

# FP7 and the SDGs

## How did research in the 7<sup>th</sup> EU framework programme address the Sustainable Development Goals (SDGs)?

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## About this report

This report has been prepared as part of the FP7-4-SD project (see [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu)) commissioned by the DG Research & Innovation of the European Commission. It links the research called for in the seventh research framework programme (FP7) with the goals and targets of the “Sustainable Development Goals” (SDGs) adopted by the UN in September 2015. The purpose is to analyse the extent to which FP7 has already addressed the SDGs, and by doing so identifying areas that have already been well-researched and areas where further attention could be placed on (e.g. in upcoming Horizon 2020 work programmes). The report was prepared in summer 2015, at a time when most of the FP7 research projects have already been finished, but before the official adoption of the SDGs at the UN summit on 25-27 September 2015.

The report is divided in three main parts. Section 1 provides a summary of the findings across all 17 Sustainable Development Goals, identifying the SDGs that have been well-addressed by FP7 and the FP7 themes that have been most relevant in this regard, including what kind of research has been carried out, by whom and where, and how much international cooperation (i.e. collaborating with other countries in the world) has been involved. The section closes by drawing conclusions, also in terms of comparing the findings on the SDGs with earlier results from the FP7-4-SD project on monitoring the contribution of FP7 to the EU Sustainable Development Strategy (see the policy briefs on the [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu) website).

Section 2 describes the background of the present study and its methodology. It provides background on FP7, the FP7-4-SD monitoring system and the Sustainable Development Goals (SDGs) as well as details on the scope and the methodology underlying the analysis.

Section 3 contains the detailed findings of the analysis, structured according the 17 Sustainable Development Goals. For each SDG the very detailed results on how it was addressed by research called for in FP7 are described. The main findings are additionally summarised in the beginning in the form of “SDG fact sheets”. Cases of important (in terms of size) and typical FP7 projects are included at the end of each SDG analysis.

When interpreting the findings presented in this report, a number of limitations have to be kept in mind. Most importantly, the analysis does not look at FP7 as a whole but is limited to the Specific Programmes “Cooperation” (all 10 themes) and “Capacities” (3 out of 7 parts only). It does not cover the Specific Programmes “Ideas” and “People”. Therefore the findings presented here cannot be generalised to FP7 as a whole. Additionally, similar to the FP7-4-SD monitoring system, the analysis is based on an *ex-ante* assessment of expected impacts of the topics called for in the annual FP7 work programmes and not on an *ex-post* analysis of the projects that have actually been carried out in FP7. For a more detailed description please see the section 2.4 on page 20 of this report.

This report has been prepared by Asya Dimitrova, Anna Dimitrova, Markus Hametner and André Martinuzzi from the WU Institute for Managing Sustainability (WIMAS) at the Vienna University of Economics and Business. The views expressed in this publication are those of the authors and do not necessarily reflect the opinion of the European Commission.

Vienna, 31 August 2015.

# 1 Summary of results

## 1.1 How is FP7\*<sup>1</sup> research related to the SDGs?

Overall, about 2,500 topics called for in the annual Work Programmes of SP ‘Cooperation’ and SP ‘Capacities’ (parts ‘Research infrastructures’, ‘Regions of knowledge’ and ‘Science in society’ only) were related to one or more of the 17 Sustainable Development Goals. This corresponds to a share of 70 % of all topics. Under these topics some 4,980 projects were carried out with an EC contribution of about € 20 billion, corresponding to 70 % of all projects and 72 % of the EC financial contribution to FP7\* research.

Considering themes in SP ‘Cooperation’ only, some 75 % of topics, 70 % of projects and 76 % of the EC contribution were relevant to the objectives of the SDGs. This is very similar to the share of topics (75 %), projects (69 %) and EC contribution (76 %) in SP ‘Cooperation’ relevant to the EU Sustainable Development Strategy (EU SDS)<sup>2</sup>. It can be observed that FP7\* research relevant to the SDGs contains substantially lower number of topics from the theme TRANSPORT compared with the research related to the EU SDS. The themes HEALTH and Agriculture (KBBE) also contain somewhat less topics with relevance to the SDGs as compared to the EU SDS. However, this difference is compensated by a significantly larger number of topics from the theme SECURITY related to the SDGs compared with the EU SDS. Regarding the three parts of SP ‘Capacities’, some 24 % of topics, 22 % of projects and 15 % of the EC contribution had a direct link the SDGs. These are almost twice higher than the share of topics (12 %), projects (12) and EC contribution (8 %) in SP ‘Cooperation’ relevant to the EU SDS<sup>3</sup>.

## 1.1 Which FP7\* themes are most relevant for the SDGs?

Among the ten research themes in SP ‘Cooperation’, the theme HEALTH had the highest number of topics related to the 17 SDGs (some 370 topics) followed by the themes ENVIRONMENT and Agriculture (KBBE), with some 330 topics each (see Figure 0.1). The theme TRANSPORT also contained a high number of SDGs relevant topics (some 310 topics). In relative terms, however, it was the theme SECURITY that contained the highest share of SDGs relevant topics (98 %), closely followed by the themes ENVIRONMENT (94 %) and ENERGY (91 %). Over 80 % of topics in the theme HEALTH also related to the objectives of the SDGs.

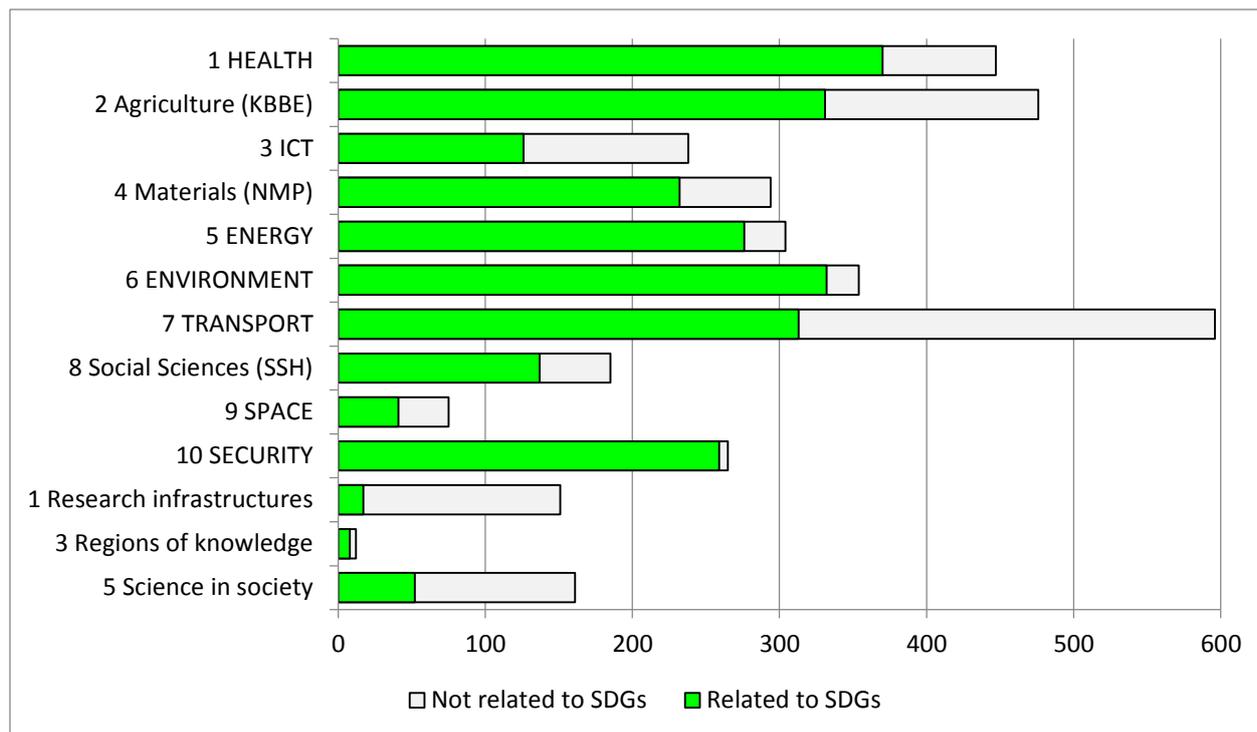
Regarding the three parts of SP ‘Capacities’, most SDG-relevant topics were called for under the theme ‘Science in Society’ (some 50 topics).

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<sup>1</sup> The report refers to SP ‘Cooperation’ and three parts of SP ‘Capacities’ only. This is indicated with an asterisk (\*) throughout the whole report. For details see the section 2.4 “Scope and methodology”.

<sup>2</sup> See: [FP7-4-SD.eu policy brief No. 11](#)

<sup>3</sup> See: [FP7-4-SD.eu policy brief No. 9](#)



**Figure 0.1:** Number of topics related to the 17 SDGs in SP ‘Cooperation’ and SP ‘Capacities’\*

When looking at the projects carried out under each theme, it is the theme ICT that stands out with the highest number of projects relevant to the SDGs (almost 1270 projects). It also constituted the largest source of funding for SDGs relevant research, with an EC contribution of some € 4.4 billion. The theme HEALTH came second in terms of number of projects (840) and EC contribution (€ 4.1 billion) relevant to the SDGs, followed by the theme Materials (NMP) with some 630 projects and € 2.7 billion. All projects in theme ‘Regions of knowledge’ in SP ‘Capacities’ and its entire budget were relevant to the SDGs, however due to the small size of the theme this constituted 15 projects and € 0.3 billion only. About 98 % of projects in theme SECURITY and 99 % of its budget contributed to the objectives of the SDGs. The theme ENVIRONMENT came third, with 94 % of its projects and 95 % of its budget going to SDGs relevant research, followed by the themes ENERGY (88 % of its projects and 93 % of its topics) and HEALTH (84 % of its projects and 87 % of its budget).

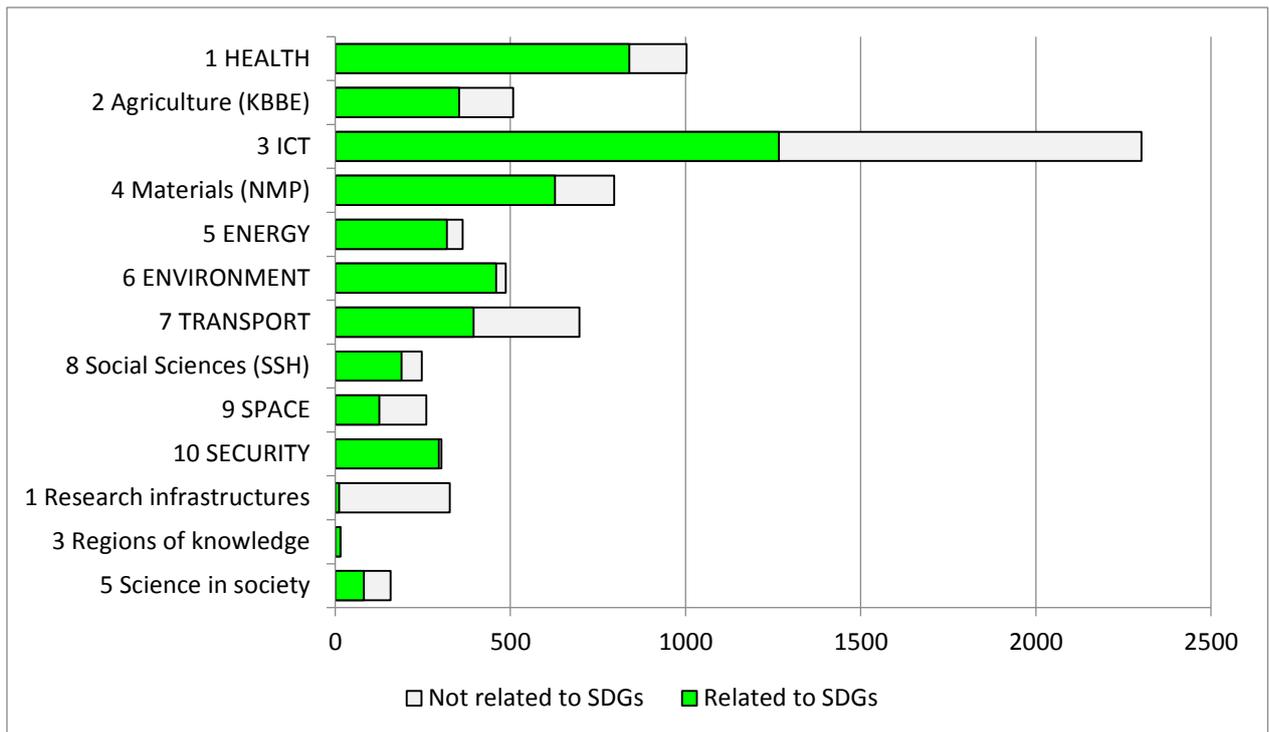


Figure 0.2: Number of projects related to the 17 SDGs in SP 'Cooperation' and SP 'Capacities'\*

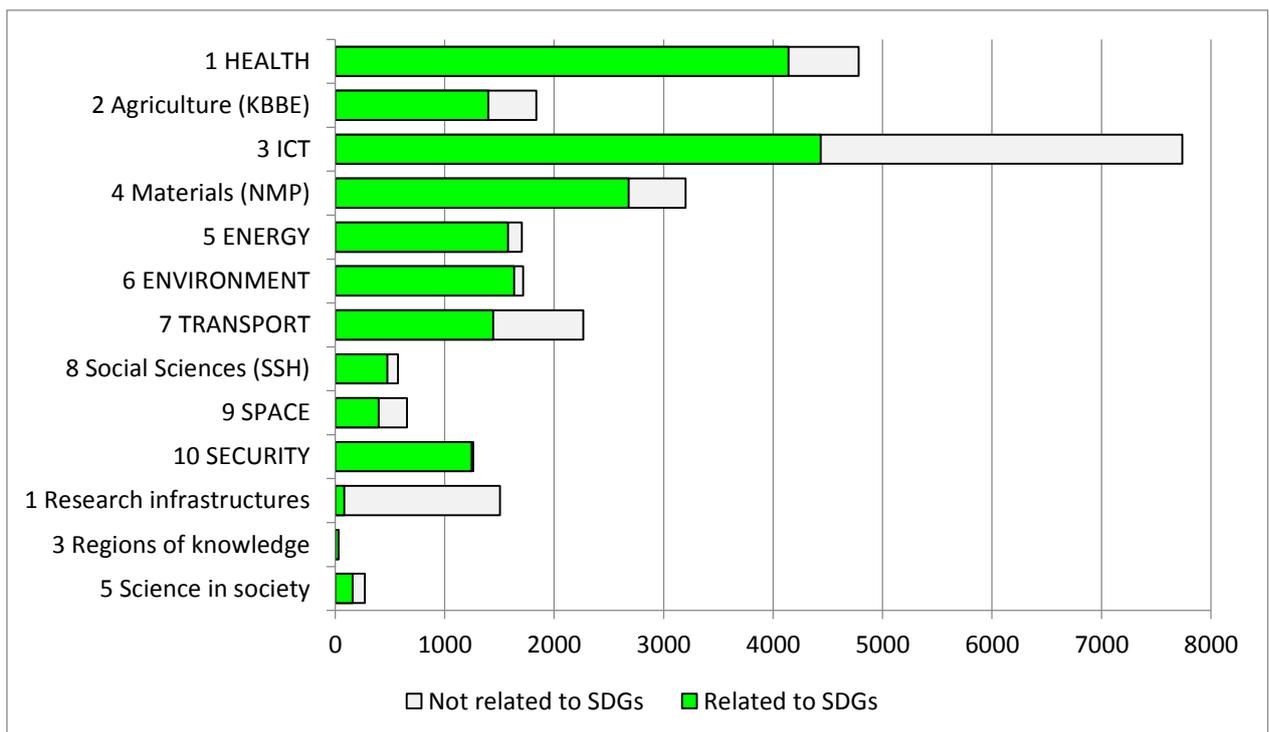


Figure 0.3: Total EC contribution (€ million) to projects related to the 17 SDGs

## 1.2 Which SDGs were well researched by FP7\*?

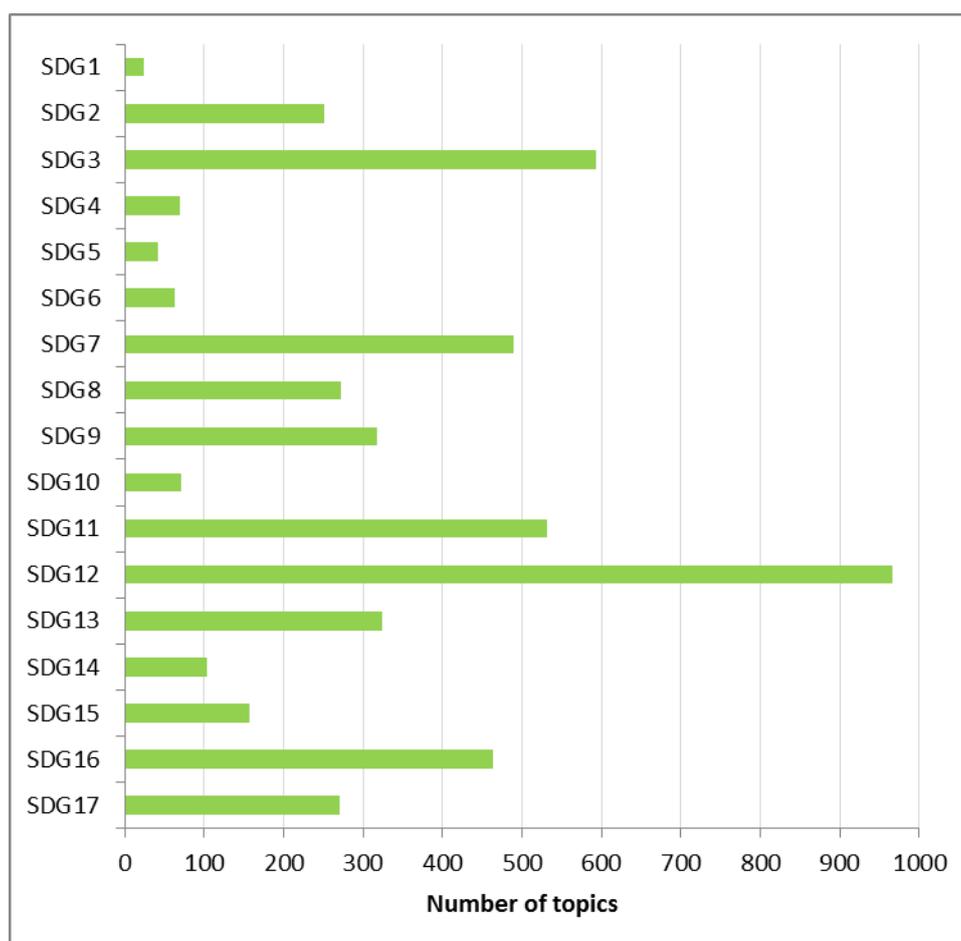
### 1.2.1 In terms of topics, five of the SDGs were well researched

