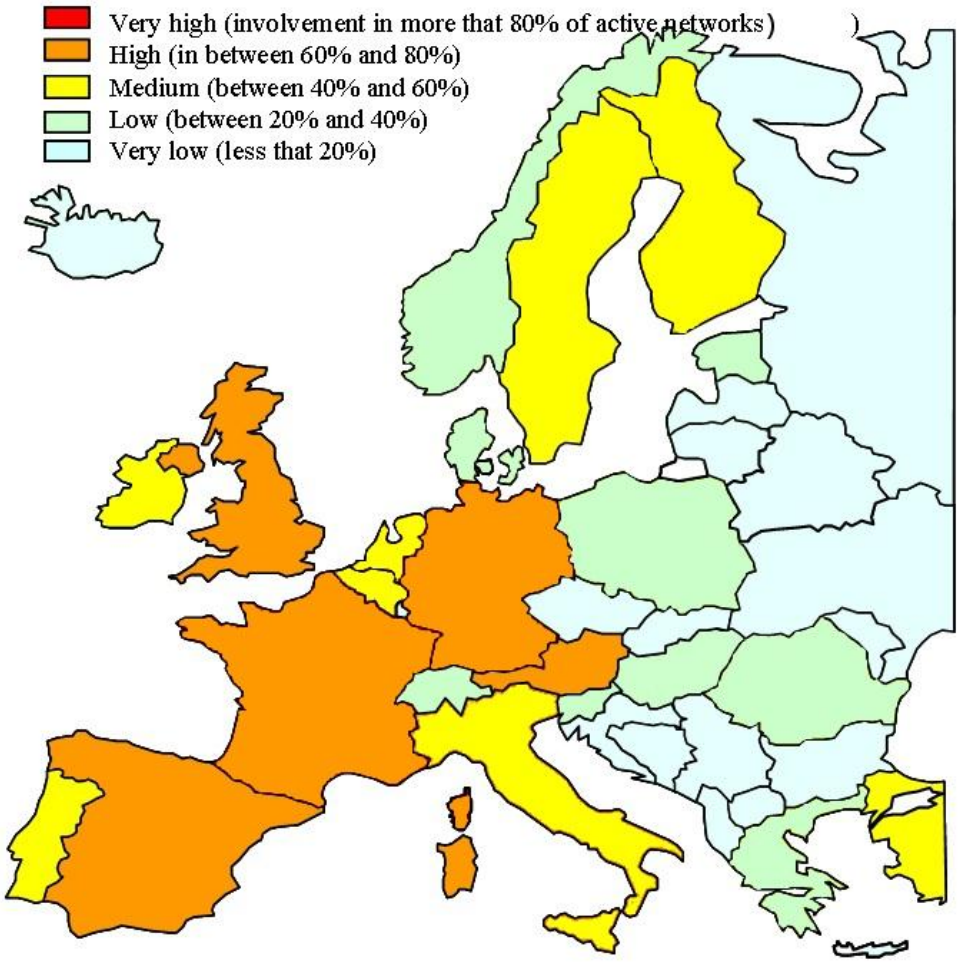


The number of self-sustaining networks has decreased to 10 from 11 in 2012, while the number of organisations has also decreased from 97 to 85. Notably, the National Centre for Research and Development (NCBiR, Poland) participates in five self-sustaining networks. Three organisations participate in three networks: the Agency for Environment and Energy Management (ADEME, France), the Engineering and Physical Sciences Research Council (EPSRC, the UK) and Agentschap (the Netherlands). Finally, there are 22 organisations participating in two self-sustaining networks.

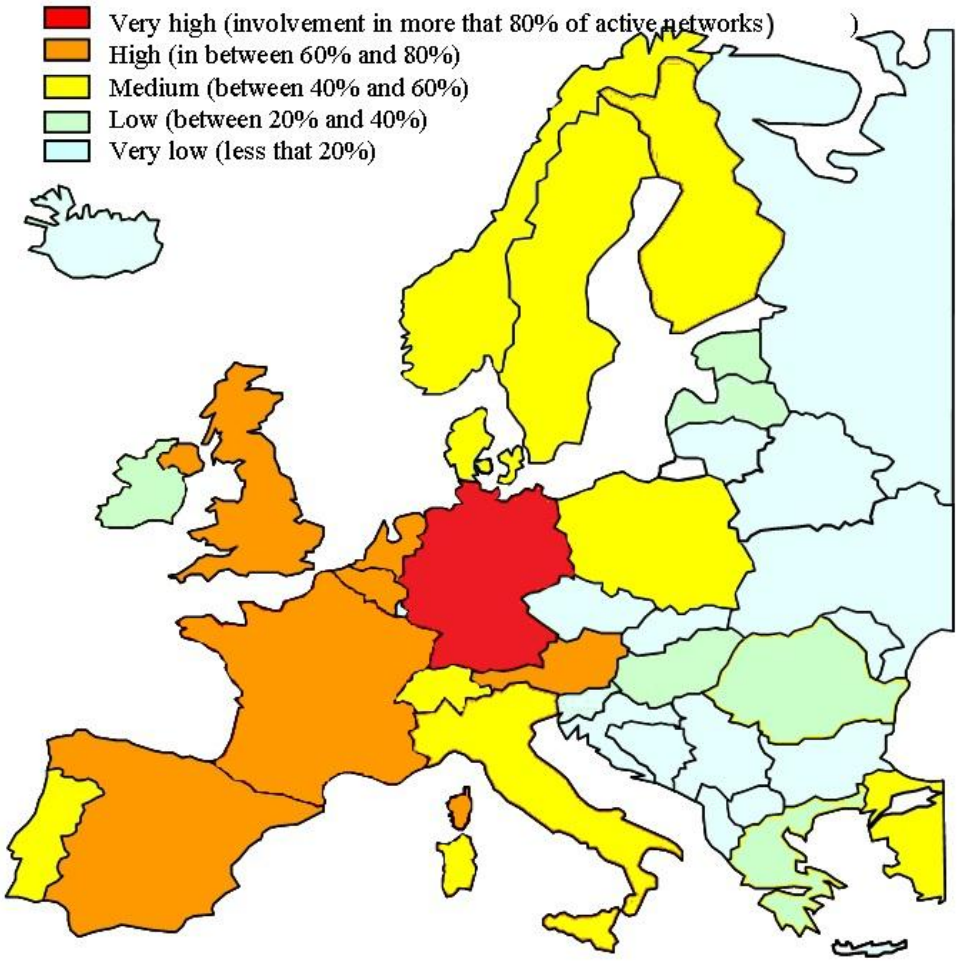
2.3. COUNTRIES

2.3.1. Country Involvement (I)

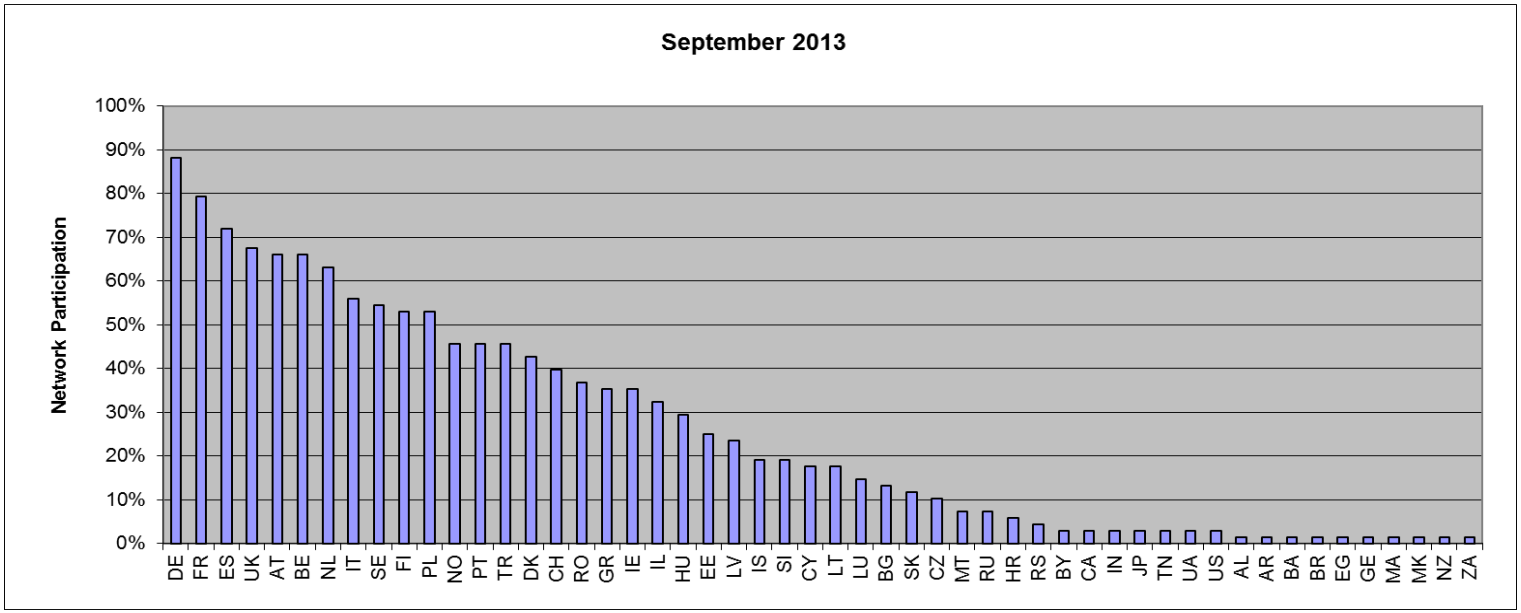
September 2012



September 2013



2.3.1. Country Involvement (II)



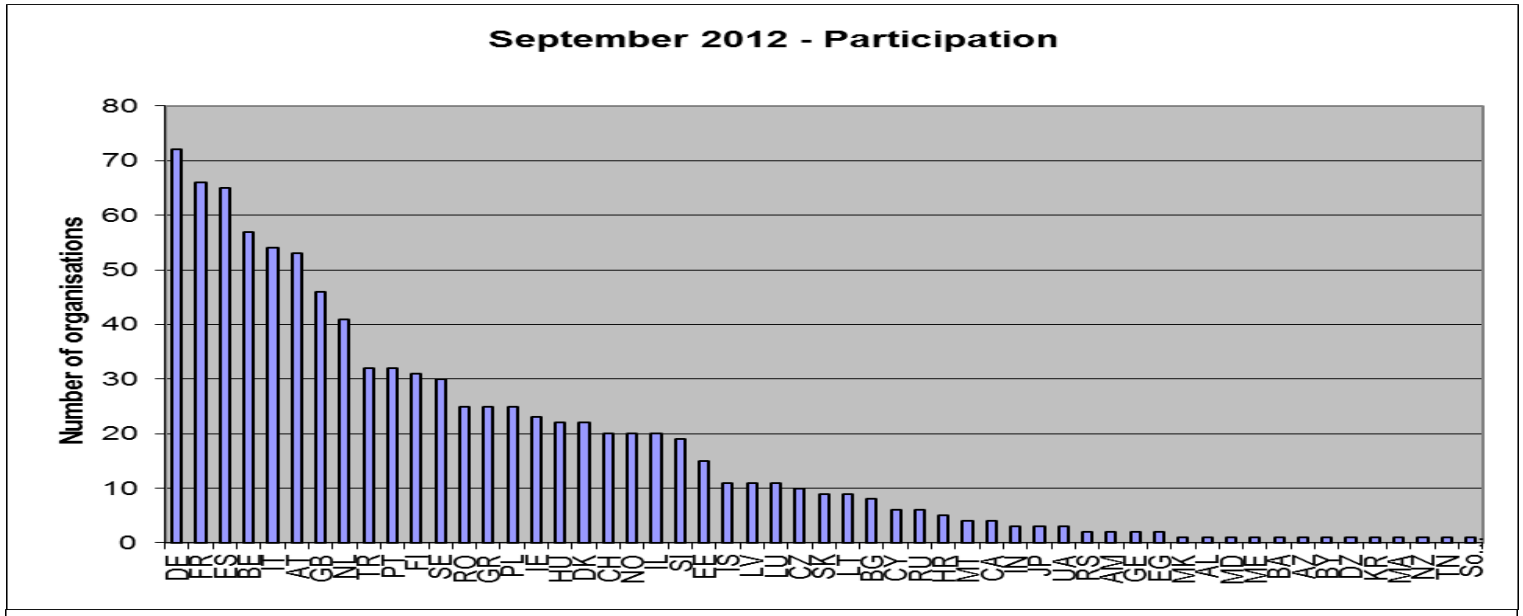
The number of countries[30] represented in active networks was 54 in 2013. The cohort covered the 28 EU Member States, 9 of the 14 countries associated to Framework Programmes and 15 Third Countries. Additionally, 15 international organisations actively participate in active networks.[31]

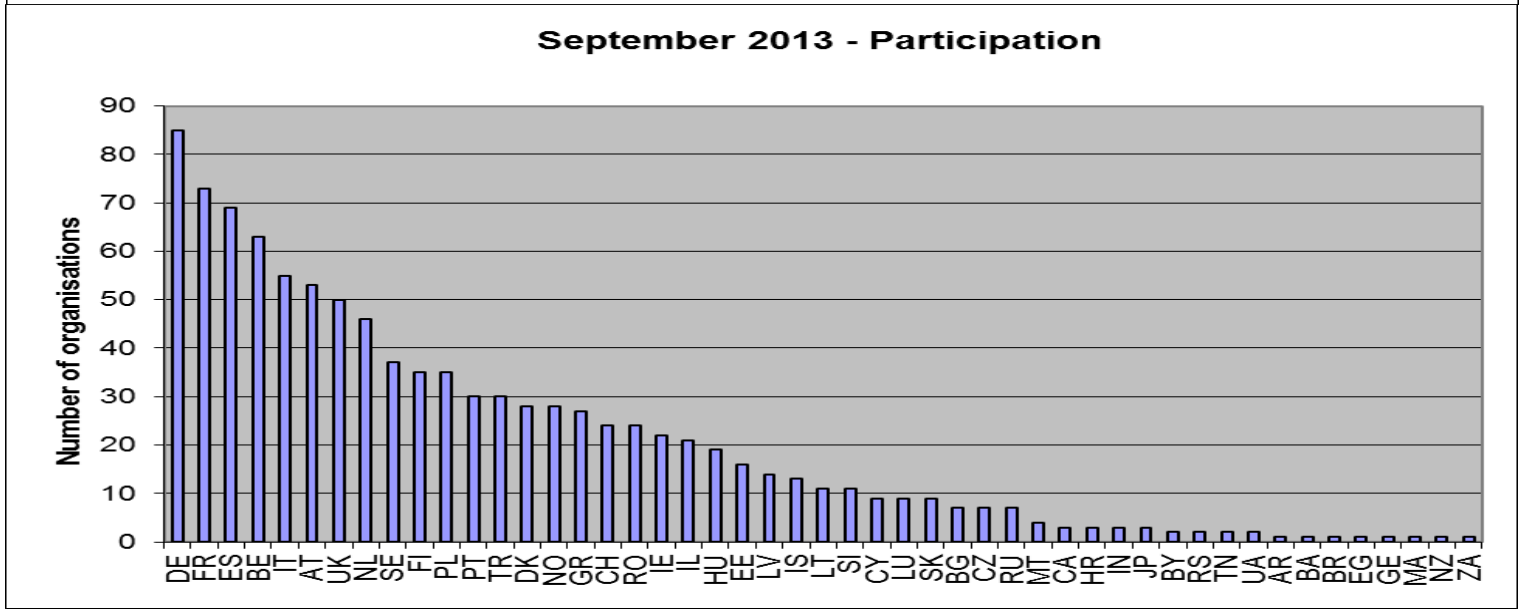
In 2013, only Germany participated in more than 80% of the active networks. Previously, in 2011, both Germany and France reached this share. As of September 2013, seven countries are involved in more than 60% of the active networks, namely: Germany (participates in 88% of networks), France (79%), Spain (72%), UK (68%), Austria (66%), Belgium (66%) and the Netherland (63%).

The average number of active networks in which an individual country participated, in 2013, was 17.5. Twenty-one countries are above this average, while 33 countries participated in fewer networks than the average. Meanwhile, the median number of network participation was 12. The lowest level of country involvement corresponding only one active network is observed 10 times, which mainly relates to Third Country participation.

[30] The country is determined by the country associated to the participating organisations.
[31] International organisations were filtered out, as they cannot be assigned to one country.

2.3.2. Country Involvement by Role (I)





2.3.2. Country Involvement by Role (II)

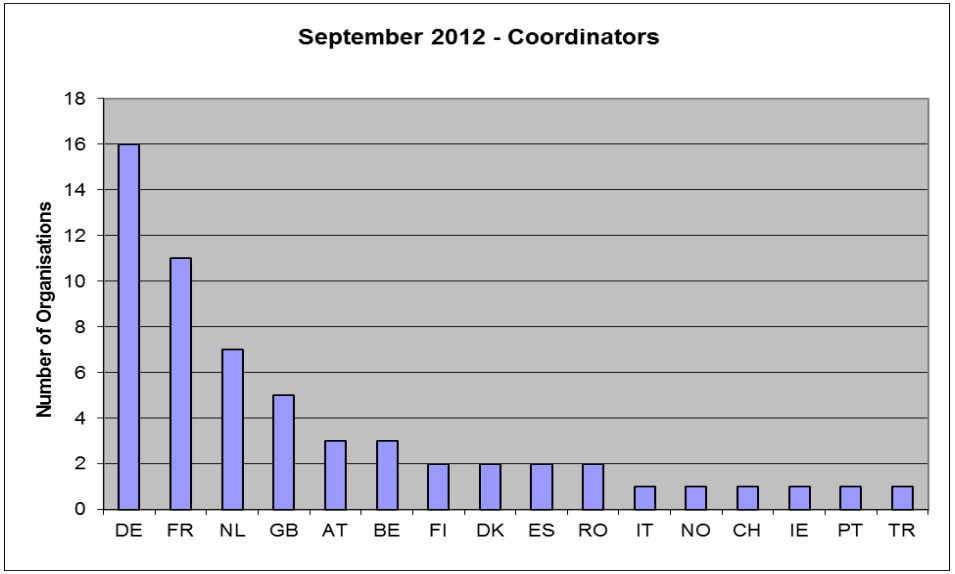
Participant refers to the number of national and regional organisations in a country acting as participants.[32] This only includes those that indicate they are a participant in NETWATCH and not those that are coordinators, observers or those acting in another capacity.

