

Monitoring the contribution of the FP7 Specific Programme 'Capacities' to the EU's SD objectives

FP7-4-SD.eu Policy brief No. 5 from September 2011

Summary

In a nutshell: the FP7 Specific Programme 'Capacities'

The Specific Programme (SP) 'Capacities' of the EU's Seventh Framework Programme (FP7) aims to enhance research and innovation capacities throughout Europe and ensure their optimal use. This policy brief analyses the contribution of the three parts SCIENCE IN SOCIETY (SIS), REGIONS OF KNOWLEDGE (RK) and RESEARCH INFRASTRUCTURES (RI) to the 78 operational objectives of the EU Sustainable Development Strategy (EU SDS).

EU policy context: the EU Sustainable Development Strategy

How does SP 'Capacities' contribute to EU SDS objectives?

Overall, 11 % of the research carried out under the SP 'Capacities' has a positive impact on at least one of the 78 operational objectives of the EU SDS¹. However, in terms of budget, the share of co-financing by the European Commission (EC contribution) provided to research projects addressing EU SDS objectives accounts for only 3 % (i.e. € 31 million out of € 932 million).

How do the three SP 'Capacities' parts contribute to SD?

How big is the EU financial contribution to SD across the SP 'Capacities' parts?

Among the different parts of SP 'Capacities', SCIENCE IN SOCIETY (22 %) comprises the largest share of topics contributing to sustainable development (SD), whereas the EC contribution is largest in REGIONS OF KNOWLEDGE (100 %) with about € 11.6 million. The part RESEARCH INFRASTRUCTURES stands out because no topics with positive impacts have been translated into action (by funding projects), and therefore none of its EC contribution can be attributed to EU SDS objectives.

How are the EU SDS operational objectives addressed by SP 'Capacities'?

How did the contribution of SP 'Capacities' to SD change over time?

SD-relevant research carried out in the SP 'Capacities' mainly relates to "social inclusion, demography and migration", "climate change and clean energy" and "public health". Within these topics, the EU SDS objectives "increasing the labour market participation of women" and "raising the share of renewables" are addressed most. Between 2007 and 2011, the number of SP 'Capacities' topics with positive expected impacts slightly decreased from 23 % to 21 %. Over the period 2007 to 2009, however, the amount of EC contribution rose considerably from 1 % to 21 %.

Where are the centres of excellence for research within SP 'Capacities' contributing to EU SDS objectives?

Cross-country comparisons reveal that most SD-related projects are coordinated by organisations from Germany, the UK and Italy. Notably, Eastern European countries are also well integrated and are benefiting from research within SP 'Capacities'.

¹ In this policy brief, terms such as "SD-relevant" or "contributing to sustainable development" are used synonymously for "contributing to at least one of the 78 objectives of the renewed EU SDS".

In a nutshell: the FP7 Specific Programme 'Capacities'

SP Capacities aims to enhance research capacities throughout Europe

The Specific Programme (SP) 'Capacities' is one out of four programmes in FP7, provided with a budget of € 4.1 billion (out of the overall FP7 budget of € 50 billion) over the period 2007 to 2013. The SP 'Capacities' consists of seven broad areas ("parts") in order to achieve its objectives of supporting research infrastructures, research for the benefit of small and medium enterprises (SMEs), and the research potential of European Regions, as well as stimulating the realisation of the full research potential of the enlarged Union and building an effective and democratic European Knowledge. Additional parts cover "support to the coherent development of research policies" and "international cooperation".

The analysis presented in the policy brief relates to the parts RESEARCH INFRASTRUCTURES, REGIONS OF KNOWLEDGE and SCIENCE IN SOCIETY only.

Table 1: Overview of the three parts of SP 'Capacities' analysed in this policy brief (Work Programmes 2007-2011)

Part of SP 'Capacities'	Number of topics	Number of projects	Number of project participations	Total project cost (€)	Total EC contribution (€)
RESEARCH INFRASTRUCTURES	119	194	2761	1298.1	842.7
REGIONS OF KNOWLEDGE	11	7	108	13.9	11.6
SCIENCE IN SOCIETY	134	78	730	93.3	77.9
Total	264	279	3599	1405.3	932.2

Analysing the contribution of SP 'Capacities' to EU SD objectives

Science and research are necessary to provide technologies for tackling societal challenges and knowledge for decisions in policy making

As outlined in the EU Sustainable Development Strategy (EU SDS), science and research are keys to tackling societal challenges like climate change and resource scarcity, particularly when used to develop technologies that decrease natural resource use or reduce pollution and other risks to health and safety. Furthermore, the role of science and research, in line with the precautionary principle, is to provide knowledge to help identify the nature of uncertainties and risks associated with decisions in the policy making process.