By far, the most well addressed SDGs by SP 'Cooperation' and SP 'Capacities'\* are SDG 12, SDG 3, SDG 11, SDG 7 and SDG 16 (see Figure 0.4). The objectives of SDG 12 for ensuring sustainable consumption and production were most prominently addressed – almost 970 topics or over a

quarter (27 %) of FP7\* topics related to the objectives of this SDG. SDG 3, which deals with health and well-being issues, was also well covered in FP7\* – almost 600 topics or 17 % of topics in SP ‘Cooperation’ and SP ‘Capacities’\* had a direct link to this particular goal. A high percentage of topics called for in FP7\* also related to the objectives of SDG 11, SDG 7 and SDG 16, 15 %, 14 % and 13 % respectively. SDG 7 promotes access to affordable and sustainable energy, SDG 11 calls for improving cities and human settlements, whereas SDG 16 promotes peaceful and inclusive societies.

SDG 1, SDG 4, SDG 5, SDG 6 and SDG 10 were least addressed by the topics called for in SP ‘Cooperation’ and SP ‘Capacities’\*. SDG 1, which calls for poverty eradication, was the most weakly covered (0.7 % of all topics). The objectives of SDG 5 for achieving gender equality and empowering women were covered by only 1.2 % of all topics. SDG 6, SDG 4 and SDG 10 were each addressed by about 2 % of topics. In general, the SDGs least addressed by FP7\* topics relate mostly to issues associated with developing countries, such as poverty eradication (SDG 1), availability of clean water and sanitation (SDG 6) and access to education (SDG 4).

The two SDGs exclusively dealing with conservation and management of ecosystems (SDG 14 and SDG 15) are also at the lower end of the spectrum in terms of topic coverage. SDG 14, which calls for the conservation and sustainable use of oceans, seas and marine resources, was addressed by only 3 % of topics. Similarly, SDG 15, which stands for protecting terrestrial ecosystems, was addressed by about 4 % of topics.



**Figure 0.4:** Number of FP7\* topics related to each of the 17 SDGs

### 1.2.2 In terms of projects, five of the SDGs were well researched

The picture is somewhat similar when looking at the number of projects carried out under each theme. SDG 3, SDG 7, SDG 12, SDG 11 and SDG 16, which were well covered in terms of FP7\* topics, were also well researched by FP7\* projects. Again SDG 12 stands out as the most well researched (24 % of all projects), followed by SDG 7 (19 %), SDG 3 (18 %), SDG 11 (14 %) and SDG 16 (11 %).

Again, the least researched in terms of FP7\* projects were the objectives of SDG 1, with only 0.6 % of FP7\* projects having a direct link to it. Weakly addressed were also SDG 4, SDG 5, SDG 6 and SDG 14, each covered by 1 % to 1.5 % of FP7\* projects.

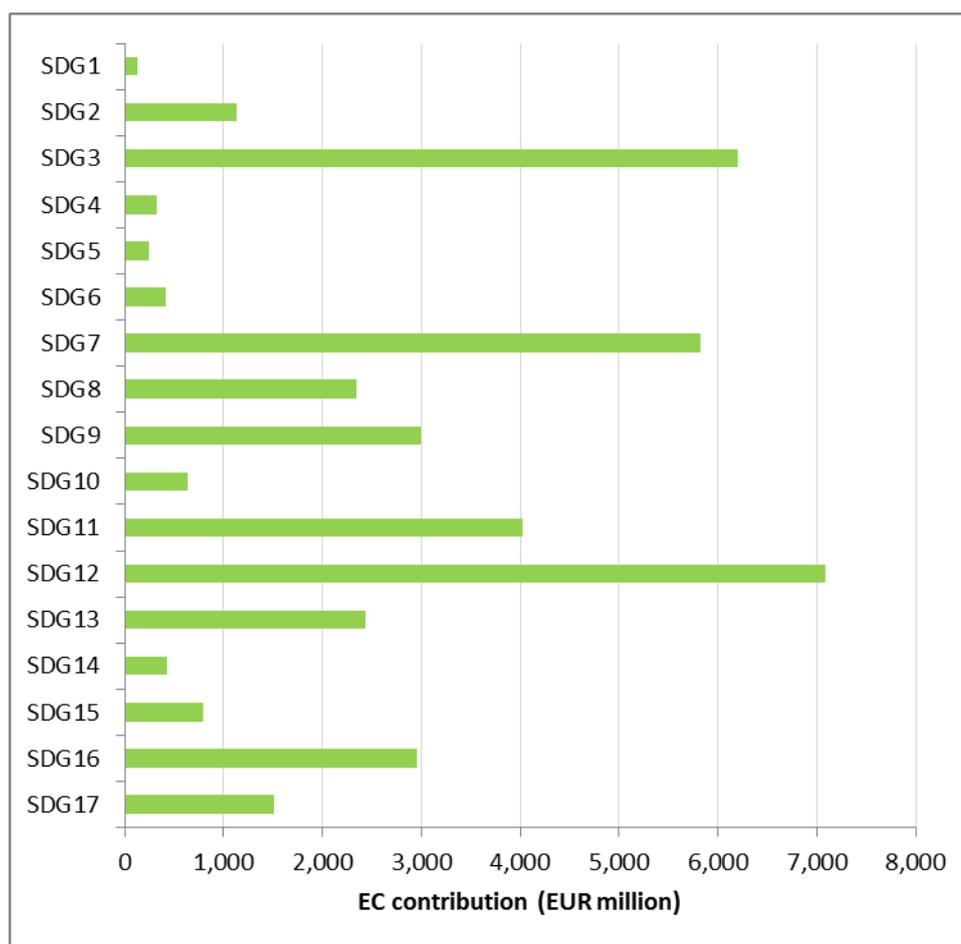
### 1.2.3 In terms of budget, projects related to SDG 12, SDG 3 and SDG 7 received most funding

The allocation of the EC research budget<sup>4</sup> reflects the distribution of projects and topics across different SDGs. A quarter of the budget allocated to SP 'Cooperation' and SP 'Capacities'\* went to projects relevant for SDG 12, which is equivalent to some € 7 billion (see Figure 0.5). Projects relevant for SDG 3 and SDG 7 also received a substantial share of the research budget, about 23 % and 21 % respectively.

The budget allocation was smallest for projects with a direct link to SDG 1 – 0.5 % or € 0.1 billion. Projects relevant for SDG 4, SDG 5, SDG 6 and SDG 14 received between 1 % and 2 % of the research budget. In general, SDGs mostly relevant for developing countries (SDG 1, SDG 4, and SDG 6) were not only addressed by a low number of topics and projects, but also received low financial contribution.

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<sup>4</sup> Refers to the researched budget for SP 'Cooperation' and SP 'Capacities' (Research infrastructures, Regions of knowledge and Science in society).



**Figure 0.5:** Total EC contribution (€ million) to FP7\* projects related to each of the 17 SDGs

### 1.3 Which SDGs are narrower and which are more cross-cutting in terms of FP7\* topics and projects?

#### 1.3.1 Five of the SDGs were more narrowly addressed by FP7\* topics, five were moderately narrow and four were cross-cutting

Five of the SDGs are narrower, i.e. they were predominantly addressed by the topics of one particular theme in FP7\*. This is the case with SDG 2, which deals with food security and nutrition. It was exclusively addressed by the theme Agriculture (KBBE), with 80 % of the SDG 2 relevant topics falling under this theme. SDG 3, which promotes health and wellbeing, was mainly addressed by the theme HEALTH. SDG 16, promoting peaceful and inclusive societies, was narrowly addressed by topics in the theme SECURITY. Majority of topics related to SDG 6, dealing with water management and sanitation, were called for in the theme ENVIRONMENT. Topics addressing poverty alleviation (SDG 1) were predominantly called for in the theme Social Sciences (SSH).

Five of the SDGs are moderately narrow, meaning that they were predominantly addressed by two themes. The SDGs dealing with economic growth and employment (SDG 8) and industrialisation (SDG 9) were both addressed by two main themes – ENEGRY and Materials (MNP). Topics related to management and conservation of ecosystems (SDG 14 and SDG 15) fell mainly under the themes ENVIRONMENT and Agriculture (KBBE). SDG 11 dealing with cities and human settlements was also addressed by mainly two themes – TRANSPORT and ENVIRONMENT.

On the other hand, four of the SDGs seem to be cross-cutting, i.e. they appear in almost all themes of SP 'Cooperation' and SP 'Capacities'\*. These are the following: SDG 7, SDG 12, SDG 13 and SDG 17.

### **1.3.2 Seven of the SDGs were more narrowly addressed by FP7\* projects, two were moderately narrow and six were cross-cutting**

From the perspective of projects, seven of the SDGs could be defined as narrow and three as moderately narrow. In addition to the ones characterised as narrow by topics (SDG 1, SDG 2, SDG 3, SDG 6 and SDG 16), SDG 5 and SDG 7 are narrow by projects, i.e. they were predominantly addressed by projects of one particular theme in FP7\*. SDG 11 and SDG 14 could be characterised as moderately narrow by project, i.e. they were predominantly addressed by projects in two themes. In contrast, SDG 8 and SDG 15, which were characterised as moderately narrow by topic, appear to be cross-cutting by projects. Other SDGs cross-cutting by projects are SDG 4, SDG 9, SDG 12 and SDG 17.

As a general observation, a large number of projects related to the SDGs were carried out under the theme ICT, although the theme was not so prominently present in the distribution by topics. Overall, projects from the theme ICT constituted the largest group for three of the SDGs (SDG 7, SDG 10 and SDG 11).

## **1.4 What kind of research has been carried out?**

When looking at the types of funding schemes, most projects with relevance to the 17 SDGs were small and medium-sized. Projects without a predefined size constituted the second most common funding scheme and coordination and support action projects ranked third. In terms of FP7\* budget allocation, small and medium-sized project received the largest financial contribution, followed by large-scale research projects. It is interesting to note that large projects were fewer in number, but in many cases received similar funding as small and medium-sized projects.

In terms of budget, the average size of projects relevant to SDG 3, SDG 7, SDG 9, SDG 13 and SDG 14 was larger than the FP7\* average project size. In contrast, the average size of projects addressing SDG 1, SDG 4, SDG 5 and SDG 10 was smaller. SDG 3 promoting health and wellbeing on average had the largest project size (€ 4.7 million), whereas SDG 4 dealing with education and lifelong learning on average had the smallest project size (€ 2.8 million). To some extent, this pattern is also reflected in the distribution of SDG relevant projects across the different funding schemes.

### **1.4.1 Comparing SDG relevant research to the FP7\* average, 'small and medium-sized' projects were the most underrepresented, whereas the group of 'any size' projects was the most overrepresented**

In FP7\* as a whole 4% of projects were funded under the scheme 'research for special/target groups'. A higher share of projects fell under this scheme for four of the SDGs – SDG8, SDG 9, SDG 12 and in particular SDG 2. In contrast, SDG 1, SDG 5 and SDG 10 contained no or a very low share of projects under this scheme.

About half of the projects in FP7\* were funded under the scheme 'small and medium-sized'. For three of the SDGs this scheme was overrepresented (SDG 1, SDG 3 and in particular SDG 10). In contrast, the 'small and medium-sized' funding scheme was underrepresented for five of the SDGs (SDG 2, SDG 8, SDG 9, SDG 12 and SDG 14).

Large research projects constituted 13 % of all FP7\* projects. A slightly higher share of projects fell under this scheme in SDG 7 and SDG 2 related research. In contrast, for SDG 1, SDG 5 and SDG 17 this funding scheme was slightly underrepresented.

About 14 % of all FP7\* projects were funded under the scheme ‘any size projects’. For five of the SDGs this scheme was overrepresented (SDG 6, SDG 8, SDG 13 and SDG 17 and in particular SDG 9). In contrast, SDG 3 and SDG 10 related research contained a lower share of ‘any size’ projects compared with FP7\* as a whole.

Coordination and support action constituted about 19 % of all FP7\* projects. This funding scheme was largely overrepresented in SDG 4 related research and underrepresented in SDG 1 and SDG 9 related research. Less than 1 % of FP7\* research projects were funded under the scheme ‘networks of excellence’, which holds true for all SDGs apart from SDG 16.

### 1.5 How do the SDGs differ in terms of international cooperation?

Projects related to certain SDGs have required extensive international cooperation. This is particularly the case with projects related to SDG 1, SDG 5 and SDG 17. The largest number of projects related to a single SDG requiring international cooperation related to the objectives of SDG 17 – about 180 projects, which were equivalent to 42 % of all projects related to SDG 17. About 40 % of the budget relevant for SDG 17 went to projects requiring international cooperation. This is not surprising since the objectives of SDG 17 stand for global partnership for sustainable development. A slightly higher share of the projects related to SDG 1 – 43 % – was carried out with the aim of strengthening international cooperation, which was equivalent to some 20 projects. These received half of the budget allocated to projects relevant for SDG 1. SDG 5, which promotes gender equality and empowerment of women, was also addressed by large a number of projects requiring international cooperation – about 30 projects or 38 % of all projects related to this SDG. These also received a substantial share of the budget going to projects relevant for SDG 5 – almost 41 %.

At the lowest end of the spectrum, international cooperation was a prerequisite for only 1 % of the projects related to SDG 7 and SDG 16.

In FP7\* as a whole 3 % of all projects were conducted with the aim of strengthening international cooperation. For six of the SDGs projects requiring international cooperation were overrepresented. In particular, about 40 % of projects related to SDG 1, SDG 5 and SDG 17 required international cooperation. SDG 2, SDG 6 and SDG 15 also contained a higher share than the FP7\* average.

### 1.6 Which types of organisations were involved in projects relevant for the SDGs?

Overall, in FP7\* research higher education institutions and private for-profit organisations accounted for a third of project participations each. Research organisations accounted for a quarter of FP7\* project participations. Public bodies and other types of organisation were involved in to a very limited extent – holding 6 % and 3 % of project participations respectively.

Higher education institutions accounted for almost 40 % of all project coordinators in FP7\* research. These were followed by research organisations, which constituted a third of all project coordinators. Private organisation were less represented as project coordinators in FP7\*, accounting for about 22 % of all coordinators.