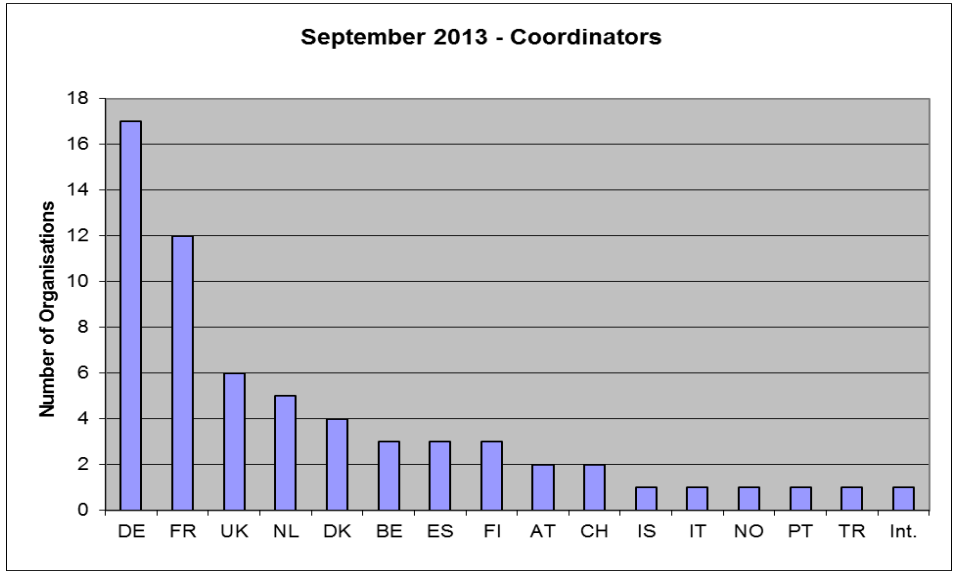
As of September 2013, there were 49 countries acting as participants and the country with the highest number of participations in active networks[33] was Germany with 85 participations. Next was France (73 participations) followed by Spain (69 participations), Belgium (63 participations), Italy (55 participations), Austria (53 participations) and the United Kingdom (50 participations). Meanwhile, eight countries had only one participation, of which four were represented by two participations. In September 2012, the highest participation was observed for Germany (72), France (66), Spain (65), Belgium (57), Italy (54), Austria (53) and the United Kingdom (48).

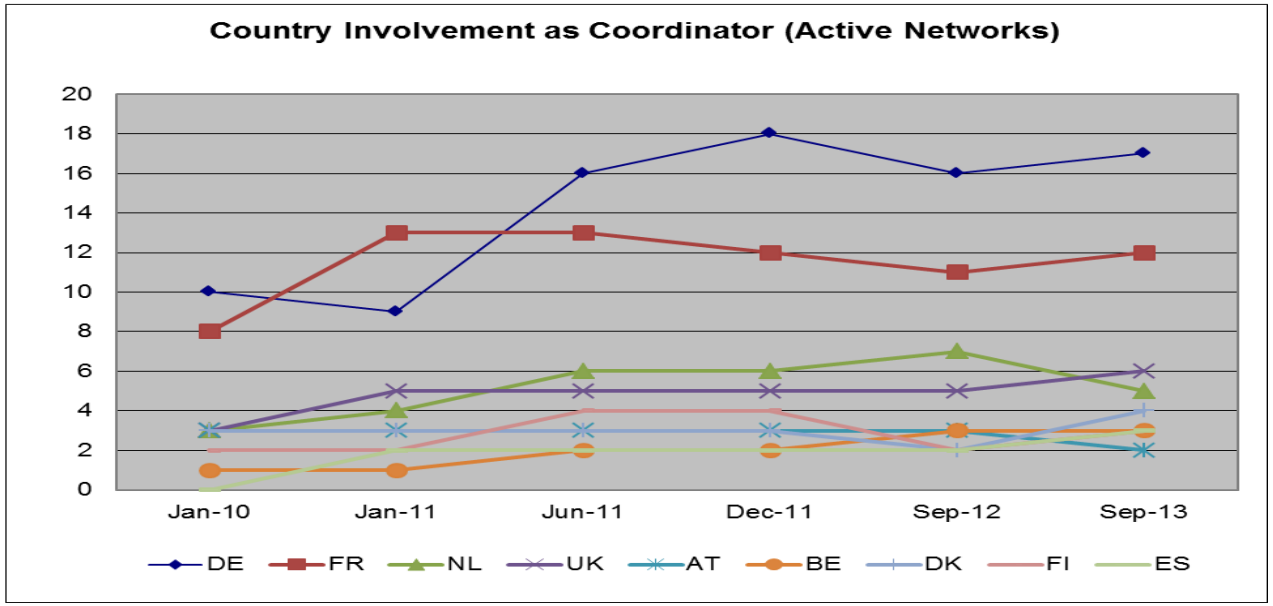
[32] International organisations are filtered out as they cannot be assigned to one country.

[33] As Nordic Countries was indicated a single participant, it was replaced by the constituent countries, namely, BONUS EEIG involves eight countries (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Switzerland) and Nordic Forest Research Co-operation Committee, Nordic Energy Research, Nordic Innovation Centre, Nordic Council of Ministers, and Nordic Optical Telescope Scientific Association involve five countries (Denmark, Finland, Iceland, Norway and Sweden)..

2.3.2. Country Involvement by Role (III)







2.3.2. Country Involvement by Role (IV)

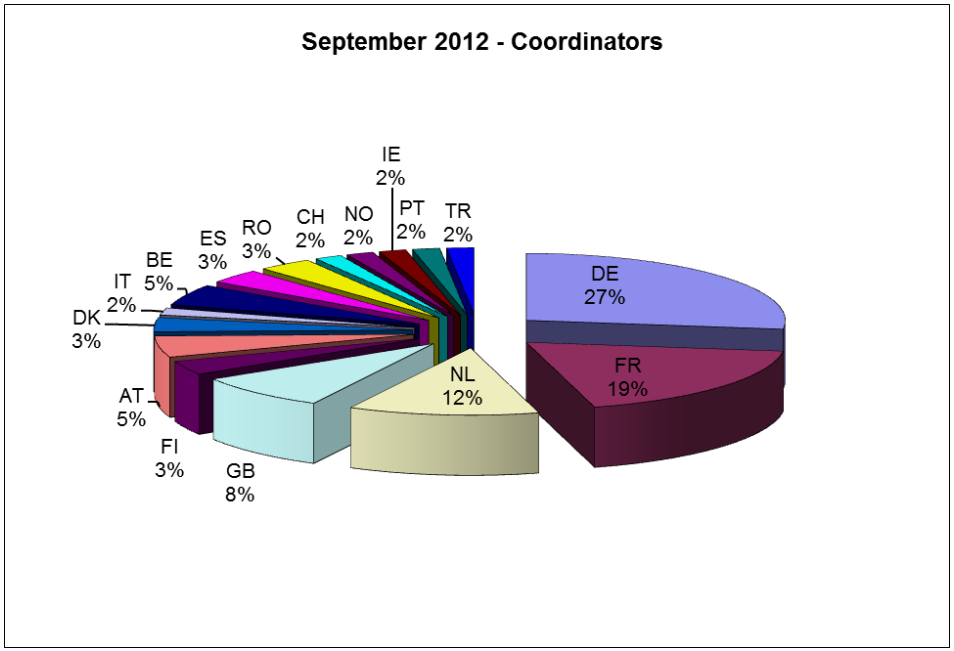
Coordinators refer to the number of national and regional organisations in a country acting as coordinators.[34]

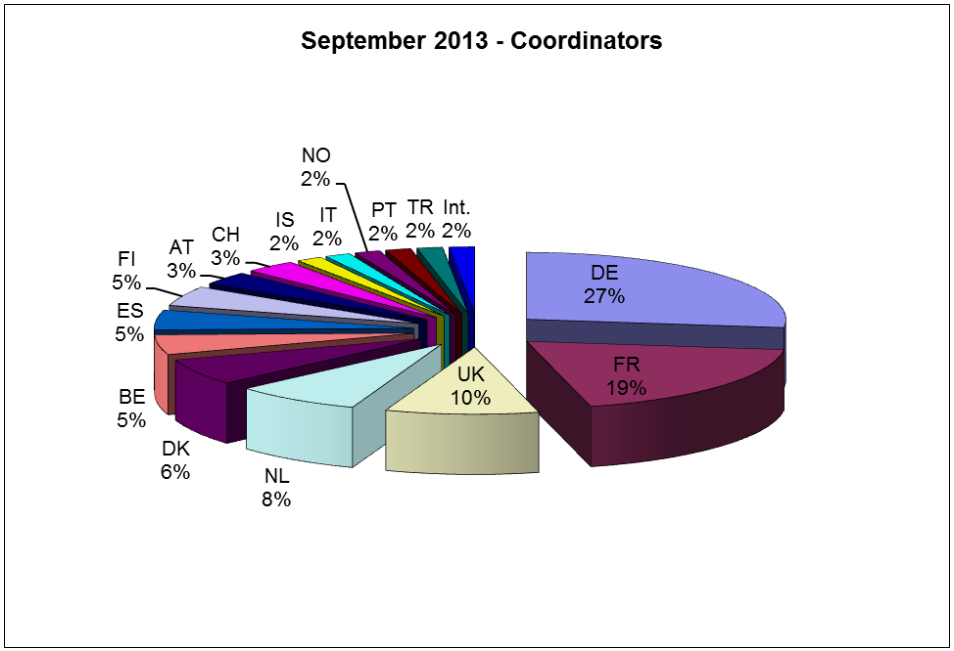
As coordinators, Germany and France predominate: 17 organisations in Germany took a coordinator role in September 2013, and 12 in France. Compared to 2012, Germany increased the number of organisations acting as coordinators from 16, while France's participation increased from 11.

The other countries that had organisations with coordination roles were, in 2013, the United Kingdom (six organisations), the Netherlands (five organisations), Denmark (four organisations), Spain, Finland and Belgium (three organisations each) Austria and Switzerland (two organisations), and Italy, Iceland, Norway, Portugal and Turkey (one organisation). Also there is one international organisation, BONUS EEIG, which took the coordinator role for a network.

[34] International organisations are filtered out as they cannot be assigned to one country.

2.3.2. Country Involvement by Role (V)

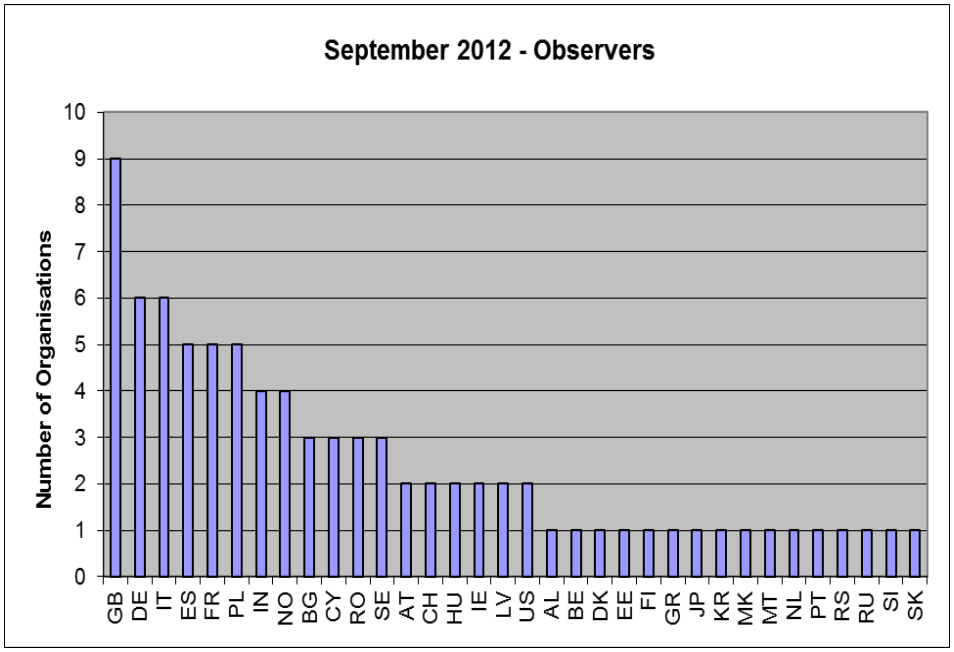


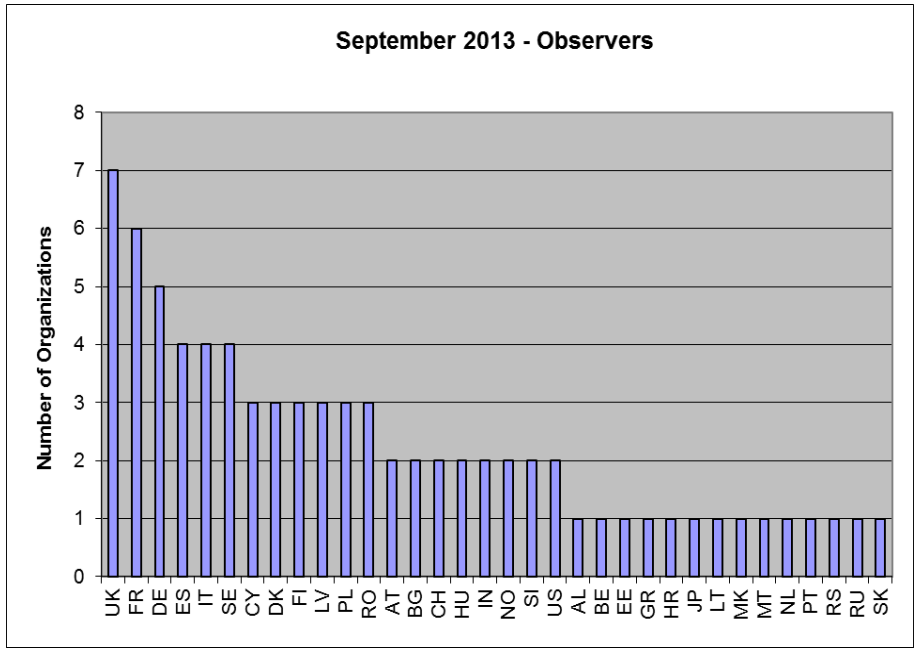


A large proportion of the networks were coordinated by Germany (27% in 2012 and 2013; also 25% in 2011) and France (19% in 2012 and 2013; and 17% in December 2011). Organisations in France and Germany coordinated almost half of the active networks during the three periods since 2011. Their combined proportion increased from 42% to 47% in 2012 and decreased to 46% in 2013.

While the high participation of Germany and France in the active networks has been matched by their frequency as coordinators since 2011, there was a contrary phenomenon, which was highlighted in previous monitoring reports, of countries with high overall participation having a low level of involvement as coordinators. For example, while organisations in Spain participated in 49 active networks in 2013, they took only three coordinator roles. Similarly, Italy and Belgium had high participation rates (56% for Italy and 66% for Belgium), but they had very low levels as coordinators in 2013 (2% and 5%, respectively).

2.3.2. Country Involvement by Role (VI)





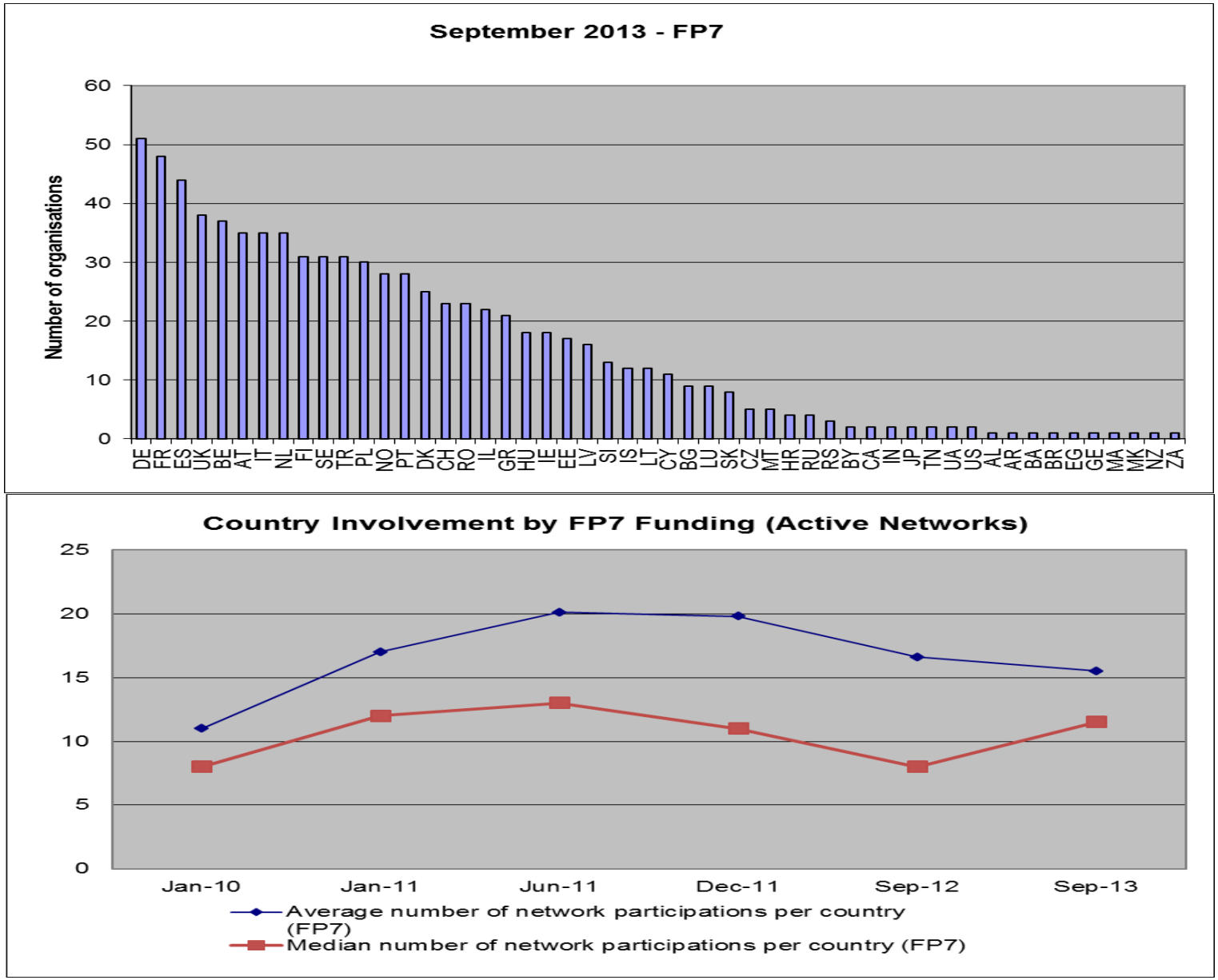
Observers refer to the number of national and regional organisations in a country acting as observers[35].

The total number of organisations in a country acting as observers and participating in active networks in 2013 was 92. They are distributed across 34 countries

The highest number of organisations in a country acting as observers was seven (the United Kingdom). In 2013, the average number of organisations in a country acting as observer was 2.29 and a median of two. The average was 2.47 in 2011 and 2012 while the median was 1.50 in 2011 and 2 in 2012.

[35] International organisations are filtered out as they cannot be assigned to one country. As Nordic Countries was indicated a single participant, it was replaced by the constituent countries, namely; Iceland, Denmark, Finland, Norway and Sweden. The charts are based on all active networks in the NETWATCH database.