The FP7 Specific Programme 'Capacities' supports achieving the goals of the EU SDS by enhancing research and innovation capacities throughout Europe and ensuring their optimal use. Usually, research funded by SP 'Capacities' does not directly contribute to sustainable development objectives (as it is the case for SP 'Cooperation'²²), but sets the basis upon which other projects (e.g. from SP 'Cooperation') can unfold their SD-related impacts. This is reflected in the way that the programme offers the capacities, space for ideas, and ensures a framework for action in science and research in order to tackle societal problems.

²² SP 'Cooperation' is at the core of FP7, representing about two thirds of the overall FP7 budget (i.e. € 32 billion out of € 50 billion) over the period 2007-2013. It fosters collaborative research across Europe and other partner countries, through projects by transnational consortia of industry, academia and civil society, in ten thematic areas that are closely related to the thematic challenges of the EU Sustainable Development Strategy.

How does SP 'Capacities' contribute to EU SDS objectives?

About one out of ten FP7-funded research projects account for SD-relevant research

Overall, about 11 % of the projects (i.e. 30 out of 279) that have been funded by FP7 under the SP 'Capacities' Work Programmes 2007 to 2010³ impacted at least one of the 78 EU SDS operational objectives. However, when looking at the number of topics covered (as called for in the annual Work Programmes) the impact is higher (19 %, i.e. 51 out of 264 topics), though the amount of funding provided by FP7 (total EC contribution) to SD-relevant projects accounts only for 3 % (i.e. € 31 million out of € 932 million). This variation can be explained by differences in the number and size of projects funded by the individual parts of SP 'Capacities'.

How do the three 'Capacities' parts contribute to SD?

The part SCIENCE IN SOCIETY comprises the largest number of topics with impacts on EU SDS objectives

Among the three parts, SCIENCE IN SOCIETY accounts for the largest number of topics with positive expected impacts on EU SDS objectives (29 topics), followed by RESEARCH INFRASTRUCTURES with 15 topics. REGIONS OF KNOWLEDGE includes only 7 topics with positive impacts on SD, but due to the very low number of total topics called for (11) it outperforms SCIENCE IN SOCIETY (22 %) and RESEARCH INFRASTRUCTURES (13 %) with a share of 64 % of SD-relevant topics.

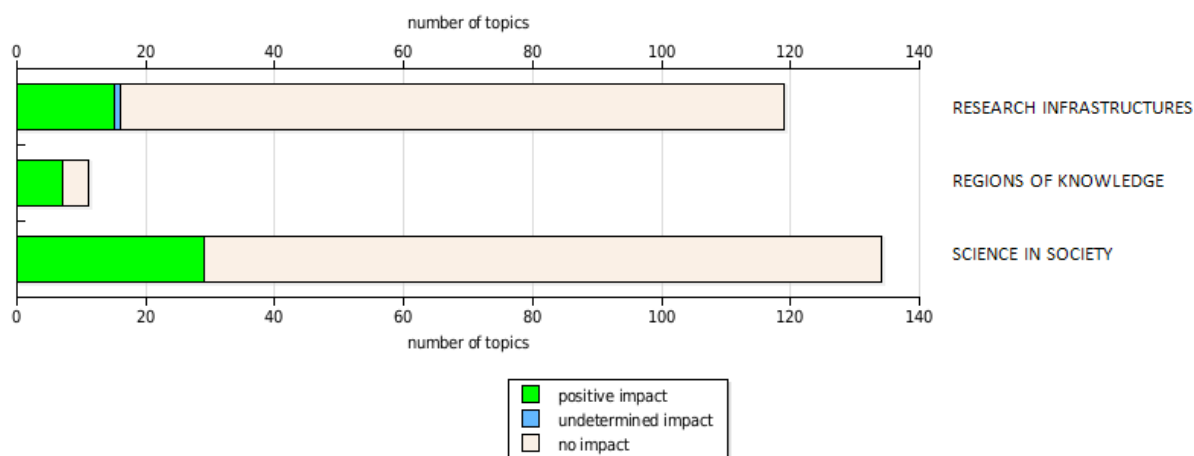


Figure 1: Number of topics with expected impacts in the three 'Capacities' parts⁴

How big is the EU financial contribution to SD across the 'Capacities' parts?

The entire amount of EC contribution in the part REGIONS OF KNOWLEDGE

The pattern of SD-relevant research in the three SP 'Capacities' parts analysed here (see Figure 1) changes substantially when looking at the amount of co-financing ("total EC contribution") provided by FP7 (see Figure 2 below).

