Forward Visions on the European Research Area

ERA Fabric Map

First Edition

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European Research Area

SEVENTH FRAMEWORK PROGRAMME

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Executive summary

This ERA fabric map provides a starting point for the implementation of the 'Visions for the ERA' (VERA) project by giving a snapshot of the ERA today in support of developing alternative future scenarios for its evolution and by mapping current involvement of stakeholders in ERA. It looks at division of responsibilities between EU and Member States, and at institutions and bodies involved in the European research system. Starting from the six ERA dimensions described in the ERA Green Paper, the report then looks where we are today, and which direction the future is taking, given the policy context of Europe 2020. Involvement of stakeholders in further building the ERA is looked at by analysing their involvement in a number of existing ERA instruments, using a taxonomy of stakeholder roles and functions. This initial mapping will be updated twice as part of the VERA project, and its findings will be used as input for the communication plan of workpackage 6 and for the other project workpackages of the VERA project.

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1. Introduction

This report constitutes a formal deliverable, namely D6.1 "Outline of ERA elements and stakeholders", of Work Package 6 "Stakeholder Engagement and Communication Strategy" of the VERA Project (Forward Visions on the European Research Area).

The main objectives of this project are both to provide relevant strategic knowledge for the governance and priority-setting of the research, technology, development and innovation (RTDI) system in Europe, and to set up a strategic conversation across the European Research Area (ERA).

In line with them, this report aims to provide the first edition of the map of ERA as it is today, taking into account its history and the current policy context. The proposed ERA fabric map aims to provide a point of reference for the whole implementation of the VERA project by giving a snapshot of the ERA today in support of developing alternative future scenarios for its evolution and by mapping current involvement of stakeholders in ERA. This ERA fabric map will be updated in Deliverable 6.4 and Deliverable 6.5 in months 20 and 28 of the Project respectively.

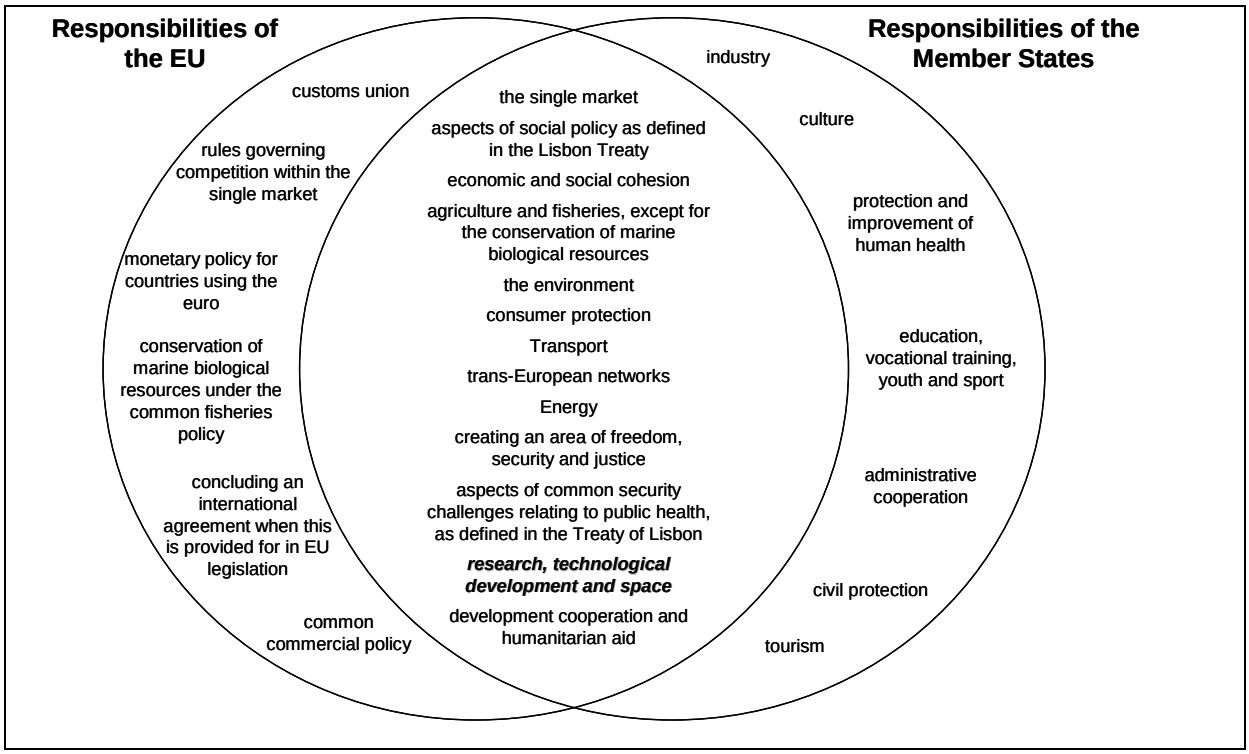
The report is structured as follows. In section 2 the ERA is looked at from a wider perspective. Section 3 explores the state of the art of ERA, building on the ERA dimensions from the ERA Green Paper, and putting them in the context of Europe 2020. Section 4 looks at current involvement of stakeholders in a selected number of ERA instruments and the roles they take. Main findings are summarised in a concluding section.

2. The ERA in a wider perspective

2.1 How are responsibilities shared between the EU and its Member States?

When looking at the European RTDI system, not only research, technology and innovation policies are important. A wide set of other policies interact with this system too, many of which lie not in the (sole) responsibility of the European Union. In general, the responsibilities for policy-making within the European Union can be divided into three categories, as illustrated in figure 1 below. In a limited number of areas, such as the customs union, the European Union alone is responsible for policy-making. For a second set of areas, such as research, technological development and space, the European Union and its Member States share responsibilities. Finally, for areas such as education, the Member States remain responsible. In those areas, the European Union can only play a supporting or co-ordinating role.

Figure 1. Division of responsibilities between the European Union and its Member States



Source: Based on Fontaine (2010)

From this overview it becomes clear that responsibilities for the RTDI system are shared ones. Many related policies, such as economic and social cohesion, energy, transport, etc are also shared ones. In addition some key responsibilities connected to research and innovation, such as education, lie with Member States only. This means that policies shaping European research and innovation are, given the current institutional context, bound to be based on collaboration and voluntary engagement of the Member States and its actors.

2.2 European institutions, bodies and discussion fora involved in research policy in Europe

European policy making in the field of research policy (the part that is developed by the European institutions) is adopted under the co-decision procedure: the Council of the European Union (Council of Ministers) and the European Parliament amend, adopt or reject legislation proposed by the Commission. The negotiation process is long and complex and characterised by considerable informal exchange of views. For the European Parliament, the "Industry, Research and Energy" committee (ITRE) does the preparatory work. For the Council, work is prepared by the Council's Research Working Party, the Permanent Representative's Committee (Coreper) and the Competitiveness Council. Finally, also the European Economic and Social Committee are involved (Source: ERAWATCH, 2012)[1].

Regarding the co-ordination activities on the Member State level, the open method of coordination was introduced by Lisbon European Council (2000) as a "means of spreading best practise and achieving greater convergence towards the main EU goals". The method includes:

- Fixing guidelines and timetables for achieving short, medium and long-term goals;
- Establishing quantitative and qualitative indicators and benchmarks, tailored to the needs of Member States and sectors involved, as a means of comparing best practices;
- Translating European guidelines into national and regional policies, by setting specific measures and targets; and
- Periodic monitoring of the progress achieved in order to put in place mutual learning processes between Member States.

The most important official advisory bodies and fora for discussion among policy-makers involved in research policies are the following[2]:

- The European Research Area Committee (ERAC), before CREST, is the advisory body assisting the Council of the European Union and the European Commission in the field of research and technological development. A number of candidate and associated countries participate as observers in ERAC[3]. ERAC has several dedicated configurations.
    - The High Level Group for Joint Programming (GPC[4]) is a dedicated configuration of ERAC responsible for identifying themes for joint programming. Members are senior officials from the European Member States and the European Commission. Associated countries can participate in the GPC.
    - The Strategic Forum for International Cooperation (SFIC) is a dedicated configuration of ERAC. Its objective is to facilitate the development, implementation and monitoring of ERA's international dimension by information sharing and joint priority identification. Associated countries are involved as observers. Countries selected for the SFIC pilot initiatives (India, US, China) are invited to dedicated discussions.
    - The Knowledge Transfer Group is a working group of ERAC established to take up and support the implementation of the EC's Recommendation on the

[1] For a detailed description of the decision making process in the field of research policy, see ERAWATCH: http://erawatch.jrc.ec.europa.eu/.
[2] Source: ERAWATCH
[3] Albania, Bosnia & Herzegovina, Croatia, Faroe Islands, Former Yugoslav Republic of Macedonia, Iceland, Israel, Liechtenstein, Moldavia, Montenegro, Norway, Serbia, Switzerland and Turkey.
[4] GPC=Groupe de haut niveau pour la Programmation Conjointe

management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations[5]

- The Steering Group on Human Resources and Mobility (SGHRM) has been active since 2002 and has been recognised by the Council in 2008 to be the appropriate forum for promoting and monitoring the implementation of the European Partnership for Researchers.
- The European Research Advisory Board (ERAB), previously EURAB, is a high-level, independent, advisory committee created by the Commission to provide advice on the design and implementation of EU research policy, and consists of 45 top experts from EU countries and beyond.
- The European Strategy Forum on Research Infrastructures (ESFRI) aims to support a coherent and strategy-led approach to policy-making on research infrastructures in Europe, and to facilitate multilateral initiatives leading to the better use and development of research infrastructures, at EU and international level. Associate country research ministry delegates participate as well.
- The Science and Technology Options Assessment (STOA) unit advises the European Parliament on research related issues.
- In support of its policy formulation remit, the Commission often sets up expert groups which focus on particular European research policy challenges and/or issues such as the Lisbon expert group or the Knowledge for Growth expert group.
- On specific thematic themes relating to research policy there are numerous advisory councils and groups that provide a sounding board for policy and programme development. These include advisory councils which addresses particular themes or sectors (ACARE and ERTRAC), advisory groups for the 7th Framework Programme (FP7) such as ISTAG and standing committees on thematic issues such as SCAR.
- There are also permanent expert groups on women in science and ethics.
- As regards ERA's interaction with science policy-making actors from third countries, two components can be identified:
  - In an outgoing perspective, the European Commission and European Member States are participating in regular high-level dialogue meetings e.g. with the Western Balkan countries (in the Steering Platform on Research for the Western Balkan Countries) or Southeast Asia (in the ASEAN-EU S&T Dialogue Meetings)
  - With regard to bi-lateral S&T agreements of the European Commission with currently 19 countries, there are regular Joint Steering and Cooperation Committee meetings.
- When understanding ERA as increasingly incorporating aspects of innovation, actors like EUREKA have to be taken into account when thinking about ERA governance. Founded in 1985 as an intergovernmental initiative[6], EUREKA is an RTD funding and coordination organisation bringing together 39 member countries and the European Union (as the 40th member) with the goal to promote international, market-oriented research and innovation. Coordination between the EU and EUREKA is considered important for ERA.

Apart from these institutions, bodies and fora for discussion among policy-makers, there is also a wide set of other European actors linked to ERA policy-making. Examples are Science Europe (grouping 49 European Research Funding Organisations (RFO) and Research Performing Organisations (RPO)), the European University Association (EUA), the European Federation of National Academies Sciences and Humanities (ALLEA), associations of

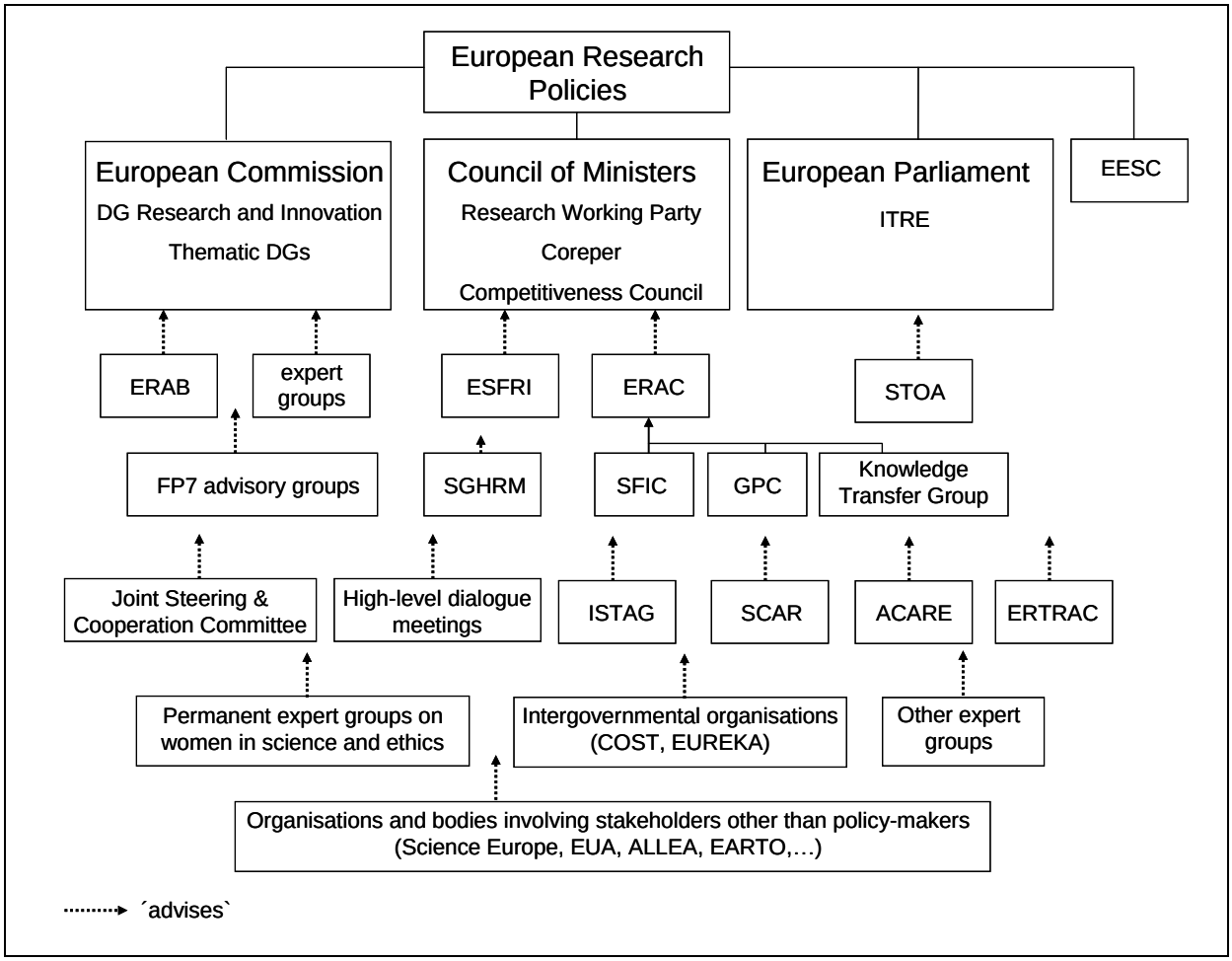
[5] COM(2008)1329

[6] The political guidance for EUREKA is coming from regular Ministerial Conferences bringing together member countries science and research ministers and the responsible European Commissioner.

research performing private sector actors, and associations at subnational governance level. Involvement of stakeholders in ERA is looked at in more detail in section 4.

The main European institutions, bodies and discussion fora involved in European research policy are presented in figure 2.