2.3.3. Country Involvement by Funding Mode (I)



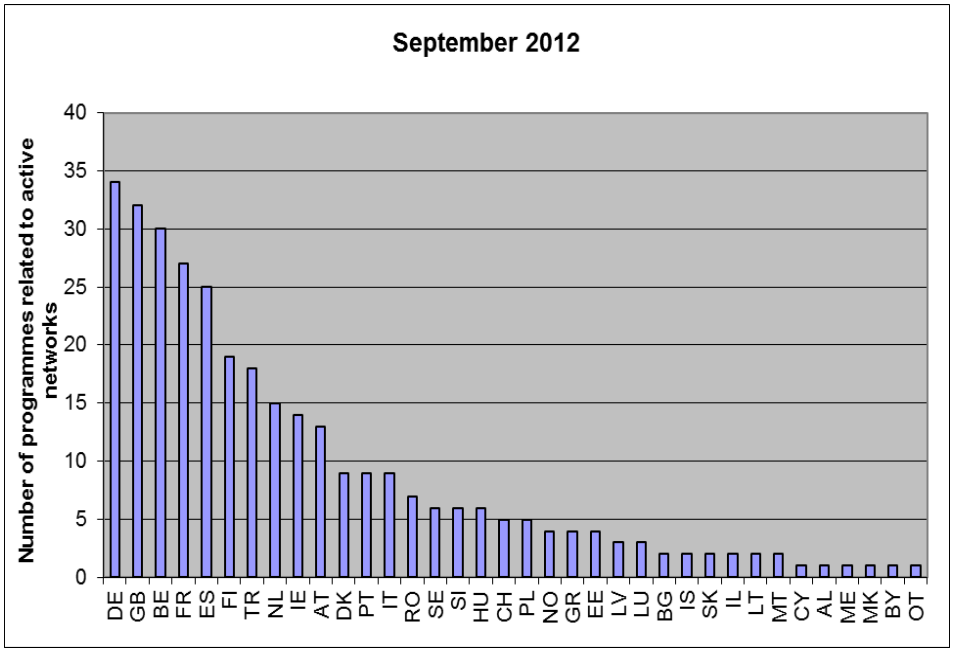
2.3.3. Country Involvement by Funding Mode (II)

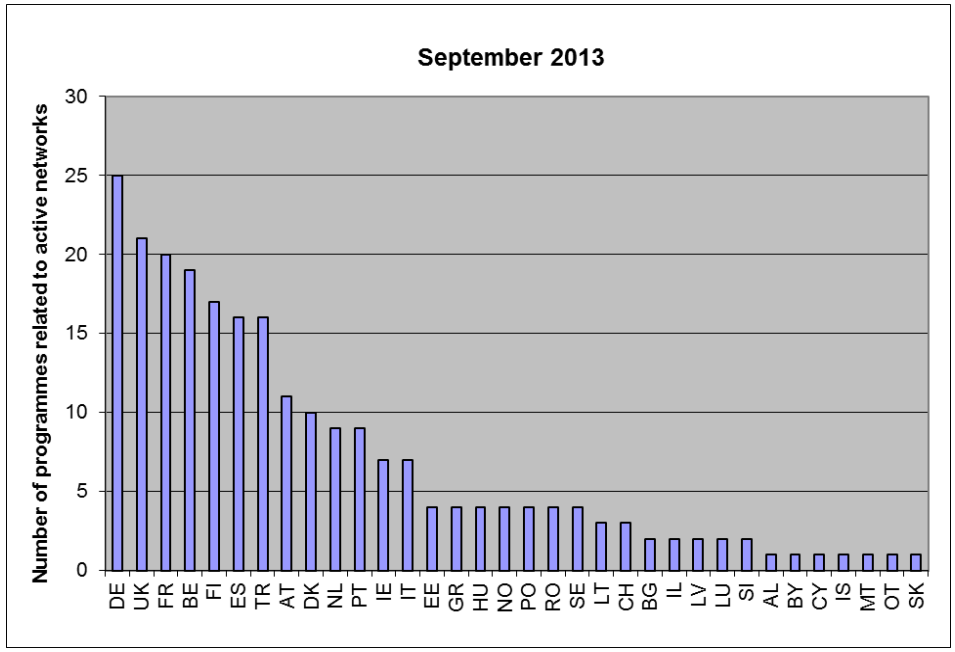
Funding mode refers to the number of active networks in a country by the source of funding.

As it is expected, the networks included in the cohort were mostly funded under FP7. In September 2013, there were 804 participations in active networks (over 56 countries) receiving FP7 funding. In 2012, the number of network participation was 998 although the number of countries was 56. The number of countries funded under FP6 was 21 in June 2011, and the number of network participations was 55. There was no change from June to December 2011. Over the last two periods, 2012 and 2013, there was only one FP6 network (an Article 185) with 16 countries involved.

In September 2013, the average number of network participations per country receiving FP7 funding was 15.5, and a median of 11.5. In 2012, the average was 16.6 while the median was eight.

2.3.4. Country Involvement by Related Programmes





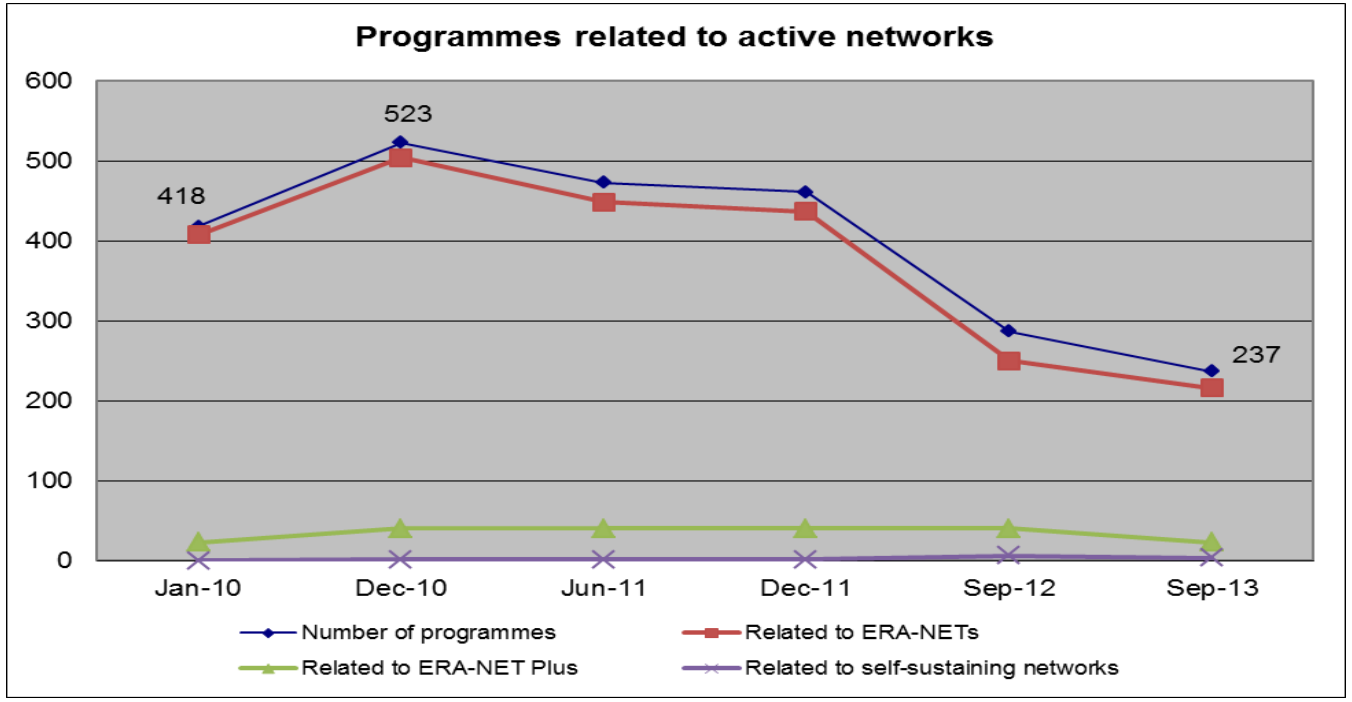
Country involvement refers to the number of programmes in a country participating in active networks. The total number of programmes related to active networks was 237 in September 2013, compared to 418 in January 2010, 523 in December 2010, 473 in June 2011, 461 in December 2011 and 287 in 2012.

As of September 2013, Germany (25), the United Kingdom (21), France (20), Belgium (19), Finland (17), Spain (16), Turkey (16), Austria (11), Denmark (10) and the Netherland (9) were the top 10 countries with programmes related to active networks. These top ten countries (out of 34) covered 69% of the total number of programmes related to active networks.

2.4. PROGRAMMES

2.4.1 Related Programmes (I)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of programmes related to active networks in the NETWATCH database	418	523	473	461	287	237
Number of programmes related to ERA-NETs	408	504	449	437	250	216
Number of programmes related to ERA-NET Plus networks	23	40	40	40	40	23
Number of programmes related to Article 169/185 networks	0	0	0	0	0	0
Number of programmes related to other networks	0	1	1	1	6	3
Number of programmes related to networks receiving FP7 funds	370	468	468	456	282	234
Number of programmes related to networks receiving FP6 funds	59	69	8	8	0	0
Number of programmes related to networks not receiving FP funds	0	1	1	1	6	3



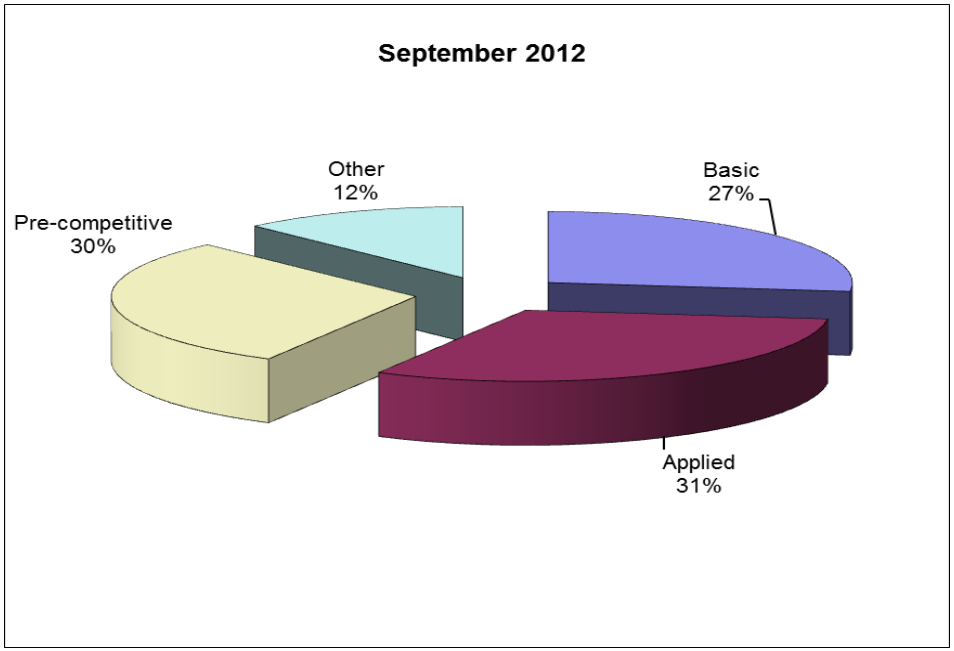
2.4.1 Related Programmes (II)

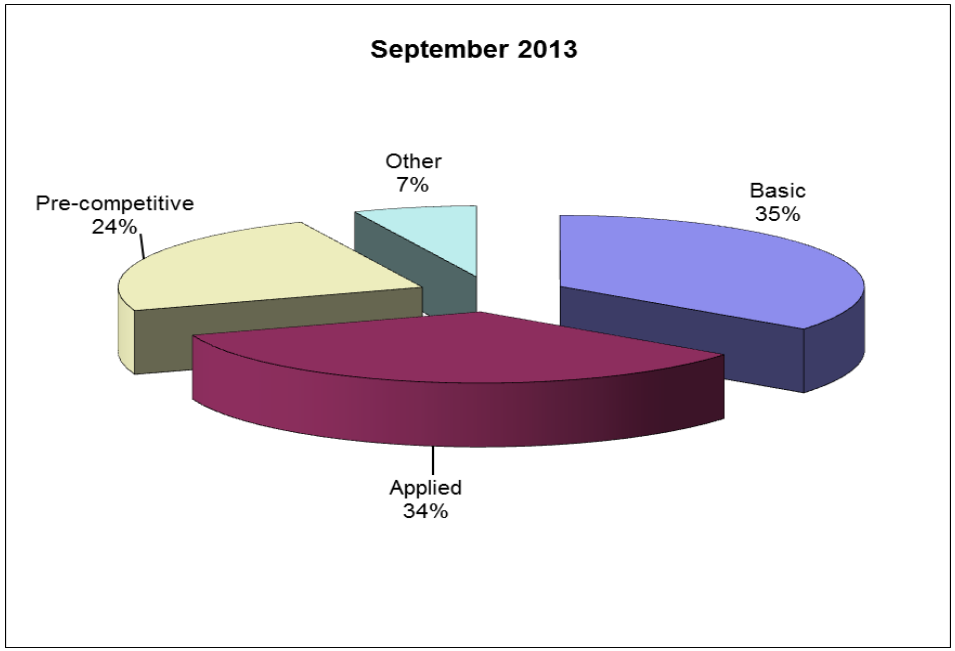
As the active networks analysed were predominately FP7 ERA-NETs, it is unsurprising that they account for the greatest number of programmes. However, not all networks have associated programmes. In September 2013, 22 out of 68 active networks had associated programmes this is a lower proportion than in previous periods of analysis: in September 2012, 28 out of 72 networks had associated programmes; while in December 2011 it was 37 out of 67[36]. Information was also requested on the budgets of the related programmes. Unfortunately, this information was, and still is, very incomplete and is presented in incompatible formats, making aggregation and comparison of the information very difficult.

There are three programmes related to two self-sustaining networks: Bioenergy with two programmes associated to it and ERA-Chemistry with one.

[36] Programmes can be associated with more than one network.

2.4.2 Types of Research Performed by Related Programmes

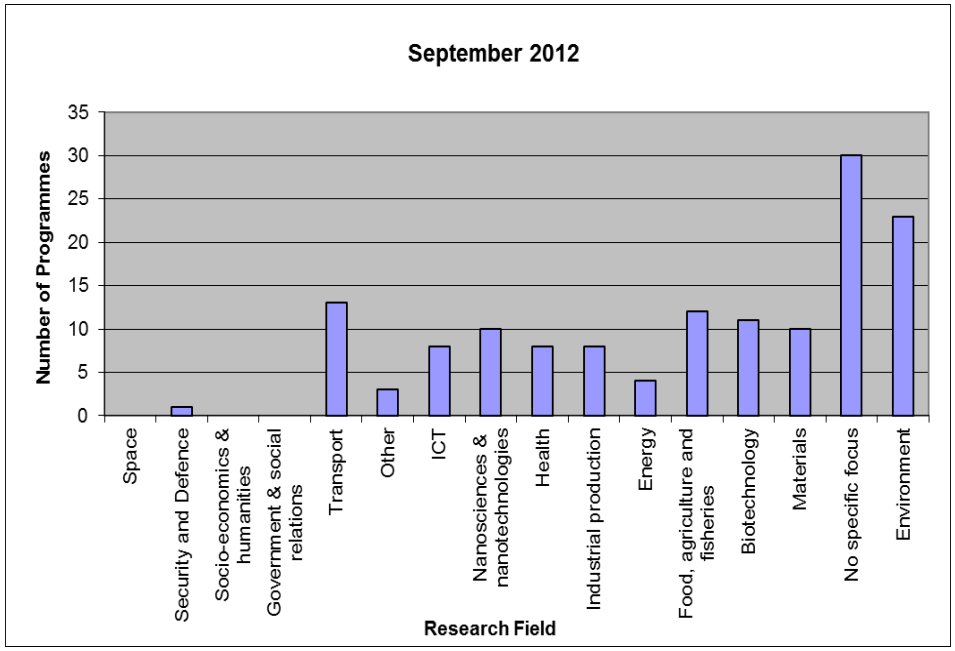


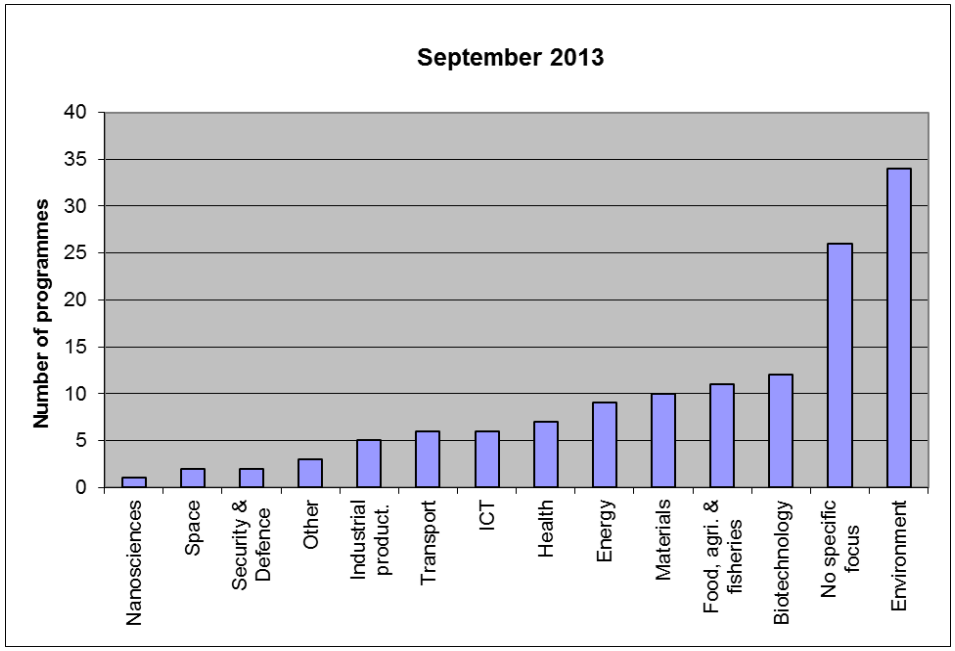


Twenty-eight networks out of 72 had related programmes in 2012, while22 out of 68 were counted in 2013.

In September 2013, 35% of programmes undertook basic research, 34% applied and 24% pre-competitive. These proportions of programmes indicating the research types (basic, applied and pre-competitive) has slightly changed over the past year: while the proportion of basic research increased from 27% to 35%, the share of pre-competitive research decreased to 24% from 30%.

2.4.3 Research Fields Covered by Related Programmes





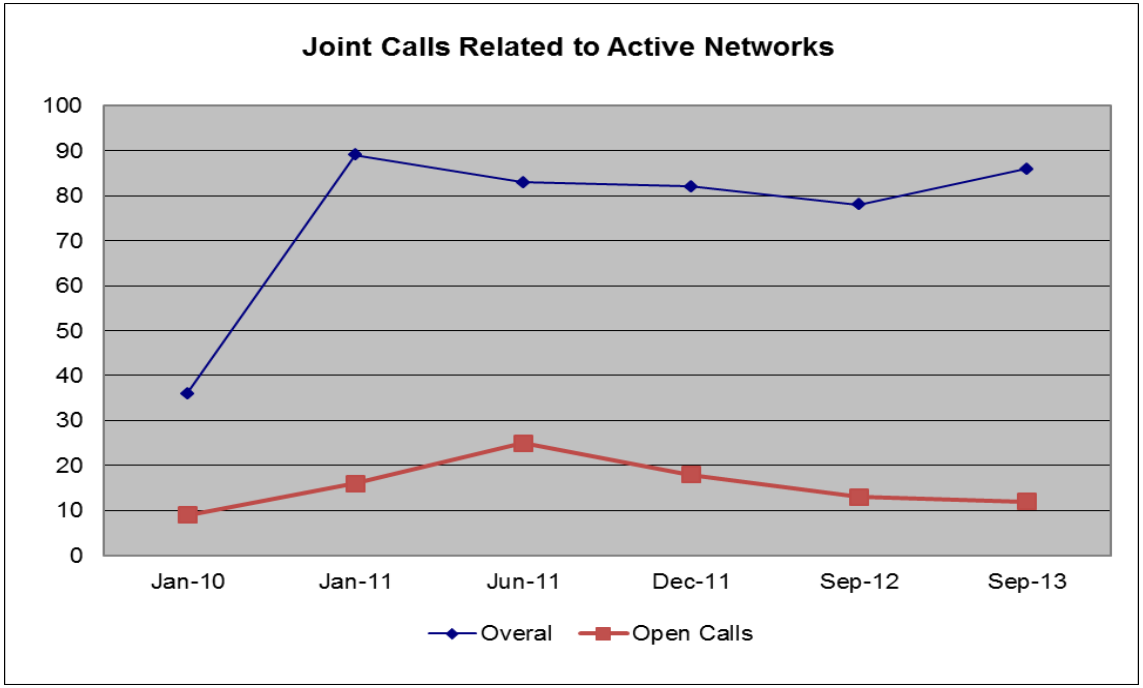
There were very few changes observed over the past year. "Environment", became the most frequently cited research field covered by programmes, followed by "no specific focus". There was also a substantial increase in programmes citing "energy" while there was a significant decrease in the number of transport-related active programmes.