Higher education institutions were significantly overrepresented both in terms of project participation and coordination in projects related to SDG 1, SDG 4, SDG 3 and SDG 5 and to some extent SDG 10, and underrepresented in projects related to SDG 9 and SDG 11.

A substantially higher share of research organisations accounted for project participation and coordination in projects related to SDG 2, SDG 14 and SDG 15. They were underrepresented as coordinators in projects relevant for SDG 1, SDG 4 and SDG 5.

Private organisations were considerably overrepresented in project participation related to SDG 7, SDG 8 and in particular SDG 9. In contrast, they were significantly underrepresented in project participation related to SDG 1, SDG 4 and SDG 5 and somewhat underrepresented in project participation related to SDG 2, SDG 14, SDG 15 and SDG 17. In terms of project coordination, private organisations were overrepresented in projects related to SDG 16 and underrepresented in projects related to SDG 1, SDG 2, SDG 4, SDG 5 and SDG 14.

### 1.7 Where were the centers of excellence for SDG relevant projects?

About 92 % of all FP7\* project coordinators were located in the EU-15 Member States. This share is comparable to all of the 17 SDGs, with the exception of SDG 14 where EU-15 countries were significantly underrepresented. This is explained by the higher share of coordinators from associated countries in SDG 14 relevant research, in particular Norway. The coordinators of most projects relevant for the SDGs were concentrated in Germany, the UK and Italy. Organisations from the Netherlands, Spain and France were also highly involved as coordinators. This geographical distribution of coordinators is very similar to the distribution in FP7\* as a whole.

In general, newer Member States (EU-12 plus Croatia) were less involved as coordinators both in FP7\* and SDGs relevant research.. Only a few project coordinators were located in these countries, mostly in Hungary, Poland and Czech Republic. Concerning non-EU countries, a considerable number of project coordinators came from Norway and Switzerland. Organisations from Israel were also somewhat involved as coordinators, in particular with regards to SDG 16 and SDG 12. However, these still constituted a very small share of all project coordinators for the respective SDGs. Involvement as project coordinators from candidate countries was very limited, with only a few coordinators coming from Serbia and Turkey.

### 1.8 Conclusions

The results of the analysis show that certain SDGs have already been well addressed by FP7\* research. This is case with the goals for ensuring sustainable consumption and production (SDG 12), promoting health and well-being (SDG 3), improving cities and human settlements (SDG 13), promoting access to energy (SDG 7) and building peaceful and inclusive societies (SDG 16).

In contrast, some SDGs seem to have been only weakly addressed by FP7\* research. The goals calling for poverty eradication (SDG 1), access to education (SDG 4), gender equality and empowerment of women (SDG 5), availability of clean water and sanitation (SDG 6) and reduction of inequality between and among countries (SDG 10) are covered by a small number of topics and projects only. As a general observation, the SDGs least addressed by FP7\* topics relate mostly to issues associated with developing countries. The two SDGs exclusively dealing with conservation and management of ecosystems (SDG 14 and SDG 15) also seem to be weakly researched in FP7\*. Therefore, for

European research to better serve the objectives of the post-2015 development agenda, there is a scope for placing further emphasis on the above issues in upcoming Horizon 2020 work programmes.

Based on the qualitative text analysis the themes HEALTH, ENVIRONMENT, Agriculture (KBBE) and TRANSPORT seem most relevant for the SDGs, i.e. they contained the highest number of topics related to the 17 SDGs.

Some of the SDGs are broader in scope, addressing complex and multidimensional issues and cutting through different themes and academic fields, whereas others are more focused and deal with problems within one or two thematic areas. One possible way to categorise the SDGs in this respect is by looking at the spread of topic and project contributions from different SP 'Cooperation' themes. In terms of topics, five of the SDGs could be defined as narrow, i.e. they were predominantly addressed by the topics of one particular theme in FP7\*. This is the case with the SDGs calling for food security and nutrition (SDG 2), health and wellbeing, (SDG 3), peaceful and inclusive societies (SDG 16), water management and sanitation (SDG 6) and poverty alleviation (SDG 1).

Five of the SDGs are moderately narrow, meaning that they were predominantly addressed by two themes. The ones falling in this group are the goals dealing with economic growth and employment (SDG 8), industrialisation (SDG 9), management and conservation of ecosystems (SDG 14 and SDG 15) and cities and human settlements (SDG 11). On the other hand, four of the SDGs seem to be cross-cutting, i.e. they appear in almost all themes of SP 'Cooperation' and SP 'Capacities'\*. These are the following: SDG 7, SDG 12, SDG 13 and SDG 17. From the perspective of projects, seven of the SDGs could be defined as narrow (SDG 1, SDG 2, SDG 3, SDG 6 and SDG 16, SDG 5 and SDG 7) and three as moderately narrow (SDG 9, SDG 11 and SDG 14).

Most projects with relevance to the 17 SDGs were small and medium-sized, which also received the largest financial contribution, followed by large-scale research projects. Compared with the FP7\* average, however, 'small and medium-sized' projects were the most underrepresented, whereas the group of 'any size' projects was the most overrepresented.

Projects related to certain SDGs have required extensive international cooperation. SDG 1, which promotes poverty alleviation, features the largest share of projects requiring international cooperation. This is followed by SDG 17, which stands for global partnership for sustainable development, and SDG 5, promoting gender equality and empowerment of women. At the other end of the spectrum, a very small share of projects related to SDG 7 and SDG 16 were conducted with the aim of strengthening international cooperation.

Overall, in FP7\* research higher education institutions and private for-profit organisations were most represented as project participants, accounting for a third of project participations each. Research organisations accounted for a quarter of FP7\* project participations. Public bodies and other types of organisation were involved to a very limited extent. Most project coordinators in FP7\* research were higher education institutions, followed by research organisations. Private organisations were less represented as project coordinators in FP7\*. Comparing SDG relevant research to the FP7\* average, higher education institutions tend to be overrepresented in SDGs addressing social issues, especially issues with high relevance for developing countries (SDG 1, SDG 4, SDG 3 and SDG 5, SDG 10), whereas private organisations tend to be overrepresented in SDGs dealing with innovation, energy, economic growth and employment (SDG 9, SDG 8 and SDG 7). Research organisations tend to be

overrepresented in SDGs related to conservation of natural resources and ecosystems and sustainable agriculture (SDG 2, SDG 14 and SDG 15).

Looking at the location of project coordinators, one could conclude that for the most part the centres of excellence for SDG relevant research were located in the “old” EU Member States (EU-15). Only for SDG 14 the EU-15 countries were significantly underrepresented due to the higher share of coordinators from associated countries, in particular Norway.

As the FP7-4-SD project has previously focused on monitoring the contribution of FP7\* research to the European Sustainable Development Strategy (EU SDS), this study allows comparison between the relevance of FP7\* research with the two sustainable development policy frameworks - the SDGs and the EU SDS. The results of the analysis reveal that the SDGs and the EU SDS were addressed to the same extent by FP7\* research. The shares of topics, projects and EC contribution in SP ‘Cooperation’ and SP ‘Capacities’ relevant to the SDGs and the EU SDS are quite similar. This is not surprising given the fact that both strategies translate the same concept – sustainable development – in two different contexts, the European and the global, and the consequently large thematic overlap between the topics dealt with in both documents.

However, a closer look at the FP7\* contribution to the two sustainable development frameworks reveals some important differences. As the SDGs are wider in scope, several of the SDG goals and targets do not seem to have a correspondence in the EU SDS framework. In general, this is the case with goals and targets that do not directly apply to the European context, as they are either more focused on developing countries or consider issues that have been already largely tackled in the EU, or targets that introduce new objectives not considered in the EU SDS framework so far. This explains the main differences between specific contributions of SP ‘Cooperation’ themes to the SDGs and the EU SDS. It can be observed, for instance, that FP7\* research relevant to the SDGs contains substantially lower number of topics from the theme TRANSPORT and somewhat less topics from the themes HEALTH and Agriculture (KBBE) compared with the research related to the EU SDS. Issues related to transport are more extensively covered in the EU SDS with TRANSPORT being one of the seven key challenges in the strategy, whereas in the SDGs “transport” is only mentioned in one of 169 targets. For the theme HEALTH the deviation is mainly due to lack of correspondence of the EU SDS operational objective on ‘life-style related diseases’ in the SDGs framework, which is more focused on diseases prevalent in developing countries. Similarly, for the Agriculture (KBBE) theme the EU SDS operational objectives on reducing GHG emissions, animal health and food labelling do not seem to be directly reflected in the SDGs’ objectives.

This “lack” of objectives in the SDG framework is however compensated by a significantly larger number of topics from the theme SECURITY related to the SDGs compared with the EU SDS. The issues of maintaining public security and protection, strengthening accountability and inclusiveness of institutions and increasing access to justice – all of which are prominently addressed in SDG 16 – are not directly reflected in the EU SDS framework.

## 2 Background: FP7, the SDGs, methodology

### 2.1 FP7 – the EU’s seventh framework programme for research

The Seventh Framework Programme for Research and Technological Development (FP7) was the EU’s main source of funding for research across Europe between 2007 and 2013. It had a total budget of € 50.5 billion for its seven year duration. FP7 consisted of 4 Specific Programmes (SPs) plus a fifth specific programme on nuclear research:

- Cooperation
- Ideas
- Capacities
- People
- FP7 Euratom

The Specific Programme (SP) ‘Cooperation’ was 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 to 2013. It fostered collaborative research across Europe and other partner countries, through projects by transnational consortia of industry, academia and civil society, in ten thematic areas.

Since the start of FP7 in 2007, a total of 3,234 topics have been called for in SP ‘Cooperation’. Under these topics, 6,967 projects<sup>5</sup> have been (and are still being) carried out by almost 20,885 institutions from academia, business and civil society organisations, with a total EC contribution (that is, the co-financing provided by FP7) of € 25.7 billion. The EC contribution accounts for 70 % of the total project costs (i.e. the co-financing provided by FP7 plus other funding sources) of € 36.7 billion.

### 2.2 The FP7-4-SD Monitoring System

An overarching aim of FP7, and in particular of its Specific Programme (SP) ‘Cooperation’, was to contribute to sustainable development (SD), as called for in the 2006 EU Sustainable Development Strategy (EU SDS)<sup>6</sup>. Against this background, DG Research and Innovation set up the FP7-4-SD monitoring system (see [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu)) to (i) monitor the contribution of FP7-funded research to EU SDS objectives (*accountability*), (ii) convey the value of FP7 to the public (*transparency*), and (iii) foster the governance of FP7 (*steering effect*).

The FP7-4-SD monitoring system is based on a cross-referencing between topics called for in the annual FP7 Work Programmes of the SP ‘Cooperation’ and the 78 operational objectives outlined in the EU SDS from 2006<sup>7</sup>. Experts from WU Vienna and TU Delft have been contracted for assessing - based on scientific evidence - the FP7 expected impacts on EU SDS objectives for the whole Programme period 2007-2013. The system enables the identification of the bulk of FP7 topics, projects, project participants and EC budgetary contribution to sustainable development. Since April

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<sup>5</sup> It is important to note that not all topics called for are being translated into action by funding of projects: in the Work Programmes 2007-2013, projects have been funded under some 2,628 topics only (81 % of all topics called for). However, more than one project may have been funded under one topic.

<sup>6</sup> Review of the EU Sustainable Development Strategy (EU SDS) - Renewed Strategy (DOC 10917/06).

<sup>7</sup> For the full list with the 78 operational objectives of the EU SDS see: [https://www.fp7-4-sd.eu/tpl/static/EUSDS\\_referential\\_framework.pdf](https://www.fp7-4-sd.eu/tpl/static/EUSDS_referential_framework.pdf)

2010, the results of the monitoring of all Work Programmes published so far under FP7 (i.e. the Work Programmes 2007-2013) are available to the public via the public platform [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu).

### 2.2.1 Scientific evidence-based screening

The monitoring system combines two main features of European policy: FP7 on the one hand, with its themes and activities (mainly from the ‘Cooperation’ programme), and the key challenges and objectives of the EU SDS on the other. In order to make this combination operational, a **qualitative text analysis of the topic descriptions** (a ‘topic’ is the most precise point of the hierarchy applied within FP7, outlining the needs, aims and expected impacts of the research to be undertaken concerning a specific issue) that are published in the annual FP7 Work Programmes has been undertaken. The key challenges and operational objectives specified in the renewed EU SDS of 2006 have in this regard been used as a [referential framework](#)<sup>8</sup>.

The initial screening was conducted by experts from WU Vienna and TU Delft, with the aim of identifying positive (i.e. supporting the EU SDS objectives), negative (i.e. conflicting with EU SDS objectives) or undetermined (i.e. impacts which due to a lack of scientific evidence cannot yet be categorised as positive or negative) expected impacts. In order to ensure the quality and accuracy of the identified impacts, some 10 % of the topics (including those having negative or undetermined impacts) were additionally validated by thematic experts from Ecologic Institute, INFRAS Research & Consulting, and ISI Fraunhofer.

When interpreting the results of the monitoring system, it is important to keep in mind that the results are based on **ex-ante evaluations of expected impacts** specified in the topic descriptions, and must not be understood as *ex-post* impact assessments of projects that are or have actually been carried out under a particular topic. However, as FP7 comprises a peer review process which ensures that the projects selected for funding actually meet the expected impacts outlined in the topic descriptions, the results provided by the monitoring system can nevertheless be seen as a “proxy” of actual impacts.

For a [more detailed description of the methodology behind the scientific evidence-based screening](#), please consult the monitoring system’s website [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu).

### 2.2.2 Interactive database at [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu)

In order to make the results of the monitoring system available to the public, to allow customised analyses according to the interests of individual users, and to stimulate a public debate on particular issues, a public platform has been set up at [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu) that – as one of its main features – includes an interactive database which allows analysing the data of the monitoring system from various points of view. To this end, it offers four so-called “Views” producing graphs, maps and tables which can be manipulated by applying several filter options in order to focus the analysis on particular FP7 themes, Work Programmes and EU SDS objectives. The analyses presented in the subsequent section of this quarterly report have been produced by combining the available “Views” and filter options.

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<sup>8</sup> In addition to the seven EU SDS Key Challenges, an additional (eighth) category was introduced (“additional SD objectives”) containing a number of objectives that are not included in the EU SDS, but are stated in national SD strategies (NSDS), such as ‘sustainable regional development’, ‘sustainable tourism’, ‘SD governance’ or ‘public security & protection’. By including these additional objectives, the monitoring system allows to not only monitor the contribution of FP7 to the EU SDS, but also to the most common objectives stated in national SD strategies. See [https://www.fp7-4-sd.eu/tpl/static/EUSDS\\_referential\\_framework.pdf](https://www.fp7-4-sd.eu/tpl/static/EUSDS_referential_framework.pdf)

In addition to the topics included in the FP7 Work Programmes, information of projects which are or have actually been carried out within FP7 has been integrated into the interactive database in order to allow even more sophisticated analyses, such as analysing the amount of funding (“EC contribution”) dedicated to research on “climate change”, “low carbon economy”, “SD governance”, etc., to name only a few. Moreover, the analyses can be broken down to the national and regional levels, allowing for a comparison across EU Member States or between regions within a particular country.

The monitoring system comprises information on about 3,234 topics (from the ‘Cooperation’ Work Programmes 2007 to 2013) and 6,967 projects (from the years 2007 to 2013) with more than 79,000 project participations and a total EC contribution of € 25.7 billion.

In order to stimulate a public debate, the database allows ‘zooming’ into the detailed screening results, i.e. the impacts a topic is expected to have on the key challenges and operational objectives of the EU SDS (see above), and additionally enables users to provide feedback.

For a [more detailed description of the monitoring system’s interactive database](#), please consult the guideline at [www.fp7-4-sd.eu](http://www.fp7-4-sd.eu).

### 2.3 The Sustainable Development Goals (SDGs)

The United Nations Conference on Sustainable Development (UNCSD)<sup>9</sup>, held in 2012 in Rio de Janeiro, marked the conception of a new global agenda for development, which strives to reconcile the objectives of poverty eradication and sustainability. One of the most important decisions which came out of the conference was the development of a set of Sustainable Development Goals to replace the Millennium Development Goals after the year 2015 and promote sustainable development on a global scale.

Work on the post-2015 development agenda of the UN encompasses three distinct aspects: definition of sustainable development goals and targets, development of a monitoring framework, and mobilisation of financial resources for sustainable development. The process has been led by UN Member States and has also involved various groups of stakeholders from international organisations, civil society, private sector and academia. Several work streams were established in the form of ‘an inclusive and transparent intergovernmental process’<sup>10</sup>, including a UN System Task Team on the Post-2015 UN Development Agenda, a High-Level Panel of Eminent Persons on the Post-2015 UN Development Agenda, an Open Working Group of the General Assembly on Sustainable Development Goals (OWG), the Sustainable Development Solutions Network (SDSN), regional, national, global and thematic consultations, and others.