Figure 2. Main European institutions, bodies and discussion fora for exchange among policy-makers involved in European research policy-making

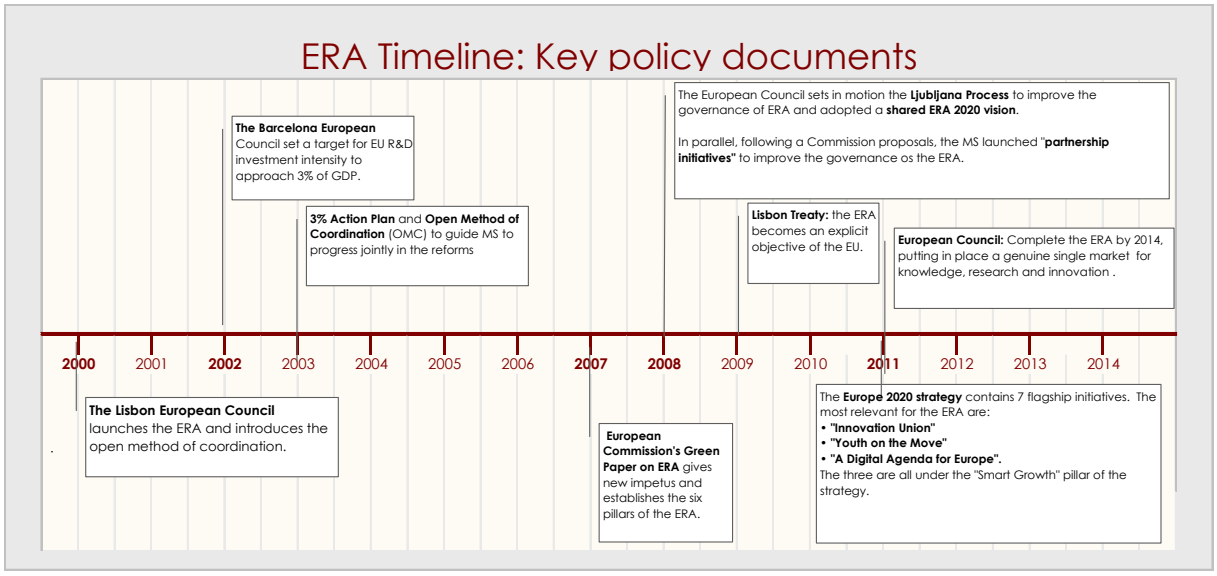


3. The ERA and Europe 2020 Strategy

3.1 Key policy documents

Research in Europe has a long history. Several universities in Europe even date back to the Middle Ages. The ERA as a concept is very recent, and was first launched at the Lisbon European Council in March 2000. The Barcelona European Council set a 3% of GDP target for EU R&D investment intensity. The ERA concept was given new impetus in 2007 with the European Commission's Green Paper on ERA. In 2008, the Council set in motion the Ljubljana Process to improve the political governance of ERA and adopted a shared ERA 2020 vision. Furthermore, concrete progress has been made via a series of new partnership initiatives proposed by the Commission in 2008 whereby Member States collaborated to further the ERA in five key areas, namely: *(a)* working conditions and mobility of researchers; *(b)* the joint design and operation of research programmes; *(c)* the creation of world-class European research infrastructures; *(d)* the transfer of knowledge and cooperation between public research and industry and *(e)* international cooperation in science and technology. In 2009, the Lisbon Treaty made the realisation of the ERA an explicit EU objective. Since 2010, seven flagship initiatives – under the Europe 2020 strategy – have been launched, and in 2011, the European Council of February 2011 stated that the ERA must be completed by 2014. To further support the ERA, the European Commission (EC) has recently announced the launch of ERA Pacts between the EC itself and major research stakeholders. Such pacts, in the words of the Commissioner Geoghegan-Quinn, ´will contain a clear roadmap, based on common objectives, with precise, realistic deliverables for research actors and for the Commission, and clear deadlines for achieving them` (Geoghegan-Quinn, 2012).

Figure 3. ERA-Timeline[7]



In this ERA fabric map, we start from the 6 pillars of ERA as established in the ERA Green Paper, and look at how those pillars are given new impetus with the Europe 2020 strategy.

[7] For more information about the key milestones of the ERA visit: http://ec.europa.eu/research/era/index_en.htm

3.2 ERA dimensions and Europe 2020

The ERA Green Paper (European Commission, 2007) establishes the following 6 dimensions for the ERA:

1. People: An adequate flow of competent researchers
2. Infrastructure: World-class research infrastructures
3. Organisations: Excellent research institutions
4. Funding: Well-coordinated research programmes and priorities
5. Knowledge circulation: Effective knowledge sharing
6. Global cooperation: A wide opening of the European Research Area to the world

In addition, three important concerns cut across all dimensions of the ERA:

- European research policy should be deeply rooted in European society.
- The right balance should be found between competition and cooperation.
- Full benefit should be derived from Europe's diversity which has been enriched with recent EU enlargements.

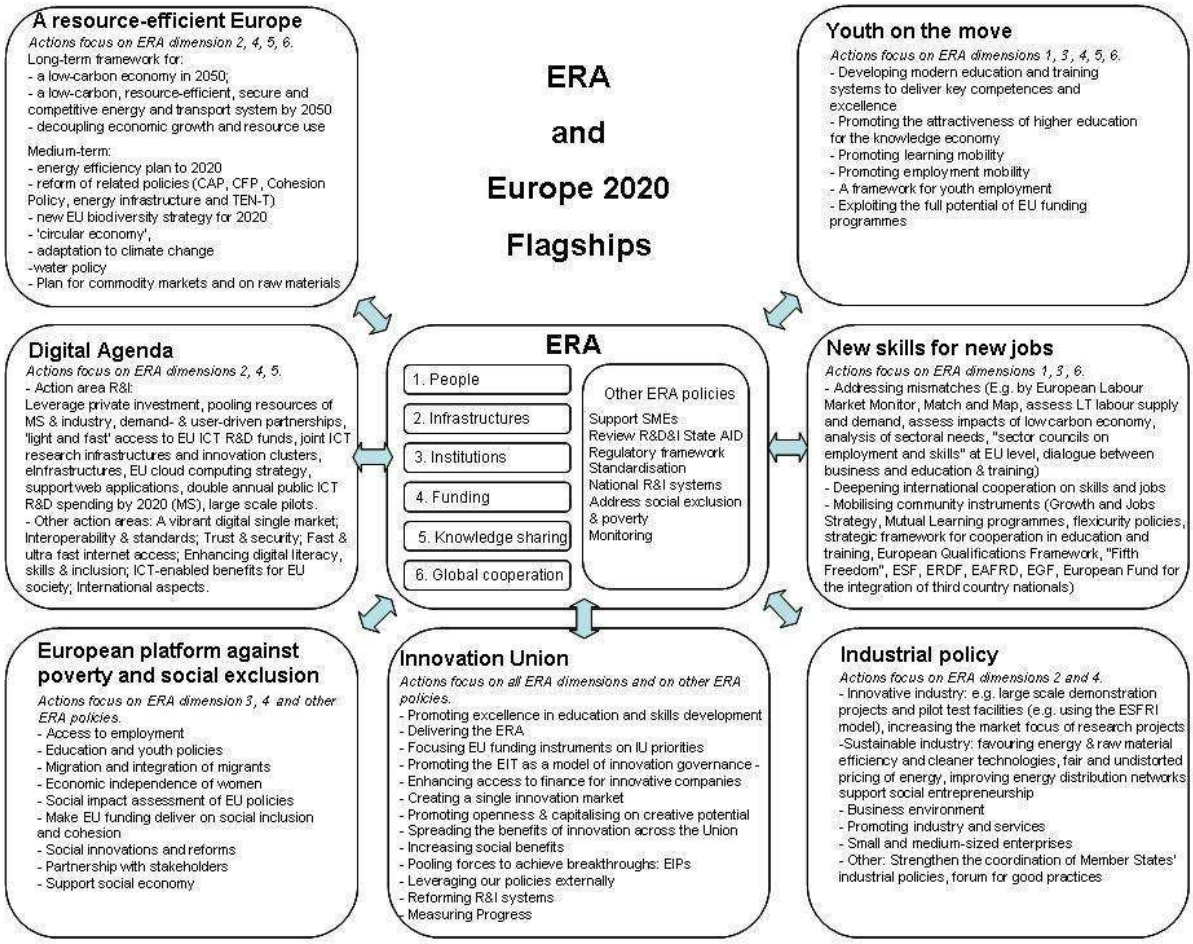
The ERA Green Paper is an EC document, but obviously, ERA countries play a crucial role in realising the ERA. Chioncel and Cuntz (2012) have analysed the impact of ERA on policy developments in Member States, based on information provided by the ERAWATCH country correspondents in the ERAWATCH Country Reports 2010 (ERAWATCH, 2012) and the country questionnaire. They identify 2 specific ERA dimensions that are seemingly more important (in particular the dimensions 1 and 2 - People and Infrastructures) than others from national perspectives of MS[8]. They also conclude that ERA progress and integration takes place at different speed. This seems particularly relevant for the (primarily national driven) dimensions 3 and 4 (Organisations and Funding). Thirdly, they conclude that dimension 5 (Knowledge circulation) is an area of potential policy failure for countries with lower innovation performance, both, on EU and national levels. By tapping further into these policy fields as rent-seeking EU funds, MS may face increased systemic failure due to limited absorptive capacities of their businesses and continue developing science base on national levels.

Since 2007, the ERA has obviously evolved. The most recent policy changes with regard to the ERA and its dimensions relate to the Europe 2020 strategy (European Commission, 2010), which has proposed the launch of 7 flagship initiatives:

- Innovation Union (European Commission, 2010a)
- Youth on the Move (European Commission, 2010b)
- Digital Agenda (European Commission, 2010c)
- New Skills for New Jobs (European Commission, 2008)
- Industrial Policy (European Commission, 2010d)
- A resource-efficient Europe (European Commission, 2011)
- European Platform against Poverty and Social Exclusion (European Commission, 2010e)

[8] These dimensions also largely lend themselves to financial incentives on EU levels and have already a certain history of financial support, in particular the one on infrastructures, i.e. this likely leading into path-dependency and overweighting/importance of specific ERA dimensions.

Figure 4. The European Research Area and its links with the 7 flagships of Europe 2020



This chapter of the report departs from the 6 ERA dimensions as defined in the ERA Green Paper, and analyses how they relate to the new policy context of Europe 2020. Figure 4 illustrates this by putting ERA and its dimensions in the wider context of the 7 flagship initiatives. The tables in Annex I give a more detailed analysis of the commitments and action areas of each flagship initiative, and how they impact on the ERA dimensions. In the centre of figure 4 also some policies (´other ERA policies`) relevant to Europe 2020 are mentioned that may also impact on ERA, but that do not relate to a specific ERA dimension.

Below each dimension is looked at in more detail. For each dimension it is explained what it is about, where we are now, and where we are going, taking into account recent policy developments.

Dimension 1. People: Realising a single labour market for researchers

What is it about?

The ERA Green Paper (European Commission, 2007) states that researchers should be stimulated by a single labour market with attractive working conditions for both men and women, involving notably the absence of financial or administrative obstacles to trans-national mobility. There should be full opening of academic research positions and national research programmes across Europe, with a strong drive to recruit researchers internationally, and easy movement between disciplines and between the public and private sectors – such mobility becoming a standard feature of a successful research career.

Where are we now?

The ERA Green Paper identified several barriers to the European single market for researchers. These include the limited extent and lack of harmonised rules and conditions for open recruitment in public research institutions, the lack of recognition in the *labour market law* of the research profession and its specificities, its poor working conditions and the existence of barriers to easily transferable pension funds. Furthermore, mobility across sectors or borders is often penalised in terms of career advancement and consolidation and, in general, the private sector is not sufficiently active in research. In this context, procedures for facilitating access to the EU for third country researchers are still cumbersome and lengthy. Doctoral education in EU is fragmented and lacks critical size at the expense of excellence and attractiveness These barriers are further reinforced by some demographic and social trends: on the one hand, women are under represented in top scientific positions; young PhDs emigrate from Europe to the US; many of the old researchers close to retirement will not be replaced resulting in loss of competences. These barriers have not been substantially overcome in the recent years and the Innovation Union flagship initiative has identified further obstacles. For instance, it has pointed out that the research profession suffers from a lack of a common understanding of researchers' competences, which hinders the match of demand and supply and thus the effective allocation of resources.

Where are we going?

The commitments or action areas which relate to this dimension are identified (see table below).

Table 1: Commitments related to Dimension 1

Commitments		Description
Innovation Union		
1	Member States strategies for researchers' training and employment conditions	"By the end of 2011, Member States should have strategies in place to *train enough researchers to meet their national R&D targets and to promote attractive employment conditions in public research institutions. Gender and dual career considerations should be fully taken into account in these strategies."*
2B	Knowledge Alliances and Skills for Innovation	"The Commission will also support business-academia collaborations through the creation of "Knowledge Alliances" between education and business to develop new curricula addressing innovation skills gaps (see also commitment 3 on e-skills). They will help universities to modernise towards inter-disciplinarity, entrepreneurship and stronger business partnerships."
3	E-Skills	"In 2011, the Commission will propose an integrated framework for the development and promotion of e-skills for innovation and competitiveness, based on partnerships with stakeholders. This will be based on supply and demand, pan-European guidelines for new curricula, quality labels for industry-

		based training and awareness-raising activities."
4	European Research Area Framework	"In 2012, the Commission will propose a European Research Area framework and supporting measures to remove obstacles to mobility and cross-border co-operation, aiming for them to be in force by end 2014. They will notably seek to ensure through a common approach: quality of doctoral training, attractive employment conditions and gender balance in research careers; mobility of researchers across countries and sectors, including through open recruitment in public research institutions and comparable research career structures and by facilitating the creation of European supplementary pension funds; cross-border operation of research performing organisations, funding agencies and foundations, including by ensuring simplicity and mutual coherence of funding rules and procedures, building on the work of stakeholders, funding agencies and their representative organisations; dissemination, transfer and use of research results, including through open access to publications and data from publicly funded research;"
		4. 1 Comparable Research Career Structures (European Framework for Research Careers)
		4.2 ERA Framework- Quality of Doctoral Training
		4. 3Creation of Pan-European Pension Funds for Researchers
9	European Institute of Innovation and Technology (EIT)	By mid-2011, the EIT should set out a Strategic Innovation Agenda to expand its activities as a showcase for Innovation in Europe. This should map out its long term development within the Innovation Union, including the creation of new KICs, close links with the private sector and a stronger role in entrepreneurship. It should also build on the EIT Foundation being set up in 2010 and on the introduction in 2011 of the "EIT degree" as an internationally recognised label of excellence.
30	Retaining and Attracting International Talent	"By 2012, the European Union and its Member States should put into place integrated policies to ensure that the best academics, researchers and innovators reside and work in Europe and to attract a sufficient number of highly skilled third country nationals to stay in Europe."
Youth on the move		
Developing modern education and training systems to deliver key competences and excellence		Raise the attractiveness, provision and quality of Vocational Education and Training (VET) Propose a quality framework for traineeships Propose a draft Council Recommendation on the promotion and validation of non-formal and informal learning (2011)
Promoting the attractiveness of higher education for the knowledge economy		Support the reform and modernisation of higher education, by presenting a Communication (2011)
Supporting a strong development of transnational learning and employment mobility for young people - promoting learning mobility		Set up a dedicated Youth on the Move website for information on EU learning and mobility opportunities (2010) Propose a draft Council Recommendation on promoting the learning mobility of young people (2010) Develop a Youth on the Move card to facilitate mobility for all young people Publish guidance on the European Court of Justice rulings on the rights of mobile students (2010) (on issues such as access, recognition and portability of grants) Propose a European Skills Passport (2011)
Supporting a strong development of transnational learning and employment mobility for young people - promoting employment mobility		Develop a new initiative: 'Your first EURES job' Create in 2010 a 'European Vacancy Monitor' Monitor the application of the EU legislation on freedom of workers and identify, in 2010, areas for action to promote youth mobility with Member States
Exploiting the full potential of EU funding programmes		Undertake a review of all relevant EU programmes fostering learning mobility and education, including via an open consultation of stakeholders, to be launched in September 2010, and make proposals in 2011 for the new Financial Framework.

	Examine the feasibility for the creation of an EU-level student loan facility, in cooperation with the EIB Group and other financial institutions.
New skills for new jobs	
Addressing mismatches	All actions (see annex I)
Mobilising Community instruments	All actions (see annex I)

Dimension 2. Infrastructure: World-class research infrastructures (RIs)

What is it about?

Regarding Research Infrastructures (RIs), the ERA Green Paper (European Commission, 2007) specified the following issues to be addressed:

- How could the EU effectively decide on pan-European RIs and their funding, involving the EC, possible synergies with EU cohesion policy instruments, Member States, Industry, the European Investment Bank and other financial institutions?
- European legal framework: What other policy and legal changes are necessary to encourage the private sector to invest more in research infrastructure?
- Is there a need to define common and transparent principles for the management of, and access to, infrastructures of European interest?
- How can the longer-term continuous improvement of RIs be ensured, e.g. through S&T programmes associated with them and European electronic infrastructures?
- Should a global forum on RI be created, involving third countries and international organisations, where Europeans could speak with one voice (as they did in the ITER project on nuclear fusion research)?