It is notable that the response rates were quite low. There were 89 responses in September 2013 out of 237 programmes associated with active networks. There were 148 with no response.

2.5. JOINT CALLS

2.5.1 Joint Calls Related to Active Networks (I)

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of open joint calls related to active networks in the NETWATCH database	**9**	**16**	**25**	**18**	**13**	**12**
Number of one stage Joint Calls at date of update	6	6	9	10	7	6
Number of two stage Joint Calls at date of update	1	8	10	6	5	6
Number of other Joint Calls at date of update	2	0	6	2	1	0
Number of unspecified Joint Calls at date of update	0	2	0	0	0	0
Overall number of joint calls related to active networks in the NETWATCH database	**36**	**89**	**83**	**82**	**78**	**86**
Number of one stage Joint Calls at date of update	13	37	36	36	37	40
Number of two stage Joint Calls at date of update	11	39	38	37	37	42
Number of other Joint Calls at date of update	10	8	7	7	2	3
Number of unspecified Joint Calls at date of update	2	5	2	2	2	1

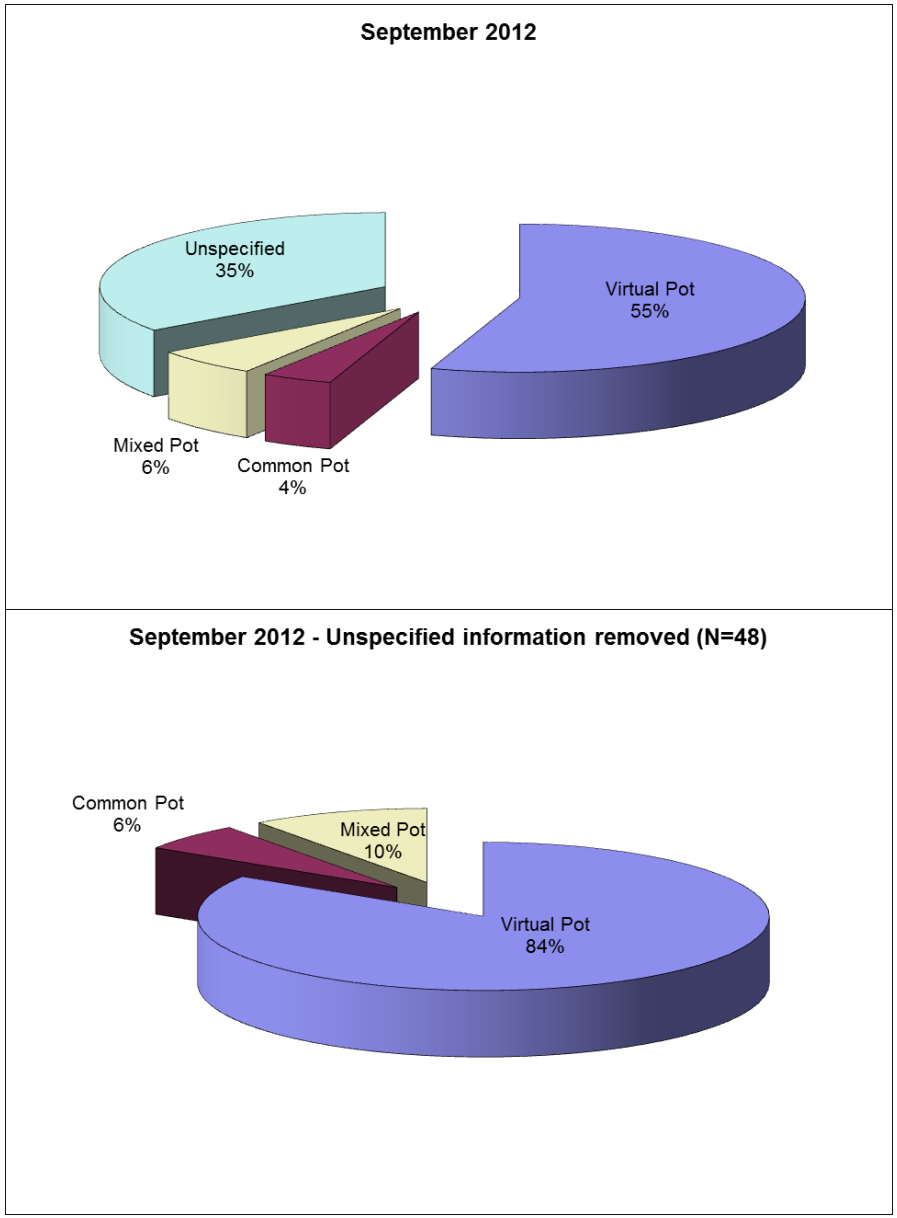


2.5.1 Joint Calls Related to Active Networks (II)

Open calls related to active networks are those open for applications at the reference dates. The joint calls related to active networks refer to the overall number of calls implemented by the active network. The number of open calls related to active networks was nine in January 2010, 16 in December 2010, 25 in June 2011, 18 in December 2011, 13 in September 2012 and 12 in September 2013. The overall number of joint calls related to active networks has also remained at around the same level, with 89 in December 2010, 83 in June 2011, 82 in December 2011, 78 in September 2012 and 86 in September 2013. Over the last five periods, the difference between the number of one stage and two stages calls has always been very small; and finally same numbers of one and two stages calls (six per each) were observed in 2013.

The figures presented here are based on the call information available in the NETWATCH database. However, the response by coordinators to these questions is generally quite low.

2.5.2. Funding Mechanism of Joint Calls in Active Networks (I)



2.5.2. Funding Mechanism of Joint Calls in Active Networks (II)

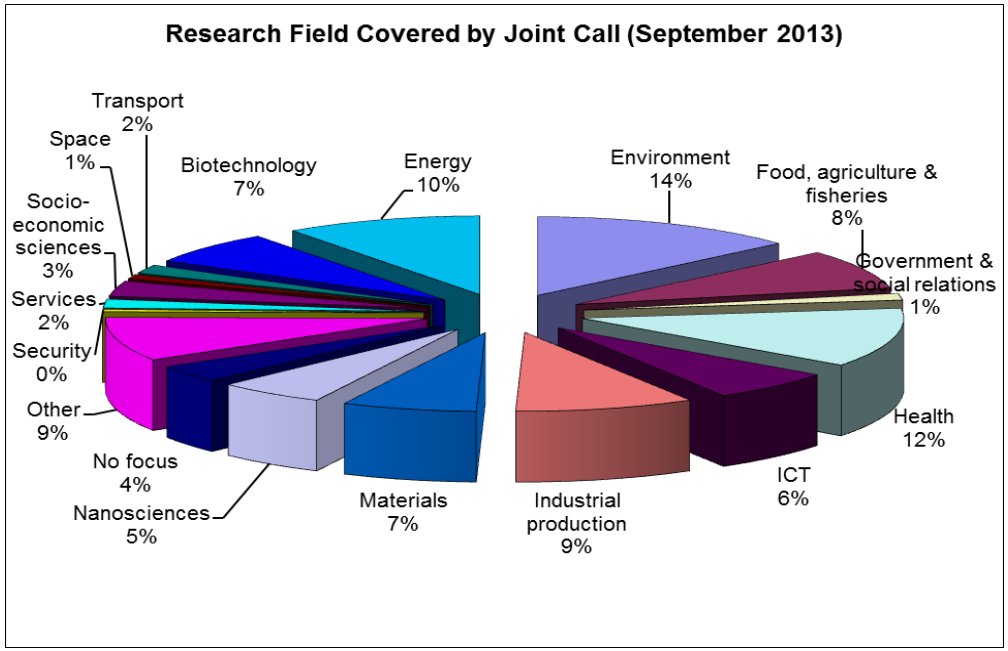
The information presented here is based on the overall number of joint calls related to active networks (86 calls in 2013 and 78 in 2012). The number of joint calls utilising a common pot, virtual mode or mixed mode is calculated as a proportion of this number of joint calls.

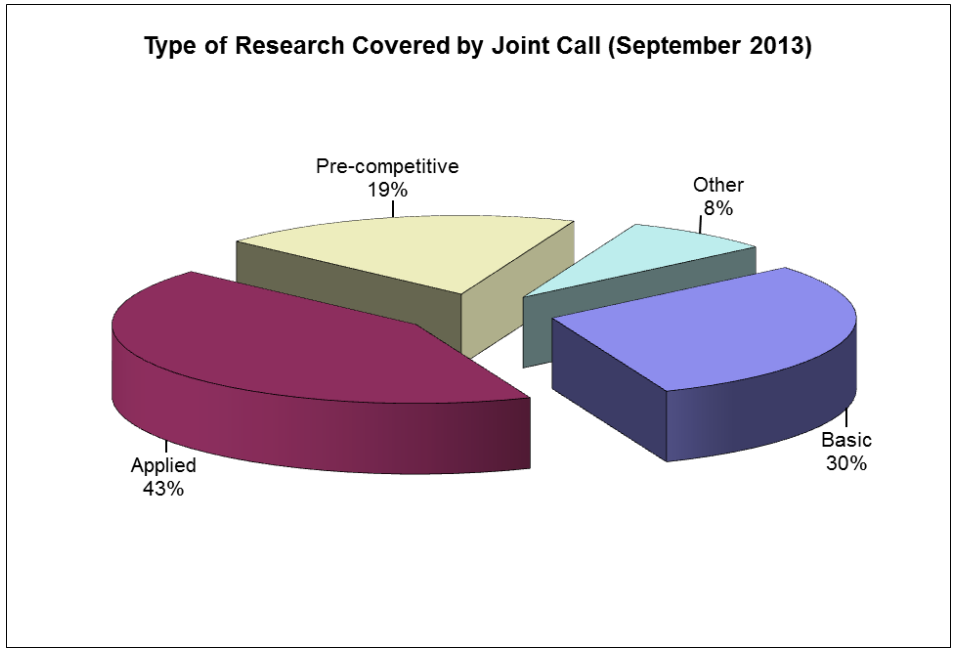
As expected, a large proportion of joint calls utilised a virtual pot (54% in 2013 and 55% in 2012). There was a small proportion utilising a common pot in 2012 (6%). In 2013, no joint call appeared to use a common pot.

One of the key issues is the need to enhance information collected in relation to joint calls. There has been an improvement in the coverage while 39% of the overall joint calls did not have any funding mode specified in 2013.

When focused on the actual responses the proportion indicating the virtual pot was 88% for 2013 an increase from 84% in 2012. It clearly shows that national organisations do not tend to fund research performed in other countries.

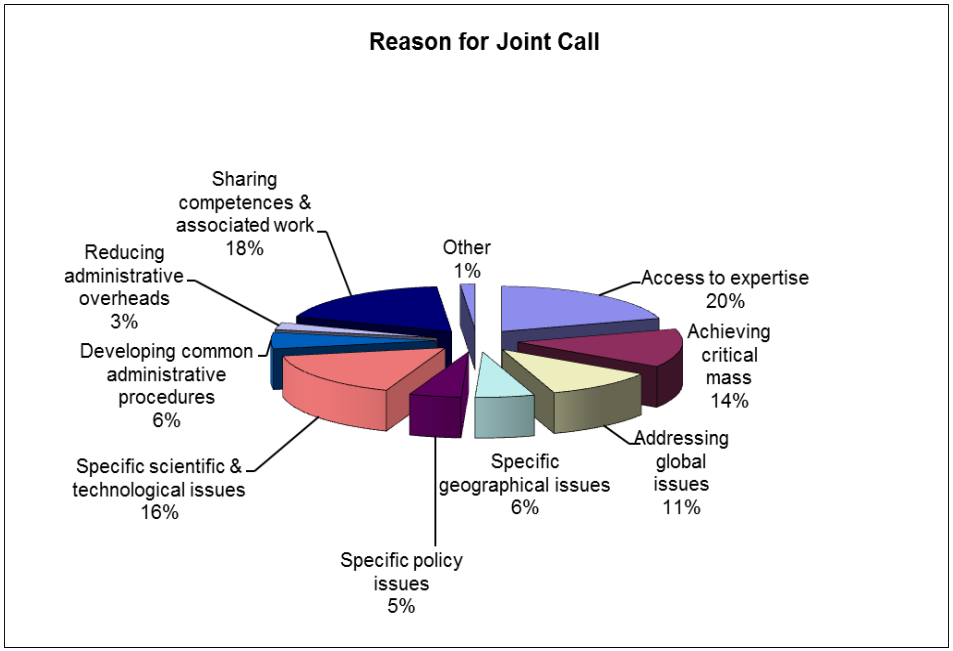
2.5.3. Type of Research & Research Field of Joint Calls in Active Networks

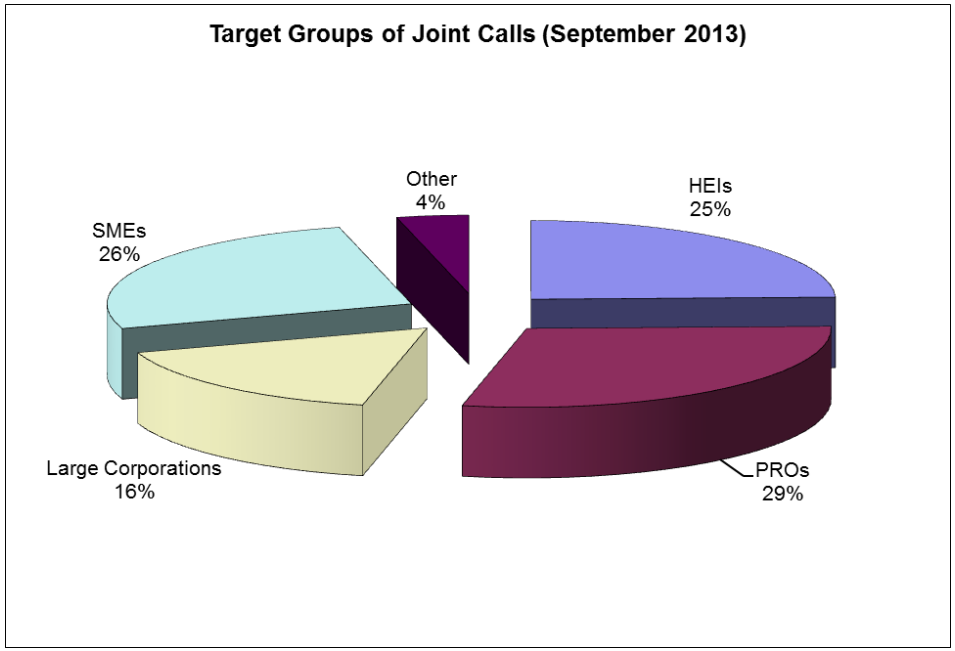




For the networks active in September 2013 the most common type of research covered by joint calls, in the NETWATCH database, was applied research (43% of the overall calls). The most common research area covered by joint calls, which followed the most common research area for the networks as a whole, was Environment (14% of the overall calls), followed by Health (12%), then Energy (10%).

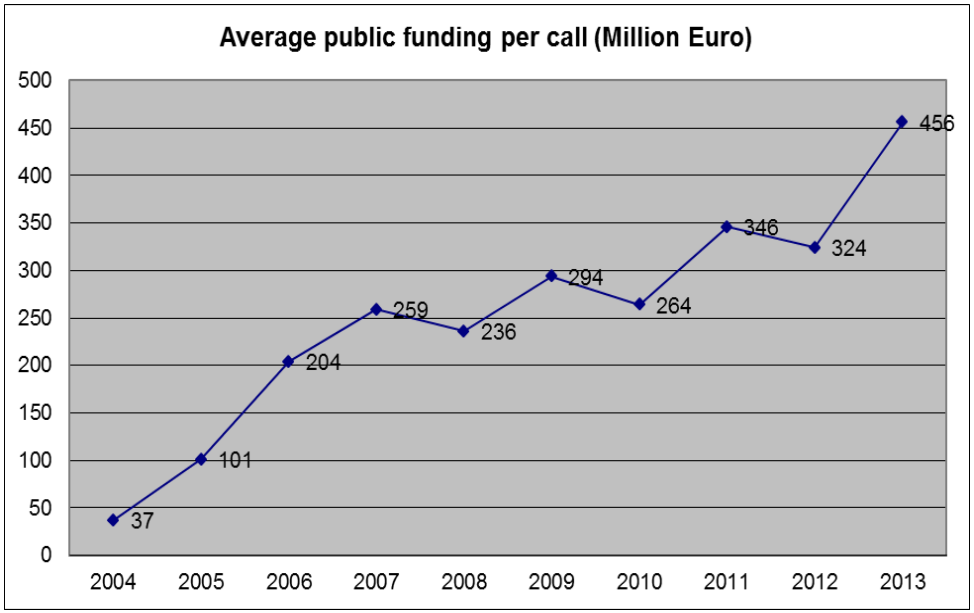
2.5.4. Target Group of Joint Calls in Active Networks

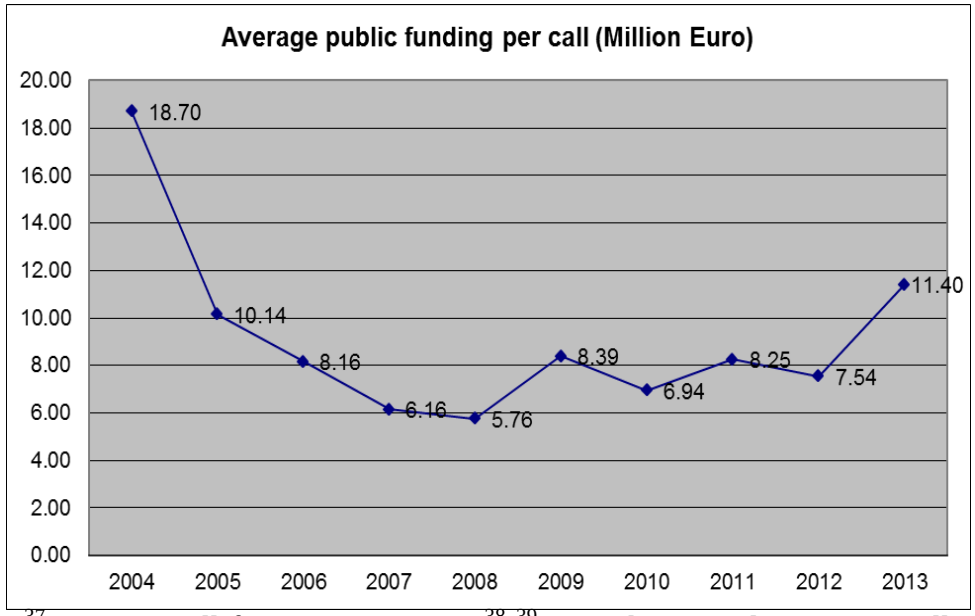




The most highly cited reason undertaking joint calls was obtaining access to expertise and sharing competencies, while achieving critical mass was also important. The predominant target group was Public Research Organisations (29% of the overall joint calls) closely followed by Small and Medium Enterprises (26%) and Higher Education Institutions (25%).