An Open Working Group of the General Assembly (OWG) was established in January 2013 with the task to prepare a proposal of sustainable development goals and targets. The OWG consisted of 30 members and was based on a consistency-based system of representation, meaning that most of the seats of the OWG were shared by several countries. At the conclusion of its thirteenth and final session on the 19th July 2014, the OWG agreed on and published a ‘zero draft’ proposal, which became the basis for negotiating the final set of SDGs<sup>11</sup>. The document contains a list of 17

<sup>9</sup> Also known as Rio+20. For more information see: <http://www.uncsd2012.org>.

<sup>10</sup> [United Nation General Assembly \(2012\). \*The future we want\*, A/RES/66/288](#), para. 248.

<sup>11</sup> [Open Working Group of the General Assembly on Sustainable Development Goals \(2014\). \*Open Working Group proposal for Sustainable Development Goals\*, A/68/970](#).

preliminary SDGs and 169 related targets. Out of these, 16 goals and 106 targets are considered substantive. Goal 17 and 62 targets relate to the means of implementing the strategy. The General Assembly confirmed that this proposal is the main basis for integrating SDGs in the post-2015 development agenda<sup>12</sup>.

### **Box 1: List of proposed SDGs**

Goal 1 - End poverty in all its forms everywhere

Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3 - Ensure healthy lives and promote well-being for all at all ages

Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5 - Achieve gender equality and empower all women and girls

Goal 6 - Ensure availability and sustainable management of water and sanitation for all

Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10 - Reduce inequality within and among countries

Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12 - Ensure sustainable consumption and production patterns

Goal 13 - Take urgent action to combat climate change and its impacts<sup>13</sup>

Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17 - Strengthen the means of implementation and revitalize the global partnership for sustainable development

Final discussions on the post-2015 development agenda took place in a series of intergovernmental negotiations. Overall eight sessions of negotiations took place between January and July 2015, during which governments agreed on some technical revisions to the targets proposed by the OWG. As a major outcome of the negotiations, governments prepared a 'Zero draft' for the post-2015

<sup>12</sup> See conclusion of the 68<sup>th</sup> session of the General Assembly: <http://www.un.org/en/ga/68/meetings/>

<sup>13</sup> Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change

development agenda, titled ‘Transforming our World: The 2030 Agenda for Global Action’<sup>14</sup>. The ‘Zero draft’ document consists of four elements: (i) a declaration, (ii) a set of sustainable development goals and targets, (iii) means of implementation, and (iv) a follow-up and review. The final agenda, including a list of SDGs and targets, will be adopted by Member States in September 2015 at a UN Summit in New York City.

Strong emphasis is put on the universality of the agenda and on its transformative character. Moreover, the agenda has the ambition to be the first ever global compact for human development and preservation of the planet with unprecedented scope and significance. An equally strong focus is attached to implementation, action and integrated solutions to respond to the complex and interrelated SD challenges. In particular, means of implementation are explored and described in relation to, for instance, financial resources, capacity-building, the central role of science, technology and innovation, multilateral trading system, policy coordination, and coherence. In the context of the implementation of the Post-2015 Agenda, critical importance is given towards the engagement of all relevant stakeholders, more specifically the document affirms: “Governments and public institutions will work closely in this regard with national parliaments, local authorities, international institutions, business and the private sector, civil society, academia, philanthropic organizations, voluntary groups and others” (para.37).

## 2.4 Scope and methodology of the study

This report analyses how the research called for in **SP ‘Cooperation’** and **three parts of SP ‘Capacities’** – ‘Research infrastructures’, ‘Regions of knowledge’ and ‘Science in society’ – is related with the goals and targets of the 17 Sustainable Development Goals (SDGs)<sup>15</sup>, as outlined in “Zero draft of the outcome document for the UN Summit to adopt the Post-2015 Development Agenda”<sup>16</sup>. It is important to note that for the sake of readability, terms like “FP7\*” or “SP ‘Capacities’\*” are used without always specifying the restricted scope of the study on SP ‘Cooperation’ and the three parts of SP ‘Capacities’. An asterisk (\*) has been added in these cases to highlight the limited scope.

For the purpose of this report, the 17 SDGs and their 169 targets were taken as a referential framework. Based on a cross-checking between the 169 objectives of the 17 SDGs and the 78 operational objectives of the EU SDS three groups of SDGs’ objectives were identified:

- (1) The first group included SDG objectives that were thematically identical and thus fully covered by one or more of the operational EU SDS objectives. This group encompassed 26 % of the SDGs’ objectives.
- (2) The second group comprised SDG objectives that were contained within a thematically broader EU SDS operational objective, meaning the topics relevant to these SDG objectives could be limited within certain EU SDS objectives. 21 % of the SDGs’ objectives fell in this category.
- (3) The last group comprised of SDG objectives that were either thematically related to some EU SDS operational objective but included additional issues, or SDG objectives which could not be related to any EU SDS objectives at all. 53 % of all SDG objectives were in this group.

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<sup>14</sup> See: [Transforming our World: The 2030 Agenda for Global Action \(Final Draft of the outcome document for the UN Summit to adopt the Post-2015 Development Agenda\)](#).

<sup>15</sup> See the Annex for the full list of the objectives within the 17 SDGs.

<sup>16</sup> <https://sustainabledevelopment.un.org/content/documents/7261Post-2015%20Summit%20-%20June%202015.pdf>

The first group of SDG objectives were linked with their corresponding operational EU SDS objectives and the data was extracted from the FP7-4-SD database.

For the second group of SDG objectives, potentially relevant topics from SP ‘Cooperation’ and SP ‘Capacities’\* were identified by linking SDG objectives to their thematically relevant (but not equivalent) EU SDS operational objectives. The resulting list of topics was screened as described in section 2.2.1 above (“Scientific evidence-based screening”). Again, the data on the relevant topics was extracted from the FP7-4-SD database.

The analysis of the last group of SDGs’ objectives was performed in two stages – firstly, the SDGs which could be partly limited to some of the EU SDS objectives went through the same qualitative screening process as for the second type of SDGs’ objectives. In addition, to account for topics which were not related to the selected EU SDS objectives, a qualitative text screening based on a keyword search encompassing all annual Working Programmes of SP ‘Cooperation’ and SP ‘Capacities’\* was performed. All topics relevant to the specific SDG objectives were selected and extracted from the FP7-4-SD database. For SDG objectives without any overlap with the EU SDS operational objectives only the last screening procedure, involving keyword search, was performed.

The data from the three screening methods described above were combined into a comprehensive list of relevant topics for each SDG, allowing identifying and analysing all FP7\* topics relevant for each SDG. Since in the FP7-4-SD database topics are linked with projects carried out under each topic, organisations participating in each project, EC financial contribution for each project, etc., it was possible to perform further analysis such as number of relevant projects, EC contribution, projects characteristics, number, types and participation of involved organisations and geographical distribution of coordinators. This methodology allowed performing a comprehensive analysis of the FP7\* research contributing to the 17 SDG’s.

## 3 Detailed analysis on how FP7-research addressed the 17 Sustainable Development Goals

### 3.1 SDG 1: End poverty in all its forms everywhere

#### 3.1.1 Overview – main results

##### Main findings:

- SDG 1 is the least addressed in FP7\* research in terms of topics and projects and also received the smallest EC budget allocation.
- SDG 1 was narrowly addressed by projects in the theme Social Sciences (SSH).
- SDG 1-related projects were smaller than the FP7\* average. Compared to FP7\* as a whole, a disproportionate high share of SDG 1 related projects was carried out and coordinated by universities. SDG 1 featured the highest share of projects requiring international cooperation.

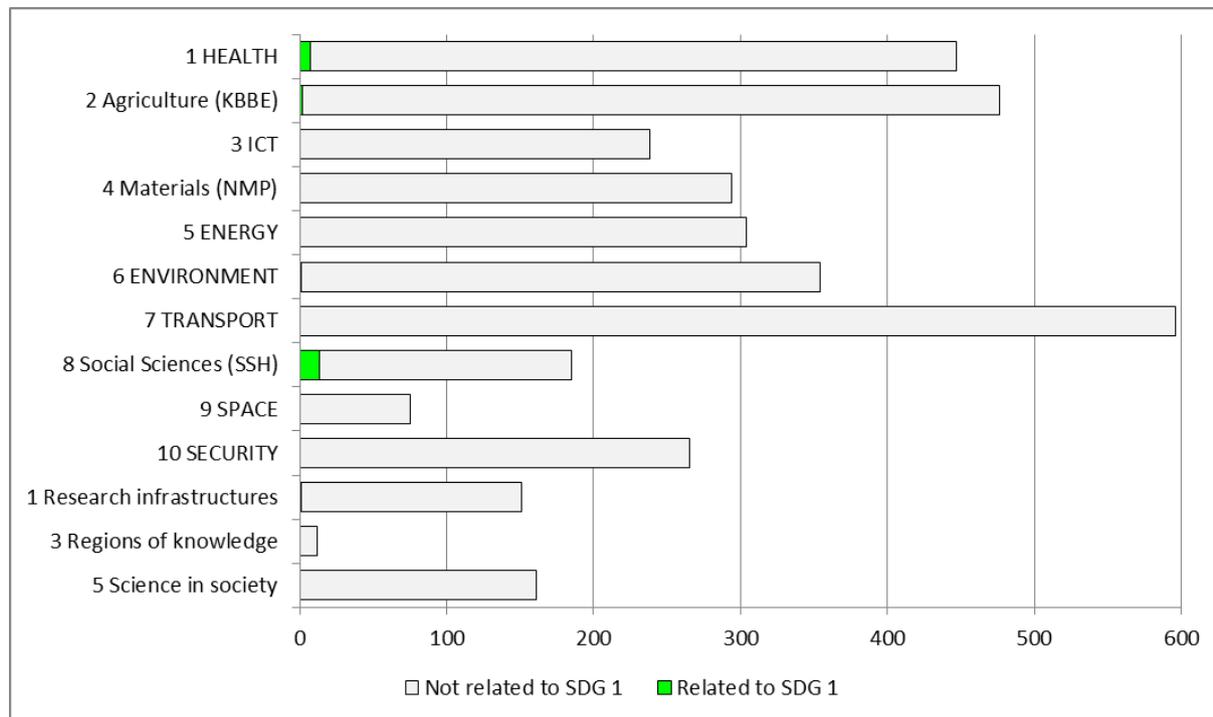
##### Summary of results:

- 25 topics or 0.7 % of all topics called for in FP7\* were relevant to the objectives of SDG 1
- Under these, some 40 projects were carried out with a financial contribution of € 0.1 billion or 1 % of the designated EC research budget
- The themes Social Sciences (SSH) and HEALTH in SP ‘Cooperation’ contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 1 was smaller than the average size of projects in FP7\* as a whole
- Two thirds of SDG 1 relevant projects were funded under the scheme of ‘small and medium-sized’, which was overrepresented compared with FP7\* as a whole. Coordination and support action projects were largely overrepresented
- Majority of relevant projects were carried out and coordinated by universities, which were considerably overrepresented compared with FP7\* as a whole. Private organisations were significantly underrepresented both as participants and coordinators
- More than 40 % of the relevant projects required international cooperation, which is substantially higher than FP7\* as a whole
- The largest number of coordinators were from the UK, Germany, and the Netherlands, with UK being significantly overrepresented, Netherlands –somewhat overrepresented and France, Spain and Italy somewhat underrepresented compared with FP7\* as a whole

#### 3.1.2 Detailed analysis

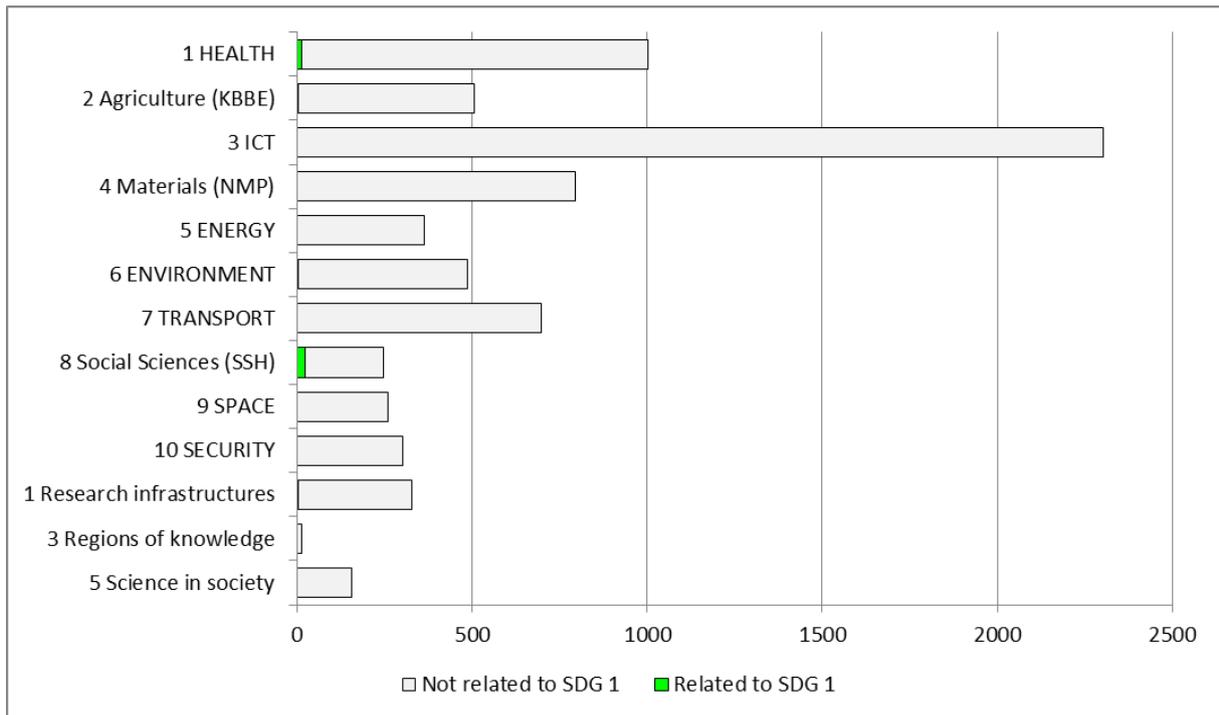
About 0.7 % of all topics called for under SP ‘Cooperation’ and SP ‘Capacities’\* are relevant for the objectives of SDG 1. This is equivalent to approximately 25 topics called for in the Work Programmes 2007-2013. The largest number of topics related to the eradication of all forms of poverty appear in the themes Social Sciences (SSH) and HEALTH in SP ‘Cooperation’ – about 7 % and 1.5 % of all topics called for under these two themes respectively (See Figure 1.1). A very small number of topics relevant to SDG 1 is contained in the themes Agriculture (KBBE) and ENVIRONMENT – 0.4 % and 0.3

% of all topics under these two themes respectively. In comparison to SP ‘Cooperation’, SP ‘Capacities’\* contains a limited number of related topics, all of which fall under the theme ‘Research infrastructure’.