Where are we now?

Progress has been made through ESFRI[9], who identified 50 new RIs (or major upgrades of existing ones) to be developed until the 2020 horizon timeframe[10]. Their costs will require pooling of resources from several MS, associated countries and also third countries for some of them.

Challenges linked to the realisation of these projects include (Source: I³S platform, commitment 5):

1. The high total investment costs (~20 B€ +operational costs of over 2 bn€ per year) and the large number of projects (~50) that are being discussed at the same time;
2. The difficulty of countries to overcome a purely national perspective in their decision to participate and invest and make long term commitment to European projects;
3. The complexity of realising the projects in partnerships between several countries and with variable geometry;
4. The work still to be completed to bring the projects to the technical, organisational, legal and financial maturity level where decisions on their funding can be taken;

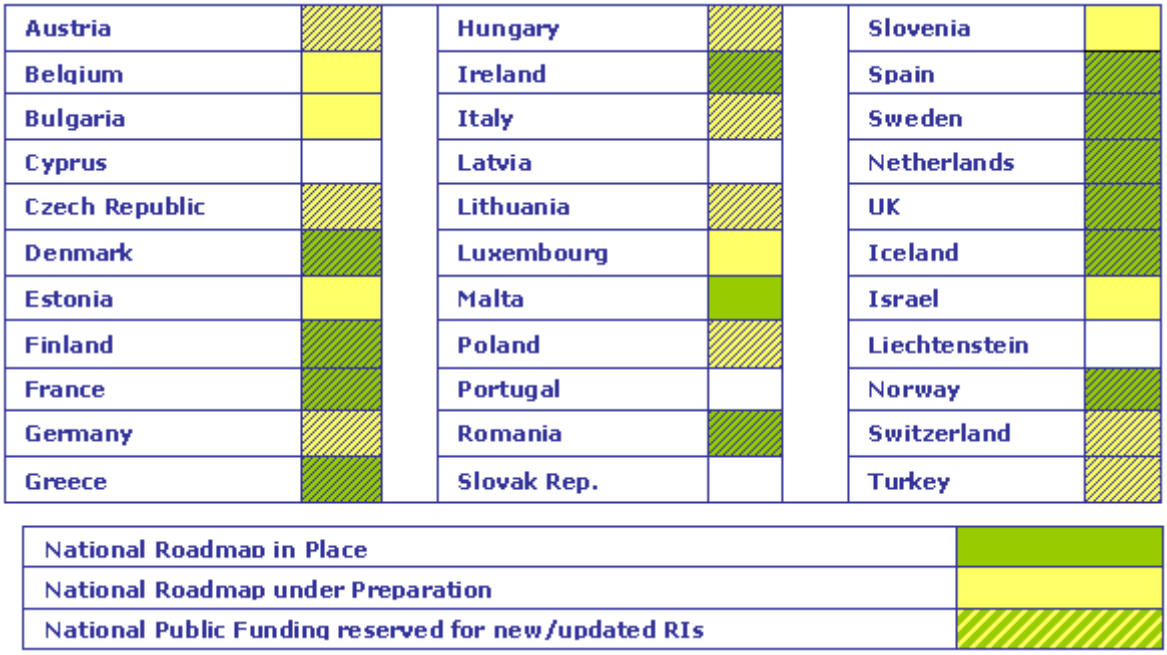
[9] The European Strategy Forum on Research Infrastructures (RIs) was created in 2002 at the behest of the European Council. It is an advisory body, seeking to identify RIs of pan-European relevance and to promote the development of RIs at EU and international level.

[10] The Competitiveness Council of 25-25 November 2004 concluded that "this roadmap should describe the scientific needs for Research Infrastructures for the next 10-20 years"

5. The difficulty of gathering sufficient European funding to co-finance the projects and complement national contributions.

The current deployment or planning of RIs implemented by Members States and Associated countries is shown below.

Figure 5. Deployment and planning of Research Infrastructures for EU MS and AC



Source: European Commission (2010f).

Considering the current implementation and the objectives, a number of remarks can be made. Keeping up the momentum of the first four years (2006-2010) over the next five years should allow the realisation of about 60% of the ESFRI projects by 2015.

At EU level this means (Source: I³S platform, commitment 5):

1. To continue mobilising the EU resources (FP7, Structural Funds, RSFF[11])
2. To continue catalysing and supporting the national efforts for the allocation of sufficient resources
3. To assess the effectiveness of the existing actions in view of their reinforcement in the next FP.

Through FP7, the EU provides mainly catalytic support to an initial Preparatory Phase (~220 M€) to address legal, governance, financial and technical issues in order to launch the projects. The EU contracts provide a framework allowing all necessary stakeholders to cooperate. FP7 funds to support to the actual Construction Phase is much more limited (90 M€). Additional financial resources (200 M€) are devoted to the RSFF to make available loans from the European Investment Bank (EIB). In view of the overall financial needs (~ 20

[11] RSFF (Risk Sharing Financial Facility) was jointly developed by the European Commission and the EIB and launched in mid-2007. It is a debt facility providing loan finance to private and public entities for the support of additional investments in RDI in the order of EUR 10 bn for the period 2007-2013. FP7 contribution to the RSFF amounts to a maximum of EUR 1 billon for the period 2007-2013 and has to be matched by an equivalent amount from the EIB.

B€), the contribution of FP7 of ~ 500 M€ is rather limited (Source: I³S platform, commitment 5).

The EU Structural Funds can provide a substantial support to some research infrastructures. Under the current Financial Perspectives from 2007 to 2013, 10 B€ are earmarked for "R&TD infrastructure and centers of competence". This support is particularly important for the 12 new MS. The projects need to meet requirements of scientific excellence and impact on the regional economy. For some ESFRI projects, industrial partners have already been identified and letters of interest from companies received, demonstrating the potential impact on the economy (partnership with innovative industries, large companies, SMEs and start-ups; links with innovative incubators for the creation of spin-offs) (Source: I³S platform, commitment 5). After 2013, as part of Horizon 2020, Research Infrastructures (including e-infrastructures) will be funded under the priority 'Excellent Science' (European Commission, 2011g).

Among the other coordination / legal instruments which have been set up to address the remaining aspects mentioned in the Green Paper, the main ones are (Report of the Expert Group on Research Infrastructures (2010):

- The Community legal framework for a European Research Infrastructure Consortium (ERIC) entered into force in 2009. This is an article 187 legal form designed to facilitate the joint establishment and operation of research infrastructures of (pan-) European interest. This legal status would allow such RIs to benefit from specific taxation and employment rules. An unresolved issue is that the current ERIC regulation is related to Public-Public Partnership. A new legal framework at Community level allowing the creation of Public-Private Partnership to serve industrial research in the long term is therefore needed.
- The e-Infrastructure Reflection Group (e-IRG) recommends best practices for the pan-European electronic infrastructure efforts (to support the creation of a political, technological and administrative framework for a shared use of e-resources). It consists of official government delegates from all the EU countries and produces white papers, roadmaps & recommendations. The themes addressed are: (i) e-infrastructures in FP7 (ii) a policy for resource sharing (iii) a registry/repository for European resources (iv) coordination of new national and EU funding programs (v) better links and synergies between Europe and other regions engaged in similar activities.

Where are we going?

The commitments or action areas which relate to this dimension are identified (see table below).

Table 2: Commitments related to Dimension 2

Commitments		Description
Innovation Union		
4	European Research Area Framework	In 2012, the Commission will propose a European Research Area framework and supporting measures to remove obstacles to mobility and cross-border co-operation, aiming for them to be in force by end 2014.
5	European Research Infrastructures	By 2015, Member States together with the Commission should have completed or launched the construction of 60% of the priority European research infrastructures currently identified by the European Strategy Forum for Research Infrastructures (ESFRI). The potential for innovation of these (and ICT and other) infrastructures should be increased. The Member States are invited to review their Operational Programmes to facilitate the use of cohesion policy money for this purpose

18	Eco-Innovation	By early 2011 the Commission will present an eco-innovation action plan building on the Innovation Union and focusing on the specific bottlenecks, challenges and opportunities for achieving environmental objectives through innovation
32	Towards Global Research Infrastructures	The European Union should step up its cooperation on the roll-out of the global research infrastructures. By 2012, agreement should be reached with international partners on the development of research infrastructures which owing to cost and/or complexity, can only be developed on a global scale.
Digital Agenda		
Action Area Research and Innovation		EC action: Ensure sufficient financial support to joint ICT research infrastructures and innovation clusters, develop further eInfrastructures and establish an EU strategy for cloud computing notably for government and science.
A resource-efficient Europe		
Long-term framework		Outline what the EU needs to do to create a low-carbon economy in 2050, cutting greenhouse gas emissions by 80-95%, as part of global efforts to fight climate change, while improving energy security and promoting sustainable growth and jobs. Analyse how the EU can create an energy system by 2050 which is low-carbon, resource-efficient, secure and competitive. This should provide the necessary certainty for investors, researchers, policy makers and regulators. Present a vision for a low-carbon, resource-efficient, secure and competitive transport system by 2050 that removes all obstacles to the internal market for transport, promotes clean technologies and modernises transport networks.
Medium-term measures		Proposals to reform the Common Agricultural Policy, the Common Fisheries Policy, Cohesion Policy, energy infrastructure and trans-European networks for transport in the context of the next EU budget to align these areas with the requirements of a resource-efficient, low-carbon economy.
Industrial policy		
Innovative industry		Pooling scarce resources to help to achieve critical mass in bringing innovation to the market; and by increasing cooperation in innovation to create large scale demonstration projects and pilot test facilities, for example using the model of the European Strategy Forum on Research Infrastructures (ESFRI).

Dimension 3. Organisations: Excellent research institutions

What is it about?

Another of the six dimensions necessary to make the European Research Area a reality is related to research organisations. Research institutions are at the core of the production process of research and innovation and should be able to attract human capital and financial resources from all over the word. To do that, as stated in the ERA Green paper (European Commission, 2007), research institutions across Europe should be able to cooperate while competing, be embedded in the social and economic life, and interact with the business community in sustainable public-private partnerships.

Moreover, networking of existing centres of excellence and the creation of virtual centres is crucial to avoid fragmentation. "Their reach should be amplified through 'virtual research communities' created by pooling and integrating activities and resources from different locations in Europe and beyond, using powerful computing and communication tools" (European Commission, 2007).

Where are we now?

With regard to research organisations in Europe, concrete actions have been initiated at EU level on new ways of working together, new instruments and new bodies to better integrate the innovation cycle and bring together the key stakeholders:

- The Marie Curie Industry-Academia Partnerships and Pathways[12], aiming explicitly at creating bridges between the academic world and enterprises. Under this programme, 50 % of businesses participating in the projects are SMEs (European Commission, 2011c).
- In September 2011, the Commission presented a reform strategy for modernising higher education, including through increasing graduate numbers; improving teaching quality and adapting curricula and delivery of education programmes to the changing needs of the wider economy; training more researchers; and improving the links between research, education and innovation (European Commission, 2011c).
- With the objective of bringing together business and academia to address innovation skills gaps, the Commission launched in 2011 the Pilot Project for Knowledge Alliances[13]. Out of 94 proposals received the three projects that were selected aim at designing new curricula and courses, developing innovative ways of delivering education and knowledge, and will help universities to modernise by moving towards inter-disciplinarity, entrepreneurship and stronger business partnerships (European Commission, 2011c).
- The European Institute of Innovation and Technology (EIT)[14], created in March 2008, brings together higher education institutions, research organisations and businesses in new types of partnerships — Knowledge and Innovation Communities (KICs) —operating in the areas of sustainable energy (KIC InnoEnergy), climate change adaptation and mitigation (Climate-KIC) and future information and communication society (EIT ICT Labs). The first results of the EIT are already visible in terms of business creation (five start-ups since January 2011) and a first EIT-backed Masters' course organised by KIC InnoEnergy, with 155 students. At the end of 2011, the Commission has proposed a Strategic Innovation Agenda for the EIT to the European Parliament and the Council. It focuses on consolidating the three existing KICs and gradually setting up new ones, which will address major societal challenges in line with the Horizon 2020 objectives (European Commission, 2011c). The following thematic areas were identified as those where the establishment of a new KIC has greatest potential to add value to existing activities and bring about a real boost to innovation: for the launch of KICs between 2014-2018: food4future - sustainable supply chain from resources to consumers; innovation for healthy living and active ageing; raw materials – sustainable exploration, extraction, processing, recycling and substitution; for the launch of KICs after 2018: added-value manufacturing; smart secure societies; urban mobility (European Commission, 2011a).

Other initiatives are still under preparation, such as the initiative to design and implement an independent multi-dimensional international university ranking system[15], with first results expected in 2013. It will allow to benchmark university performance and, thus, to identify best performing European universities. A feasibility study was launched in May 2009 to design and test the feasibility of a multi-dimensional. It finished in June 2011 and prepared

[12] http://cordis.europa.eu/fp7/people/industry-academia_en.html

[13] http://ec.europa.eu/education/higher-education/knowledge_en.htm

[14] Innovation Union commitment No. 9: The EIT should set out a Strategic Innovation Agenda (SIA) to expand its activities as a showcase for Innovation in Europe.

[15] Innovation Union commitment No. 2. For more information about the ranking see van Vugh & Ziegele (2011).

the ground for the introduction of a personalised ranking concept, both by taking account and influencing the debate on rankings, contributing to further improve and sophisticate existing ranking systems. It carried out a pilot phase including a sample of 159 institutions in and outside the EU. This feasibility study concluded that the implementation of this ranking is possible, although continuous work will be required in some indicators and dimensions. The Commission is currently preparing the next phase leading to the implementation of the multi-dimensional ranking instrument, so that this broader implementation is publicly available for the first time by mid-2013.

Where are we going?

The commitments or action areas which relate to this dimension are identified (see table below).

Table 3: Commitments related to Dimension 3

Commitments	Description
Innovation Union	
Commitment 2.A: "Personalised" University Ranking	In 2011 the Commission will, on the basis of the current preparatory work11, support an independent multi-dimensional international ranking system to benchmark university performance. This will allow the best performing European universities to be identified. In 2011 further steps will be proposed in a Communication on the reform and modernisation of higher education.
Commitment 2.B: Knowledge Alliances and Skills for Innovation	The Commission will also support business-academia collaborations through the creation of "Knowledge Alliances" between education and business to develop new curricula addressing innovation skills gaps (see also commitment 3 on e-skills).They will help universities to modernise towards inter-disciplinarity, entrepreneurship and stronger business partnerships
Commitment 4: European Research Area Framework	In 2012, the Commission will propose a European Research Area framework and supporting measures to remove obstacles to mobility and cross-border co-operation, aiming for them to be in force by end 2014.
Commitment 9: European Institute of Innovation and Technology (EIT)	By mid-2011, the EIT should set out a Strategic Innovation Agenda to expand its activities as a showcase for Innovation in Europe. This should map out its long term development within the Innovation Union, including the creation of new KICs, close links with the private sector and a stronger role in entrepreneurship. It should also build on the EIT Foundation being set up in 2010 and on the introduction in 2011 of the "EIT degree" as an internationally recognised label of excellence.
Commitment 21: Facilitating Effective Collaborative Research and Knowledge Transfer	The Commission will facilitate effective collaborative research and knowledge transfer within the research Framework Programmes and beyond. It will work with stakeholders to develop a set of model consortium agreements with options ranging from traditional approaches to protect IP through to more open ones. Mechanisms are also needed to further strengthen knowledge transfer offices in public research organisations, in particular through trans-national collaboration
Commitment 31: Scientific Cooperation with third Countries	The European Union and its Member States should treat scientific cooperation with third countries as an issue of common concern and develop common approaches. This should contribute to global approaches and solutions to societal challenges and to the establishment of a level-playing field. In 2012 together with the ERA Framework, the Commission will propose common EU / Member States priorities in S&T as a basis for coordinated positions or joint initiatives vis-à-vis third countries, building on the work of the Strategic Forum for International Cooperation. In the meantime, the EU and Member States should act in a concerted manner when engaging in S&T agreements and activities with third countries. The potential scope for "umbrella" agreements between the EU and Member States with third countries will be explored.
Youth of the move	
Promoting the attractiveness of higher education for the	- Support the reform and modernisation of higher education, by presenting a Communication (2011)

knowledge economy	- Benchmark higher education performance and educational outcomes - Propose a multiannual Strategic Innovation Agenda (2011)
New skills for new jobs	
Addressing mismatches	Promote dialogue between business and education and training providers, for the establishment of partnerships to meet medium-term skills needs; and provide insight on the expectations of employers with respect to students and graduates, through qualitative prospective studies such as 'Tuning Educational Structures in Europe'.
European platform against poverty and social exclusion	
Developing an evidence-based approach to social innovations and reforms	Launch in 2011 an initiative to pool a range of European funds to promote evidence-based social innovation, possibly initially concentrating on social assistance schemes: A European research excellence network to promote capacity building for the design and evaluation of social innovation programmes.