2.5.5. Evolution of Public Funding to Joint Calls (I)





The figures above present the evolutions of total and average public funding[37] per joint call from 2004 to 2013.[38] [39] Over this period, 166 joint calls were funded under FP6 and 124 calls under FP7. Additionally 16 ERA-NET Plus calls and 12 JPI calls were funded by the European Union [40]. The total public funding for joint calls was €37.4 million in 2004 (funded two projects) and it has increased until 2013 with some small fluctuations. A peak was observed in the most recent observation (2013) at around €450 million. There was a particularly significant increase (around 40%) over the past year, from 324 million to 456 million.

The number of joint calls varied from 2004 to 2006. Only two joint calls were launched in 2004 and the overall number increased to 25 in 2006. In subsequent years, the overall figures have fallen in the range of 35 and 45. The most recent observation, in 2013, was 40. While this small decrease observed over the last year, average public funding per call increased by more than 50%, from 7.54 in 2012 to 11.40 in 2013 with total budgets of €324.4 million and €455.9 million respectively.

[37] Public funding involves EU funding (FP6 and FP7) for all the schemes. It was considered together with the national contribution for ERA-NET Plus actions.

[38] Data is based on the work Radka Jekova and Jörg Niehoff (2012), "The ERA-NET scheme under FP6 and FP7: Statistics on ERA-NET and ERA-NET Plus actions and their joint calls", Brussels: June 2012. It covers ERA-NETs and ERA-Net Plus actions

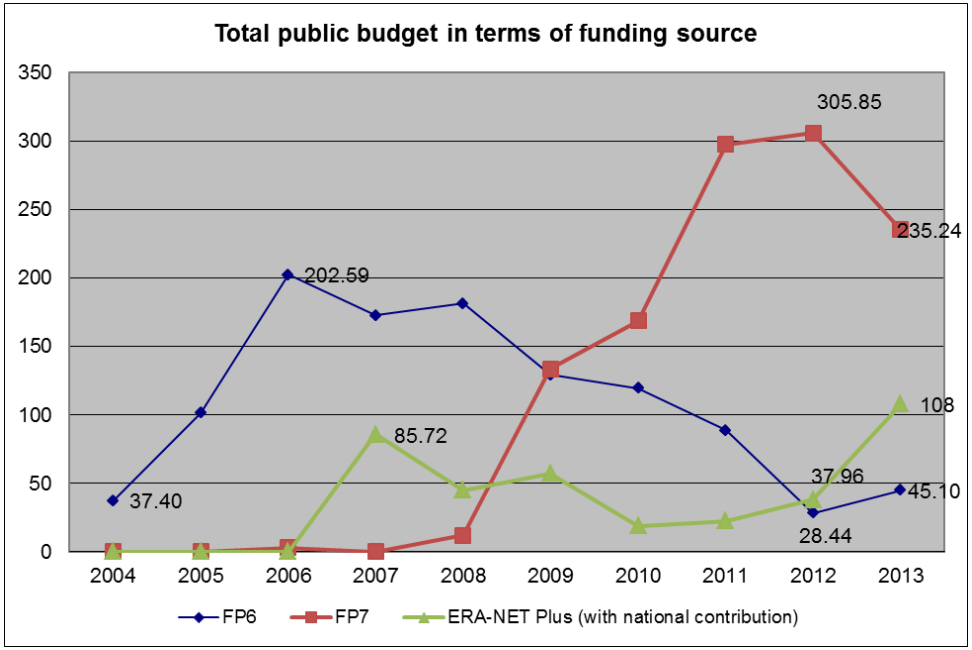
[39] The data for 2013 are based on the number of calls that were planned by the networks at the late 2012 and early 2013. The desk research confirmed that these planned calls were mostly launched over the past year.

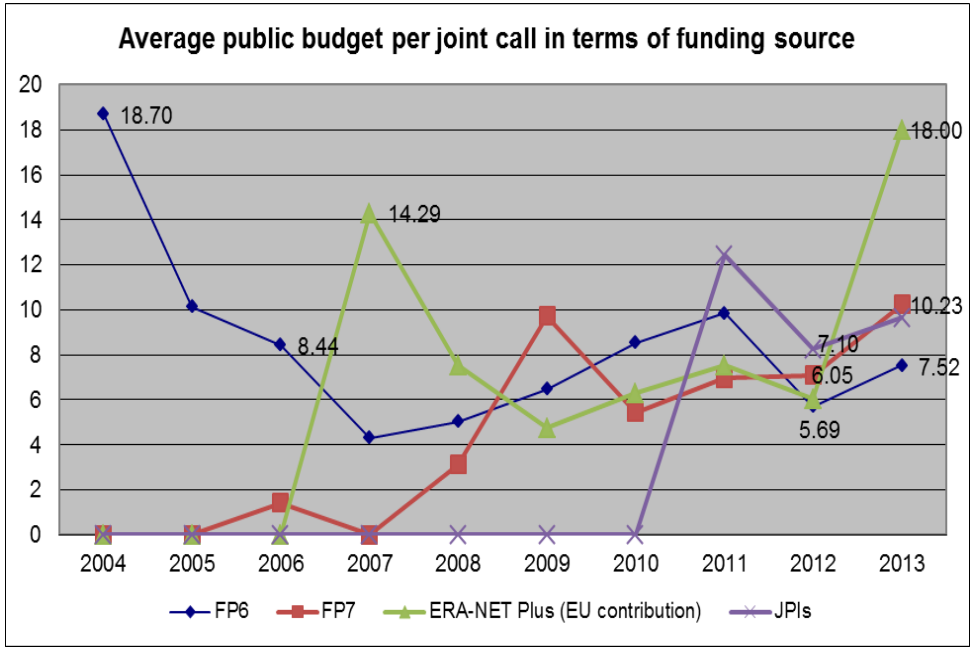
[40] As ERA-NET Plus actions undertake limited number of cases with high European added value, additional EU financial support have provided to facilitate joint calls for proposals between national programmes. Under the FP7, the European Commission funded one third of each call's overall budget by 'topping-up' joint transnational funding. JPI calls have also been supported through FP7 CSA funding, except URBAN Europe as the evaluation still continue.

2.5.6. Evolution of Public Funding to Joint Calls (II)

Year	FP6 public funding	FP7 public funding*	ERA-NET Plus (EU contr.)	ERA-NET Plus (national contr.)	JPI public funding	Number of FP6 funded calls	Number of FP7 funded calls	Number of JPI calls	Number of ERA-NET Plus calls	Overall number of calls
2004	37,400,000	0	0	0	0	2	0	0	0	2
2005	101,401,543	0	0	0	0	10	0	0	0	10
2006	202,592,596	1,420,000	0	0	0	24	1	0	0	25
2007	172,848,184	0	28,573,471	57,146,942	0	40	0	0	2	42
2008	181,536,025	9,372,664	15,033,333	30,066,667	0	36	3	0	2	41
2009	129,425,709	107,043,845	19,037,257	38,074,515	0	20	11	0	4	35
2010	119,428,500	125,302,991	6,300,000	12,600,000	0	14	23	0	1	38
2011	88,749,976	202,190,078	7,533,333	15,066,667	37,252,503	9	29	3	1	42
2012	28,435,186	241,471,245	12,090,000	4,410,000	16,500,000	5	34	2	2	43
2013	45,100,000	235,243,000	72,000,000	36,000,000	67,580,000	6	23	7	4	40

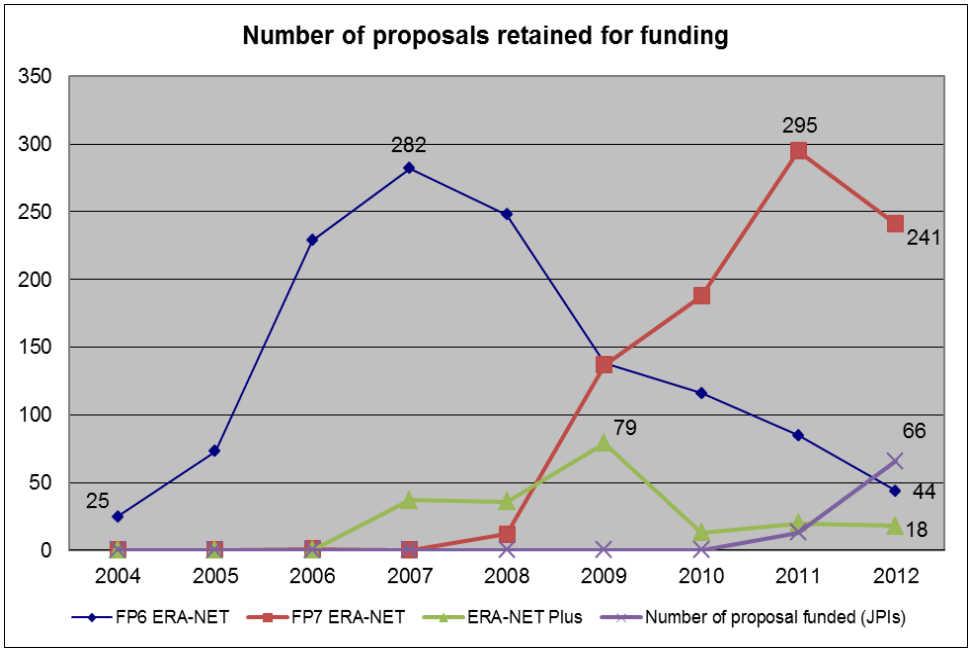
** FP7 funds involves both, the continuation of FP6 networks and newly established FP7 networks.*

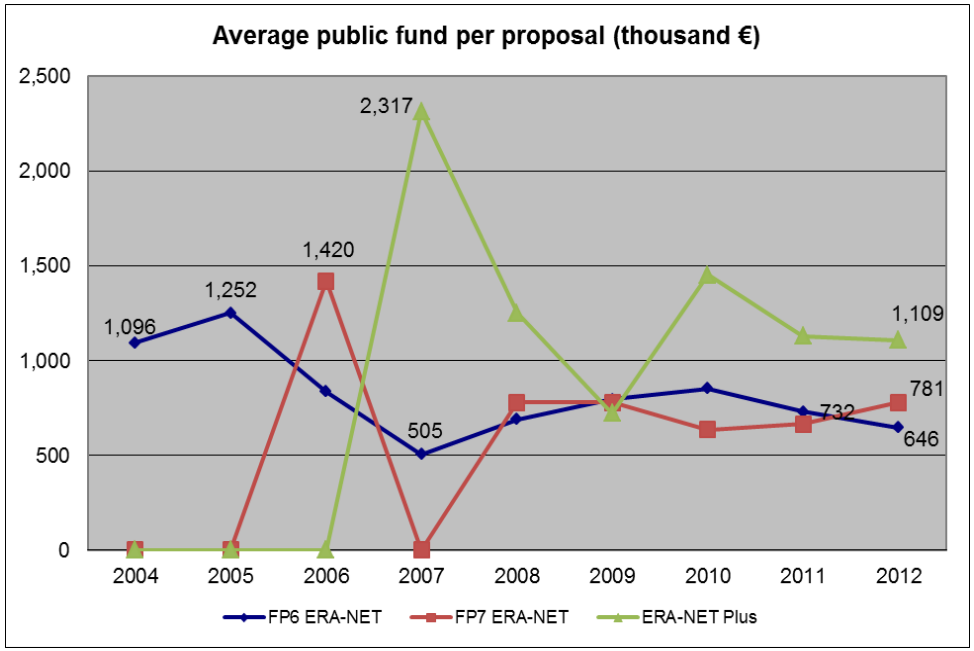




The details and exact budgets of the joint calls related to ERA-NETs, ERA-NET Plus actions and JPIs are presented in the table above.

2.5.7. Evolution of Public Funding Actually Committed to Proposals





When calculating the average numbers of funded proposals and public funding per proposal, the networks not providing information on the funded projects were not included.[41] Over the nine years, from 2004 to 2012, the peak numbers of the proposals vary significantly: 282 projects for FP6 funded ERA-NETs; 295 projects for FP7 ERA-Nets; and 79 projects for ERA-NET Plus actions. The numbers of FP6 and FP7 funded projects were inversely proportional as expected.

There were fluctuations in terms of the average public funding per project. It is possible to mention that there was a relatively balanced progress after 2007 for FP6 and FP7 funded ERA-NETs. From 2008 to 2012 the average amount was in the range €650-850 thousand. The average for ERA-NET plus actions, including the national contributions, mostly overcame €1 million.

[41] For the period from 2004 to 2012, 21 FP6 funded ERA-NETs, nine FP7 funded ERA-NETs and one FP7 funded ERA-NET Plus calls excluded from the scope of this calculation as there is no information available on the number of projects actually funded. For 2013 there is so far no information collected on the number of proposals retained for funding.

2.6. JOINT PROGRAMMING INITIATIVES

2.6.1. Overview (I)

Acronym	Start Date	No of countries	No of orgs	Composition	Orientation	SVD	SRA	Peer review	Foresight	IP regime
JPI-Climate	06/11/12	15	24	C: FI CC: FR P: 11 O: SI and TR	- Policy	No	Yes	Yes	Yes	No
JPI-Demographic	30/09/11	15	16	C: DE P: 14	- Scientific and technological - Industry - Policy	Yes	No	n/a	Yes	Under preparation
JPND	01/06/09	27	41	C: FR P: 25 O: Canada	- Scientific and technological - Industry - Policy	No	Yes	Yes	Yes	No
JPI Oceans	06/12/11	18	32	C: NO P: 17 O: MT	- Scientific and technological - Industry - Policy - Regional	Yes	Yes	Yes	Yes	n/a
Urban Europe	18/06/10	16	21	C: AT and NL P: 11 O: PT, ES and the UK	- Policy	Yes	Yes	Yes	Yes	n/a
Water-JPI	14/04/11	23	37	C: ES CC: NL P: 17 O: BE, GR, HU, LT, SE and EC	Unspecified	Yes	Yes	No	Yes	No
FACCE-JPI	01/01/10	21	32	C: FR and the UK P: 19 O: EC and SCAR	- Scientific and technological - Policy	Yes	Yes	Yes	No	No
HDHL	01/03/10	21	37	C: NL P: 20 O: EC	- Scientific and technological - Industry - Policy	Yes	Yes	n/a	Yes	n/a
JPI Cultural Heritage	03/12/09	25	30	C: IT P: 16 O: AT, BG, EE, DE, GR, IL, LT and PT	- Scientific and technological - Industry - Policy	Yes	Yes	n/a	n/a	n/a
JPIAMR	20/10/10	18	34	C: SE P: 17 O: EC	n/a	Yes	Yes	n/a	Yes	n/a

C: Coordinator; CC: Co-coordinator; P: number of participants; O: Observers; SVD: Strategic Vision Document; SRA: Strategic Research Agenda

2.6.1. Overview (II)

Information on JPIs has been included in the NETWATCH database since the second half of 2013. This follows on from a pilot process to develop a specific tool for collecting JPI information and it faced the challenge of retaining comparability with information on ERA-NETs and other networks, while also enabling the specificities of JPIs to be adequately captured. Firstly, the dedicated draft template for JPIs information was prepared by IPTS and tested with three JPI coordinators; namely, HDHL, FACCE and CULTURAL HERITAGE. After this piloting process was completed, templates were sent to the JPI coordinators to update. Nine out of 10 JPIs sent back the updated templates.[42] The analysis presented in this report is based on this information. Meanwhile adaptation to the web platform enables this information to be fully integrated.

In terms of the kick off dates, the oldest JPI is JPND, launched on 01/06/2009; and the newest one is JPI-Climate launched on 06/11/2012. Within this three-year period, eight more JPIs launched and today there are 10 JPIs running and contributing the European research landscape.

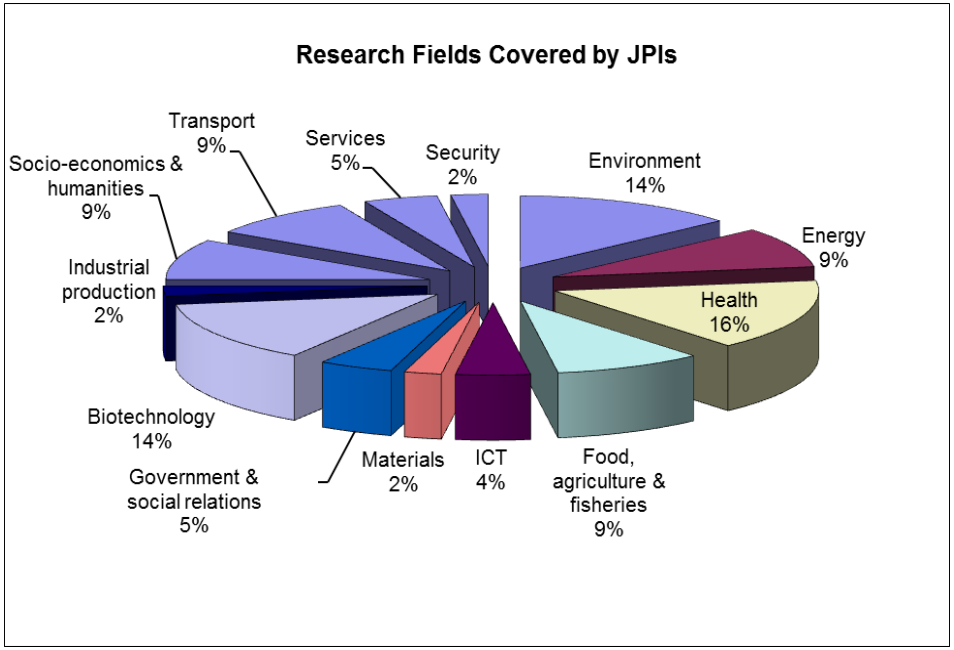
The coordinator countries[43] vary by networks. French organisations were acting as a coordinator or co-coordinator in three JPIs while the Netherland coordinated two JPIs. Apart from these two countries, several countries are also acting as coordinators; namely, Finland, Germany, Norway, Austria, Spain, the United Kingdom, Italy and Sweden.