³ Data on the number of projects stemming the Work Programme 2010 are still not complete, and projects from the Work Programme 2011 are not included as they are still under negotiation.

⁴ Typology of impacts: "positive": supporting the EU SDS objectives; "undetermined": impacts that due to a lack of scientific evidence cannot yet be categorized as positive, negative or neutral; "no impact": no expected impacts on EU SDS objectives.

contributes to EU SDS objectives

For the part REGIONS OF KNOWLEDGE, all EC contribution (€ 11.6 million) is dedicated to SD-relevant research, which means that projects have so far only been funded under those topics with positive expected impacts on SD. In contrast, none of the topics with positive impacts that were called for in the part RESEARCH INFRASTRUCTURES have been selected for funding, and therefore no EC contribution can be attributed to EU SDS objectives. The part SCIENCE IN SOCIETY is in between, with a share of 25 % (€ 19.5 million) of the EC contribution addressing EU SDS objectives.

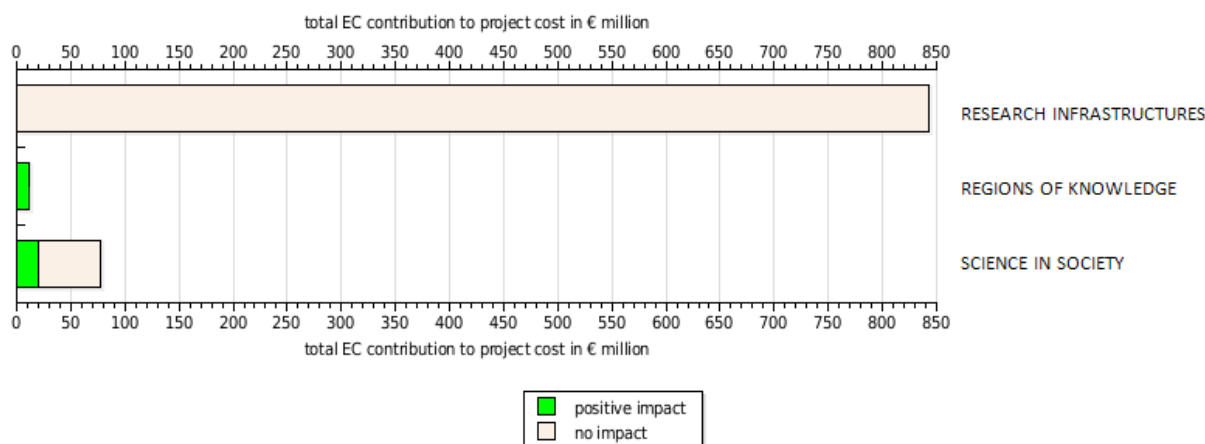


Figure 2: Total EC contribution to projects with expected impacts on the EU SDS objectives from the three 'Capacities' parts

How are the EU SDS operational objectives addressed by 'Capacities'?

SP 'Capacities' contributes considerably to "social inclusion, demography and migration", "climate change and clean energy" and "public health"

As shown in Figure 3, EU SDS objectives related to "social inclusion, demography and migration" are addressed most prominently (26 topics) by SP 'Capacities', followed by objectives related to "climate change and clean energy" (17 topics) and "public health" (12 topics). The picture changes when looking at the funding (EC contribution) provided to projects (see Figure 4): "public health" and "climate change and clean energy" receive the highest EC contribution, with € 18.7 million and € 17.3 million respectively, followed by "social inclusion, demography and migration" accounting for € 15.1 million. This variation can be explained by the fact that projects from the social sciences domain usually have a lower project budget, since it is mainly staff costs that need to be covered. Research from more "technical" disciplines (i.e. where it is necessary to also cover costs for technical equipment) typically involves larger projects (in terms of budget), which is clearly the case here for "public health" and "climate change and energy". No projects that contribute to objectives relating to "sustainable transport" or "global poverty & sustainable development challenges" have been funded (and consequently no EC contribution is allocated).

Issues like increasing the labour market participation of women and raising

At the level of the EU SD strategy's operational objectives, the objectives "increasing the labour market participation of women" (18 topics) and "raising the share of renewables" (9 topics), followed by "other expected

the share of renewable are most prominent

impacts" within "climate change and clean energy" and "public health" with 7 topics each, are addressed most prominently by SP 'Capacities'.