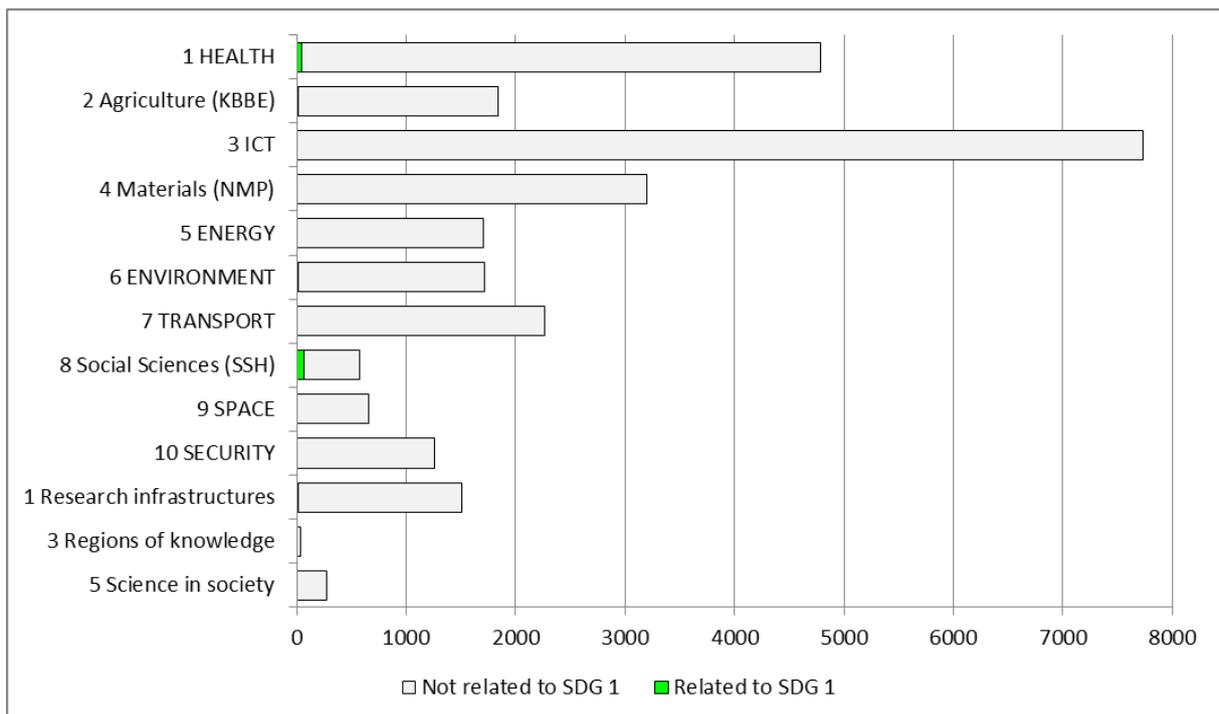
**Figure 1.1:** Number of topics related to SDG 1 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, some 40 projects related to the objectives of SDG 1 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to under 1% of all projects in both specific programmes. The themes Social Sciences (SSH) and HEALTH again stand out in terms of number of projects relevant for SDG 1, with about 25 projects (10% of all projects under this theme) and 15 projects from HEALTH (2% of all projects under this theme). In contrast, under 1% of projects implemented in SP ‘Capacity’ were relevant for SDG 1.



**Figure 1.2:** Number of projects related to SDG 1 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP 7, some € 127 million or about 1 % of the research budget for SP ‘Cooperation’ and SP ‘Capacities’\* for 2007-2013 was allocated to projects relevant to SDG 1. A disproportionate amount of this share – some 122 € million - came from SP ‘Cooperation’. The Social Sciences (SSH) theme constituted the largest source of funding in this respect, with about 67 € million or 12 % of its budget being distributed to projects with relevance for the achievement of SDG 1. The second largest financial contribution was provided by the HEALTH theme, which allocated some 46 € million of its budget to projects addressing the poverty eradication objectives. Although a significant amount in real terms, this sum constituted only 1 % of the HEALTH theme budget.



**Figure 1.3:** Total EC contribution (€ million) to projects related to SDG 1

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 1 was highest in 2012, with almost € 31 million, and lowest in 2009, with about € 3 million. In contrast to budget distribution, the highest number of relevant projects was recorded in 2010 - about 10 projects or almost 1 % of all projects in SP 'Cooperation' and SP 'Capacity' conducted in this year. Similar has been the development in the number of topics – the highest number of topics with relevance to SDG 1 were called for in 2010 and the lowest in 2008 and 2009.

Figure 1.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. More than 25 projects or about 62 % of all projects that are relevant for the objectives of SDG 1 were small and medium-sized research projects. This group also received the highest financial contribution from the EC – about € 67.6 million or 53 % of the funding going to projects relevant to SDG 1. Projects without a pre-defined size (categorised as 'any size' in Figure 1.4) constituted the second largest type in terms of number of projects (about 10), followed by large-scale research projects and coordination and support action (about 5 each). Although large-scale research projects and coordination and support action made up 10 % of FP7\* projects relevant to SDG 1 each, more than 20 % of the EC budget relevant for SDG 1 was allocated to large-scale research projects and only 5 % to projects constituting coordination and support action. This discrepancy could be attributed to the differences in the size and requirements of projects in the two types of funding schemes.

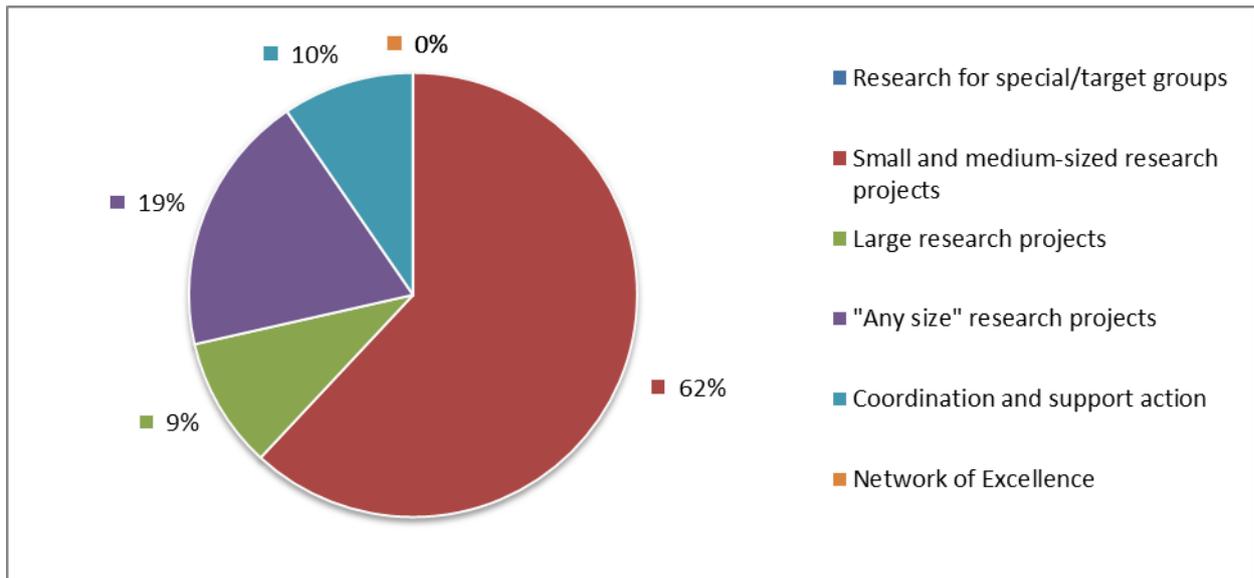
Compared with FP7\* as a whole, a higher share of projects relevant to SDG 1 were small and medium-sized research projects and these received a higher share of the EC contribution. In contrast, coordination and support action projects were underrepresented compared with FP7\* as a whole.

The relatively small size of projects relevant to SDG 1 is reflected in the financial contribution received from the EC - projects related to SDG 1 received € 3 million on average, whereas projects in FP7\* as a whole received € 3.7 million on average.

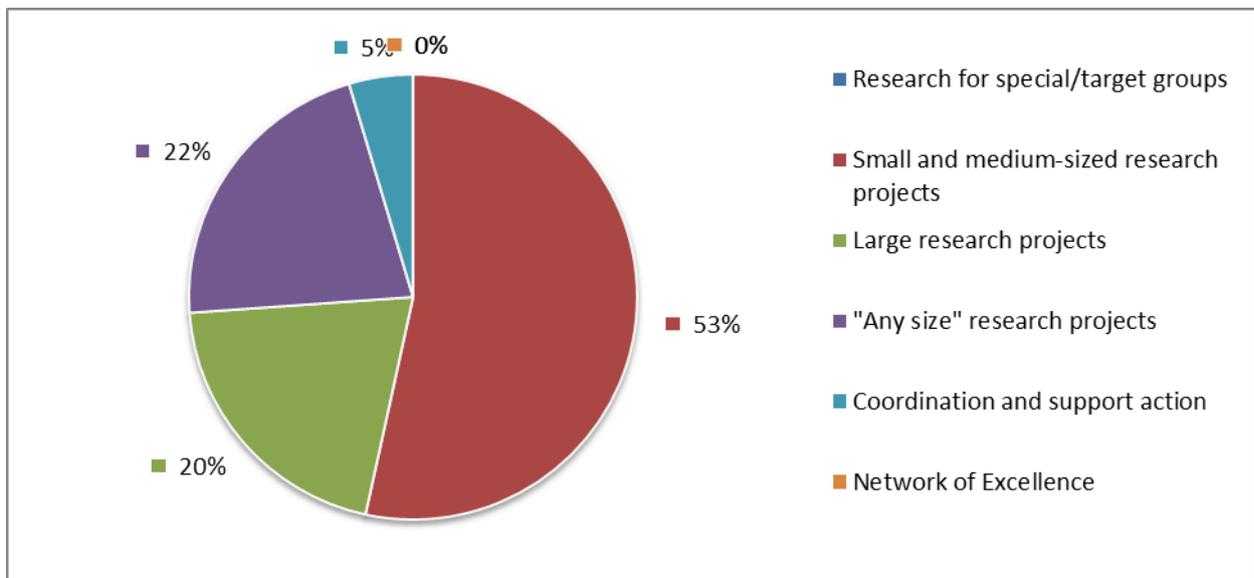
Looking at funding schemes, about 43 % of the projects with relevance to SDG 1 were carried out with the aim of strengthening international cooperation<sup>17</sup>. These received about 51 % of the EC contribution related to SDG 1 (some € 65 million). In comparison, only about 3 % of projects in FP7\* as a whole required international cooperation and received about 3 % of the designated EC budget.

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<sup>17</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.

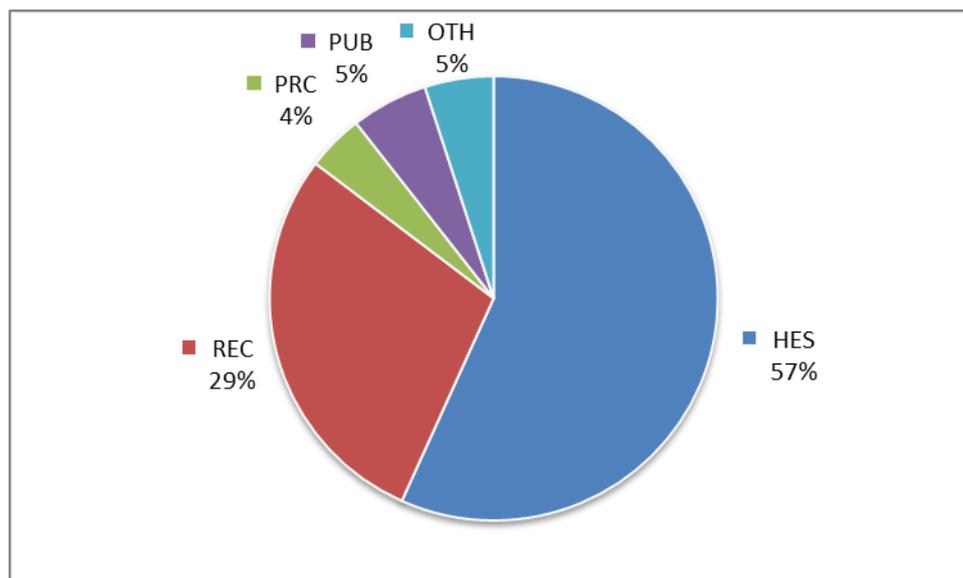


**Figure 1.4:** Projects related to SDG 1, by funding scheme



**Figure 1.5:** EC contribution to projects related to SDG 1, by funding scheme

For the entire period between 2007 and 2013, over 340 organisations participated in projects related to SDG 1. As shown in Figure 1.6, higher education institutions accounted for about 60 % of all organisations, followed by research organisations (almost 30 %). Private for-profit, public and other organisations were less involved, with 4% to 5 % of the participating organisations falling in each of these categories.

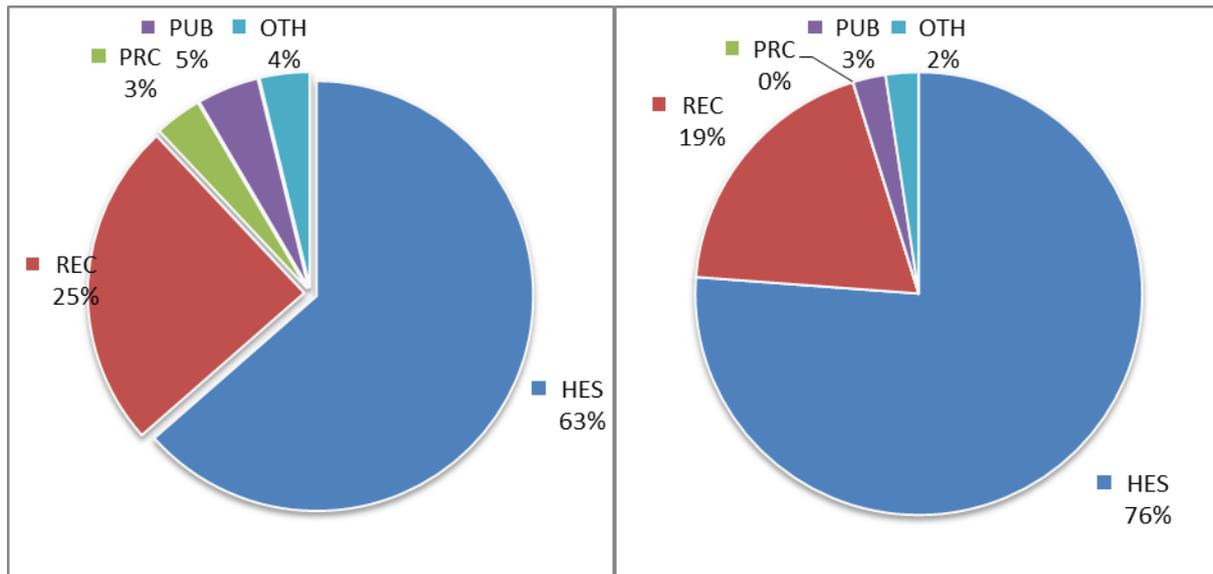


**Figure 1.6:** Organisations participating in projects related to SDG 1

The involvement of higher education institutions in projects relevant for SDG 1 seems even more pronounced when looking at the number of project participations<sup>18</sup>. Higher education institutions participated on average in one to two projects related to the objectives of SDG 1, whereas the rest of the organisation types – research organisations, for-profit organisations, public bodies and others – participated in only 1 project on average. Higher education institutions were substantially overrepresented in projects related to SDG 1 (64 %) compared with FP7\* as a whole (34 %). In contrast, private-for-profit organisations accounted for only 3 % of project participations related to SDG 1, but almost 32 % of all FP7\* project participations.

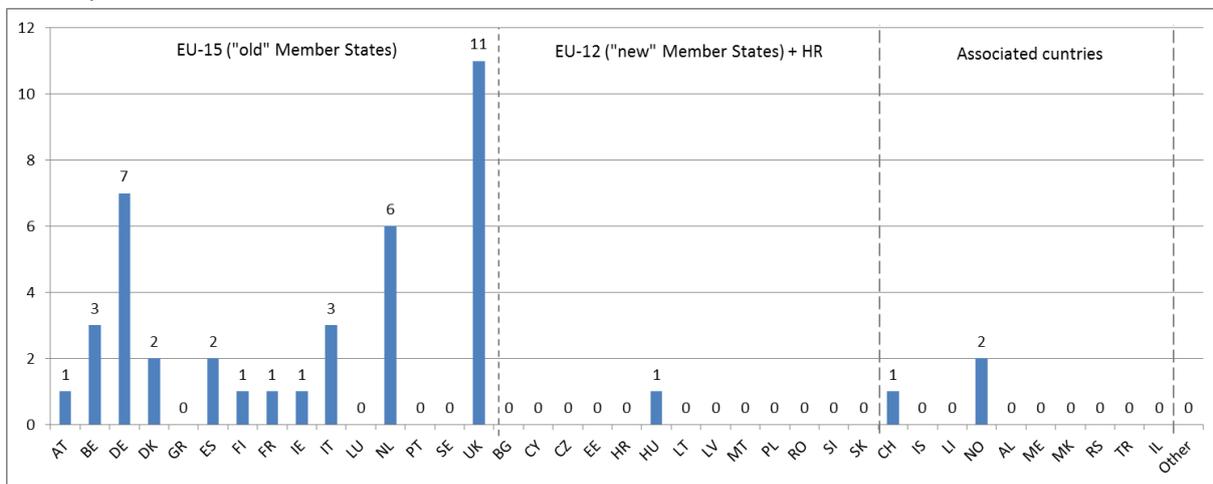
Higher education institutions were also highly involved as coordinators of projects related to SDG 1. As shown on Figure 1.7, 76 % of the projects with relevance to SDG 1 were coordinated by higher education institutions, which is a much higher share than for FP7\* as a whole (about 40 %). Research organisations also coordinated a notable share of projects related to SDG 1 (about 20 %). In contrast, private for-profit organisations were substantially underrepresented, coordinating only 3 % of the SDG 1 relevant project compared with 22 % of all FP7\* projects.