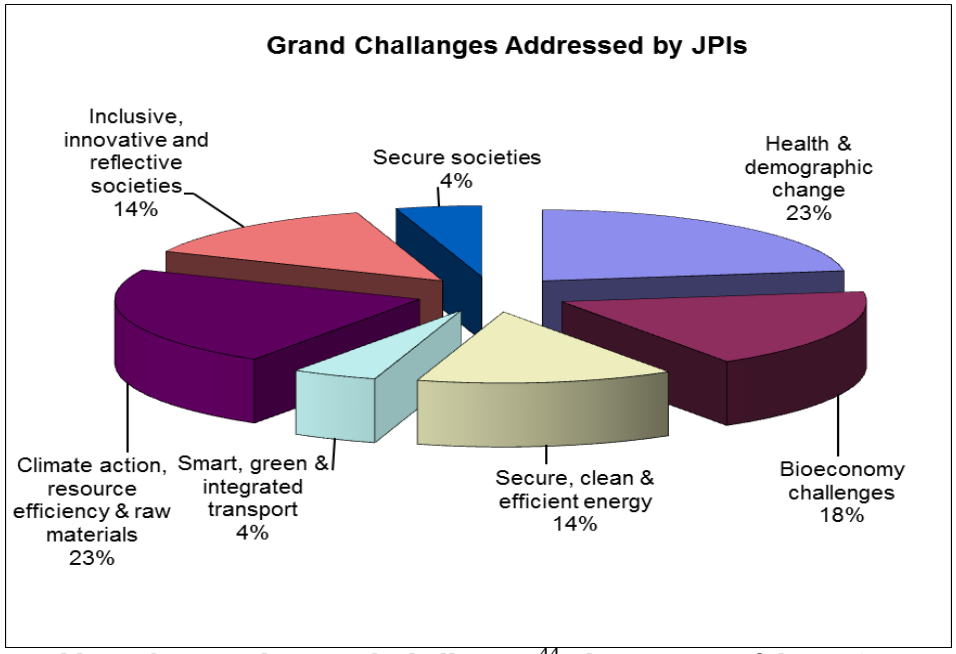
Eight out of 10 JPIs coordinators, i.e. those where a response was given, described the overall orientation of the network with an emphasis on the specific policy issue areas, e.g. climate change, demographic change, aging societies, neurodegenerative diseases, environment, food security sustainability and so on. The relevant policy issues indicated are followed by the scientific and technological domains, which refer to various scientific areas including health, ICT, social sciences, economics, demographics, biomedical sciences, marine research etc. Finally, a focus on particular region is indicated by only one network, JPI-Ocean.

All JPIs have already produced and published main documents such as Strategic Vision Document and Strategic Research Agenda. It is also notable that most of JPIs undertake (or planning to undertake) foresight activities while there are more uncertainties on the regime of intellectual properties.

[42] Desk research was performed to collect information on the missing network, the Joint Programming Initiative on Antimicrobial Resistance (JPIAMR), and this network was included to the scope where online information was available.
[43] Coordinator refers to the national organisation in a country acting as coordinator.

2.6.2. Grand Challenge Addressed & Research Fields Covered





The underlying rationale of JPIs is to mobilise efforts at European level to better address the Grand Societal Challenges.[44] The purpose of the JPI's is to provide a framework for Member States to identify develop collaborative approaches to pursue research, technological development demonstration and innovation actions.

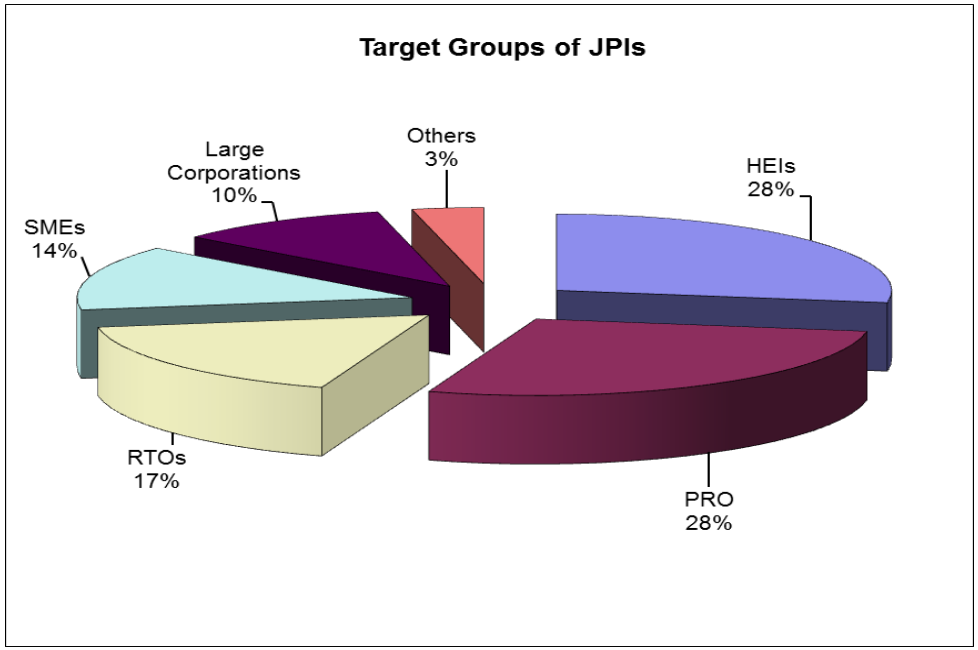
The Grand Societal Challenges were addressed in the following proportions:[45] "Health and demographic change and wellbeing" and "Climate action, resource efficiency and raw materials" both 23%; "European bioeconomy challenges" 18%; and "Secure, clean and efficient energy" and "Inclusive, innovative and reflective societies" both 14%. Similar results were observed for the research fields covered by JPIs. "Health" was the most prominent area, was cited by 16% of all respondents. It was followed by "environment" (14%), "biotechnology" (14%), "food, agriculture and fisheries", "energy", "transport" and "socio-economics and humanities" (9%).

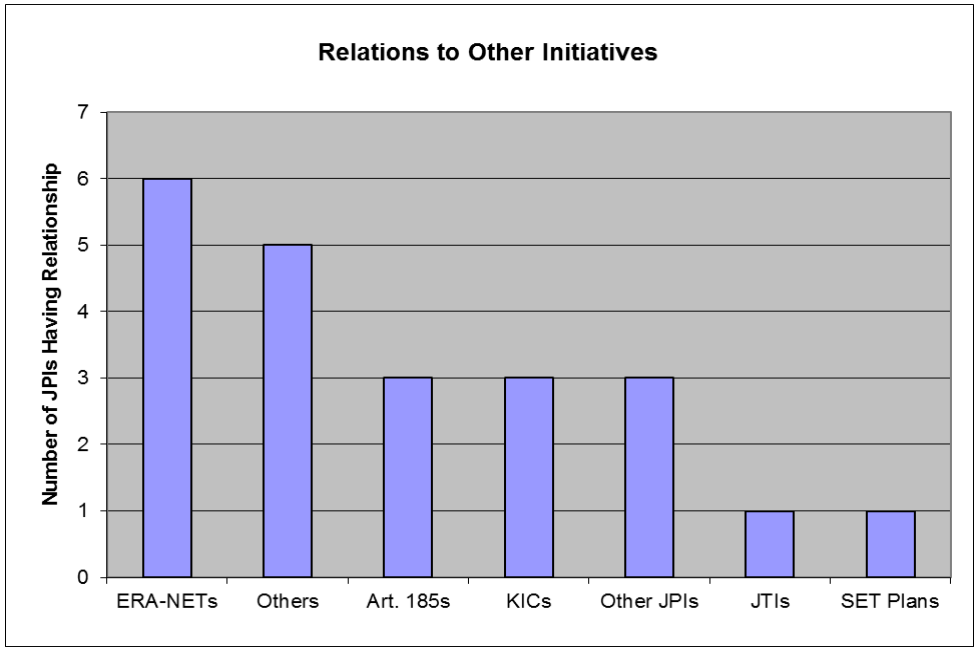
The research fields covered by JPIs show similarity in terms of prominent research fields covered by other schemes. As observed for other schemes, environment, health, energy, food, agriculture and fisheries were identified as the most common research fields. This can be related to the grand societal challenges as JPIs have to refer these challenges and joint calls of ERA-NETs also focus on the related research fields

[44] For more information, please see http://ec.europa.eu/programmes/horizon2020/en/h2020-section/societal-challenges

[45] The Grand Challenges are divided in seven specific areas; namely, i) Health, demographic change and wellbeing; ii) European bioeconomy challenges; iii) Secure, clean and efficient energy; iv) Smart, green and integrated transport; v) Climate action, resource efficiency and raw materials; vi) Europe in a changing world; vii) Secure societies.

2.6.3. Target Groups & Relation to Other Initiatives



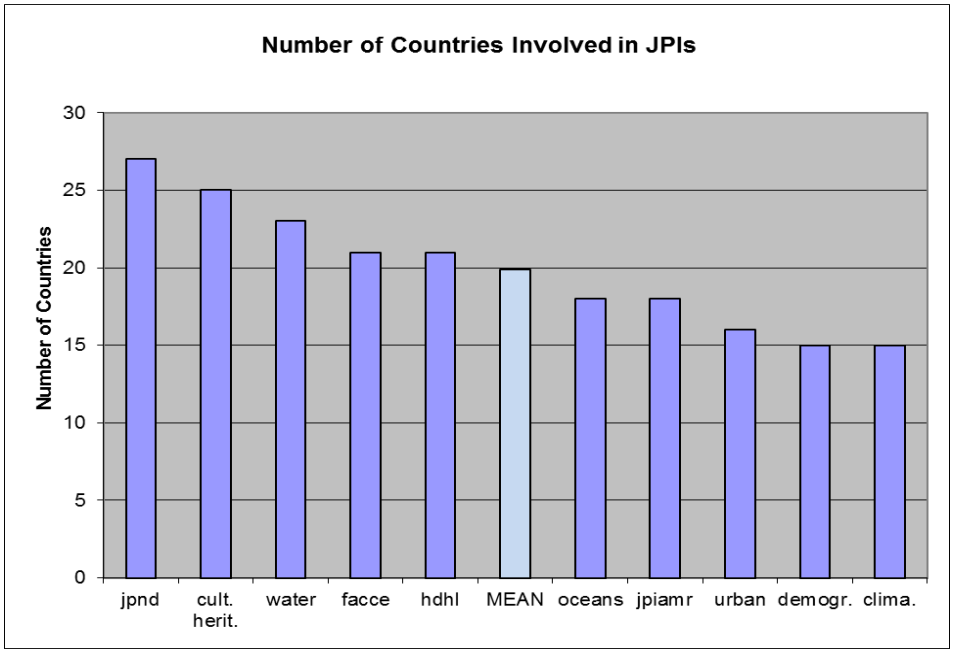


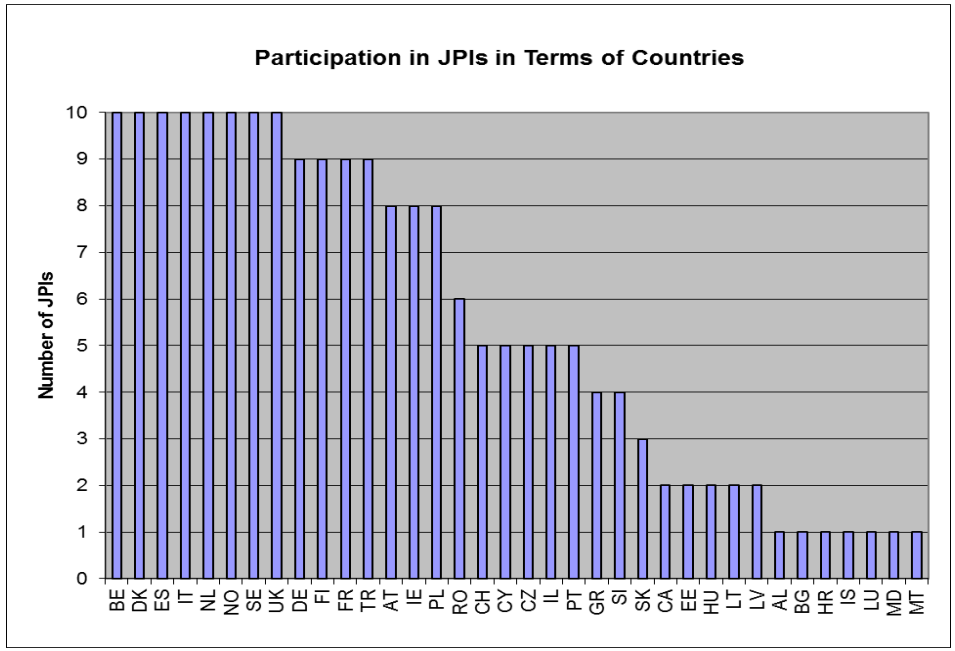
The predominant target groups of JPIs are Higher Education Institutions and Public Research Organisations, both cited by 28 of JPI coordinators. They are followed by Research Technology Organisations (17%), Small and Medium Sized Enterprises (14%) and Large Corporations (10%).

JPIs have already established some relationships (collaboration, networking, joint activities etc.) with other European initiatives. The most common initiatives are ERA-NETs, with 21 different ERA-NETs, cited by all 10 JPI coordinators. In addition to ERA-NETs, two Article 185 actions (AAL JP and BONUS 169) and two KICs (Climate KICS and KIC InnoEnergy) were referred to three times; and one JTI (IMI-JU) and one SET Plan (Smart Cities and Communities) were mentioned once. It is also notable that JPIs cite their relations with each other: JPND, URBAN EUROPE, HDHL and FACCE were referred to five times as interacting networks.

The others, which were frequently cited, refer to different schemes and networks; namely, NordForsk, EEA, ESA, ECRA, ESFRI, FUTURAGE, SHARE, Population Europe, several CSAs (Marine Biotech CSA, CSA Oceans), Waterborne, EATIP, EFTP and TPWind.

2.6.4. Size of JPIs in Terms of Numbers of Countries Involved





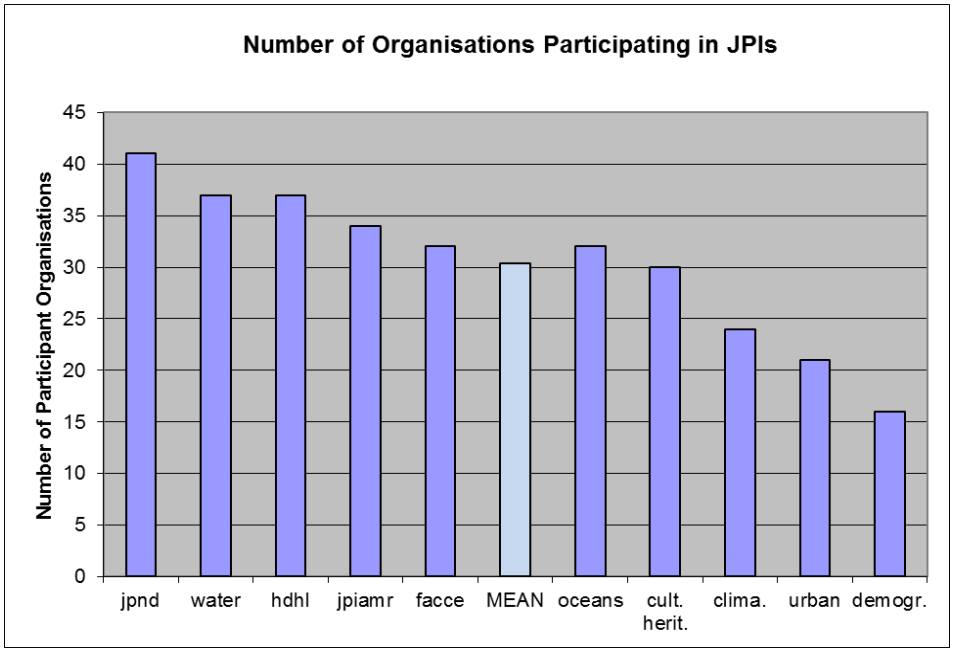
The country designation is determined by the country of origin of the participating organisations, and country involvement is thus only counted once.

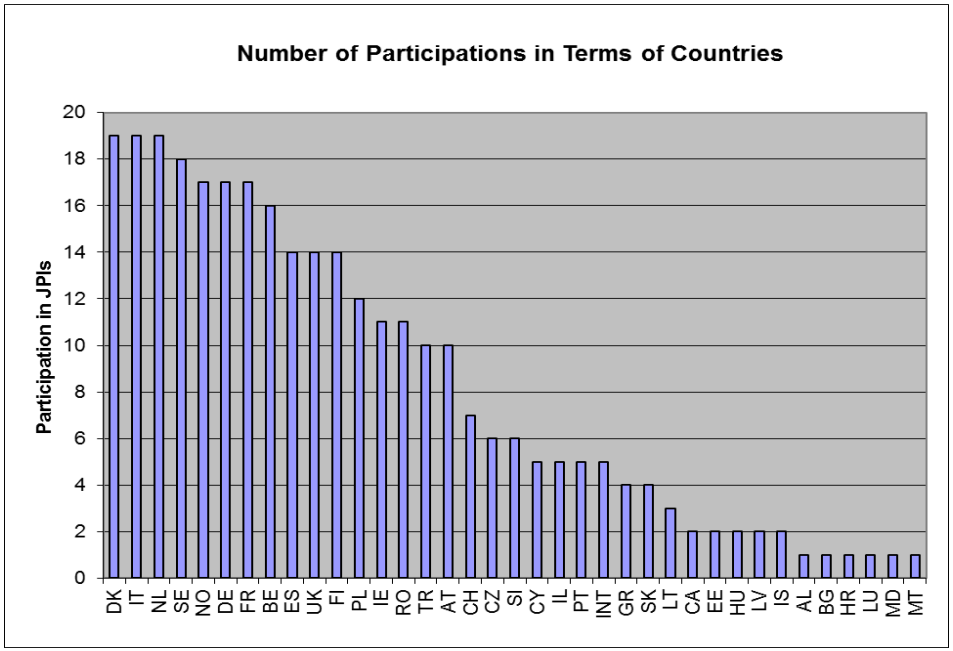
The maximum number of the countries involved in JPIs was 27,[46] for JPND, i.e. 75% of all 36 JPI participant countries. JPND was followed by Cultural Heritage (25), JPI-Water (23), FACCE (21) and HDHL (21). These five networks are the JPIs involving more than the average number of countries. 'The average number of countries involved in JPIs is much higher than the average number of the countries involved in other schemes: 19.9 and 13.4 respectively.

There are eight countries involved in all 10 JPIs; namely, Belgium, Denmark, Spain, Italy, the Netherland, Norway, Sweden and the United Kingdom. Four countries followed them with the participation in nine JPIs (Germany, Finland, France and Turkey) and three countries with participation in eight networks (Austria, Ireland and Poland). Seven countries participated in only one JPI (Albania, Bulgaria, Croatia, Iceland, Luxembourg, Moldova and Malta).

[46] The countries acting as observer are included to the cohort.

2.6.5. Size of JPIs in Terms of Numbers of Participant Involved





In terms of the number of participant organisations,[47] there are similar results as for participant countries. The maximum number of participant organisations involved in JPIs is for JPND with 41 organisations. This is followed by JPI-Water (37 organisations), HDHL (37 organisations), JPIAMR (34 organisations) and FACCE (32 organisations). These five networks all placed above the average participation. This average (30.4) is again much higher than the average number of the participant organisations in other schemes (18).

Distribution of the numbers of participations across countries differed from the overall country involvement. Denmark, Italy and the Netherland exhibit the highest levels of participation with 19 participations. While Italy and the Netherland reached this level of participation with 16 organisations, Denmark participated in JPIs with only 10 organisations. These countries were followed by Sweden (18 participations), Norway (17), Germany (17), France (17) and Belgium (16).

In terms of both country and organisation participation, the largest Joint Programming Initiative is JPND (27 countries and 41 organisations) while the smallest one is JPI-Demographic (15 countries and 16 organisations).

[47] The organisations acting as observer are included to the cohort.