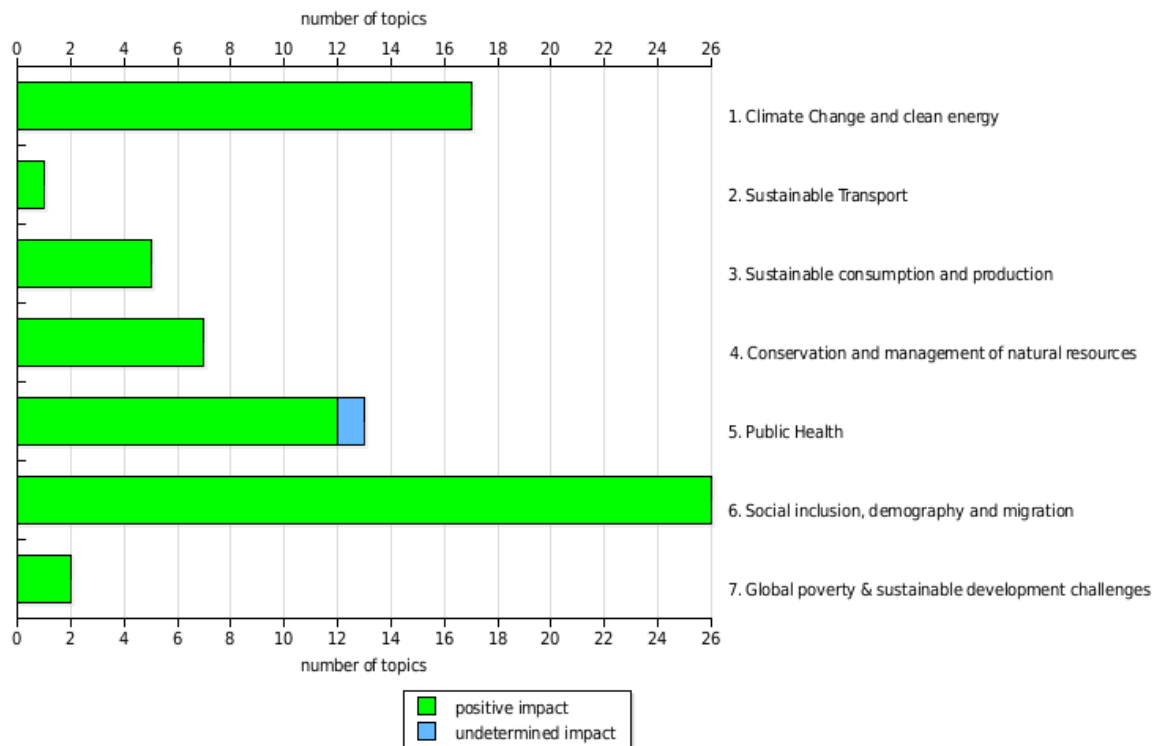


Figure 3: Number of topics with expected impacts on EU SDS objectives in the corresponding challenges