Dimension 4. Funding: Well-coordinated research programmes and priorities

What is it about?

According to the ERA Green Paper (European Commission, 2007), coherence should be ensured of national and regional research programmes and priorities on issues of European interest. This includes a significant volume of jointly programmed public research investment at European level, involving common priorities, coordinated implementation and joint evaluation. This requires cross-border operation of research actors. Hurdles to cross-border collaboration exist at three levels (Source: I³S platform, commitment 6):

- Political level: insufficient political will to pool national resources into joint European initiatives, as Member States are facing pressure on public budgets;
- Structural level: incompatibility between national research and innovation systems, and hesitance of Member States to commit to teaming up resources into "joint" schemes; insufficient funding at national level to address major challenges alone and - in some Member States - absence of national programmes or adequate top-down governance;
- Managerial/implementation level: absence of a simple set of common definitions / principles between the EU and Member States, which would allow assembling better the various national actors for the design, selection and implementation of cross-border projects, programmes and funding arrangements.

Another aspect of co-ordination in research is the issue of societal challenges. Research and innovation policies have always been looking for ways to solve societal concerns, but using these challenges as a driving factor for developing research and innovation policy is a recent development. What has caused this development is a combination of factors (Source: I³S platform, commitment 6), including:

- increasing demand from society to get 'value for public money' in terms of societal benefits;
- the threatened competitive position of Europe on the global stage which is forcing policy makers at the highest political level to reflect on new modes of stimulating sustainable growth;
- the continued fragmentation and lack of coordination in Europe across policy domains and policy levels which an approach based on grand challenges could help to address

Where are we now?

Estimations indicate that around 85% of public R&D in the EU is programmed, financed, monitored and evaluated at national level, with too little collaboration or coordination between countries (European Commission, 2008b). In 2011 an EC Communication on Partnering in Research and Innovation was launched aiming to simplify the existing partnering landscape in research and innovation (European Commission, 2011b). A wide set of co-ordination instruments is currently available:

- Existing EU-level Public-Public Partnership (P2P) instruments (European Commission, 2011b): ERA-NETs[16] (100 since 2002) aim to coordinate national research programmes in a selected area. ERA-NET Plus projects (9 since 2007) enhance joint funding by MS and EU in a selected area. Article 185 Initiatives (5 since 2003) integrate national and European research programmes in a selected area. Joint Programming Initiatives (10 have been launched since 2008[17]) aim to coordinate/integrate national research programmes to address a societal challenge. The Strategic Energy Technology plan started in 2007 and aims to accelerate development of low carbon energy technologies and streamline national research programmes in strategic technology areas at EU level. Europe INNOVA/PRO INNO Europe (25 pilot projects since 2008, targeted at Eco-innovation/innovation in services and clusters) focuses on joint policy learning and development of better innovation support.
- Existing EU-level Public-Private Partnership (PPP) instruments (European Commission, 2011b): Joint Technology Initiatives (5 since 2007) aim to strengthen European industrial leadership in well defined areas. European Industrial Initiatives (EIIs) under the SET Plan (7 EIIs since 2010) address the demonstration/market rollout bottleneck in the innovation chain of low carbon energy technologies. Recovery Plan PPPs (3 since 2008) focus on maintaining and strengthening industry sectors hit by the economic crisis. Future Internet PPP (since 2011) aims to ensure future Internet development at the service of society. COLIPA (since 2009) helps industry comply with EU legislation. SESAR aims to modernise European air traffic management.
- European Innovation Partnerships (EIPs - 2 up until now) aim to "act across the entire Research and Innovation cycle to ensure that ideas can be turned into successful products or services to tackle societal challenges whilst also generating growth and jobs". Knowledge and Innovation Communities (KICs - 3 up until now) are structured partnerships integrating education, research and business actors to address major societal challenges (European Commission, 2011b). Additional EIPs and KICs are in the pipeline.
- According no NETWATCH data, there were 7 active networks in 2011 receiving no funding from FP7. They were all self-sustaining networks, which were actually former ERA-NETs, and which continued without EU support (Harrap and Özbolat, 2011).
- In addition there are currently 11 INCO-NETs, aiming to support bilateral dialogue with Third Countries in the context of FP7 (European Commission, 2011f)[18].

Research programming of universities in Europe is currently not co-ordinated across borders in a systematic way. With regard to co-ordination between research institutes, two initiatives exist to date: the European Energy Research Alliance (EERA) and the European Climate Research Alliance (ECRA).

[16] For an interactive map of countries participating in ERA-NETs, see http://netwatch.jrc.ec.europa.eu/nw/index.cfm/info/Countries.

[17] For an overview of countries involved in each JPI: http://www.era.gv.at/space/11442/directory/11767.html.

[18] For a list of currently active INCO-NETs, see http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=inconet.

Where are we going?

EU level funding will be drastically changed after 2013. Horizon 2020 brings together all existing Union research and innovation funding, including the Framework Programme for Research, the innovation related activities of the Competitiveness and Innovation Framework Programme and the European Institute of Innovation and Technology (EIT) (European Commission, 2011g). Resources will be focused on three priorities: 'Excellent Science', 'Industrial Leadership', and 'Societal Challenges'. Funding will be focussed on the following challenges: Health, demographic change and wellbeing; Food security, sustainable agriculture, marine and maritime research and the bio-economy; Secure, clean and efficient energy; Smart, green and integrated transport; Climate action, resource efficiency and raw materials; Inclusive, innovative and secure societies.

The commitments or action areas which relate to this dimension are identified (see table below).

Table 4: Commitments related to Dimension 4

Commitments		Description
Innovation Union		
4	European Research Area Framework	In 2012, the Commission will propose a European Research Area framework and supporting measures to remove obstacles to mobility and cross-border co-operation, aiming for them to be in force by end 2014.
6	EU Research and Innovation Programmes	Future EU research and innovation programmes will focus on Europe 2020 objectives and particularly the Innovation Union. In 2011, looking ahead to the next financial perspectives, the Commission will set out ways for future programmes to focus more on societal challenges, streamline funding instruments and radically simplify access through a better balance between a control-based and a trust-based system.
8	Strengthen the Science Base for Policy Making, "European Forum on Forward Looking Activities"	The Commission will create a "European Forum on Forward Looking Activities" bringing together existing studies and data and involving public and private stakeholders to improve the evidence base of policies.
9	European Institute of Innovation and Technology (EIT)	By mid-2011, the EIT should set out a Strategic Innovation Agenda (SIA) to expand its activities as a showcase for Innovation in Europe. This should map out its long-term development within the Innovation Union, including the creation of new Knowledge and Innovation Communities (KICs), close links with the private sector and a stronger role in entrepreneurship. It should also build on the EIT Foundation set up in 2010 and on the introduction in 2011 of the "EIT degree" as an internationally recognized label of excellence."
18	Eco-Innovation	By early 2011 the Commission will present an eco-innovation action plan building on the Innovation Union and focusing on the specific bottlenecks, challenges and opportunities for achieving environmental objectives through innovation.
21	Facilitating Effective Collaborative Research and Knowledge Transfer	The Commission will facilitate effective collaborative research and knowledge transfer within the research Framework Programmes and beyond. It will work with stakeholders to develop a set of model consortium agreements with options ranging from traditional approaches to protect IP through to more open ones. Mechanisms are also needed to further strengthen knowledge transfer offices in public research organisations, in particular through transnational collaboration.
24-25	Maximising Social and Territorial Cohesion	Commitment 24: Starting in 2010: Member States should considerably improve their use of existing Structural Funds for research & innovation projects, helping people to acquire the necessary skills, improving the performance of national systems and implementing smart specialisation strategies and trans-national projects. This should also apply to the pre-

		accession funding for EU candidate countries. The Commission stands ready to assist and will use its regional research and cluster initiatives to support this change and establish a "smart specialisation platform" by 2012, including further support for the emergence of world class clusters. Commitment 25: Member States should initiate the preparation of post 2013 Structural Fund programmes with an increased focus on innovation and smart specialisation. Future regulations governing the operation of the European Regional Development Fund should further commit substantial financial resources to support innovation initiatives within the regions of the European Union."
27-B	Research Programme on Public Sector and Social Innovation	Starting in 2011, the Commission will support a substantial research programme on public sector and social innovation, looking at issues such as measurement and evaluation, financing and other barriers to scaling up and development. As an immediate step, it will pilot a European Public Sector Innovation Scoreboard as a basis for further work to benchmark public sector innovation.
29	European Innovation Partnerships	The Council, Parliament, Member States, industry and other stakeholders are invited to support the innovation partnership concept and to indicate the specific commitments they will undertake to make the concept work. The Commission invites all key stakeholders to commit themselves to pooling efforts and resources to achieve the partnership's intended objectives.
Digital Agenda		
Action Area Research and Innovation		EC Key Action 9: Leverage more private investment through the strategic use of pre-commercial procurement and public-private partnerships, by using structural funds for research and innovation and by maintaining a pace of 20% yearly increase of the ICT R&D budget at least for the duration of FP7.
		EC action: Reinforce the coordination and pooling of resources with Member States and industry, and put greater focus on demand- and user-driven partnerships in EU support to ICT research and innovation.
		EC action: Starting in 2011 propose measures for 'light and fast' access to EU research funds in ICT, making them more attractive notably to SMEs and young researchers in view of a wider implementation within the revision of the EU RTD Framework.
		EC action: Ensure sufficient financial support to joint ICT research infrastructures and innovation clusters, develop further eInfrastructures and establish an EU strategy for cloud computing notably for government and science.
		EC Action: Work with stakeholders to develop a new generation of web-based applications and services, including for multilingual content and services, by supporting standards and open platforms through EU-funded programmes.
		MS action: By 2020, double annual total public spending on ICT research and development spending from €5.5bn to €11bn (which includes EU programmes), in ways that leverage an equivalent increase in private spending from € 35 billion to € 70 billion.
		MS action: Engage in large scale pilots to test and develop innovative and interoperable solutions in areas of public interest that are financed by the CIP.
Youth on the move		
Promoting the attractiveness of higher education for the knowledge economy		Propose a multiannual Strategic Innovation Agenda (2011)
Exploiting the full potential of EU funding programmes		Undertake a review of all relevant EU programmes fostering learning mobility and education, including via an open consultation of stakeholders, to be launched in September 2010, and make proposals in 2011 for the new Financial Framework
A resource-efficient Europe		
Long-term framework		Outline what the EU needs to do to create a *low-carbon economy in 2050*; analyse how the EU can create an *energy system by 2050 which is low-carbon, resource-efficient, secure and competitive*; present a *vision for a low-carbon, resource-efficient, secure and competitive transport system by 2050*; define medium and long-term objectives and means for achieving them with the main

	aim to *decouple economic growth from resource use* and its environmental impact.
Medium-term measures	An *energy efficiency plan with a time horizon of 2020;* proposals to *reform the Common Agricultural Policy, the Common Fisheries Policy, Cohesion Policy, energy infrastructure and trans-European networks for transport;* a new *EU biodiversity strategy for 2020;* measures to *tackle the challenges in commodity markets and on raw materials;* A strategy to make the EU a *'circular economy';* early action on *adaptation to climate change;* a *water policy.*
Industrial policy	
Innovative industry	Reducing the fragmentation of innovation support systems, facilitating bringing innovative solutions to the market, and increasing the market focus of research projects. Denmark and Austria have successfully reduced the fragmentation and the United Kingdom has schemes to bring innovative solutions to the market.
European platform against poverty and social exclusion	
Making EU funding deliver on the social inclusion and social cohesion objectives	The Commission will aim at facilitating access to global grants for small organisations and an improved access to funding for groups with multiple disadvantages and at high risk of poverty.

Dimension 5. Knowledge circulation: Effective knowledge sharing

What is it about?

The ERA Green Paper (European Commission, 2007) states that generation, diffusion and exploitation of knowledge are at the core of the research system. In particular it stresses that access to knowledge generated by the public research base and its use by business and policymakers lie at the heart of the European Research Area, where knowledge must circulate without barriers.

Such effective circulation of knowledge should consist of: open and easy access to the public knowledge base; a simple and harmonised regime for Intellectual Property Rights, including a cost-efficient patenting system and shared principles for knowledge transfer and cooperation between public research and industry; innovative communication channels to give the public at large access to scientific knowledge, the means to discuss research agendas and the curiosity to learn more about science.

Along the same line, it is also essential to improve the education and continuous training of researchers: researchers trained in Europe should be confident that their qualifications will allow a rewarding career. For that to happen European doctoral programmes and further training should meet stringent quality standards, fulfil the needs of both academia and business, and be recognised across Europe. Finally researchers at all levels should be trained in cross-disciplinary work and S&T administration, including knowledge transfer and dialogue with society.

Where are we now?

The High Level Expert Group on Scientific Data (2010) submitted a report to the European Commission in 2010, recognising that important work has been done: funding by the European Commission of several projects to develop distributed computing environments, databases for discipline-specific content, and libraries for new types of online

communications. They also note that much debate[19] – from the Commission, the Council and the Parliament – has taken place about the need to speed development of scientific e-infrastructure, and that many other public bodies have begun considering these matters. At the same time the High Level Expert Group on Scientific Data offers a short-list of action by various EU institutions – building on work already begun across the EU in recent years, and complementing efforts in the US, Japan and elsewhere in the world. The actions proposed concern:

1. Develop an international framework for a Collaborative Data Infrastructure
2. Earmark additional funds for scientific e-infrastructure
3. Develop and use new ways to measure data value, and reward those who contribute it
4. Train a new generation of data scientists, and broaden public understanding
5. Create incentives for green technologies in the data infrastructure
6. Establish a high-level, inter-ministerial group on a global level to plan for data infrastructure

An important obstacle to an effective circulation of knowledge is the fragmented patent system. Patenting remains excessively complicated and costly in Europe, and fragmented litigation fails to provide sufficient legal certainty. Recently the European Commission proposed a regulation for an enhanced cooperation in the area of the creation of unitary patent protection (European Commission, 2011e).

Where are we going?

The above issues are targeted by the Europe 2020 strategy and below we identify the relevant commitments/actions for each flagship initiative of the strategy.

Table 5: Commitments related to Dimension 5

Commitments		Description
Innovation Union		
2B	Knowledge Alliances and Skills for Innovation	"The Commission will also support business-academia collaborations through the creation of ***"Knowledge Alliances"*** *between education and business to develop* ***new curricula addressing innovation skills gaps*** *(see also commitment 3 on e-skills). They will help universities to modernise towards inter-disciplinarity, entrepreneurship and stronger business partnerships."*
4	European Research Area Framework	"In 2012, the Commission will propose a European Research Area framework and supporting measures to remove obstacles to mobility and cross-border co-operation, aiming for them to be in force by end 2014.
9	European Institute of Innovation and Technology (EIT)	"By mid-2011, the EIT should set out a Strategic Innovation Agenda (SIA) to expand its activities as a showcase for Innovation in Europe. This should map out its long-term development within the Innovation Union, including the creation of new Knowledge and Innovation Communities (KICs), close links with the private sector and a stronger role in entrepreneurship. It should also build on the EIT Foundation set up in 2010 and on the introduction in 2011 of the "EIT degree" as an internationally recognized label of excellence."
14	EU Patent	"The European Parliament and Council should take the necessary steps to adopt the proposals on the EU patent, its linguistic regime and the unified system of dispute settlement."
18	Eco-Innovation	"By early 2011 the Commission will present an eco-innovation action plan building on the Innovation Union and focusing on the specific bottlenecks, challenges and opportunities for achieving environmental objectives through innovation."