2.6.6. Joint Activities of JPIs

Acronym	Funding	Joint Calls	Training	Sharing infrastructure	Staff mobility	Procurement	Networking	Other
JPI-Climate	- Virtual pot	Yes	Yes	Yes	Yes	Yes	Yes	Co-alignment
JPI-Demographic	Open to be decided	Yes	Yes	Yes	No	No	Yes	Joint mapping
JPND	Virtual pot	Yes	Yes	Yes	Yes	No	Yes	-
JPI Oceans	Open to be decided (searching a flexible form)	Yes	No	Yes	No	No	Yes	Joint mapping
Urban Europe	- Virtual pot - Mixed pot	Yes	No	Yes	No	No	Yes	- Research alliance - Co-alignment - City networks - Stakeholder forums
Water-JPI	- Virtual pot	Yes	Yes	Yes	Yes	No	Yes	Mapping and monitoring
FACCE-JPI	- Virtual pot	Yes	Yes	Yes	Yes	No	Yes	-
HDHL	- Virtual pot - Mixed pot	Yes	Yes	Yes	Yes	Yes	Yes	-
JPI Cultural Heritage	- Virtual pot - Mixed pot	Yes	n/a	n/a	n/a	n/a	n/a	n/a
JPIAMR	- Virtual pot - Mixed pot	Yes	n/a	n/a	n/a	n/a	n/a	n/a

The details of joint activities undertaken (or planning to be undertaken) by JPIs are presented in the table above. Joint calls are cited by all JPI coordinators; which was followed by sharing infrastructure and networking marked by eight out of 10 coordinators. There are also other types of activities, which were not specified in the template. It is notable that the activities of ‘co-alignment’ and ‘joint mapping (and monitoring)’ were mentioned twice.

3. CONCLUSIONS

This fifth NETWATCH Mapping and Monitoring exercise represents something of a departure from previous reports, particularly with respect to the amount of time that has elapsed between the cohorts of active networks. The first three reports presented the analysis in the six-monthly periods while the fourth exercise covered the longer period from December 2011 to September 2012. This report provides analysis on a yearly basis, from September 2012 to September 2013; and in this way, the report covers all the activities and changes that were realised over the past year and demonstrates how the landscape has evolved. In addition, the Joint Programming Initiatives (JPIs) are included for the first time and specific results presented in a dedicated chapter.

The cohort analysed in this report was thus composed of 78 networks still active in September 2013: 43 FP7 funded ERA-NETs, one remaining FP6 funded ERA-NET, 10 FP7 funded ERA-NET Plus, five Article 169/185 networks, 10 JPIs, and 10 self-sustaining networks.

12 networks with very little information entered in the NETWATCH database have been excluded, namely, BESTF2, C-IPM, ERA-MBT, FACCE Era-NET Plus, GENDER-NET, HERITAGE Plus, ICT-AGRI 2, INFRAVATION, NEWA, OCEANERA-NET, SUMFOREST and WSF. Furthermore, four new networks were still in the process of being formally launched at the reference date, and have only subsequently become active (ERA-NET RUS Plus, ERANETMED, INCOMERA and INNO INDIGO). These networks are also excluded from the scope of this report.

What objectives, activities and research have been addressed?

From 2010 to 2013, the key strategic objective of the networks has remained the implementation of joint calls, rated as "very important" or "important' by 94% of respondents in 2013. This is followed by the exchange of information and good practices. The implementation of joint research programmes and the coordination of national programmes are seen as, relatively, less important.

In terms of the distribution of network activity between FP7 thematic areas, most of the FP7 funded ERA-NETs resulted from calls corresponding to one of the FP7 thematic priorities. A large number of networks, (17% of total responses), indicated that their thematic priority is horizontal. The reminder to coordinators to specifically check and update thematic information has contributed to a drop in this figure share over the past year from 28%. However, this relative concentration on the horizontal theme may also reflect the multi-disciplinary character of the research undertaken by active networks. In the section on 'research fields' where multiple-choice was possible, the horizontal approach was cited as one of the least frequent approaches while almost half of total respondents (49%) identified more than one research field.

The research fields indicated reflect the research that the active networks undertake. Coordinators are able to identify secondary and tertiary research fields. This multiple-choices option provides a more comprehensive and accurate reflection of network activities compared to the FP7 thematic priorities. While the largest proportion of networks were categorised under the "food, agriculture and fisheries" in terms of the FP7 themes, "environment" was highlighted as a prominent *research field* covered by active networks, 26 out of 55 networks (not including 13 unspecified responses). This has consistently been the case since the 2010 analysis and this field has been followed, in varying order, by food, agriculture and fisheries; energy; health; and information and communication technologies.

NETWATCH requests coordinators to rank the relative importance of joint activities according to a five point Likert scale, from "unimportant" to "very important". Similar to the results of previous periods, in 2013, two joint activities marked as the most important activities were the design and implementation of joint calls. This shows consistency with the strategic objectives mentioned above. It reflects a greater emphasis on short-term outcomes and the benefits arising from joint calls. Furthermore, subsequent joint activities also given attention were: the establishment of common evaluation procedures and mutual learning. Work on benchmarking, joint training activities, mutual opening of programmes and personnel exchange are the least emphasised activities. There has been very little change in this pattern since 2010.

For JPIs, the most frequent challenge was "health and demographic change and wellbeing" and "climate action, resource efficiency and raw materials" (cited by five out of 10 networks). They are followed by 'European bioeconomy challenges" (four networks), "inclusive, innovative and reflective societies" (three networks) and "secure, clean and efficient energy" (three networks). The 10 active JPIs cover all seven Grand Challenges.

How has the composition of networks (countries, organisations and programmes) changed over time?

Despite significant turnover, with more than a hundred networks finalising their activities and new networks starting theirs, the number of active networks has remained highly stable since 2008, at around 80.

The numbers of participating countries and organisations have not significantly changed. 470 organisations and 56 countries participated in the active networks in 2012, changing only slightly in 2013 to 473 and 52 respectively.

The average number of countries per network has decreased slightly from 14 to 13.4 while the size active networks was grown in terms of the average number of participant organisations, increasing from 17 to 18. The size of active networks reflects the increasing interest in participation in Europe-wide research programme collaboration.

A decrease in the overall and average numbers of participant countries, however, has not affected the total number of network participations. Benefits to individual organisations appear to have increased, with many organisations involved in multiple networks. Countries participate in more networks than previously: the average number of networks in which an individual country participates has increased to 17.5 from 15.6.

Notable differences in the national participations persist from previous years. For example, in September 2013, 17 Swiss organisations have 32 network participations, whereas only three Turkish organisations participated in the same number of networks. A similar variation exists for the top participant countries. For example, the United Kingdom with 29 organisations had 67 network participations, while 28 German organisations had 111 participations. This reflects the structural differences that exist in the different countries, and has consistently observed in NETWATCH mapping and monitoring exercises since 2010.

Building on observations from previous reports, the involvement of newer Member States and Associated Countries remains generally lower than that observed for experienced Member States. In 2013, once more, the experienced countries participated in more networks accompanied by the increasing number of national organisations while the average numbers of participant countries per network decreased. A relative lack of experience in transnational programme collaboration may be

behind this. In addition, there may be a focus on using limited resources more efficiently, leading to changing strategies for participation.

In terms of country involvement, there was only one country, Germany, involved in more than 80% of all networks in September 2013. Germany is followed by six countries taking a central role in active networks since 2010: namely, France (79%), Spain (72%), the United Kingdom (68%), Austria (66%), Belgium (66%) and the Netherland (63%).

The composition of JPIs differs significantly from the other schemes. The average numbers of involved countries (19.9) and participant organisations (30.4) are higher than for other types of networks. The maximum number of countries involved in JPIs was 27 (JPND), which covered 75% of all the countries participating in JPIs (27 out of 36). JPND was followed by Cultural Heritage (25 countries), JPI-Water (23 countries), FACCE (21 countries) and HDHL (21 countries). In terms of the number of organisation participating in JPIs, JPND was, once more, observed as the largest network with 41 organisations, which was followed by Water-JPI (37 organisations), JPIAMR (34 organisations) and FACCE (32 organisations). On the other hand, the highest numbers of participation can be observed for Denmark, Italy and the Netherlands, each with 19 participations. While Italy and the Netherland achieved this participation level with 16 organisations, Denmark participated in 19 JPIs with only 10 organisations.

The number of programmes related to active networks in the NETWATCH database was relatively stable until 2012, ranging from 418 to 523. However, this figure substantially decreased in 2012, from 461 to 287, mostly related to FP6 ERA-NETs. Over the past year, overall number of programmes has slightly changed and decreased to 237. The networks' lack of concern with common programmes may also be evidenced in the analysis of strategic objectives, where "common programmes" received the lowest rating.

In what way have national programmes been involved in networks?

Only 22 out of 68 networks registered related programmes, which equates to 32%. This is the lowest proportion so far recorded (decreasing from 39% in 2012 and 55% in 2010 and 2011). This, once more, reflects the reduction in the number of programmes related to active networks receiving FP funds. However, this raised doubt about the NETWATCH coverage of national programmes as national organisations are only eligible to participate in ERA-NETS in the case that they operate, or will operate, a suitable programme

The average and median numbers of related programmes increased over the last year. In 2013, the average was 13.6 and the median 11.6, increasing from 11.6 and 5 respectively.

National programmes were related most to those networks supporting basic research (35% of total respondents) and applied research (34%); and those networks focusing on environmental and then horizontal issues.

How have the scope, participants and budget of joint calls changed?

The analyses of the joint calls are two-fold, with consideration of the overall number of joint calls launched by the active networks and the number of calls open at the reference date to determine the active networks being analysed (i.e. September 2013 for the latest time period). In addition, the call data, especially on the financial dimension of the calls, relies on coordinators' entries. As the response rate of coordinators, which determines the completeness of information, was not adequate

to provide analysis at sufficient/expected level, complementary information collected by DG RTD helps to fill gaps in joint call budget information.[48]

The number of overall joint calls has changed very little over time (89 in December 2010, 83 in June 2011, 82 in December 2011, 78 in September 2012 and 86 in September 2013). The number of open calls has also been relatively stable: 16 in December 2010, 25 in mid-2011, 18 at the end of 2011, 13 in 2012 and 12 in 2013.

The virtual pot remains the most common funding mechanism observed. Of those joint calls where a response was given, 88% in 2013 preferred the virtual pot. This preference has been a consistent finding of the mapping exercises since 2010. In 2013, no coordinator cited 'common pot' decreasing from the already low figure of 6% in 2012.

For FP6 and FP7 funded ERA-NETs, ERA-NET plus actions and JPIs, where data are available, the total public budget of joint calls has regularly increased since 2004. The largest amount, €456 million, can be observed in 2013, an increase of €132 million (40%) on the previous year. The average public contribution per joint call has been in the range €6-8 million from 2006 to 2012. A significant increase of more than 50% occurred over the past year, with 40 joint calls launched having a total value of €11.4 million. This increase needs to be re-checked after receiving information on the actually committed budget to joint calls as the information on the calls launched in 2013 is based on the reserved budgets.

The numbers of proposals submitted and funded vary in terms of schemes and funding sources (FP6 and FP7). The maximum numbers of proposals retained for funding were 282 for FP6 funded ERA-NETs with €505K average public contribution (in 2007) and 295 for FP7 funded ERA-Nets with €665K average public contribution (in 2011). The peak was 79 funded proposals for ERA-NET Plus action with the lowest average public contribution for this scheme, €723K. Furthermore, the average public funding per proposal stabilised for ERA-NETs after 2007: the average contribution was in the range of €650-850 thousand from 2008 to 2012. For ERA-NET Plus actions, this amount surpassed €1 million for six observations out of seven.

The most common type of research covered by joint calls for active networks in 2013 was applied research, with the predominant target group being Public Research Organisations (29% of joint calls where data are available) closely followed by Small and Medium Enterprises (%26) and Higher Education Institutions (25%). The most common research area covered by joint calls followed the most common research area for the networks in general and was environment, followed by health, and then food and agriculture.

Recommendations:

In terms of **information collection**, the response rate of the coordinators was generally good for many indicators including the information on networks, organisations and countries. However, there are critical data gaps in certain areas, which need attention. This is particularly relevant for joint calls and national programmes. Future work should ideally address these data gaps and improve the quality of the coverage, with additional effort focused on the financial details of joint calls and programme details.

[48] The data provided by DG-RTD provides exact information from 2004 to 2012; but the information on 2013 is based on the planned schedule of the networks, performed in late 2012 and early 2013. Extra effort was made to check whether these planned calls have been launched. However, some information could not be accessible such as number of proposal submitted and number of proposals actually funded.

- Duplication in relation to information collection needs to be further addressed. Certain data are also available at different European Commission platforms. For example, the FP7 Research and Innovation Participant Portal[49] provides detailed information on the network participants. The similarities and differences of these types of services should be analysed and closer cooperation should be established, with appropriate technical and administrative arrangements for exchange of information.
- As the response rate of the network coordinators determines the completeness and accuracy of information. While additional/supplementary information can be obtained from other sources, as in the case of joint call data, close cooperation with the coordinators is essential, as they are the only group that is able to provide most accurate and timely information.
- Improved motivation for coordinators to input timely information is required, to reinforce their contractual obligations. The respondent group could be enlarged to encompass representatives of the participant organisations in order to address specific gaps, e.g. programme information.
- H2020 has already been launched, with concomitant changes in the European research and innovation landscape.[50] There is a need to update the information templates to address main themes of H2020; namely, the Excellent Science, Industries Leadership and Societal Challenges.[51]
- Scope of mapping and monitoring would be extended towards other European initiatives; e.g. Joint Technology Initiatives, SET Plan, KICs and so on.

Building on the experience of NETWATCH mapping and monitoring exercises:

- Refinement of the information templates is also crucial to provide good quality analysis. Similarly, the core questions, on which the reports focus, need to be refined to create consistent follow-up dimensions in a long-term monitoring activity. These two refinements would also help to take into account the current policy directions.
- There is a need to enhance the evaluation of patterns in European transnational research. This requires a well-organised and better-focused time-series data, which is currently not possible due to the data deficiencies of information collected in previous years. As seen in the last two NETWATCH mapping and monitoring exercises, time series presentation would help to display significant changes rather than static snapshots. Further effort will further reduce the time-series data gaps and obtain high quality information allowing to better presentations, e.g. comparable data plots.
- Analysis can be supported by more sophisticated methods and empirical techniques to address more specific research questions. This would require particular effort rather than taking account the current policy directions as the difficulties show variety and more needed

[49] For more information, please visit http://ec.europa.eu/research/participants/portal/desktop/en/home.html.
[50] H2020 covers a large spectrum of research and innovation funding provided through Framework Programme for Research and Technological Development, the Competitiveness and Innovation Framework Programme (CIP) and the European Institute of Innovation and Technology (EIT). Additionally, different types of funding have been brought together into a single and flexible framework. This has reflected to the implementations and instruments of the transnational research and innovation collaboration in Europe. For more information, please see http://ec.europa.eu/programmes/horizon2020/.
[51] Please also see http://ec.europa.eu/programmes/horizon2020/en/h2020-sections.

to address some specific fields. Thus, there is a need to closer cooperation with different types of stakeholders (e.g. different levels of policy makers, programme managers, researchers and so on) to figure out required/relevant research questions.

- A specific focus on the geographical dimensions in terms of both, transnational regions (e.g. Nordic Region, Danube Region, Balkan Region etc.) and national sub-regions (e.g. NUTS regions) would provide better addressed analysis to relevant countries and organisations.

ANNEX I. Networks Included in the Scope

	Name of Network		Name of Network
1	AAL JP	35	ERASynBio
2	AirTN	36	ERASysAPP
3	ANIHWA	37	EUPHRESCO II
4	ARIMNet2	38	EURONANOMED II
5	BESTF	39	Eurostars
6	BiodivERsA2	40	EUROTRANSBIO (ETB-PRO)
7	BIOENERGY	41	FENCO-NET
8	BiophotonicsPlus	42	FORESTERRA
9	BONUS-169	43	Geothermal ERA NET
10	CAPITA	44	HERA JRP CE
11	CHIST-ERA II	45	HIVERA
12	CIRCLE-2	46	ICT-AGRI
13	COFASP	47	Infect-ERA
14	CONCERT-Japan	48	LEAD ERA
15	CORE Organic Plus	49	MANUNET II
16	CORNET	50	MARTEC II
17	CRUE	51	MATERA+
18	ECO-INNOVERA	52	M-ERA.NET
19	ECORD	53	New INDIGO
20	EDCTP	54	NORFACE Plus
21	Electromobility+	55	OLAE+
22	EMRP	56	PIANO+
23	ENTIII	57	PV-ERANET 2
24	ERA.Net RUS	58	RURAGRI
25	ERA-CAPS	59	SAFERA
26	ERA-CHEMISTRY	60	SEAS-ERA
27	ERAFRICA	61	SIINN
28	ERA-IB-2	62	SKEP
29	ERA-MIN	63	SNOWMAN
30	ERA-NET NEURON II	64	SOLAR-ERA.NET
31	ERANet-LAC	65	SUSFOOD
32	ERANID	66	THE HOUSE
33	E-Rare-2	67	TRANSCAN
34	EraSME	68	WoodWisdom-Net+

ANNEX II. Explanation of Core Variables

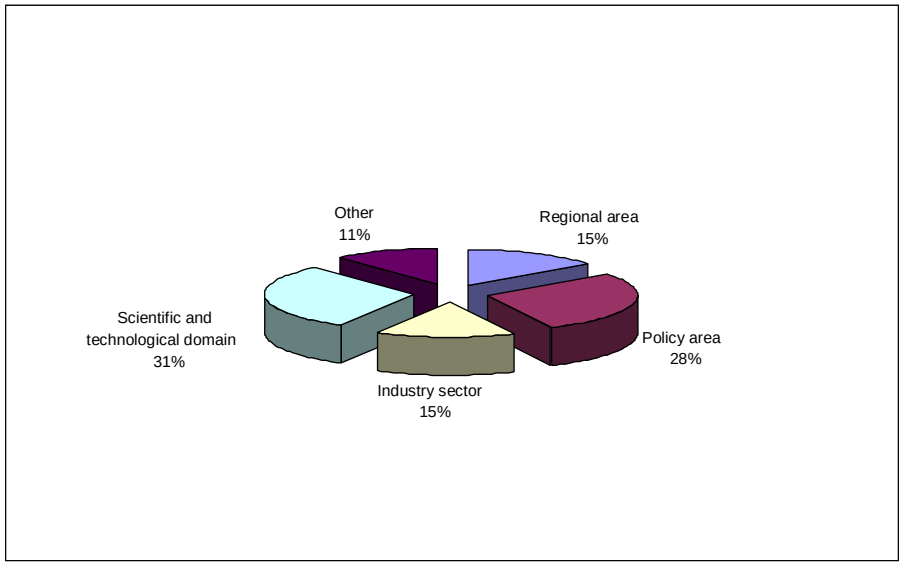
		Core Variables	Explanation
Networks	1	Type of network	ERA-NETs, ERA-NET Plus, Art. 169/185s and other (self-sustaining networks)
	2	Framework funding	FP6, FP7 and other
	3	Strategic objectives of the network	Likert scale for; - Exchange of information and good practices - Definition of common research agendas - Coordination of national programmes - Implementation of joint calls - Implementation of joint research programmes
	4	FP7 thematic priority	One thematic priority the network related (11 priorities defined)
	5	Country, organisation and programme participation	Participants details of the network, including: - Countries involved - Organisation involved and roles (coordinator, participant, observer and/or other). - Funding details of the participant organisations (programme funding, institutional funding and other) - Related programmes
	6	Joint activities and calls	- Call participation of network (including completed, open and planned calls)
Organisations	7	Network participation and roles	- Network collaborations, including the details of roles (coordinator, participant, observer and/or other).
	8	Funding details	Type of funds (programme, institutional and other) and details.
	9	Organisation - programme relations	Related programmes with responsibilities (launching, administrating and/or funding the programme)
Countries	10	Network involvement & role	Countries involvement to networks and roles (coordinator, participant, observer, etc.)
	11	Involvement & funding mode	Countries involvement to networks and funds (FP6, FP7, other)
	12	Involvement & joint activities	Countries involvement to joint activities, including details of represented organisations' responsibilities (launching, administrating, funding etc.)
	13	Involvement & programmes	Countries involvement to programmes and programme details
Programmes	14	Network relations	Programmes related to networks, including details on the network type (ERA-NET, Art. 183s etc.) and funds (FP6, FP7 and other)
	15	Research fields	Research fields covered by related programme
	16	Budget details	Institutional funding over time; also covering

			information on related organisations, their roles and budget types
Joint calls	17	Network relations	Joint call activities related to networks with details on the type of joint call
	18	Scope of call	Research field, type of research (basic, applied, pre-competitive and other), and target groups (HEIs, PROs, RTOs, SMEs, corporations and other)
	19	Participants of call	Participant countries, organisations and their roles (including funding details per organisation)
	20	Funding (mechanisms and details) of call	Public fund reserved, public fund committed, private fund and funding mode (common, virtual, mix and other)
	21	Project (proposed & supported)	Number of proposal submitted, number of projects funded and average fund per project,