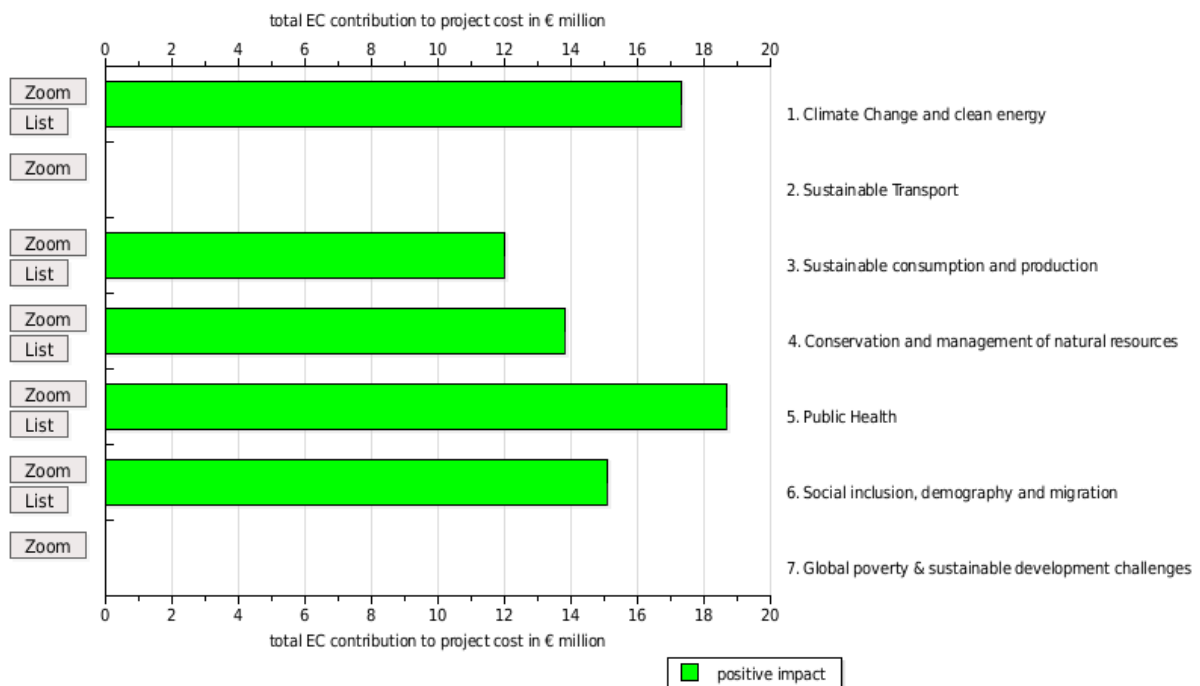


Figure 4: Total EC contribution to projects with expected impacts on EU SDS objectives in the corresponding challenges

The three parts of CP 'Capacities' address different aspects of

As shown in Figure 5 below, the amount of EC contribution and the number of topics addressing EU SDS objectives as well as their correlation to each

sustainable development

SCIENCE IN SOCIETY mainly addresses the social dimension of SD

other varies considerably among the three parts of SP 'Capacities'. The diversity of impacts on different topical EU SDS objectives is highest in the part REGIONS OF KNOWLEDGE, with at least one topic in each of the EU SDS challenges, and the EC contribution dedicated to objectives stemming from "climate change and clean energy", "sustainable consumption and production", "conservation and management of natural resources" and "public health". The part SCIENCE IN SOCIETY mostly focuses on the social dimensions of the EU SDS, as the number of topics and EC contribution is the highest on EU SDS objectives from "social inclusion, demography and migration" and "public health". On the other hand, RESEARCH INFRASTRUCTURES addresses EU SDS objectives in a diverse way due to the fact that most of the topics impact objectives from "climate change and clean energy", "public health" and "conservation and management of natural resources".

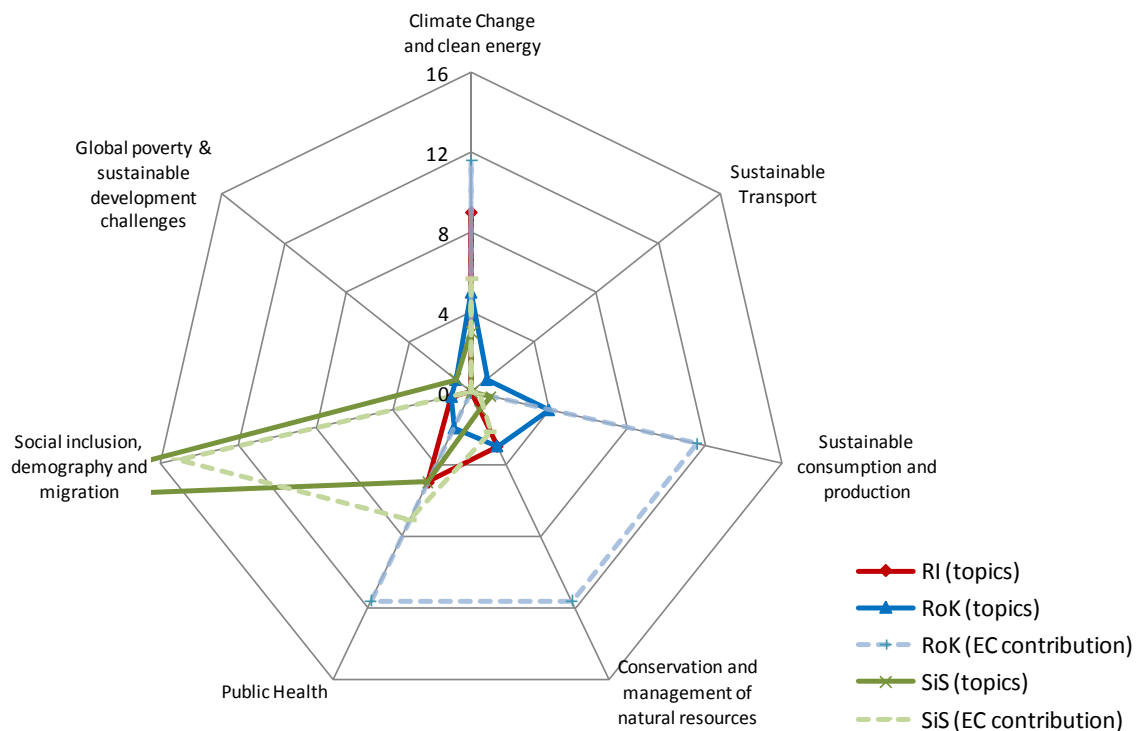


Figure 5: Number of topics and amount of EC contribution (€ mill.) to EU SDS operational objectives (RI = RESEARCH INFRASTRUCTURES, RoK = REGIONS OF KNOWLEDGE, SiS = SCIENCE IN SOCIETY)⁵

⁵ SCIENCE IN SOCIETY addresses the key challenge "social inclusion, demography and migration" with 24 topics (not shown due to layout issues).