[19] For a description of the e-Infrastructure Reflection Group (e-IRG), see the section on Dimension 2.

20	Open Access to Research Results / Research Information Services	"The Commission will promote open access to the results of publicly funded research. It will aim to make open access to publications the general principle for projects funded by the EU research Framework Programmes. The Commission will also support the development of smart research information services that are fully searchable and allow results from research projects to be easily accessed."
21	Facilitating Effective Collaborative Research and Knowledge Transfer	"The Commission will facilitate effective collaborative research and knowledge transfer within the research Framework Programmes and beyond. It will work with stakeholder to develop a set of model consortium agreements with options ranging from traditional approaches to protect IP through to more open ones. Mechanisms are also needed to further strengthen knowledge transfer offices in public research organisations, in particular through transnational collaboration."
22	Develop a European Knowledge Market for Patents and Licensing	"By the end of 2011, working closely with Member States and stakeholders, the Commission will make proposals to develop a European knowledge market for patents and licensing. This should build on Member State experience in trading platforms that match supply and demand, market places to enable financial investments in intangible assets, and other ideas for breathing new life into neglected intellectual property, such as patent pools and innovation brokering."
23	Role of Competition Policy in safeguarding Against the Use of IPRs for Anti-Competitive Purposes	"The Commission will examine the role of Competition Policy in safeguarding against the use of intellectual property rights for anti-competitive purposes. It will analyse the implications of collaborative IPR agreements as part of its review of the application of its anti-trust rules to horizontal agreements between competing companies."
29	European Innovation Partnerships	"The Council, Parliament, Member States, industry and other stakeholders are invited to support the innovation partnership concept and to indicate the specific commitments they will undertake to make the concept work. The Commission invites all key stakeholders to commit themselves to pooling efforts and resources to achieve the partnership's intended objectives.
Digital Agenda		
Action Area Research and Innovation		EC Key Action 9: Leverage more private investment through the strategic use of pre-commercial procurement and public-private partnerships, by using structural funds for research and innovation and by maintaining a pace of 20% yearly increase of the ICT R&D budget at least for the duration of FP7. EC action: Reinforce the coordination and pooling of resources with Member States and industry, and put greater focus on demand- and user-driven partnerships in EU support to ICT research and innovation. EC action: Starting in 2011 propose measures for 'light and fast' access to EU research funds in ICT, making them more attractive notably to SMEs and young researchers in view of a wider implementation within the revision of the EU RTD Framework. EC action: Ensure sufficient financial support to joint ICT research infrastructures and innovation clusters, develop further eInfrastructures and establish an EU strategy for cloud computing notably for government and science. EC Action: Work with stakeholders to develop a new generation of web-based applications and services, including for multilingual content and services, by supporting standards and open platforms through EU-funded programmes. MS action: Engage in large scale pilots to test and develop innovative and interoperable solutions in areas of public interest that are financed by the CIP.
Youth on the move		
Promoting the attractiveness of higher education for the knowledge economy		Propose a multiannual Strategic Innovation Agenda (2011)
A resource-efficient Europe		
Long-term framework		Outline what the EU needs to do to create a *low-carbon economy in 2050*; analyse how the EU can create an *energy system by 2050 which is low-*

	carbon, resource-efficient, secure and competitive; present a *vision for a low-carbon, resource-efficient, secure and competitive transport system by 2050*; define medium and long-term objectives and means for achieving them with the main aim to *decouple economic growth from resource use* and its environmental impact.
Medium-term measures	An *energy efficiency plan with a time horizon of 2020;* proposals to *reform the Common Agricultural Policy, the Common Fisheries Policy, Cohesion Policy, energy infrastructure and trans-European networks for transport;* a new *EU biodiversity strategy for 2020;* measures to *tackle the challenges in commodity markets and on raw materials;* A strategy to make the EU a *'circular economy';* early action on *adaptation to climate change;* a *water policy*.

Dimension 6. Global cooperation: A wide opening of the European Research Area to the world

What is it about?

As the Green Paper (European Commission, 2007) states, "science knows no boundaries and the issues that research is asked to deal with are increasingly global". There are no adequate national or even European solutions to these global problems (climate change, epidemics, loss of biodiversity, energy security, cyber threats, etc.). Moreover, the global research landscape is changing rapidly. As an example, new players like the BRICS countries are expanding their research base with growing numbers of researchers, amounts of public and private R&D funding, etc.

This requires the European Research Area to be open and to reach out to the world. Science is and has ever been global in its setup and self-understanding. International cooperation is happening bottom-up, driven by researchers looking for knowledge and the best partners. However, in order to address the right issues at the right time, the Green Paper considers that international S&T cooperation has to be steered in a coherent manner and driven by policy.

Where are we now?

Europe is increasingly involved in international activities, not least in the area of the global challenges. However, the Green Paper considers that this engagement has to be coordinated better with Member States' activities. At the same time, a common and coordinated approach has to take into account the varying geometries on the side of Europe's partners: The Green Paper differentiates neighbouring countries, developing countries and industrialised and emerging economies.

In this direction, the 2008 Communication from the European Commission to the Council and the European Parliament on "A Strategic European Framework for International Science and Technology Cooperation" has to be mentioned as an important step (European Commission, 2008a). Among its guiding principles are the idea to widen the ERA and make it more open to the world, to ensure policy coherence and complementarity of programmes, to foster cooperation with key third countries and to develop the attractiveness of Europe as a research partner. Some flashlight on the current situation:

- The recent Framework Programmes for Research and Technological Development have established a series of instruments in order to support international cooperation horizontally (INCO-Nets, horizontal ERA-Nets, BILATS, EUROAXESS) or thematically (coordinated calls in the thematic work programmes, etc) as well as to

coordinate with national policies and programmes of international S&T cooperation (horizontal ERA-Nets).

- Participation of third-country researchers in the Framework Programme has increased significantly. The success varies depending on the country and there is still room for improvement.
- Mobility of European researchers to third countries and of third-country researchers to Europe is supported through different instruments, for instance the Marie Curie actions in the Framework Programme. European policy efforts like the Scientific Visa Package for third country citizens are moving forward, though at different speed in different Member States.
- Particularly since the 2012 work programmes, European-level efforts also intend to facilitate innovation cooperation and the joint exploitation of research results (going beyond cooperation between public research labs). It is too early to evaluate the results of this process.
- Output-wise, for instance, the number of international co-publications of European scientists with colleagues from third countries is on the rise. It is difficult to estimate however to what extent this rise is part of a general trend or an expression of the success of European and/or Member State efforts in internationalisations.

The International Cooperation Directorate of DG Research & Innovation is working on a new Strategy for the European-level international S&T policy – publication is foreseen in the second half of 2012.

Where are we going?

One of the goals (and challenges) of efforts related to this dimension is, according to the Green Paper (European Commission, 2007), to make sure that international S&T cooperation contributes to stability, security and prosperity in the world. Global cooperation should and has to make sure that solutions to global challenges are found and shared. Europe's international S&T policy also aims at supporting European competitiveness through strategic partnerships and to facilitate contacts providing access to research carried out elsewhere.

The Communication on the Strategic Framework for International Cooperation states the following orientations for future action (European Commission, 2008a):

- strengthening the international dimension of ERA
    - integrating Europe's neighbours into the ERA
    - fostering strategic cooperation with key third countries through geographic and thematic targeting
- improving the framework conditions for international S&T cooperation
    - tackling scientific challenges through global research infrastructures
    - mobility of researchers and global networking
    - more open research programmes
    - good management of intellectual property issues
    - pre-standardization

Within Horizon 2020 the focus of international cooperation will be on cooperation with three major country groupings: industrialised and emerging economies; enlargement and neighbourhood countries; and developing countries. Where appropriate, Horizon 2020 will promote cooperation at regional or multilateral level (European Commission, 2011g).

The commitments or action areas which relate to this dimension are identified (see table below).

Table 6: Commitments related to Dimension 6

Commitments		Description
Innovation Union		
4	European Research Area Framework	"In 2012, the Commission will propose a European Research Area framework and supporting measures to remove obstacles to mobility and cross-border co-operation, aiming for them to be in force by end 2014.
30	Retaining and Attracting International Talent	"By 2012, the European Union and its Member States should put into place integrated policies to ensure that leading academics, researchers and innovators reside and work in Europe and to attract a sufficient number of highly skilled third country nationals to stay in Europe." (linked to this is the Scientific Visa Directive (Council Directive 2005/71/EC)
31	Scientific Cooperation with third Countries	"The European Union and its Member States should treat **scientific cooperation with third countries as an issue of common concern** and develop common approaches. This should contribute to global approaches and solutions to societal challenges and to the establishment of a level-playing field (removing barriers to market access, facilitating standardisation, IPR protection, access to procurement etc.). In 2012 together with the ERA Framework, the Commission will propose common EU / Member States priorities in S&T as a basis for coordinated positions or joint initiatives vis-à-vis third countries, building on the work of the Strategic Forum for International Cooperation." From the Report of the EC on the State of the Innovation Union 2011 (European Commission, 2011c): "In line with these commitments the EU and Member States have developed in the Strategic Forum for International Science and Technology Cooperation (SFIC) three pilot initiatives (with India, China and the US). • A joint EU/Member States initiative aims to raise the attractiveness of Europe as a destination for research, particularly compared to the US. Attracting top talent from the US to Europe, offering excellence and capitalising on advanced European technology centres ought to redress transatlantic mobility. • With India a Strategic Research and Innovation Agenda is under preparation to leverage existing bilateral S&T cooperation. A central element is aimed at building strong links between European and Indian centres of excellence to develop viable and innovative solutions for societal challenges in fields like water, bio-mass, energy or health. • With regard to China, common priorities for EU and Member States are currently being identified for purposes of more coordinated multilateral cooperation with China and to improve interoperability of bilateral programmes, funding schemes and rules (including IPR issues)."
32	Towards Global Research Infrastructures	"The European Union should step up its cooperation on the roll-out of the global research infrastructures. By 2012, agreement should be reached with international partners on the **development of research infrastructures**, including ICT infrastructures, which owing to cost, complexity and/or interoperability requirements can only be developed on a global scale."
Youth on the move		
Promoting the attractiveness of higher education for the knowledge economy		Propose a multiannual Strategic Innovation Agenda (2011)
Resource-efficient Europe		

Rationale	"Given the global dimension of key environmental issues such as climate change, biodiversity, land use, deforestation, external impacts of consumption and production patterns, competitiveness, security of supply and access, the EU needs to address resource efficiency issues internationally and to cooperate closely with key partners, including with candidate countries and those in our neighbourhood."
Long-term framework	Outline what the EU needs to do to create a *low-carbon economy in 2050*; analyse how the EU can create an *energy system by 2050 which is low-carbon, resource-efficient, secure and competitive*; present a *vision for a low-carbon, resource-efficient, secure and competitive transport system by 2050*; define medium and long-term objectives and means for achieving them with the main aim to *decouple economic growth from resource use* and its environmental impact.
Medium-term measures	An *energy efficiency plan with a time horizon of 2020;* proposals to *reform the Common Agricultural Policy, the Common Fisheries Policy, Cohesion Policy, energy infrastructure and trans-European networks for transport;* a new *EU biodiversity strategy for 2020;* measures to *tackle the challenges in commodity markets and on raw materials;* A strategy to make the EU a *'circular economy';* early action on *adaptation to climate change;* a *water policy.*
From the EC Communication on security of energy supply and international cooperation (European Commission, 2011d):	"The Energy 2020 strategy identified strengthening the external dimension of the EU energy policy as one of the key priorities in the coming years. […] Accordingly, this Communication proposes to further develop an external energy policy with the following priorities: − Building up the external dimension of our internal energy market; − Strengthening partnerships for secure, safe, sustainable and competitive energy; − Improving access to sustainable energy for developing countries; and − Better promoting EU policies beyond its borders."
An agenda for new skills and jobs	
Deepening international cooperation	Actively participate in the OECD's new Programme for the Assessment of Adult Competences (PIAAC), alongside the ongoing PISA and AHELO Programmes on student and higher education outcomes. The Commission will also co-operate with the OECD in the development of qualitative studies on the evolution of skills demand and indicators of mismatches.
	Cooperate with the International Labour Organisation (ILO), particularly with a view to developing a knowledge sharing platform and to assess the global impact of climate change policies on skills and jobs;
	Enhance the current bilateral dialogues with third countries, particularly with China, India, the USA and Canada, leading to joint research and cooperation on forecasting and methodology.
	Develop the policy dialogue with neighbourhood countries and within the Eastern Partnership and the Union for the Mediterranean supported by the European Training Foundation, notably to develop the vocational education and training sector (VET) and national qualifications frameworks.
Mobilising Community instruments	The European Fund for the integration of third country nationals can also contribute – complementing the ESF - in upgrading and adapting immigrants' skills, in particular by supporting pre-travel measures (e.g. vocational and language training) in the country of origin, and language courses in the Member State of residence.

4. Main current stakeholders and their roles

The section aims to identify the main stakeholders actively taking part in the ERA today and their main roles. To do so we have examined systematically 13 key ERA instruments[20], described in detail in Annex II.[21] As a result, table 7 shows the main stakeholders indentified as active participants in the evolving ERA. In addition, some explanatory notes on each of them are included.

Table 7. Main stakeholders actively involved in the ERA

Stakeholder	Definition
European Commission (EC)	The EC is, needless to say, a key-stakeholder of the ERA as it is in charge to implement the decisions taken by the European Council and Parliament. The European Commission designs, in consultation with other stakeholders, and implements the framework programmes; furthermore, it is a funder or co-funder of many of the key instruments of the ERA (Including the different programmes of the FP7).
European Research Council (ERC)	The main goal of the ERC is to encourage high quality research in Europe through competitive funding. The ERC consists of a Scientific Council (which sets up the strategy to foster research excellence) and an Executive Agency (which implements it). The ERC is independent from the European Commission though it received its funds as part of the FP7.
European Institute of Technology (EIT) and the EIT Foundation (EITF)	The EIT is a body of the European Union established in March 2008 whose mission is to increase European sustainable growth and competitiveness by reinforcing its innovation capacity. To do so, the EIT has created integrated structures (Knowledge and innovation Communities - KICs), which link the higher education, research and business sectors to one another in order to boost innovation and entrepreneurship. Much of the EIT's efforts to date have been focused on establishing the current three KICs. The EIT and the EIT Foundation are two separate legal entities. The EIT Foundation (EITF) was established in September 2010 as a philanthropic foundation registered in the Netherlands. It is a not-for-profit entity whose primary purpose is to attract and channel funding for EIT activities that fall outside the scope of its regular funding, but which can bring the benefits of the EIT closer to EU citizens. Accordingly, it is responsible for fundraising and the subsequent financial administration of external donations.
Universities	Universities are a crucial stakeholder of the ERA. They have a prominent role in knowledge production and dissemination (education, training and innovation) and are also one of the most important employers of researchers. Within the ERA they are receivers of funds (and co-funders) for research, infrastructure and also coordination of research related activities. This is respectively the case, for instance, for the cooperation programme of the FP7, the capacities programme of the FP7, or the ERA-NET scheme.

[20] Information on instruments available at: http://ec.europa.eu/research/era/instruments/era_instruments_en.htm
[21] Stakeholders in the wider sense of actors with a stake in the evolution of ERA will be identified in the VERA communication Strategy.