<sup>18</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 7.7:** Participations in projects related to SDG 1, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, 90 % of the projects related to SDG 1 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 1.8), in particular the UK (26 %), Germany (17 %) and the Netherlands (14 %). The UK was significantly overrepresented in SDG 1 relevant projects compared with all FP7\* projects. In contrast, only 2 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia). Some 7 % of the projects coordinators came from other European (non-EU) countries, in particular Switzerland and Norway.



**Figure 1.8:** Geographical location of coordinators of projects related to SDG 1

### 3.1.3 Project cases

**Project title:** *Enhancing Knowledge for Renewed Policies against Poverty (NOPOOR)*

**Project coordinator:** INSTITUT DE RECHERCHE POUR LE DEVELOPPEMENT (FRANCE)

**Duration:** 04/01/2012 to 03/31/2017

**Costs:** € 9.9 million; **EC contribution:** € 8 million

**Funding scheme:** Large-scale integrating project for specific cooperation actions dedicated to international cooperation partner countries

**Abstract:** NOPOOR aims to build new knowledge on the nature and extent of poverty in developing countries to provide policymakers with a broader understanding of poverty. We believe that poverty cannot be tackled without a comprehensive approach. We know that poverty is a multidimensional phenomenon, but NOPOOR will explore new and uncharted dimensions. It is not just a picture of poverty, but also an understanding of poverty entry and exit processes that is needed for achieving MDGs and for making more effective the policies. Nineteen experienced partners are involved in the project, which includes ten teams from developing and emerging countries in three regions (Latin America, sub-Saharan Africa and South Asia). These countries have implemented different poverty reduction policies, and this will form the basis for the comparative and case studies approach taken. The project will identify key mechanisms that explain the persistence and exacerbation of poverty, which have been altered by the insertion of developing countries into the globalization process, including trade, aid, FDI and migration, and by the growing interdependence of economies. Causes may differ between countries. This calls for policies and actions to be tailored to each poor country's characteristics, including their access to resources, political regime, quality of institutions and governance. These points are developed by various approaches, including political economics, and different methods: surveys, econometric studies and case studies. NOPOOR will put significant resources into generating new knowledge from original surveys, database work and qualitative work. It will also look forward to future scenarios. Conclusions will be oriented to policy recommendations. Beyond this contribution to scientific knowledge, NOPOOR will pursue an active policy of dissemination and capacity building, including training of young Southern researchers and the implementation of a permanent network with National Institutes of Statistics (NIS). The project is policy-oriented. NOPOOR will accompany the EU's agenda for its policy against poverty by consultations, guidance notes, and policy briefs on issues relating to the program. The review of MDG will constitute an important point of focus in the future years

**Website:** <http://www.nopoor.eu/>

**Project title:** *Combating Poverty in Europe: Re-organising Active Inclusion through Participatory and Integrated Modes of Multilevel Governance (COPE)*

**Project coordinator:** CARL VON OSSIETZKY UNIVERSITAET OLDENBURG (GERMANY)

**Duration:** 02/01/2012 to 01/31/2015

**Costs:** € 2.5 million; **EC contribution:** € 2 million

**Funding scheme:** Small or medium-scale focused research project

**Abstract:** To combat poverty, European strategies propose implementing active inclusion policies. However, these policies face serious conceptual questions and governance challenges. Practical implementation is problematic in that social exclusion is a multidimensional problem that goes far beyond financial poverty, necessitating the participatory co-production of individual opportunities. In addition, the complex social needs of the most excluded groups require the integration of different policy fields and the involvement of beneficiaries, civil society and public agencies in the co-production of welfare. This project focuses on the political and organisational challenges of this complex governance model which has evolved from European, national and local policies. Investigating the co-production of active inclusion in a multilevel, multidimensional and multi-stakeholder perspective addresses key questions: How can the combat against poverty be

organised in practice? How do European, national and local institutions shape the co-production of active inclusion? How do beneficiaries participate in these policies and how does this shape their life courses? Project COPE integrates multiple disciplines and experienced social policy researchers. A common theoretical and methodological approach guides the research in each work package. First, we will contextualise poverty as a multidimensional challenge. Secondly, COPE will study how minimum income schemes for three different groups (lone mothers, long-term unemployed, working poor) are organised in five EU countries (Italy, Germany, Poland, Sweden and the UK) and how they cope with multilevel and multi-stakeholder modes of co-producing active inclusion policies. As these countries cover different welfare regimes, the results will have direct EU-wide relevance. To conclude, we will analyse the impact of these approaches on the individually perceived situation of the poor and the life courses of the most vulnerable social groups.

**Website:** <http://cope-research.eu/>

## 3.2 SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

### 3.2.1 Overview – main results

#### Main findings:

- SDG 2 was narrowly addressed by topics and projects from the theme Agriculture (KBBE).
- SDG 2-related projects were similar in size to the FP7\* average. Compared to FP7\* as a whole, a disproportionate high share of SDG 2 related projects was carried out by research organisations.
- The funding scheme ‘small and medium-sized projects’ was underrepresented in SDG 2-related research, whereas ‘research for special/target groups’ was overrepresented. Research projects requiring international cooperation were also significantly overrepresented.

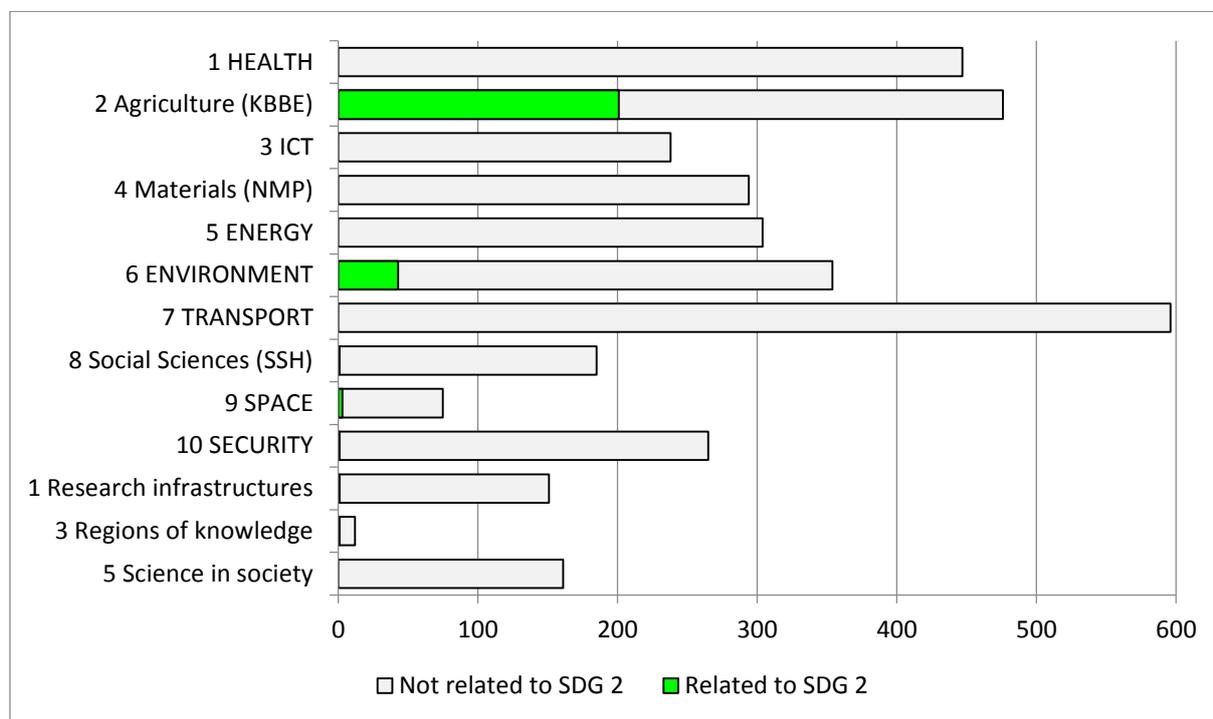
#### Summary of results:

- 250 topics or 7 % of all topics called for in FP7\* were relevant to the objectives of SDG 2
- Under these, 230 projects were carried out with a financial contribution of € 1.1 billion or 4 % of the designated EC research budget
- The theme Agriculture (KBBE) in SP ‘Cooperation’ contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 2 was close to the average size of all FP7\* projects
- Most relevant projects were funded under the scheme of ‘small and medium-sized’ projects or ‘research for special/target groups’, with the former being underrepresented compared with FP7\* as a whole and the latter substantially overrepresented
- Majority of relevant projects were carried out by private organisations, but coordinated by research organisations and universities. Compared with FP7\* as a whole, universities and research organisations were overrepresented, whereas private-for-profit organisations were substantially underrepresented, especially as coordinators.
- About 12 % of all related projects required international cooperation, which is considerably higher than the FP7\* average
- The largest number of coordinators were from the UK, the Netherlands, France and Germany, with Germany being underrepresented and Netherlands overrepresented compared with FP7\* as a whole

### 3.2.2 Detailed analysis

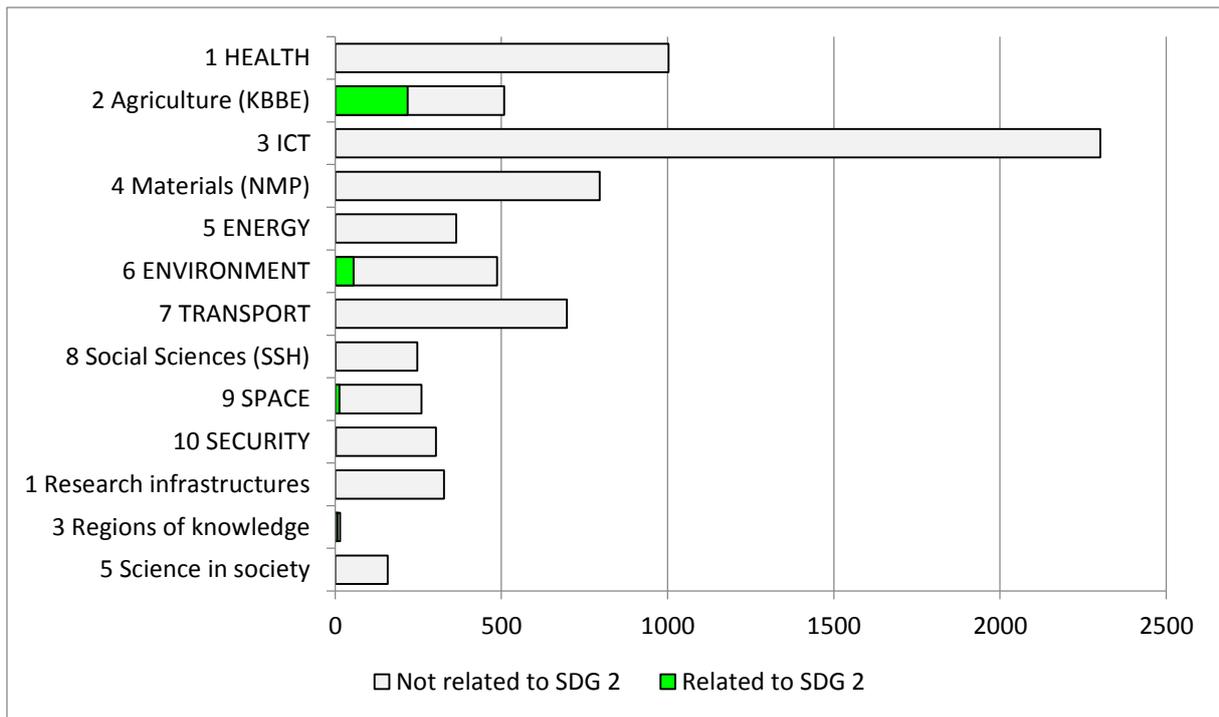
About 7 % of all topics called for in SP ‘Cooperation’ and SP ‘Capacities’\* in the period between 2007 and 2013 were relevant for the objectives of SDG 2. This is equivalent to some 250 topics, the bulk of which (about 200 topics or 80 % of all relevant topics) were called for in the theme Agriculture (KBBE) under SP ‘Cooperation’ (see Figure 2.1). This is not surprising since SDG 2 deals with issues closely related to agricultural practices, such as food security, nutrition, sustainable food production etc. However, in terms of the total number of topics called for in the theme Agriculture (KBBE), less than half (about 40 %) were relevant for the objectives of SDG 2. A moderate share of topics called for in

theme ENVIRONMENT had a direct link to SDG 2 (over 10 %). Only a couple of relevant topics could be seen in the themes SPCACE, SECURITY and Social Sciences (SSH) and in SP ‘Capacities’\*. Overall, less than 1 % of the topics in SP ‘Capacities’\* were relevant for SDG 2.



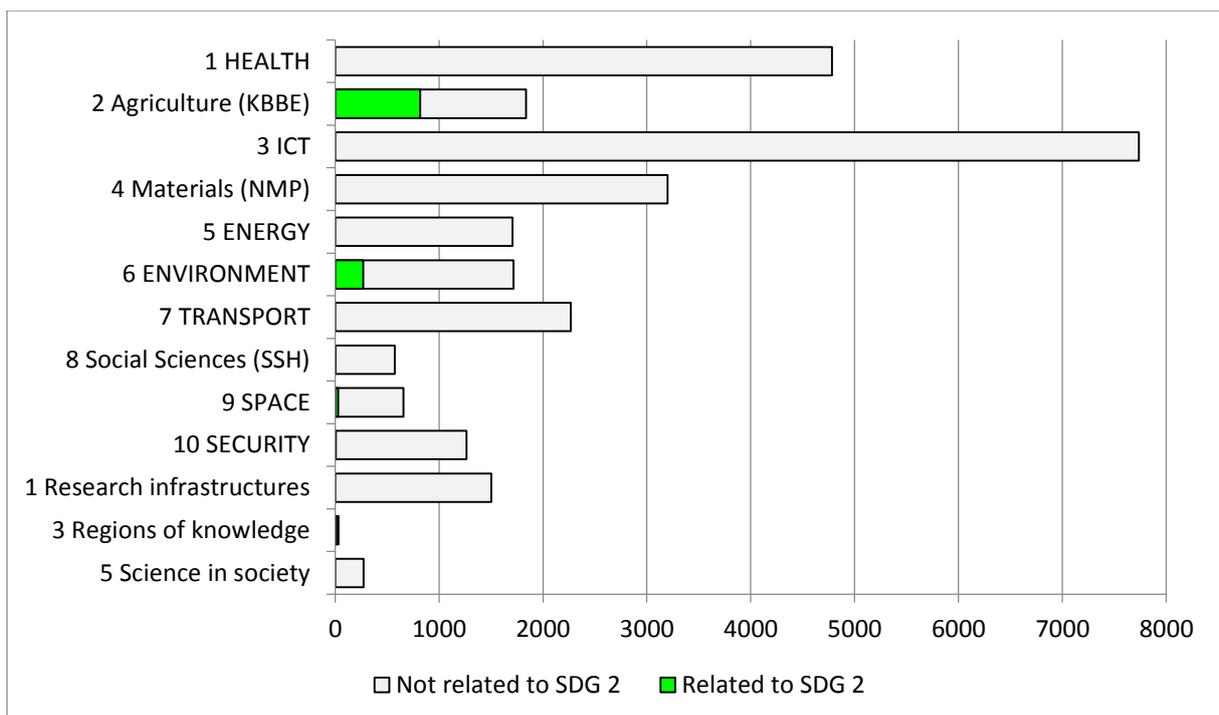
**Figure 2.1:** Number of topics related to SDG 2 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, only 4 % of the projects carried out in SP ‘Cooperation’ and about 1.5 % of the projects carried out in SP ‘Capacities’\* were related to SDG 2. This corresponds to some 230 projects in both specific programmes. It is interesting to note that almost 50 % of the projects in the theme ‘Regions of Knowledge’ in SP ‘Capacities’ had a direct link to SDG 2, however due to the small number of projects in this theme this constitutes 7 projects only (Figure 2.2). About 40 % of the projects in the theme AGRICULTURE (KBBE) and 10 % of the projects in the theme ENVIRONMENT contributed to the objectives of SDG 2. Also, 5 % of the projects in the theme SPACE were relevant for this SDG.