How did the contribution of 'Capacities' to SD change over time?

The share of topics with positive expected impacts decreased slightly between 2007 to 2011

As indicated in Figure 6, the share of topics in SP 'Capacities' contributing to EU SDS objectives decreased slightly during the Work Programmes (WP) 2007 to 2011. The share of topics with positive expected impacts declined from about 23 % in 2007 to 21 % in 2011. However, the total number of topics varied substantially between 18 in 2009 and 85 in 2010. The WP 2010 accounts for the lowest share of topics with positive impacts, although the total number of topics (85) is the highest when compared to the other WPs. Within the annual WPs, one topic with an undetermined impact⁶ exists only in WP 2010, although no project has been funded under this topic.

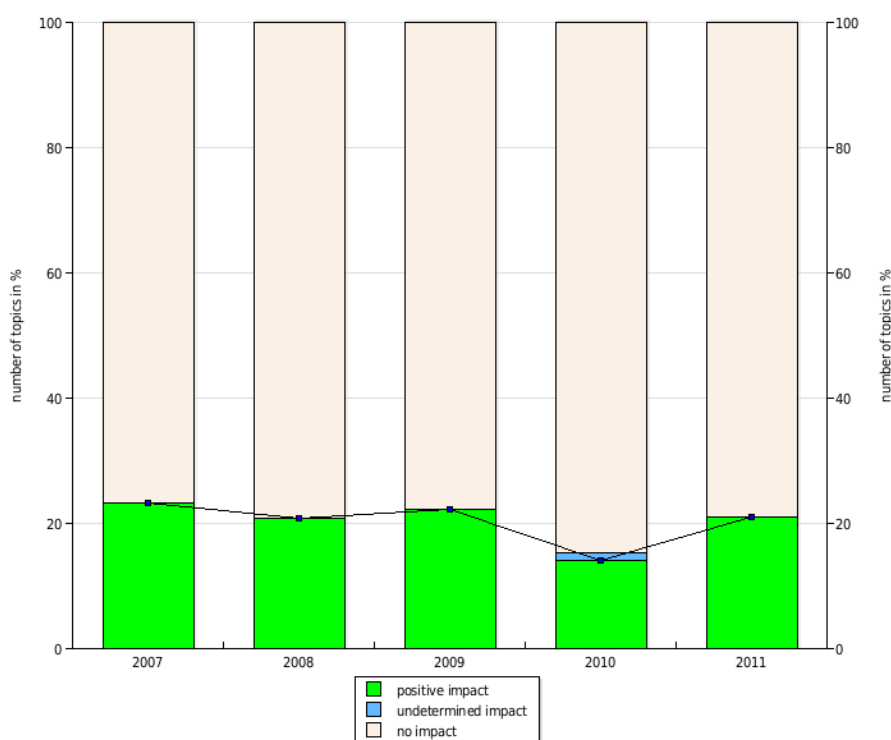


Figure 6: Share of topics with expected impacts on EU SDS objectives during the Work Programmes 2007 to 2011

The share of EC contribution addressing projects with positive impacts on the 'Innovation Union' continuously increased over time

Figure 7 shows that despite an overall decline of EC contribution to projects from about € 590 to € 46 million during the WPs 2007 and 2009⁷ the share of EC contribution to projects with positive impacts rose substantially from 1.4 % to 21 %. This strong increase was mainly driven by a strong reduction in the overall funding allocated to the part RESEARCH INFRASTRUCTURES (within which no SD-relevant projects have been funded) in 2009.

In 2007, RESEARCH INFRASTRUCTURES was responsible for the largest amount of EC contribution (€ 570.4 million, i.e. accounting for more than 90 %) allocated to the three parts analysed here. However, due to the fact

⁶ "Undetermined impacts": impacts that due to a lack of scientific evidence cannot yet be categorized as positive, negative or neutral.

⁷ Data on the number of projects stemming the Work Programme 2010 are still not complete, and projects from the Work Programme 2011 are not included as they are still under negotiation.

that so far none of the projects in RESEARCH INFRASTRUCTURES contributed to EU SDS objectives, the overall share of EC contribution addressing EU SDS objectives was rather small. In 2009, the Parts REGIONS OF KNOWLEDGE (100 %) and SCIENCE IN SOCIETY (36 %) were both responsible for the high share of EC contribution to projects with positive impacts (about 40 %).