Stakeholder	Definition
European University Association (EUA)	The EUA[22] represents and supports Higher Education Institutions (HEIs) in 47 countries, providing them with a forum to cooperate and update them trends in higher education and research policies. It is the result of a merger between the Association of European Universities (CRE) and the Confederation of European Union Rectors' Conferences, which took place in Salamanca, Spain on 31 March 2001. EUA plays an essential role in shaping tomorrow's European higher education and research landscape thanks to its unique knowledge of the sector and the diversity of its members. The Association's mandate in the Bologna process, contribution to EU research policy-making and relations with intergovernmental organisations, European institutions and international associations, ensure its capacity to debate issues which are crucial for universities in relation to higher education, research and innovation.
European Association of Research Managers and Administrators (EARMA)	EARMA represents the community of Research Managers and Administrators within Europe. It acts as interface between research funding organisations and the scientific community, bridging cultural and legal differences between countries, and between academia and industry, contributing to policy consultations, and managing the smooth running of research projects.
Research and Technology Organisations (RTOs) and The European Association of Research and Technology Organisations (EARTO)	RTOs are organisations "which as their predominant activity provide research and development, technology and innovation services to enterprises, governments and other clients" (as defined by EARTO[23], the European trade association representing RTOs). The have a key role in performing research and innovation, working with enterprises, governments, universities and others to support socio-economic development and public policy. RTOs perform R&D and provide related technology services in the public interest. They generate innovation from research funded by government through a range of mechanisms. RTOs also support public policy (and, increasingly, pre-policy debate through participation in consultation processes for instance) through research and state-of-the-art advice as well as through condition monitoring and technical service work (assaying, certification, norms and standards).
Individual researchers	Individual researchers are the ultimate stakeholder of the ERA. They are targeted, indirectly by all instruments, but directly as beneficiaries for infrastructure, research and mobility grants.
Large firms	Large firms, as universities, can be receivers of different funding streams for both research and innovation programmes. As such they are a critical stakeholder of the ERA. For instance, they can be part of FP7 consortia, they can be involved in mobility schemes within the People programme, or take part in the EIT KICs.

[22] For more information see http://www.eua.be
[23] For more information see http://www.earto.eu/ and http://www.earto.eu/fileadmin/content/03_Publications/EARTO_Annual_Report_2011_2012.pdf

Stakeholder	Definition
Small and Medium Enterprises (SMEs)	SMEs can, in the first place, be involved in research consortia together with universities, research centres, or larger firms. However, as a category, they are also the targets of specific policy measures. In particular under the Capacities programme of the FP7, some initiative are aimed specifically at allowing SMEs to outsource their R&D activities to larger institutions (e.g. universities) either as individual firms or in networks, favouring intersectoral knowledge transfer. Other programmes aim at improving SMEs access to finance for research and innovation, providing key business services and innovation policy support, as well as piloting market tests.
European business associations	A number of European business associations play an important role in the ERA by facilitating the exchange of best practices, experience sharing and networking. They are also important as 'agenda setter' in the areas of their interest. Some examples are: European Industrial Research Management Association (EIRMA), The European Manufacturing and Innovation Research Association and The European Association of Craft, Small and Medium-sized Enterprises.
European Investment Fund (EIF)	The EIF is the European Investment Bank Group's specialist provider of small and medium-sized enterprises (SME) risk finance across Europe. It is owned by the European Investment Bank (EIB), the European Commission and a wide range of public and private banks and financial institutions. The EIF supports innovation and entrepreneurship in Europe through a variety of instruments.
Programme managers and owners	While "programme managers" are national or regional research councils and funding agencies managing research programmes, "programme owners" are national ministries and regional authorities defining research programmes. They are a critical ERA stakeholder not only in their capacity of research managers and policy makers, but also for strategic reasons. Currently, the vast bulk of research programmes in Europe are run in an isolated way, leading to unwanted fragmentation or ineffectiveness. However, major societal challenges require a more coordinated action, national programme managers and owners, therefore, are crucial to pool national research efforts and resources to tackle common European challenges more effectively in a few key areas. Thus, programme managers and owners of the different Member States play a crucial role if the development of joint programming initiatives and in the ERA-NETs and ERA-NETs +. Furthermore they can also be beneficiaries of the calls for proposals organised by the Joint Technology Initiatives (JTIs).
Professional associations	Professional Associations can be eligible to be part of the call for proposals organised by the JTIs.
Regulatory bodies	Regulatory bodies can be eligible to be part of the call for proposals organised by the JTIs.
Not-for-profit organisations	They can be present in the Innovation Communities (KICs) created by the EIT. A non-for-profit-led association is typically part of a JTI. They are also eligible to be part of the call for proposals organised by the JTIs.
Institutions from associated countries	Institutions from Associated Countries can participate in a large majority of instruments and can also be beneficiary of the calls.
Institutions from third countries	Participation of institutions from Third Countries is not always possible in all the instruments. For instance in the JTIs, applications from organisations based in third countries are assessed on a case-by-case basis.

The mentioned stakeholders can be further classified following a broader category as shown in the next table.

Table 8. Classification of the main stakeholders by category and scope of performance

	European level	National level
Policy - making institutions	EC, ERC, EIT, EIF , EARTO	Programme managers, programme owners, regulatory bodies
Academia	EUA and EARMA	Universities, RTOs, individual researchers
Business enterprise sector	Business associations	Large firms, SMEs
Societal organisations / third-sector	Professional associations, non-for profit organisations	

Table 9 provides a synopsis of the key stakeholders identified and their main roles within the analysed instruments of the ERA.

Table 9. Stakeholders actively involved in the ERA instruments and their main roles

	Main roles in the ERA instruments						
	Designer of instruments	**Provider of funds (funder or co-funder)**	**Part of the governance of instruments**	**Research performer**	**Beneficiary of research/infrastructure funds**	**Beneficiary of funds for coordination/administration of research or innovation**	**External Observer**
European Commission	x	x	x				
ERC		x	x			x	
EIT & EIT Foundation	x	x	x				
Universities		x		x	x	x	
European University Association (EUA)							
European Association of Research Managers and Administrators (EARMA)							
Research and Technology Organisations (RTOs)	x	x	x	x		x	
European Association of Research and Technology Organisations (EARTO)							
Large firms		x		x	x		
SMEs		x		x	x		
Business association							
Venture capital and Finance for		x					
Individual researchers				x	x		
Professional associations							
Regulatory bodies	x		x				
Not-for-profit organisations		x			x		
Programme owners	x	x	x			x	
Programme managers	x	x	x			x	
Institutions from associated countries				x	x	x	x
Institutions from third countries				x	x	x	x

Stakeholders can be further classified regarding the following general functions within the ERA:

Policy-formulation is the development of effective and acceptable courses of action for addressing what has been placed on the policy agenda. The process of policy formulation goes from the definition of principles of departure to the design of the implementation plan and the monitoring and evaluation systems. The *EC* and *programme owners* of the national ministries and regional authorities are the main stakeholders involved in the policy formulation. *Business associations*, *associations of universities* and r*esearch managers* and *administrators* also play an important role as "agenda setters" and try to influence the policy formulation process in the areas of their interest. The *ERC* and the *EIT* also play a role in this stage.

Policy-implementation represents the stage of execution of the defined policy. Implementation involves translating the goals and objectives of a concrete policy into an operating, on going program. The *EC* implements the *FP* and other European initiatives. The *ERC* and *EIT* have their own programmes and initiatives. At national/regional level, *ministries* and *research councils* implement and manage the programmes.

Policy-evaluation. The effectiveness of the policy needs to be assessed after a certain period of time, and steps must be taken to ensure that there are resources and means to maintain a successful policy. Policy evaluation is conducted for checking the effects of the policies and for evaluating the policies in terms of necessity, efficiency, validity, etc. to improve the planning and implementation process. The *EU, ERC, EIT* and *EIF* are responsible for monitoring and evaluating the ongoing programmes and instruments. At project level, also *universities, RTOs, business* and other partners should put in place monitoring mechanisms to steer the project development.

Research performance refers to the execution of the research. *Universities*, *RTOs*, *individual researchers*, *large firms* and *SMEs* are the key actors of this function. In some cases, the *EUA* also performs research projects.

Facilitation of linkages between organisations. *Professional associations* (of business, universities, managers, etc.) are typically intermediary organisations which facilitate the exchange of information, good practices and network between partners and act also as links between the stakeholders involved din the policy formulation and those involved in the policy implementation and research performance.

Use of research results: we refer to the final users of the research results which can be *business*, *research centres*, *not-for-profit organisations* and *society in general*.

5. Conclusions

This ERA fabric map provides a snapshot of the ERA today in support of developing alternative future scenarios for its evolution under the VERA project. It shows that responsibilities for research and innovation and related policy domains are shared between the EU and its Member States, and that the landscape of European institutions, bodies and discussion fora involved in research policy in Europe is quite complex. Progress has been made with regard to the 6 ERA dimensions as described in the ERA Green Paper, and the European Commission is aiming to complete the ERA by 2014, mainly by implementing the Europe 2020 Strategy and its 7 flagship initiatives. Implications of Europe 2020 for each ERA dimension have been looked at in this report, showing the direction the ERA is planned to take.

Many stakeholders participate in ERA in a diversity of roles. Some of them will be increasingly involved with the introduction of the planned ERA Pacts. This initial stakeholder mapping will serve as input for the communication plan, which will, amongst others, identify potential stakeholders, to be involved in the VERA project.

This ERA Fabric Map will be updated twice as part of the VERA project.

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Annex I. Europe 2020 Flagship commitments and ERA dimensions

Innovation Union - COM(2010) 546 final		**Relevant for**							
Commit-ment	**Commitment title**	**Respon -sible**	**ERA**	**Dimension 1 People**	**Dimension 2 Infrastructures**	**Dimension 3 Institutions**	**Dimension 4 Funding**	**Dimension 5 Knowledge sharing**	**Dimension 6 Global cooperation**
Promoting excellence in education and skills development									
1	Member State strategies for researchers' training and employment conditions	MS	x	x					
2A	"Personalised" University Ranking	EC	x			x			
2B	Knowledge Alliances and Skills for Innovation	EC	x	x		x		x	
3	E-Skills	EC	x	x					
Delivering the European Research Area									
4	European Research Area Framework	EC	x	x	x	x	x	x	x
4.1	Comparable Research Career Structures (European Framework for Research Careers)	EC	x	x					
4.2	ERA Framework- Quality of Doctoral Training	EC	x	x					
4.3	Creation of Pan-European Pension Funds for Researchers	EC	x	x					
5	European Research Infrastructures	EC	x		x				
Focusing EU funding instruments on Innovation Union priorities									
6	EU Research and Innovation Programmes	EC	x	x			x		
7	SMEs in Research and Innovation Programmes	EC	x						
8	Strengthen the Science Base for Policy Making, "European Forum on Forward Looking Activities"	EC	x				x		
Promoting the European Institute of Innovation and Technology (EIT) as a model of innovation governance in Europe									
9	European Institute of Innovation and Technology (EIT)	EC	x	x		x	x	x	
Enhancing access to finance for innovative companies									
10	Access to Finance - Innovation	EC							
10 RSFF	Risk-Sharing Finance Facility (RSFF)	EC							
11	Access to Finance - Venture Capital	EC							
12	Access to Finance - Matching	EC							
13	Mid-term Review of the R&D&I State AID Framework	EC	x						
Creating a single innovation market									
14	EU Patent	EC	x					x	
15	Screening of the Regulatory framework	EC	x						
16	Standardisation Strategy for Europe 2020	EC	x						
17	Public Procurement - Commission Support	EC							

17 (cont)	Joint Public Procurement	EC							
18	Eco-Innovation	EC	x		x		x	x	
Promoting openness and capitalising on Europe's creative potential									
19-A	Creative Industries	EC							
19-B	European Design Leadership Board	EC							
20	Open Access to Research Results / Research Information Services	EC	x					x	
21	Facilitating Effective Collaborative Research and Knowledge Transfer	EC	x			x	x	x	
22	Develop a European Knowledge Market for Patents and Licensing	EC	x					x	
23	Role of Competition Policy in safeguarding Against the Use of IPRs for Anti-Competitive Purposes	EC	x					x	
Spreading the benefits of innovation across the Union									
24-25	Maximising Social and Territorial Cohesion	EC	x				x		
Increasing social benefits									
26	European Social Innovation Pilot	EC							
27-A	Public Sector Innovation Scoreboard	EC							
27-B	Research Programme on Public Sector and Social Innovation	EC	x				x		
28	Consultation of Social Partners on Interaction between the Knowledge Economy and the Labour Market	EC	x						
Pooling forces to achieve breakthroughs: European Innovation Partnerships									
29	European Innovation Partnerships	EC	x				x	x	
Leveraging our policies externally									
30	Retaining and Attracting International Talent	EC	x	x					x
31	Scientific Cooperation with third Countries	EC	x			x			x
32	Towards Global Research Infrastructures	EC	x		x				x
Reforming research and innovation systems									
33	Member States R&I Systems	MS	x						
Measuring Progress									
34-A	Development of an Innovation Headline Indicator	EC							
34-B	Innovation Union Scoreboard	EC	x						

Digital Agenda - COM(2010) 245 final/2			Relevant for						
Action area	**Action**	**Respon-sible**	**ERA**	**Dimension 1 People**	**Dimension 2 Infrastructures**	**Dimension 3 Institutions**	**Dimension 4 Funding**	**Dimension 5 Knowledge sharing**	**Dimension 6 Global cooperation**
Research and innovation	EC Key Action 9: Leverage more private investment through the strategic use of pre-commercial procurement and public-private partnerships, by using structural funds for research and innovation and by maintaining a pace of 20% yearly increase of the ICT R&D budget at least for the duration of FP7.	EC	X				X	X	
	EC action: Reinforce the coordination and pooling of resources with Member States and industry, and put greater focus on demand- and user-driven partnerships in EU support to ICT research and innovation.	EC	X				X	X	
	EC action: Starting in 2011 propose measures for 'light and fast' access to EU research funds in ICT, making them more attractive notably to SMEs and young researchers in view of a wider implementation within the revision of the EU RTD Framework	EC	X				X	X	
	EC action: Ensure sufficient financial support to joint ICT research infrastructures and innovation clusters, develop further eInfrastructures and establish an EU strategy for cloud computing notably for government and science.	EC	X		X		X	X	
	EC Action: Work with stakeholders to develop a new generation of web-based applications and services, including for multilingual content and services, by supporting standards and open platforms through EU-funded programmes.	EC	X				X	X	
	MS action: By 2020, double annual total public spending on ICT research and development spending from €5.5bn to €11bn (which includes EU programmes), in ways that leverage an equivalent increase in private spending from € 35 billion to € 70 billion.	MS	X				X		
	MS action: Engage in large scale pilots to test and develop innovative and interoperable solutions in areas of public interest that are financed by the CIP.	MS	X				X	X	

Youth on the move - COM(2010) 477 final			Relevant for						
Line of action	**Action**	**Respon-sible**	**ERA**	**Dimension 1 People**	**Dimension 2 Infrastructures**	**Dimension 3 Institutions**	**Dimension 4 Funding**	**Dimension 5 Knowledge sharing**	**Dimension 6 Global cooperation**
Developing modern education and training systems to deliver key competences and excellence	Propose a draft Council Recommendation on reducing Early School leaving (2010)	EC							
	Launch a High Level Expert Group on Literacy (2010)	EC							
	Raise the attractiveness, provision and quality of Vocational Education and Training (VET)	EC	x	x					
	Propose a quality framework for traineeships	EC	x	x					
	Propose a draft Council Recommendation on the promotion and validation of non-formal and informal learning (2011)	EC	x	x					
Promoting the attractiveness of higher education for the knowledge economy	Support the reform and modernisation of higher education, by presenting a Communication (2011)	EC	x	x		x			
	Benchmark higher education performance and educational outcomes	EC	x			x			
	Propose a multiannual Strategic Innovation Agenda (2011)	EC	x			x	x	x	x
Supporting a strong development of transnational learning and employment mobility for young people - promoting *learning* mobility	Set up a dedicated Youth on the Move website for information on EU learning and mobility opportunities (2010)	EC	x	x					
	Propose a draft Council Recommendation on promoting the learning mobility of young people (2010)	EC	x	x					
	Develop a Youth on the Move card to facilitate mobility for all young people	EC	x	x					
	Publish guidance on the European Court of Justice rulings on the rights of mobile students (2010) (on issues such as access, recognition and portability of grants)	EC	x	x					
	Propose a European Skills Passport (2011)	EC	x	x					
Supporting a strong	Develop a new initiative: 'Your first EURES job'	EC	x	x					

development of transnational learning and employment mobility for young people - promoting *employment* mobility	Create in 2010 a 'European Vacancy Monitor' Monitor the application of the EU legislation on freedom of workers and identify, in 2010, areas for action to promote youth mobility with Member States	EC EC/MS	x x	x x					
A framework for youth employment	In order to address public spending constraints, work with Member States to identify the most effective support measures Establish a systematic monitoring of the situation of young people not in employment, education or training (NEETs) Establish, with the support of the PROGRESS programme, a new Mutual Learning Programme for European Public Employment Services (2010) Strengthen bilateral and regional policy dialogue on youth employment Encourage the greater use of support to potential young entrepreneurs via the new European Progress Micro-finance Facility Ensuring that all young people are in a job, further education or activation measures within four months of leaving school and providing this as a 'Youth Guarantee' Offering a good balance between rights to benefits and targeted activation measures based upon mutual obligation	EC EC EC EC EC MS MS	- -						
Exploiting the full potential of EU funding programmes	Examine ESF interventions and make a proposal to increase awareness of and maximise the potential of the ESF to support young people Member States should ensure that ESF swiftly supports young people and the achievement of Europe 2020 targets.	EC/MS MS							