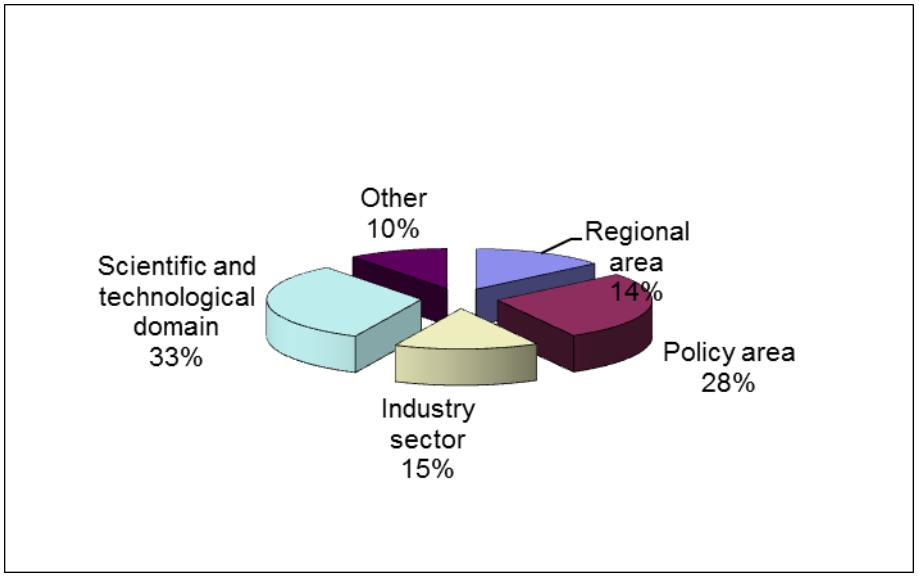
ANNEX III: Results of the Analysis on Complementary Indicators

A3.1. Focus of Active Networks

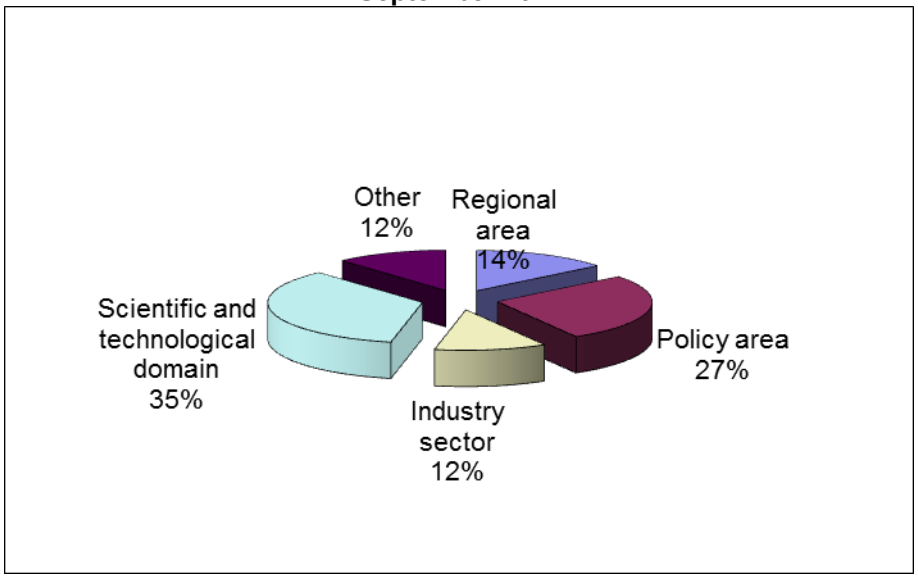
June 2011



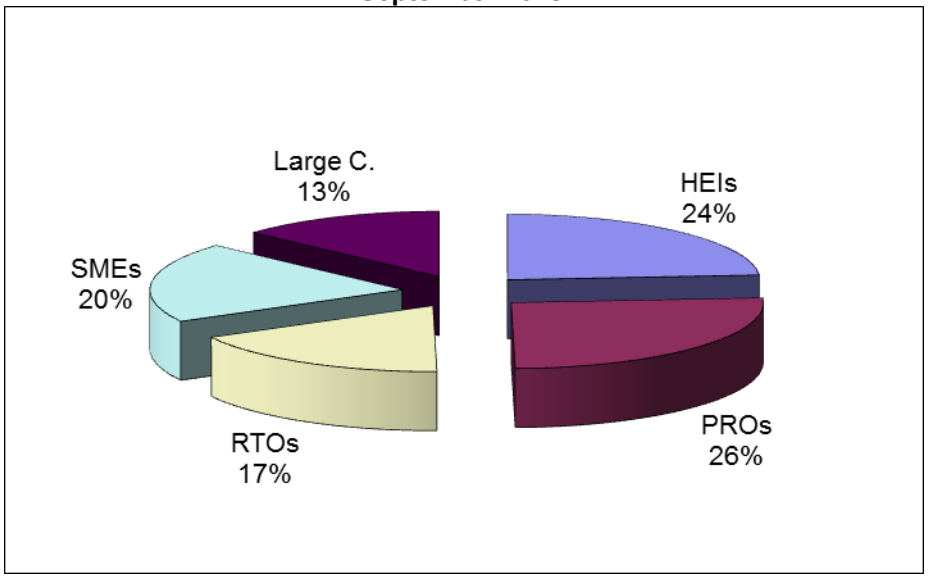
December 2011



September 2012

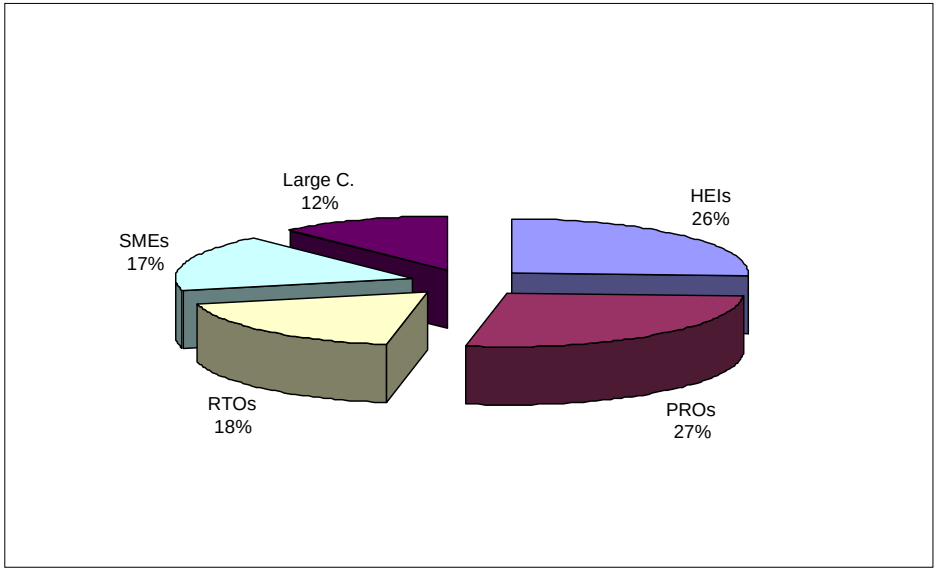


September 2013



A3.2. Target Groups of Active Networks

June 2011



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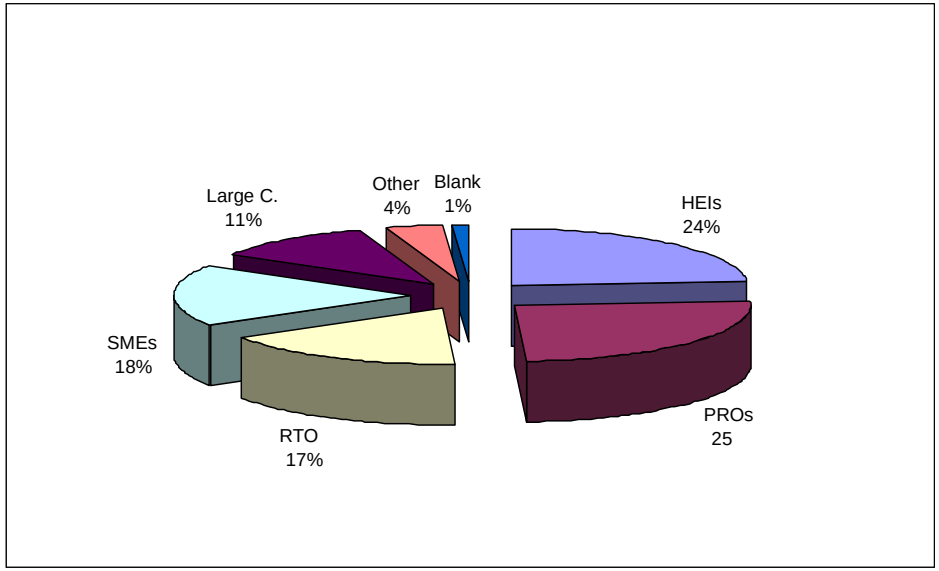
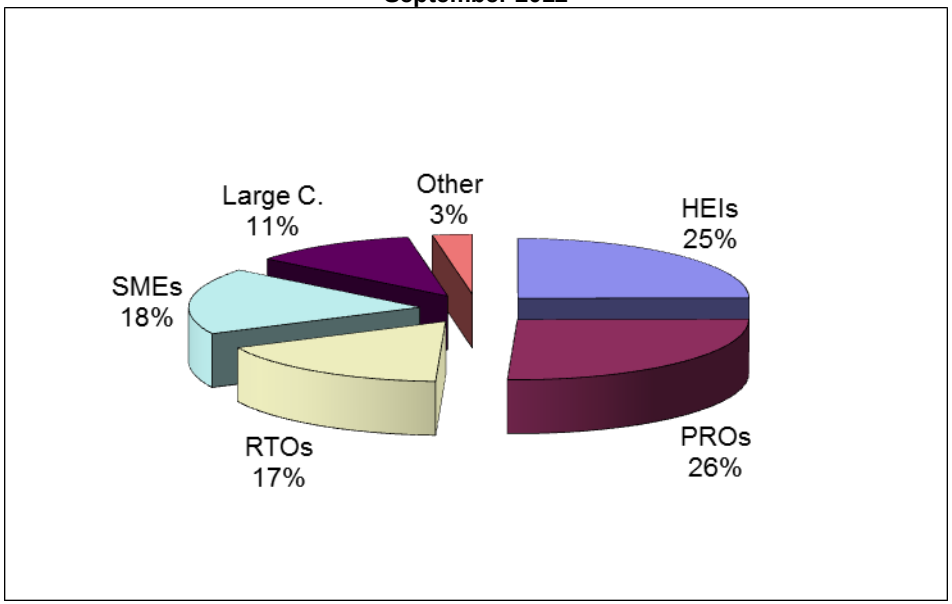
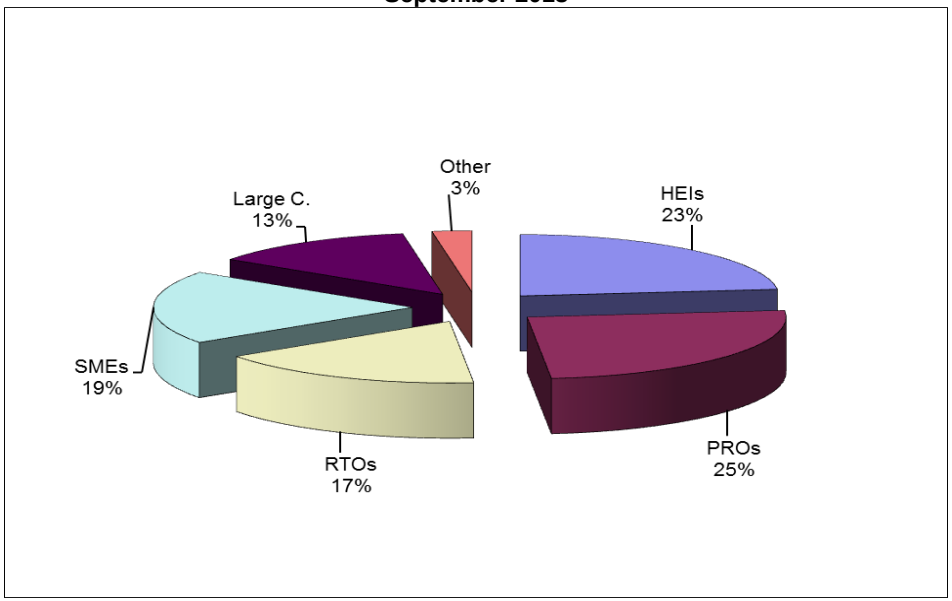


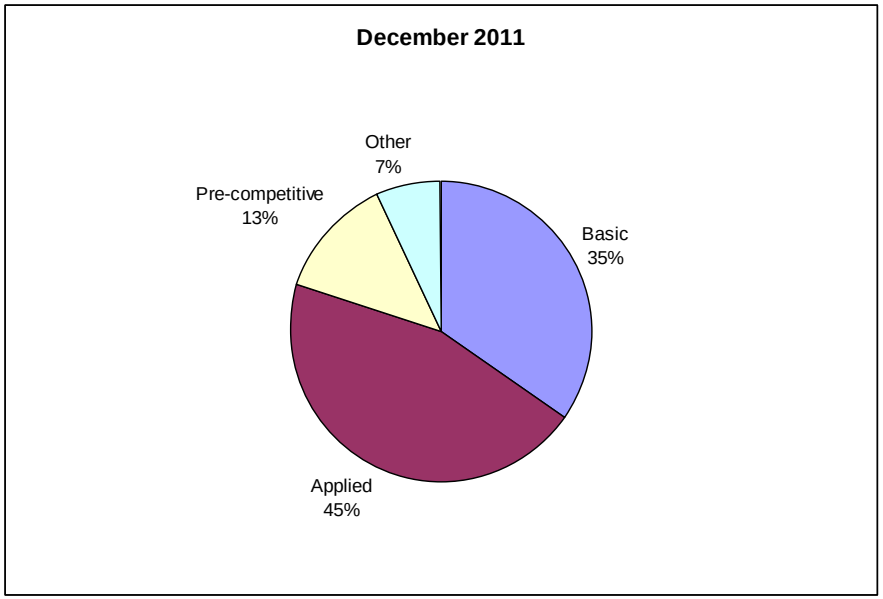
September 2012

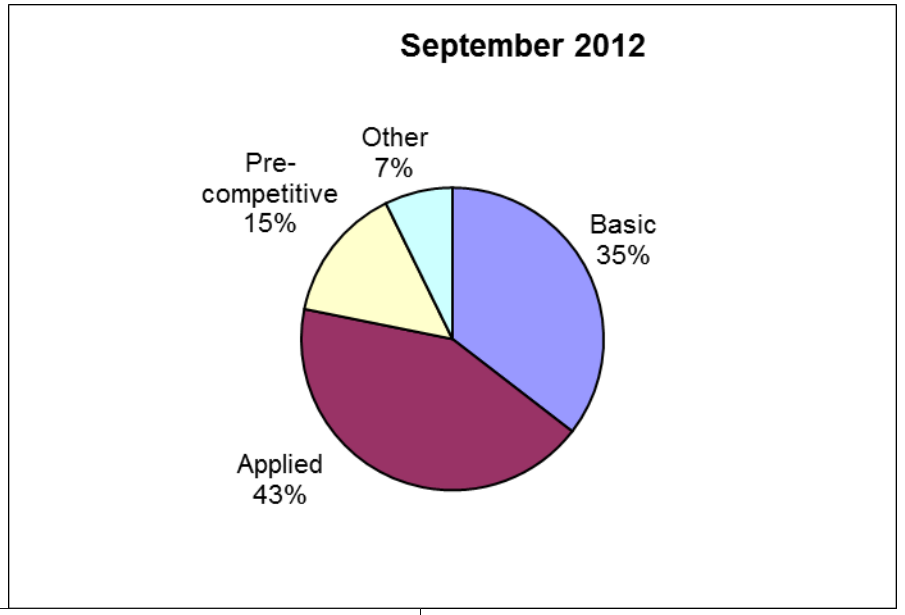


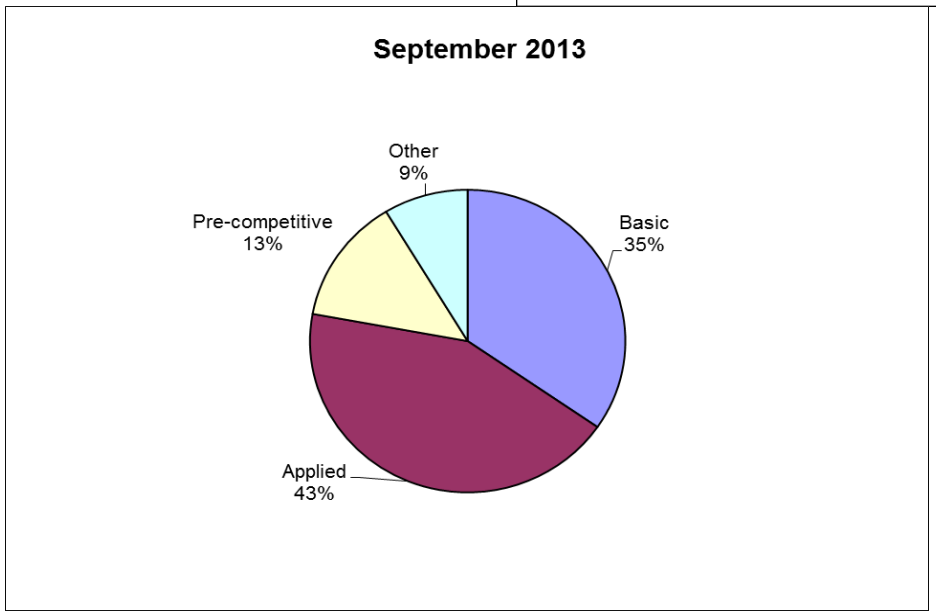
September 2013



A3.3. Types of Research Performed by Active Networks







A3.4 Country Types

	Jan-10	Dec-10	Jun-11	Dec-11	Sep-12	Sep-13
Number of countries represented in active networks in the NETWATCH database	51	53	54	55	56	
Number of EU countries represented in the network	27	27	27	27	27	28
Number of associate countries represented in the network	10	11	11	11	14	9
Number of other countries represented in the network	12	15	16	17	17	15
Number of international organisations represented in the network	10	21	20	20	18	15