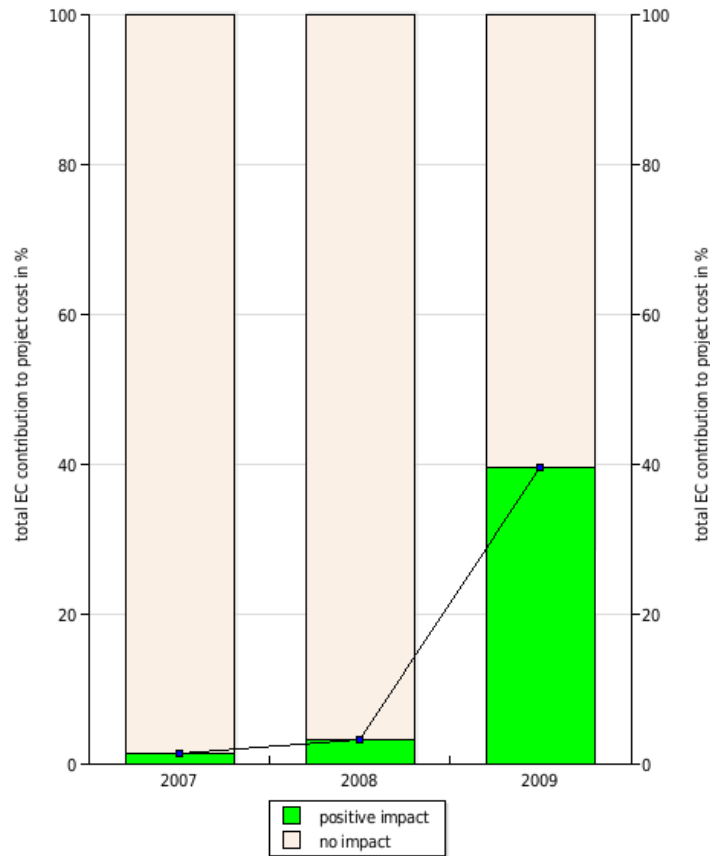


Figure 7: Total EC contribution to projects with expected impacts on EU SDS objectives during the Work Programmes 2007 to 2009

Where are the centres of excellence for research within SP 'Capacities' contributing to EU SDS objectives?

Germany, UK, Italy, Austria and Finland are key players concerning SP 'Capacities' projects contributing to EU SDS objectives

The EU Member States contributing most EU SDS objectives through projects in SP 'Capacities' are Germany and the United Kingdom, followed by Italy, Austria and Finland (see Figure 8)⁸. Germany and the UK account for 5 and 4 coordinated projects respectively, and organisations from Italy, Austria and Finland coordinate 3 projects each.

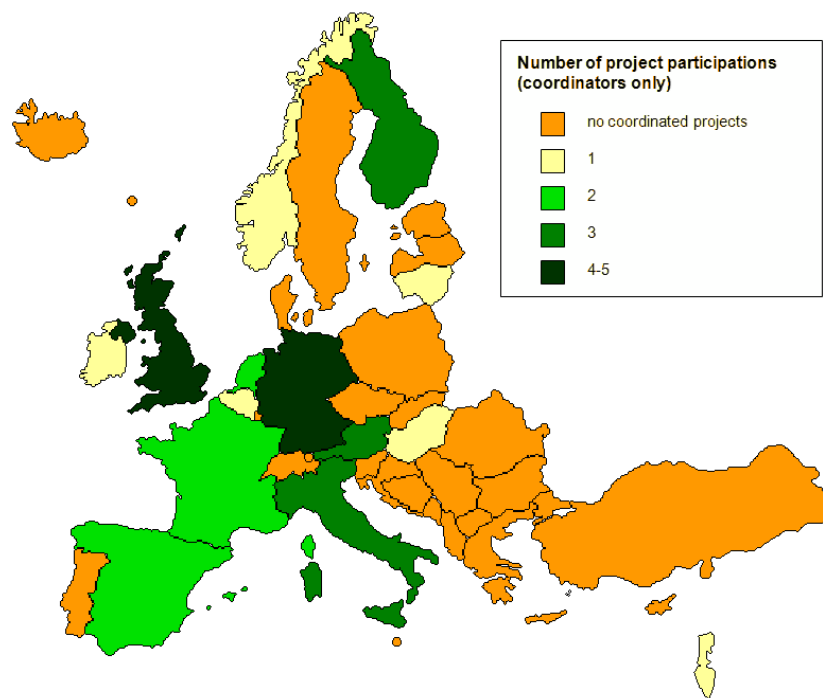


Figure 8: Geographical representation of coordinated projects impacting on EU SDS objectives in EU Member States and associated countries