	Undertake a review of all relevant EU programmes fostering learning mobility and education, including via an open consultation of stakeholders, to be launched in September 2010, and make proposals in 2011 for the new Financial Framework	EC	x	x			x		
	Examine the feasibility for the creation of an EU-level student loan facility, in cooperation with the EIB Group and other financial institutions	EC	x	x					

A resource-efficient Europe - COM(2011) 21			**Relevant for**						
Line of action	**Action**	**Respon-sible**	**ERA**	**Dimension 1 People**	**Dimension 2 Infrastructures**	**Dimension 3 Institutions**	**Dimension 4 Funding**	**Dimension 5 Knowledge sharing**	**Dimension 6 Global cooperation**
Long-term framework	Outline what the EU needs to do to create a *low-carbon economy in 2050*, cutting greenhouse gas emissions by 80-95%, as part of global efforts to fight climate change, while improving energy security and promoting sustainable growth and jobs.	EC	X		X		X	X	X
	Analyse how the EU can create an *energy system by 2050 which is low-carbon, resource-efficient, secure and competitive*. This should provide the necessary certainty for investors, researchers, policy makers and regulators	EC	X		X		X	X	X
	Present a *vision for a low-carbon, resource-efficient, secure and competitive transport system by 2050* that removes all obstacles to the internal market for transport, promotes clean technologies and modernises transport networks.	EC	X		X		X	X	X
	Define medium and long-term objectives and means for achieving them with the main aim to *decouple economic growth from resource use* and its environmental impact.	EC	X				X	X	X

Medium-term measures	An *energy efficiency plan with a time horizon of 2020* which will identify measures to achieve energy savings of 20% across all sectors, and which will be followed by legislation to ensure energy efficiency and savings.	EC	X				X	X	X
	Proposals to *reform the Common Agricultural Policy, the Common Fisheries Policy, Cohesion Policy, energy infrastructure and trans-European networks for transport* in the context of the next EU budget to align these areas with the requirements of a resource-efficient, low-carbon economy.	EC	X		X		X	X	X
	A new *EU biodiversity strategy for 2020* to halt further loss to and restore biodiversity and ecosystem services in the light of pressures on ecosystems.	EC	X				X	X	X
	Measures to *tackle the challenges in commodity markets and on raw materials* which will, amongst others, periodically assess critical raw materials and define a trade policy to ensure sustainable supplies of raw materials from global markets. These measures will help ensure coherence between the EU's raw materials and external policies, including the promotion of good governance, transparency of activities and creation of local valued added in developing countries. It will promote extraction, recycling, *research,* innovation and substitution inside the EU.	EC	X				X	X	X
	A strategy to make the EU a *'circular economy',* based on a recycling society with the aim of reducing waste generation and using waste as a resource.	EC	X				X	X	X
	Early action on *adaptation to climate change* to minimise threats to ecosystems and human health, support economic development and help adjust our infrastructures to cope with unavoidable climate change.	EC	X				X	X	X

	A *water policy* that makes water saving measures and increasing water efficiency a priority, in order to ensure that water is available in sufficient quantities, is of appropriate quality, is used sustainably and with minimum resource input, and is ultimately returned to the environment with acceptable quality.	EC	X				X	X	X

New skills for new jobs - COM(2008) 868 final			**Relevant for**						
Action area	**Action**	**Respon-sible**	**ER A**	**Dimension 1 People**	**Dimension 2 Infrastructures**	**Dimension 3 Institutions**	**Dimension 4 Funding**	**Dimension 5 Knowledge sharing**	**Dimension 6 Global cooperation**
Addressing mismatches	Establish as of 2009 a "European Labour Market Monitor"	EC	X	X					
	Develop as of 2009 a standard multilingual dictionary of occupations and skills	EC	X	X					
	Create in 2009 *Match and Map*, a user-friendly, transparent online service for citizens, providing qualitative information on occupations, skills, learning and training opportunities across the EU.	EC	X	X					
	Establish a regular, systematic assessment of long-term supply and demand in EU labour markets up to 2020,	EC	X	X					
	Increase EU methodological, analytical and mutual learning capacities for skills and jobs anticipation. As of 2009, the Commission will concentrate efforts under the PROGRESS and Lifelong Learning programmes to develop new ways of measuring competences.	EC	X	X					
	Increase EU capacity for assessing the employment effects of a transition to a low carbon economy.	EC	X	X					
	Promote *dialogue between business and education and training providers*, for the establishment of partnerships to meet medium-term skills needs; and provide insight on the expectations of employers with respect to students and graduates, through qualitative prospective studies such as 'Tuning Educational Structures in Europe'.	EC/Busines s/ education & training providers	X	x		x			

	Enhance knowledge, awareness and *involvement of businesses in forecasting skills needs*, through an employers' survey tool and qualitative studies on the skills needs of business, notably SMEs.	EC/Business	X	X					
	Support platforms of companies, training providers and recruitment specialists to *jointly design targeted training courses* and organise an annual *"Partnership for skills and employment" event*, to recognize the most innovative partnerships matching skills supply and demand.	EC/Business/ education & training providers/recruitment specialists	X	X					
	Provide an *analysis of the skills and labour market needs of key sectors*. Comprehensive results for 16 sectors covering 75% of total EU private sector jobs will be available in mid-2009, providing a full picture of labour demand and its implications for restructuring.	EC	X	X					
	Discuss with stakeholders, notably the existing sector social dialogue committees, the possibility of establishing "sector councils on employment and skills" at EU level, to collect information available in Member States and regions and provide guidance drawn from stakeholders and from education and training systems.	EC/Sector dialogue committees/ MS/Regions	X	X					
Deepening international cooperation	Actively participate in the *OECD*'s new Programme for the Assessment of Adult Competences (PIAAC), alongside the ongoing PISA and AHELO Programmes on student and higher education outcomes. The Commission will also co-operate with the OECD in the development of qualitative studies on the evolution of skills demand and indicators of mismatches.	EC	X						X
	Cooperate with the *International Labour Organisation (ILO)*, particularly with a view to developing a knowledge sharing platform and to assess the global impact of climate change policies on skills and jobs;	EC	X						X
	Enhance the current bilateral dialogues with third countries, particularly with China, India, the USA and Canada, leading to *joint research and cooperation on forecasting and methodology*.	EC	X						X
	Develop the policy dialogue with *neighbourhood countries and within the Eastern Partnership* and the Union for the Mediterranean supported by the European Training Foundation, notably to develop the vocational education and training sector (VET) and national qualifications frameworks.	EC	X						X

Mobilising Community instruments	The *Growth and Jobs Strategy and the Mutual Learning programmes* within the Open Method of Co-ordination provide an overall policy framework for the New Skills for New Jobs initiative.	EC	X	X					
	The *Commission's Recovery Plan* underlines that a stronger emphasis on *flexicurity* policies, with a focus on activation measures, retraining and skills upgrading, is essential to promote employability and reintegration into the labour market.	EC	X	X					
	The *updated strategic framework for cooperation in education and training* can stimulate innovative partnerships between education and training providers and social and economic actors, to promote more flexible and demand-led systems.	EC	X	X					
	The implementation of the *European Qualifications Framework* should increase the transparency of qualifications and facilitate access to further learning. The Copenhagen process on cooperation in VET will include a new priority to improve the links with the labour market.	EC	X	X					
	The *"Fifth Freedom" – the freedom of movement of knowledge* - called for by the 2008 Spring European Council, will support the deployment of the New Skills for New Jobs initiative. It will foster the mobility of knowledge workers across borders and sectors and thus help match demand and supply at the high skill level.	EC	X	X					
	The New Skills for New Jobs initiative is fully within the scope of the *European Social Fund (ESF)*. Several Member States have already identified as a priority in their 2007-2013 ESF programming the development of policies and services to address skills needs and labour market mismatches, including actions aiming at a better gender balance and guidance on educational choices. The Commission will provide policy guidance for Member States on an optimal use of ESF funds.	EC	X	X					
	The *European Regional Development Fund (ERDF)* can also contribute to developing skills and anticipation, by promoting technology forecasting, innovation, research and development and communication infrastructure and through cross-border cooperation between education and training organizations.	EC	X	X					

	The *European Agricultural Fund for Rural Development (EAFRD)* invests in innovation, new technologies, *research and development*, and supports the skills upgrading of farmers, foresters and food processors as well as of the broader rural population through training, information and diffusion of knowledge actions.	EC	X	X					
	The Commission's proposal to amend the *European Globalisation adjustment Fund (EGF) Regulation* will allow for strengthening skills upgrading activities.	EC	X	X					
	The *European Fund for the integration of third country nationals* can also contribute – complementing the ESF - in upgrading and adapting immigrants' skills, in particular by supporting pre-travel measures (e.g. vocational and language training) in the country of origin, and language courses in the Member State of residence.	EC	X	X					X

Industrial policy - COM(2011) 642 final			**Relevant for**						
Commitment	**Commitment title**	**Respon-sible**	**ERA**	**Dimension 1 People**	**Dimension 2 Infrastructures**	**Dimension 3 Institutions**	**Dimension 4 Funding**	**Dimension 5 Knowledge sharing**	**Dimension 6 Global cooperation**
Innovative industry	Pooling scarce resources to help to achieve critical mass in bringing innovation to the market; and by increasing cooperation in innovation to create large scale demonstration projects and pilot test facilities, for example using the model of the European Strategy Forum on Research Infrastructures (ESFRI).				X				
	Reducing the fragmentation of innovation support systems, facilitating bringing innovative solutions to the market, and *increasing the market focus of research projects*. Denmark and Austria have successfully reduced the fragmentation and the United Kingdom has schemes to bring innovative solutions to the market.		X				X		

Sustainable industry	*Favouring energy and raw material efficiency and promoting innovation and deployment of cleaner technologies along value chains* with the use of long-term incentives that encourage market creation and facilitate the participation of SMEs in these processes. As outlined above, many Member States have made considerable progress with these issues. Ensure *fair and undistorted pricing of energy*, and continue to work on *upgrading and interconnecting energy distribution networks*. Favouring and promoting *social entrepreneurship* in Europe, in particular in enhancing its public profile and its access to public and private finance (especially through Social investment Funds).								
Business environment	*Reducing the administrative burden* on businesses by evaluating the current burden (including that due to the tax code) and rapidly reducing burdens to targets. *Promoting competition among service providers* that use the infrastructures in broadband, energy and transport.								
Promoting industry and services	Developing *support for innovative services* based on measureable outcomes; and by participating in the Innovation Partnerships and in large-scale demonstration projects. *Fully implementing the Single Market legislation*, in particular the Services Directive and promoting business services.								
Small and medium-sized enterprises	Facilitating the growth of SMEs by ensuring that regulations do not pose obstacles to expansion; by favouring access to appropriate finance; and by providing support services for accessing new markets, and publicising these. Ensuring that public administrations reduce payment times and adhere strictly to the Late Payments Directive.								
General EC actions	Strengthen the coordination of Member States' industrial policies by promoting and monitoring growth-enhancing structural improvements to achieve the targets of the Europe 2020 strategy. By first quarter of 2012 provide a forum for identifying and discussing good practices in promoting growth through industrial policies.	EC EC							

European platform against poverty and social exclusion - COM(2010) 758 final										
Action Area Action area		**Action**		**Relevant for**						
			Respon-sible	**ERA**	**Dim. 1 People**	**Dim. 2 Infra-structures**	**Dim. 3 Institutions**	**Dim. 4 Funding**	**Dim. 5 Knowledge sharing**	**Dim. 6 Global cooperation**
Delivering action to fight poverty and exclusion across the policy spectrum	Access to employment	Present in 2012 a Communication providing an in-depth *assessment of the implementation of active inclusion strategies at national level*, including the effectiveness of minimum income schemes and of the way EU programmes can be used to support active inclusion.	EC/MS	X						
	Social protection and access to essential services	Present in 2011 a *White Paper on Pensions* to jointly address sustainability and adequacy of pensions in the post-crisis context.	EC							
		Launch a *European Innovation Partnership (EIP) on active and healthy ageing in 2011* and support initiatives for active ageing at all levels in the context of a European Year for Active Ageing in 2012.	EC							
		Develop the *Voluntary European Quality Framework on social services* at sectoral level, including in the field of long-term care and homelessness.	EC							
		Undertake an *assessment of the efficiency and effectiveness of health expenditure*, including in relation to the issues highlighted in the communication on "Solidarity in Health: reducing health inequalities in the EU"	EC							
		Present in 2011 a *legislative initiative to ensure access to certain basic banking services* and call on the banking sector to submit a self-regulatory initiative geared towards improving the transparency and comparability of bank charges.	EC							

Education and youth policies	Present in 2011 a *Communication and a proposal for a Council Recommendation on policies to combat early school leaving* and launch a wide-ranging initiative to promote more effective interventions at all levels of education against the cycle of disadvantage.	EC	X						
	Propose in 2012 a *Recommendation on child poverty* outlining common principles and effective monitoring tools to combat and prevent poverty in early age.	EC							
Migration and integration of migrants	Present in 2011 a *"New European Agenda on Integration"* to better support the efforts of Member States in promoting third-country nationals of diverse cultural, religious, linguistic and ethnic backgrounds to participate actively in European economies and societies.	EC/MS	X						
Social inclusion and antidiscrimination	Present an *EU Framework for National Roma Integration Strategies* in 2011.	EC							
	Step up efforts to *promote the economic independence of women*, which is the first of the five priorities of its Strategy on equality between women and men for 2010-2015.	EC	X						
	Ensure appropriate *follow up to the European Disability Strategy 2010-2020*, targeting in particular circumstances and barriers that prevent people with disabilities from enjoying their rights fully.	EC							
	Identify methods and means to best *continue the work it has started on homelessness and housing exclusion*, taking into account the outcome of the consensus conference of December 2010.	EC							
Mainstreaming social objectives in sectoral policies and in internal market and consumer policies	Accessible use of Information and Communication Technologies	EC							
	Address the risks of energy poverty	EC							

		Access to financial services for the most vulnerable	EC							
	External dimension	Employment and social policies	EC							
	Social Impact Assessment	Continue to refine and *improve the quality of its impact assessment* to ensure that attention is paid to the *social dimension*. It is important that other EU Institutions when modifying the Commission's proposals and the Member States at national level assess the social dimension of their own proposals.	EC/other EU Institutions /MS	X						
Making EU funding deliver on the social inclusion and social cohesion objectives	The *European Social Fund should be used to sustain Member States' efforts to achieve the Europe 2020 objectives*, including the poverty reduction target. This implies that the necessary resources would be devoted to social inclusion while making the access of the relevant stakeholders to those resources easier.		EC							
	The Commission will aim at *facilitating access to global grants for small organisations* and an improved *access to funding for groups with multiple disadvantages and at high risk of poverty*.		EC	X				X		
	The Commission will put forward proposals in 2011 for the *new Cohesion Policy regulatory framework for the period post-2013* which will simplify access to the structural funds for local groups and ensure greater complementarity and synergies between EU funds to promote community-based approaches, including for urban regeneration.		EC	X						
	The Commission will propose for the new Cohesion Policy post-2013 a *Common Strategic Framework (CSF)* that will ensure coherence and complementarity between the European Regional Development Fund, the European Social Fund, the European Agricultural Fund for Rural Development and the European Fisheries Fund. The CSF would identify EU priorities to address the European poverty target and the actions set out in this flagship initiative.		EC	X						
Developing an evidence-based approach to social	Launch in 2011 an initiative to pool a range of European funds to	A *European research excellence network* to promote capacity building for the design and evaluation of *social innovation programmes*.	EC	X			X			

innovations and reforms	promote evidence-based social innovation, possibly initially concentrating on social assistance schemes.									
		A *European research project in the area of social innovation* aimed at devising workable methods and concrete impact measurements.	EC	X						
		The definition of *common principles* on the design, implementation and evaluation of *small scale projects* designed to test policy innovations (or reforms) before adopting them more widely (social experiments).	EC							
		Communication and awareness raising about ongoing social innovation.	EC							
		A "high-level steering committee" which will provide advice and guidance on developing actions.	EC							
Promoting a partnership approach and the social economy	Support through the *PROGRESS programme regular exchanges and partnerships between a wider set of stakeholders* in specific priority areas, such as active inclusion, child poverty, Roma inclusion, homelessness and financial inclusion.		EC	X						
	Elaborate *voluntary guidelines on stakeholders' involvement* in the definition and the implementation of policy actions and programmes to address poverty and exclusion, and will promote their implementation at national, regional and local level.		EC	X						
Harnessing the potential of the social economy	Support the *development of the social economy as a tool for active inclusion* by proposing measures to improve the quality of the legal structures relating to foundations, mutual societies and cooperatives operating in a European context, proposing a "Social Business Initiative" in 2011, as well as facilitating access to relevant EU financial programmes.		EC	X						