**Figure 2.2:** Number of projects related to SDG 2 in SP ‘Cooperation’ and SP ‘Capacities’\*

Regarding the financing of projects, the EC has contributed some € 1.1 billion in total to FP7\* projects relevant for the objectives of SDG 2 (see Figure 2.3). This constitutes about 4 % of the EC budget allocated to SP ‘Cooperation’ and less than 1 % of budget allocated to SP ‘Capacities’\*. Out of the € 1.1 billion, more than 70 % were allocated to projects in the theme Agriculture (KBBE). This is equivalent to some € 0.8 billion or about 45 % of the total budget of the theme Agriculture (KBBE). Some € 0.3 billion were allocated to projects in the theme ENVIRONMENT, equivalent to about 16 % of the total budget of this theme.



**Figure 2.3:** Total EC contribution (€ million) to projects related to SDG 2

In the period between 2007 and 2013, the highest financial contribution from the EC relevant for the objectives of SDG 2 was provided in 2007 (about € 0.2 billion). In 2008, the financial contribution relevant for SDG 2 fell to its lowest level for the entire period – under € 0.1 billion, before gradually increasing again in the following years. Regarding the number of topics and projects relevant for the objectives of SDG 2, the highest number was reached in 2007 (about 50 topics and projects). In contrast, the lowest number of relevant topics was recorded in 2008 and 2013 (some 25 topics in both years), and the lowest number of relevant projects was reached in 2008 (some 25 projects).

In relative terms, the highest share of topics relevant for SDG 2 was reached in 2009 (about 10 % of the topics called for that year). The share of relevant projects ranged between 3 % in 2008 and 5.4 % in 2009 and 2010. The share of EC contribution related to the objectives of SDG 2 ranged between 3 % in 2008 and 6 % in 2012.

Figure 2.4 below shows the different funding schemes in FP7, which define the type and the size of projects carried out. Almost 40 % of the projects relevant for the objectives of SDG 2 were financed under the scheme of small and medium-sized research projects, which was equivalent to some 110 projects. Research for the benefit of special/target groups was the second most prevalent scheme, with over 20 % of the projects with relevance to SDG 2 falling into this category. It was followed by large-scale research projects and coordination and support action, which constituted 17 % and 14 % of the projects relevant for SDG 2, respectively. None of the project relevant for SDG 2 were financed under the scheme network of excellence.

In terms of financial contribution of the EC budget to projects relevant for SDG 2, an equal share of the budget was received by small and medium-sized research projects and large-scale research projects (about 30 % each), although the first group constituted twice as many projects as the second group. A quarter of the budget was allocated to research for special/target groups and only 5 % to coordination and support action. Projects without a pre-defined size (categorised as ‘any size’ in Figure 2.4 and Figure 2.5 below) constituted about 10 % of all projects related to SDG 2, and held an equivalent share of the EC budget.

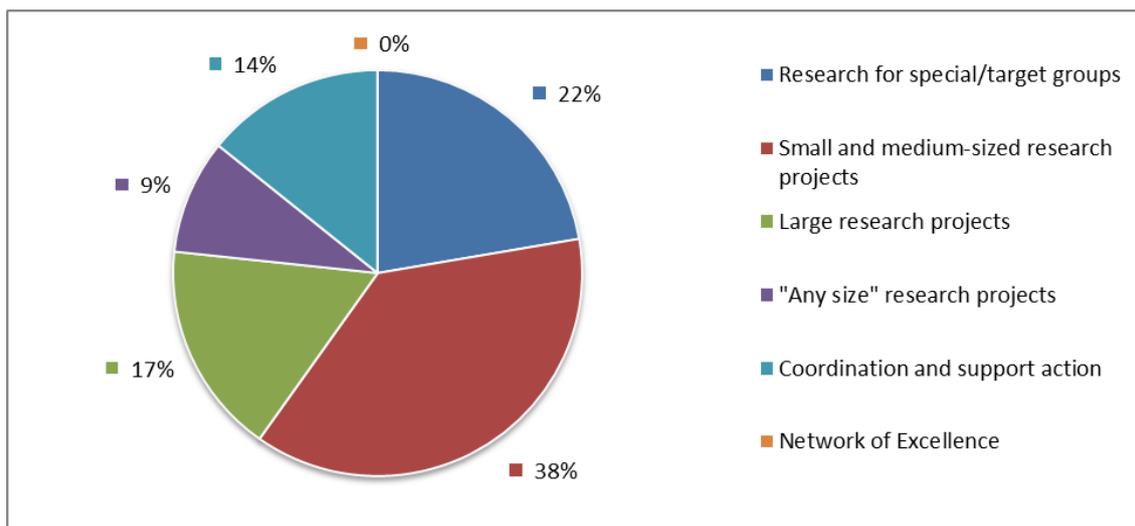
Although constituting the largest group of relevant projects, small and medium-sized projects were underrepresented compared with FP7\* as a whole, with almost 50 % of all FP7\* projects and 40 % of the designated EC contribution falling in this scheme. In contrast, projects addressing the needs of special/target groups were overrepresented compared with FP7\* as a whole, with only 4 % of all FP7\* projects and 4 % of the designated budget addressing the needs of special/target groups.

It is interesting to note that projects related to SDG 2 involved on average a larger number of organisations (16 organisations per project) compared with the FP7\* as a whole (11 or 12 organisations per project). In terms of EC financial contribution, however, the average size of projects related to SDG 2 (€ 3.8 million) was close to the average size of FP7\* projects (€ 3.7 million).

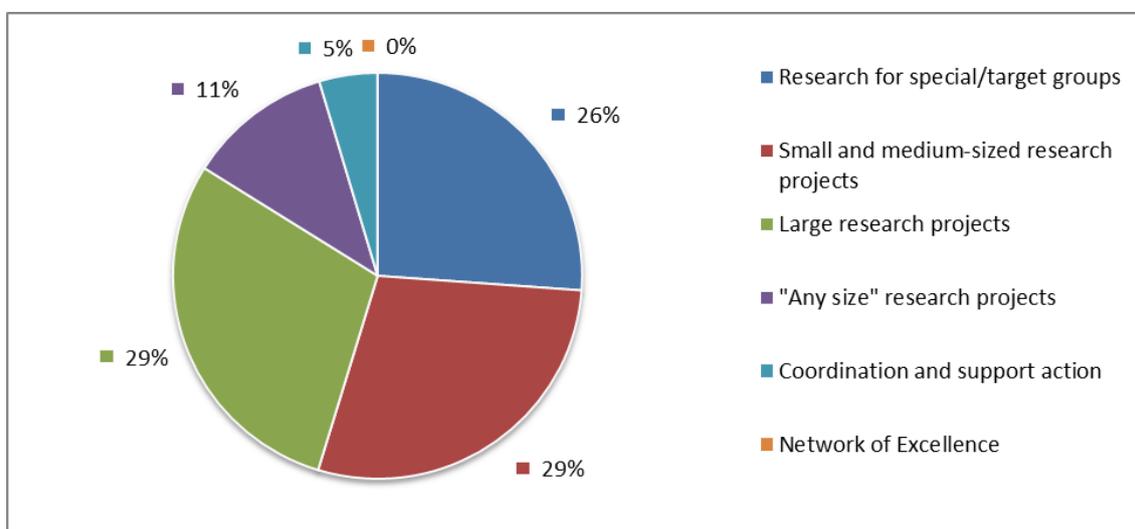
Some 35 projects or almost 12 % of all project related to SDG 2 were carried out with the aim of strengthening international cooperation<sup>19</sup>. About 13 % of the EC financial contribution went to these projects (some € 0.1 billion). This is a higher share compared with the FP7\* as a whole, with only about 3 % of projects in FP7\* requiring international cooperation and receiving about 3 % of the designated EC research budget.

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<sup>19</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.



**Figure 2.4:** Projects related to SDG 2, by funding scheme



**Figure 2.5:** EC contribution to projects related to SDG 2, by funding scheme

Between 2007 and 2013, more than 2,200 organisations took part in FP7\* projects related to SDG 2. About 40 % of these were private-for-profit organisations (see Figure 2.6). Higher or secondary education institutions constituted the second largest group with 24 %, closely followed by non-profit research organisations with 23 %. Only 8 % of the participating organisations were public bodies.

The picture changes when looking at the number of project participations relevant for SDG 2<sup>20</sup>. On average private-for-profit organisations participated in one project only, whereas higher education institutions and non-profit research organisations participated in 3 projects. This explains the high shares of project participations from higher education institutions and non-profit research organisations, 35 % and 33 % respectively (see Figure 2.7). In contrast, private-for profit organisations constituted only 21 % of project participations. Public bodies participated on average in 2 projects and accounted for 8 % of the project participations.

Compared with FP7\* as a whole, non-profit research organisations were overrepresented in research projects relevant for SDG 2, whereas private-for-profit organisations were substantially underrepresented.

<sup>20</sup> Project participations refer to the number of organisations times their participation in projects.

Figure 2.7 shows that most of the projects relevant for SDG 2 were coordinated either by non-profit research organisations (45 %) or higher education institutions (40 %). Private organisations coordinated only 7 % of the projects, closely followed by public bodies (6 %). Again, non-profit research organisations were overrepresented as project coordinators compared with FP7\* as a whole, whereas private organisations were substantially underrepresented as project coordinators.

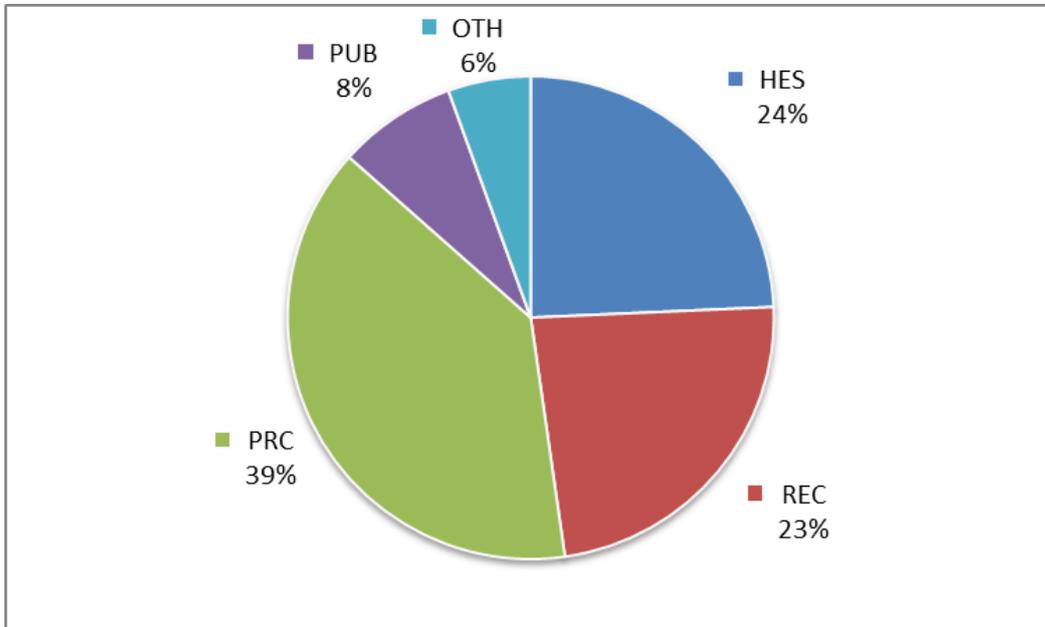


Figure 2.6: Organisations participating in projects related to SDG 2

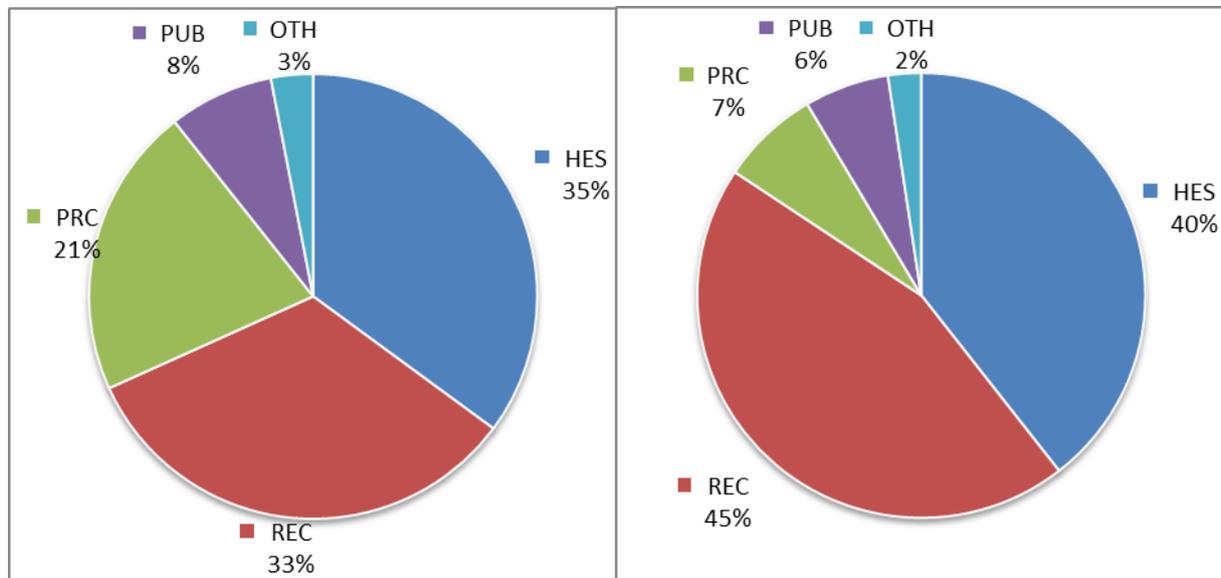
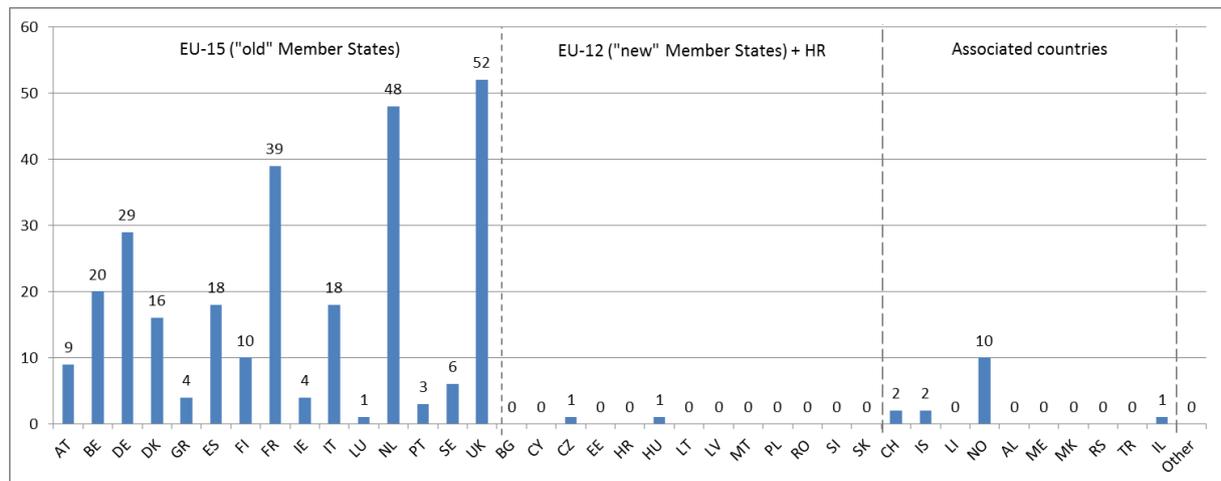


Figure 2.7: Participations in projects related to SDG 2, by organisation type - all project partners (left), project coordinators (right)

Regarding the geographical distribution of project coordinators, the overwhelming majority of projects related to SDG 2 were coordinated by organisation located in the ‘old’ (EU-15) Member States (94 % of projects). Most project coordinators were located in the UK (18 %), the Netherlands (16 %), France (13 %) and Germany (10 %). Despite the high share of project coordinators from Germany, the country was still underrepresented compared with FP7\* as a whole, whereas the

Netherlands were overrepresented. Less than 1 % of the projects related to SDG 2 were coordinated by organisations from the ‘new’ Member States (EU- 12 plus Croatia). About 5 % of the projects coordinators were located in other European (non-EU) countries, mostly in Norway.