For Bulgaria, Slovakia, Cyprus, Malta, Greece and Latvia the ratio of EC contribution to national R&D expenditure in million € is highest

As indicated in Figure 9, Bulgaria (€ 3,032 million), Slovakia (€ 2,531 million), Cyprus (€ 1,403 million), Malta (€ 1,319 million), Greece (€ 1,054 million) and Latvia (€ 974 million) are countries with a relatively high ratio of EC contribution to national R&D expenditures, that is, in relation to their national expenditure on R&D, the co-financing provided by SP 'Capacities' is rather high compared to the European average. The underlying reason for a rather high ratio of total EC contribution per € million national R&D expenditure is either a relatively low national R&D expenditure and/or a high number of projects contributing to EU SDS objectives.

Eastern European countries are

With regard to the participation of Eastern European countries in SD-relevant research in SP 'Capacities', Figure 8 suggests that they are not among the

⁸ The assumption has been made that institutions from countries which are responsible for coordinating a project are characterized by an exceptional scientific knowledge base and the essential coordination skills to implement the respective project. Therefore countries with a high number of coordinated projects can be seen as leaders in the respective field of research.

integrated in SP
'Capacities' research
contributing to EU
SDS objectives

centres of excellence driving research and development. However, as described above, Figure 9 reveals that these countries are well integrated in European research within SP 'Capacities'. This finding is in line with the aim of the European Union to establish a European-wide research area.

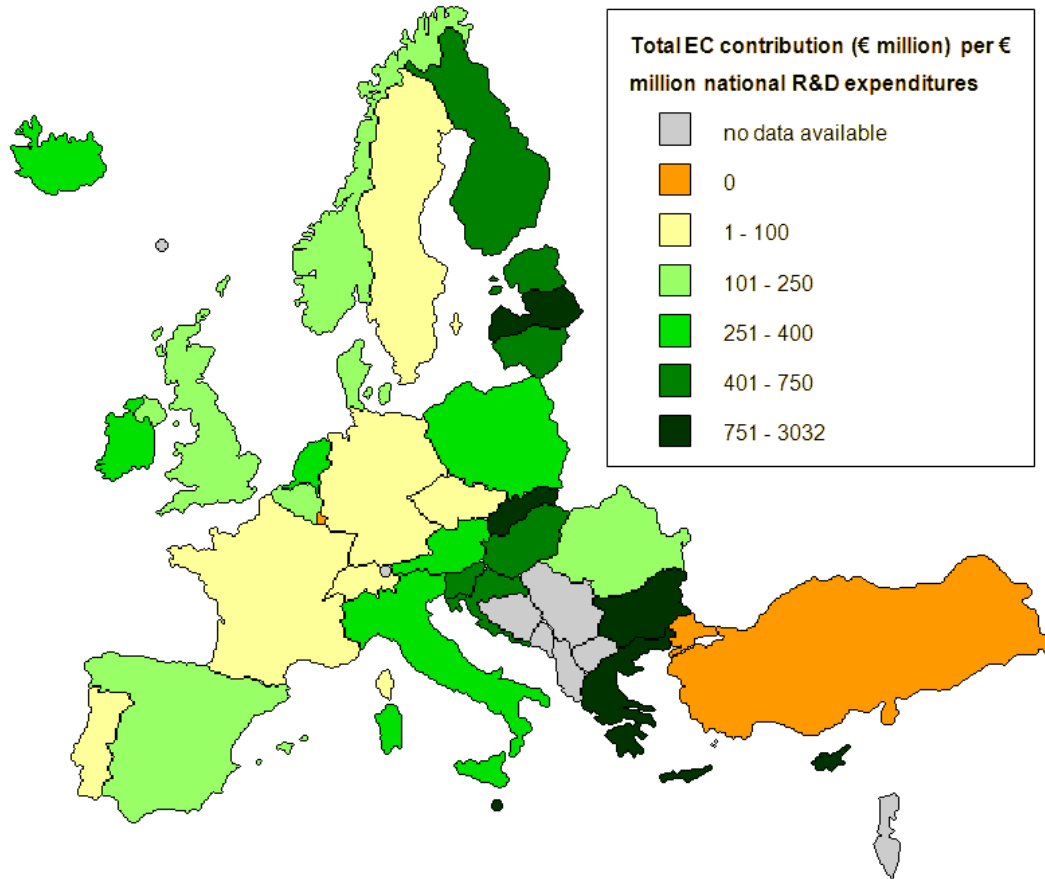


Figure 9: Geographical representation of total EC contribution (€ million) per € million national R&D expenditures of Member States and associated countries contributing to EU SDS objectives (2007 to 2010)