Stepping up policy coordination between the Member States	Based on the experience of the first European Semester of Europe 2020, the Commission will discuss with Member States and other institutional and non-institutional actors, how to best *adapt the working methods of the Social Open Method of Coordination to the new governance of Europe 2020*. The Commission will present a report before the end of 2011 summarising the orientations emerged and the follow up it will give to it.	EC/MS/ Other							
Building on the legacy of the European year 2010 against poverty and exclusion	Work with other EU institutions and bodies to *transform the Annual Round Table on Poverty and Exclusion into a wider Annual Convention of the European Platform* designed to bring together all relevant actors.	EC/other EU Institutions and bodies							

Annex II. Main stakeholders involved in a selected number of ERA instruments

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
Era-Net and Era-Net +	ERA-NET scheme: develop and strengthen the coordination of national and regional research programmes. ERA-NET Plus actions aim at facilitating the launch of joint calls for proposals	Design of the instrument, organise call for proposal, evaluation of the instrument, support of the existing ERA-NETs, cover additional costs related to the coordination up to 100%. ERA-NET +: the Commission provides an incentive for the organisation of joint calls between national or regional research programmes, by 'topping-up' joint transnational funding with Community funding	The Commission stakeholder consultation on the future of European research revealed a strong support for more coordination of national research programmes from all categories of contributors	Programme 'owners' (national ministries or regional authorities defining research programmes) and programme 'managers' (research councils or other research funding agencies managing research programmes. Also EC (additional costs).	Programme managers and owner (additional cost) Universities, research centres, large companies, SMEs (of the open calls). In some cases also international organisations participate	Each ERA-NET is coordinated by a national programme owner or manager. The EC also helps to coordinate and putting together different ERA-NET (ERA-NET s on stage workshops, development of NETWATCH)	Dimension 4: Funding: coordinated research programmes and priorities
ERC Grant Scheme (Idea Programme)	European Research Council (ERC) grants support individual researchers of any nationality and age who wish to pursue their frontier research. Two main schemes: one for early career researchers (2 to 12 years post Phd) for a	The scheme is implemented by the ERC which is independent from the commission		The ERC is the Funder	The direct beneficiary of the fund can be a private or public research institution. The application for the grant is made by a principal investigator on behalf of the institution which will then host her/him.	The grants are allocated by a panel of experts.	Dimension 1: People: An adequate flow of competent researchers

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
	max of 2 mln; one for older researchers for a max of 3.5 mln						
Marie Curie (People)	A set of actions that support researcher mobility and career development, within and outside the European Union. Some actions are targeted to individual researchers, other to host institutions, or to host-networks/partnerships of institutions.	Funder or co-funder. Costs covered are personnel as well as network activities and other research costs		Research funding organisations (in some actions). It seems that all stakeholders may be involved in the funding.	Individual Marie Curie Fellows, networks/partnerships of research and businesses, any research performing institutions, research funding organisations.	Different types of action are foreseen: 1. Creation of networks for training 2. Creation of public partnership 3. Direct participation of researchers in new institutions.	Dimension 1: People: An adequate flow of competent researchers
E-Infrastructure (Capacities)	The programme focuses on the further development and evolution of the high-capacity and high-performance communication network (GÉANT), distributed computing infrastructures (grids and clouds), supercomputer infrastructures, simulation software, scientific data infrastructures, e-Science services as well as on the adoption of e-Infrastructures by user communities.	Funder of the infrastructure			Different research departments around Europe and the world make use of this infrastructure. I assume firms are involved in building this infrastructure.	A not for profit company manages the funds of the EC. It is governed by NREN (National Research and Education Networks).	Dimension 2: Infrastructure: World-class research infrastructures

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
Research for the Benefit of SMEs (Capacities)	The aim is to strengthen the 'innovation capacity' of small and medium-sized enterprises (SMEs) in Europe and their contribution to the development of new technology based products and markets. The programme will help them outsource research, increase their research efforts, extend their networks, better exploit research results and acquire technological know how, bridging the gap between research and innovation. The programme support aims at SMEs or SME associations in need of outsourcing research to providers of research services ('RTD performers') such as universities, research centres or other, more specialised SMEs. The programme also provides developing and coordinating support to SMEs at national level and other support measures (studies, etc.).	Funder/Co-funder/ Manager of the project.		the SMEs and other organisations that participate to the projects have to co-fund	SMEs, Research institutions.	Funds can cover SMEs, or SMEs Networks.	Dimension 3. Organisations: Excellent research institutions ; Dimension4 Funding: Well-coordinated research programmes and priorities; Dimension 5 Knowledge circulation: Effective knowledge sharing

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
Competitiveness and Innovation Framework Programme	The EIP, one of the specific programmes under the CIP, seeks to support innovation and small and medium enterprises (SMEs) in the EU, focusing on (1) Access to finance (2) Business Services (3) Support for improving innovation policy (4) Pilot and market testing for innovative products/processes/services (5) Support for innovation and SME policy-making though contracts and grants, analytical work and awareness raising activities	Funder/Co-funder/ Manager of the project.		Banks, guarantee, microfinance providers, private equity and venture capital funds through the EIF	Most funds and services are addressed to SMEs.	It depends on the type of actions. For support to research the mechanism is normally that of an open competition. However, a notable initiative is that of the Enterprise Europe Network in which a variety of organisations (chambers of commerce and industry, technology centres, research institutes and development agencies) provide free services to SMEs business development.	Dimension3. Organisations: Excellent research institutions; 4 Funding: Well-coordinated research programmes and priorities.

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
EIT (European Institute of Technology)	The EIT is a body of the European Union established in March 2008. Its mission is to grow and capitalise on the innovation capacity and capability of actors from higher education, research, business and entrepreneurship from the EU and beyond through the creation of highly integrated Knowledge and Innovation Communities (KICs).	The EIT concept was proposed by the EC and its vision and approach were first submitted in a European Commission Communication in February 2006	Wide public consultation taking into account more than 700 contributions by experts and the general public	EU budget (provide the support structure and the conditions necessary for integrated knowledge transfer and networking).EIT annual grant will be allocated on a competitive basis and may not exceed 25 % of the KICs' global expenditure In addition to public funding via the EU budget, the EIT aims to attract significant private sector funds for its activities (EIT Foundation).	Knowledge and Innovation Communities (KICs). They include businesses (including SMEs); entrepreneurs; research and technology organisations; higher education institutions; investment communities (private investors and venture capital); research funders, including charities and foundations; local, regional and national governments. The EIT grant to the KIC will act as leverage. KICs will draw on a variety of sources in order to ensure a sound financial base (National/Regional funding – e.g. grants from National educational or research councils Community (non-EIT) funding - e.g. FP7 research grant or structural funding; Private funding – e.g. grant from a private foundation or contribution from private business. ; The participant's own resources - e.g. cash from the participant's own treasury or in-kind contributions such as the use of buildings (teaching facilities, laboratories, offices) or staff that the partners place at the disposal of the KIC without charge).	EIT has a fully independent governing body: prestigious professionals from business and academic backgrounds. The KICs are an independent but operational part of the EIT (They have great degree of autonomy to the KICs to define their own legal status, internal organisation and working methods)	Dimension: 1: People; Dimension 3: Organisations: Excellent research institutions; Dimension 4: Funding Well-coordinated research programmes and priorities

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
Article 185 (ex 169)	Support the integration of national research activities that goes beyond coordination, and to achieve critical mass. Implementing Article 185 TFEU in the Seventh Framework Programme implies that the participating EU Member States integrate their research efforts by defining and committing themselves to a joint research programme, in which the EU promotes the voluntary integration of scientific, managerial and financial aspects.	Art. 185 enables the Community to participate in new joint research programmes undertaken by several member states, as well as to participate in the dedicated implementation structures		Co-funding by the Member States and the Community, and principle of additionality are respected	Participants: Member States (through respective national R&D programmes). Other countries, in particular FP7 Associated Countries, may join the joint programmes. Beneficiary of calls: research organisations, business sector, etc. (depends on the calls)	The recipient of the EU funding in each Article 185 TFEU (ex Article 169 TEC) initiative is a Dedicated Implementation Structure (DIS). The DIS is responsible for the administrative, financial and contractual management of the joint research programme	Dimension 4: Funding Well-coordinated research programmes and priorities

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
Joint Technology Initiatives (JTIs)	JTIs are a mechanism for performing research at EU level in areas where the traditional instruments of the Framework Programme (e.g. collaborative research) are not adequate. JTIs support large-scale multinational research activities in areas of major interest to European industrial competitiveness and issues of high societal relevance.	The Commission (and the Member States in those cases where they are part of the Joint Undertakings) annually commits funds from the research budget. Industry commits matching in-kind (i.e. non-monetary) contributions and funds, amounting to 50% or more of the total costs of the projects undertaken to carry out the research.		The Commission (and the Member States in those cases where they are part of the Joint Undertakings) annually commits funds from the research budget. Industry commits matching in-kind (i.e. non-monetary) contributions and funds, amounting to 50% or more of the total costs of the projects undertaken to carry out the research.	Who is part of a JTI? Typically the European Commission and a not-for-profit industry-led association. In the some cases, some Member States are also founding members of these Joint Undertakings. SMEs, research organisations (including universities) and corporate members are all welcome to join the industrial association. Calls for proposals: academia, business sector (large and SMEs), professional associations, regulatory bodies, programme managers and owners, intergovernmental organisations, non-for profit organisations. Organisations in countries associated to the Seventh Framework Programme are also eligible to apply for funding. Applications from organisations based in other countries are assessed on a case-by-case basis.	JTIs are long-term Public-Private Partnerships and are managed within dedicated structures based on Article 187 TFEU (ex Article 171 TEC). They are independent legal entities that manage research projects in an integrated way, with industry joining forces with other stakeholders. hey organise calls for proposals, oversee selection procedures and put in place contractual arrangements for projects set up to implement the JTI research agenda. They thus allow funds from different sources to be jointly managed and they are responsible for the related communication and dissemination activities. Each JTI includes a Governing Board, an Executive Director as well as other bodies, including advisory bodies, depending on its specific operational and governance needs.	Dimension 3. Research organisations and Dimension 4. Funding Well-coordinated research programmes and priorities

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
Joint Programming Initiatives (JPIs)	To pool national research efforts in order to make better use of Europe's precious public R&D resources and to tackle common European challenges more effectively in a few key areas. It follows a structured strategic process whereby Member States agree common visions and strategic research agendas to address major societal challenges.	The Commission made proposals to launch Joint Programming in research in July 2008 in a Communication entitled Towards Joint Programming in Research: Working together to tackle common challenges more effectively. The Commission recommends a limited number of areas in which to implement Joint Programming. The Commission facilitates the identification process and, if they so wish support Member States for Joint Programming as necessary.	These proposals made by the EC were based notably on the results of the public consultation following the Commission Green Paper of April 2007	Member States participating and EC (Financing support actions to their management)	Participation of Member States in each initiative "à la carte", based on voluntary commitments leading to partnerships composed of variable groups of countries	High Level Group for Joint Programming (GPC's members are senior officials from Member States and the Commission. Countries associated to the Framework Programme may participate in the group. The GPC is chaired by a member representing the Presidency-in-office). Each JPI is typically managed by Management Board, Executive Board, Scientific Advisory Board and a Secretariat	Dimension 4. Funding Well-coordinated research programmes and priorities

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
International Cooperation (Capacities)	Link ERA to other research areas in the world; Coordinate S&T policies and cooperation including priority setting	Design and fund the instrument; participate in and use the policy dialogue; follow-up on		European Commission (via the Framework Programme)	Beneficiaries receiving the grant: typically consortia of Ministries, funding agencies, agencies supporting the Ministries in external science policies, NCP bodies; Target group (targeted by the INCO-Nets): European Commission; European Member States (mostly science ministries); Partner region countries (science ministries); Through more coordination and a better funding support, beneficiaries are ultimately: programme owners and managers; scientists/universities/RTOs /SMEs	The European Commission funds INCO-Nets as Coordination and Support Actions within FP7; The projects themselves are coordinated by Member State Ministries or agencies with a mandate to represent the Ministry and implement/support national science policy.	Dimension 5. International Cooperation: A wide opening of the ERA to the world; Dimension 4. Well coordinated research programmes and priorities; Dimension 1. People: An adequate flow of competent researchers

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
European Regional Development Fund (ERDF)	The ERDF aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions. It finances: direct aid to investments in companies (in particular SMEs) to create sustainable jobs; infrastructures linked notably to research and innovation, telecommunications, environment, energy and transport; financial instruments (capital risk funds, local development funds, etc.) to support regional and local development and to foster cooperation between towns and regions; technical assistance measures. The ERDF can intervene in the three objectives of regional policy: convergence, regional competitiveness and employment; and European territorial cooperation	Co-funder. Cohesion policy does not fund individual projects. Instead, it funds multi-annual national programmes aligned on EU objectives and priorities. The Commission pays the certified expenditure to each country. The Commission monitors each operational programme, alongside the country concerned.		The EU and Member States (all cohesion policy programmes are co-financed by the member countries)	Companies, SMEs, regional and local organisations and authorities from Member States, social partners and organisations from civil society (this fund is heavily concentrated in the regions with lowest GDP/head).	Principles of shared management. Regional policy involves all levels of scale from EU to local. Each country produces a national strategic reference framework (NSRF), which outlines the country's strategy and proposes a list of operational programmes (OP). The Commission validates the NSRF and the OPs. The operational programmes are implemented by the member countries and their regions. This work is organised by 'management authorities' in each country and/or region	All dimensions(cohesion policy)

		Stakeholders					
Name of the Instrument	**Objective**	**Role of European Commission**	**Consultation process (if any)**	**Funders**	**Beneficiary**	**Governance**	**ERA dimension**
European Social Fund (ESF)	The ESF sets out to improve employment and job opportunities in the European Union. It intervenes in the framework of the Convergence and Regional Competitiveness and Employment objectives. The ESF supports actions in Member States in the following areas: adapting workers and enterprises: lifelong learning schemes, designing and spreading innovative working organisations; access to employment for job seekers, the unemployed, women and migrants; social integration of disadvantaged people and combating discrimination in the job market strengthening human capital by reforming education systems and setting up a network of teaching establishments.	Co-funder		EU financial support always runs alongside national public or private financing (co-funding). The level of EU intervention is linked with the situation on the ground. Depending on a number of socio-economic factors, the co-financing may vary between 50% and 85% of the total cost of interventions.	Participants in ESF projects are people who take part in projects and benefit from them, for example by receiving training in new skills or guidance on how to get a job. Organisations and businesses can also be participants in ESF projects, for example through training courses on new skills for their workforce, or help for management on new working practices. Public administrations, NGOs and social partners active in the field of employment and social inclusion.	Principles of shared management. Regional policy involves all levels of scale from EU to local. Each country produces a national strategic reference framework (NSRF), which outlines the country's strategy and proposes a list of operational programmes (OP). The Commission validates the NSRF and the OPs. The operational programmes are implemented by the member countries and their regions. This work is organised by 'management authorities' in each country and/or region	All dimensions(cohesion policy)