**Figure 2.8:** Geographical location of coordinators of projects related to SDG 2

### 3.2.3 Project cases

**Project title:** *AN Integration of Mitigation and Adaptation options for sustainable Livestock production under climate CHANGE (ANIMALCHANGE)*

**Project coordinator:** INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE (FRANCE)

**Duration:** 03/01/2011 to 02/28/2015

**Costs:** € 12 million; **EC contribution:** € 9 million

**Funding scheme:** Large-scale integrating project for specific cooperation actions dedicated to international cooperation partner countries

**Project abstract:** ANIMALCHANGE will provide scientific guidance on the integration of adaptation and mitigation objectives and design sustainable development pathways for livestock production in Europe, in Northern and Sub-Saharan Africa and Latin America. ANIMALCHANGE will inform public policy development in EU27 and propose cooperation programs addressing smallholder livestock farming in selected developing countries. The core analytical spine of the project is a series of coupled biophysical and socio-economic models combined with experimentation. This allows exploring future scenarios for the livestock sector under baseline and atmospheric CO<sub>2</sub> stabilization scenarios. These scenarios are first constructed in Component (CP) 1. They are elaborated and enriched by breakthrough mitigation and adaptation options from CP 2 at field and animal scales, integrated and evaluated at farm scale in CP 3 and used to assess policy options and their socio-economic consequences in CP 4. ANIMALCHANGE will: - Quantify and reduce uncertainties in greenhouse gas (GHG) emissions and assess climate change impacts on livestock systems (including grasslands) - Revise estimates of the GHG balance of livestock systems and integrate soil carbon sequestration - Integrate climate variability and extremes into the assessment of impacts, adaptation and vulnerability of livestock systems to climate change - Develop breakthrough technologies for adaptation and mitigation to climate change for both ruminants and monogastrics - Study and quantify trade-offs and synergies between adaptation and mitigation options - Assess the potential

societal and sectoral costs and benefits of these options for the livestock sector in Europe and in study regions of Africa and Latin America - Assess climate change vulnerability of animal production and of associated GHG emissions - Provide direct support through the design of an integrated and consistent mitigation and adaptation policy framework for the livestock sector

**Website:** <http://www.animalchange.eu/>

*Project title: An integrated strategy for the conservation and use of underutilized Latin American agrobiodiversity. (LATINCROP)*

**Project coordinator:** KOBENHAVNS UNIVERSITET (DENMARK)

**Duration:** 11/01/2013 to 10/31/2017

**Costs:** € 1.3 million; **EC contribution:** € 1 million

**Funding scheme:** Coordination (or networking) actions

**Project abstract:** LATINCROP objectives are to reinforce agrobiodiversity conservation in the Andean region; to identify promising underutilized species for commercial initiatives and improved food security; and to integrate activities into a strong network between relevant stakeholders in Latin America and the EU. The project will identify attractive species for marginal lands involving novel crop combinations thus establishing robust cropping systems. The underutilized species of the Andes are regarded as extremely nutritious and stress tolerant, hence significant components of human culture at present and in the future, with a vital role in the upkeep of sustainable livelihoods and ecosystem stability. Yet, the loss of species, cultivars and wild relatives, and associated traditional knowledge at the farm level, has a noticeable impact on food security of small hold farming communities and their ability to cope with adverse climates. LATINCROP will address the following themes: (A) Environmental - Conservation of agro-biodiversity, (B) Economic - Sustainable development of bio-economy, (C) Social - Improved food security, and (D) Network - Supporting existing activities into network. The project duration is 48 months to be implemented by a team from Bolivia, Peru, Ecuador, Denmark, UK and Spain. The project takes stock of related past and on-going projects and will complement them in an integrative approach to obtain long-term results leading to increased food security, on the selected crops among seed, roots and tubers. The principal expected outcome is the strengthening of the conservation of the Andean agrobiodiversity for food security and global bioeconomy. We will improve sustainable use of agrobiodiversity by developing underutilized crops, supporting economic development in Latin America while ensuring mutual interest and benefit with the EU, and creating a network to facilitate transfer of knowledge and technology related to the promotion of underutilized Andean species.

**Website:** <http://latincrop.org/>

### 3.3 SDG 3: Ensure healthy lives and promote well-being for all at all ages

#### 3.3.1 Overview – main results

##### Main findings:

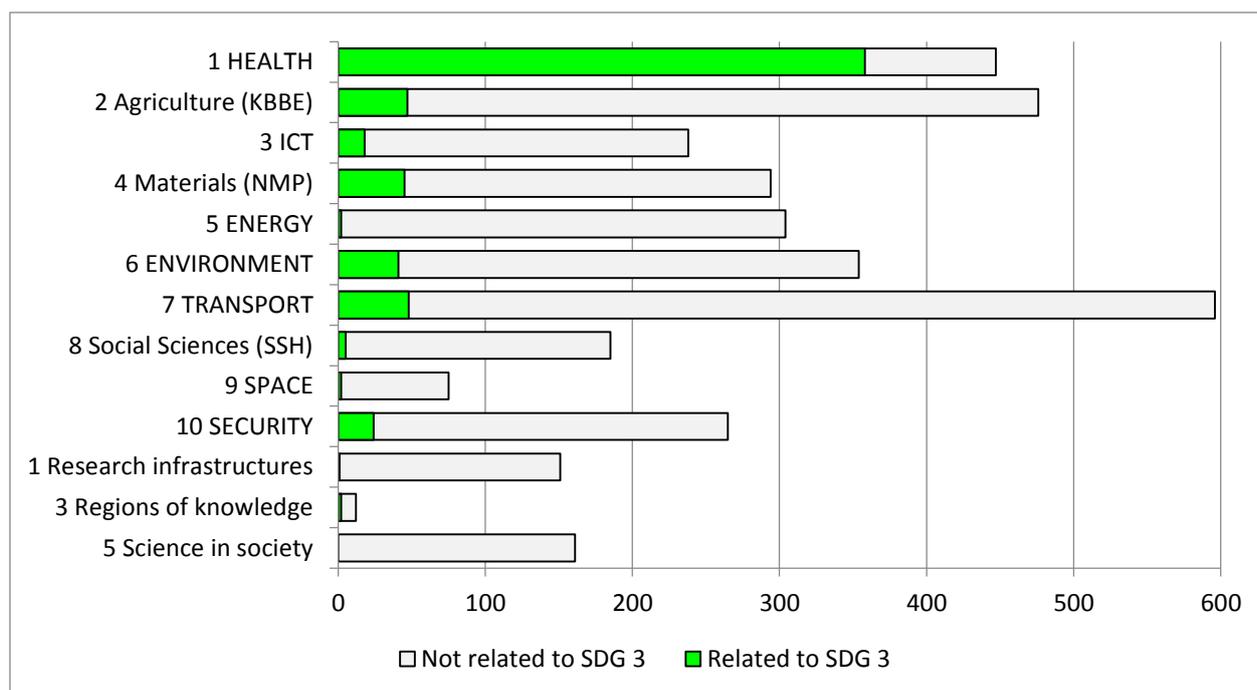
- SDG 3 is one of the most well addressed in FP7\* research in terms of topics and projects and also received some of the largest EC budget contribution
- SDG 3 was narrowly addressed by topics and projects in the theme HEALTH.
- SDG 3-related projects were significantly larger than the FP7\*average. Compared to FP7\*, a disproportionate high share of SDG 3 related projects was carried out and coordinated by universities.

##### Summary of results:

- 593 topics or 17 % of all topics called for in FP7\* were relevant to the objectives of SDG 3
- Under these, some 1330 projects were carried out with a financial contribution of € 6.2 billion or 23 % of the designated EC research budget
- The themes HEALTH, ICT and Materials (MNP) in SP ‘Cooperation’ contained the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 3 was significantly larger than the average size of projects in FP7\* as a whole
- Two thirds of the projects were funded under the scheme of ‘small and medium sized’, which was largely overrepresented compared with FP7\* as a whole, whereas ‘any-size’ projects and coordination and support action projects were underrepresented
- A large share of the research was carried out by universities, which were considerably overrepresented, especially as coordinators. Research institutes and private organisations were underrepresented, especially as coordinators
- About 6 % of related projects required international cooperation, which was higher than the FP7\* average
- The largest number of coordinators were from the UK, Germany, Netherlands and Italy, with UK and Netherlands being somewhat overrepresented

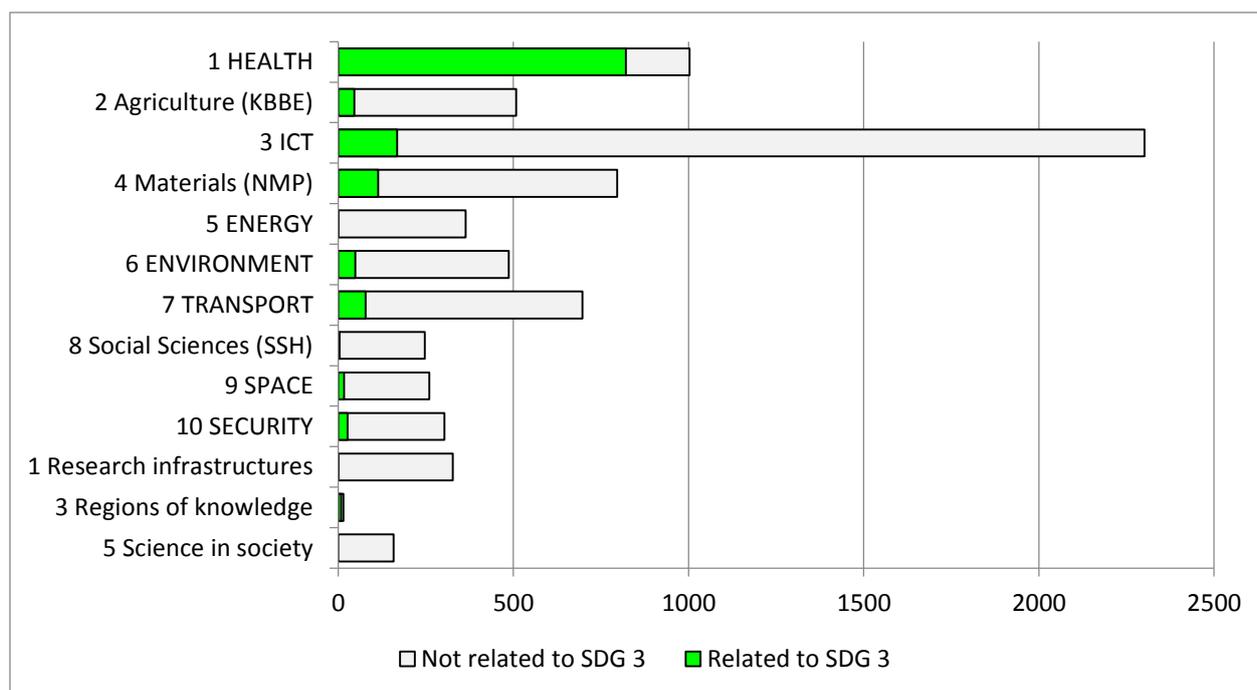
#### 3.3.2 Detailed analysis

About 18 % of all topics called for under SP ‘Cooperation’ and 1 % under SP ‘Capacities’\* are relevant for the objectives of SDG 3. This is equivalent to approximately 590 topics called for in the Work Programmes 2007-2013. The theme HEALTH in SP ‘Cooperation’ contains the largest number of topics related to the objective of SDG 3 – about 360 topics or almost 80 % of all topics called for under this theme. This is not surprising since SDG 3 focuses primarily on the promotion of and access to health. Other themes in SP ‘Cooperation’ which also contain a sizeable share of topics with relevance to SDG 3 are TRANSPORT (about 50 topics or 8 % of all its topics), Agriculture (KBBE) (about 50 topics or 10 % of all its topics), Materials (NMP) (about 45 topics or 15 % of all its topics) and ENVIRONMENT (about 40 topics or 12 % of all its topics). Overall, all themes in SP ‘Cooperation’ contain at least a few topics relevant to SDG 3 (See Figure 3.1). In comparison to SP ‘Cooperation’, SP ‘Capacity’ contains a very limited number of related topics, most of which fall under the ‘Regions of knowledge’ theme (about 17 % of all its topics).



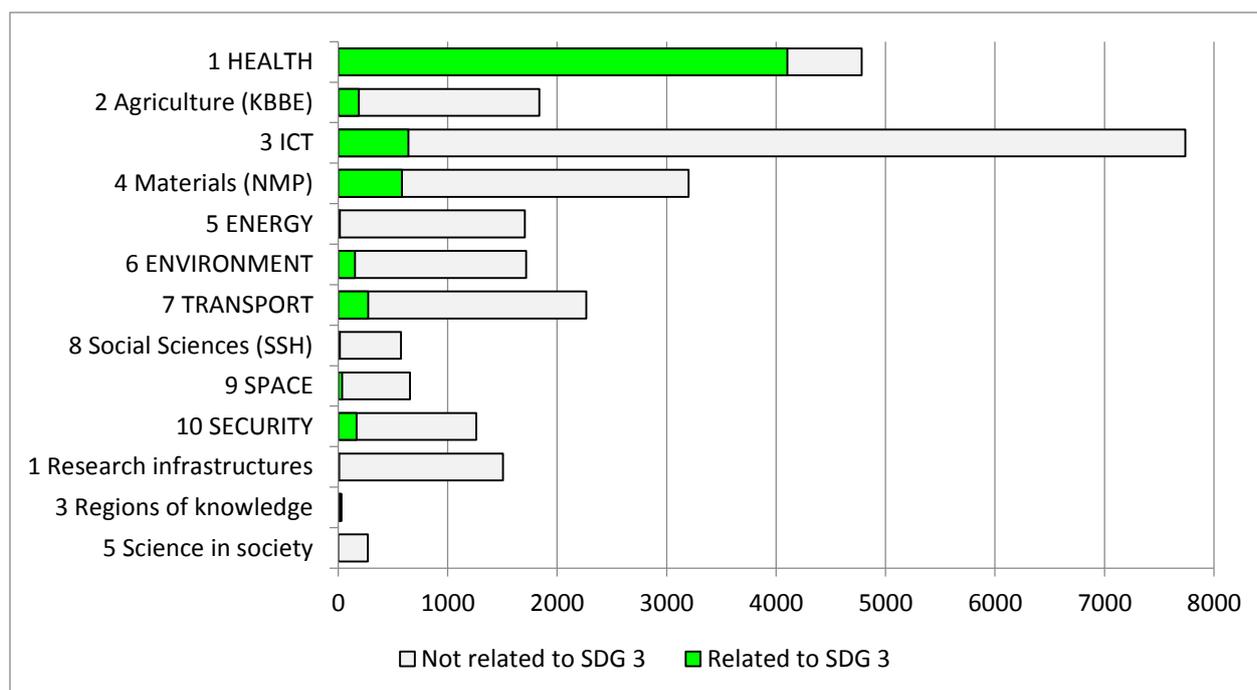
**Figure 3.1:** Number of topics related to SDG 3 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, some 1330 projects related to the objectives of SDG 3 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to 18 % of all projects in both specific programmes. The theme HEALTH still stands out with the largest number of projects with relevance to SDG 3– about 820 projects or almost 82 % of all projects carried out under this theme. The themes Material (NMP), TRANSPORT, ENVIRONMENT and Agriculture (KBBE) also have a high share of projects relevant for SDG 3 (between 10 % and 14 % of all projects in these themes), however, it is the theme ICT that contains the second-largest number of relevant projects - about 170 projects, corresponding to 7 % of all projects under this theme. About 53 % of all projects in the theme ‘Regions of Knowledge’ in ‘SP ‘Capacities’ also relate to SDG 3, however due to the small size of the theme this is equivalent to some 8 projects only.



**Figure 3.2:** Number of projects related to SDG 3 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP7\*, some € 6,200 million or almost 23 % of the budget of SP ‘Cooperation’ and SP ‘Capacities’\* was allocated to projects relevant to SDG 3. The lion share of this financial contribution – € 6,170 million - came from SP ‘Cooperation’ and only about 28 € million from SP ‘Capacity’. The HEALTH theme constituted the largest source of funding in this respect, with almost € 4,100 million or 86 % of its budget being distributed to projects with relevance for SDG 3. The themes ICT and Materials (NMP) also stand out in terms of their financial contribution to projects promoting health and well-being, having allocated respectively € 640 million (8 % of the overall budget of ICT) and € 580 million (18 % of the overall budget of Materials (NMP)). About 62 % of the funding provided by the theme ‘Regions of Knowledge’ in SP ‘Capacities’ was allocated to projects relevant for SDG 3. However, due to the small budget of this theme, in real terms this amounted to some € 19 million.



**Figure 3.3:** Total EC contribution (€ million) to projects related to SDG 3

Over the period 2007 to 2013, the financial contribution from the EC to projects relevant for SDG 3 was highest in 2013, with some € 1,050 million, and lowest in 2008, with some € 724 million. However, in relative terms the largest share of the EC research budget relevant for SDG 3 was observed in 2012 – almost 30 %.

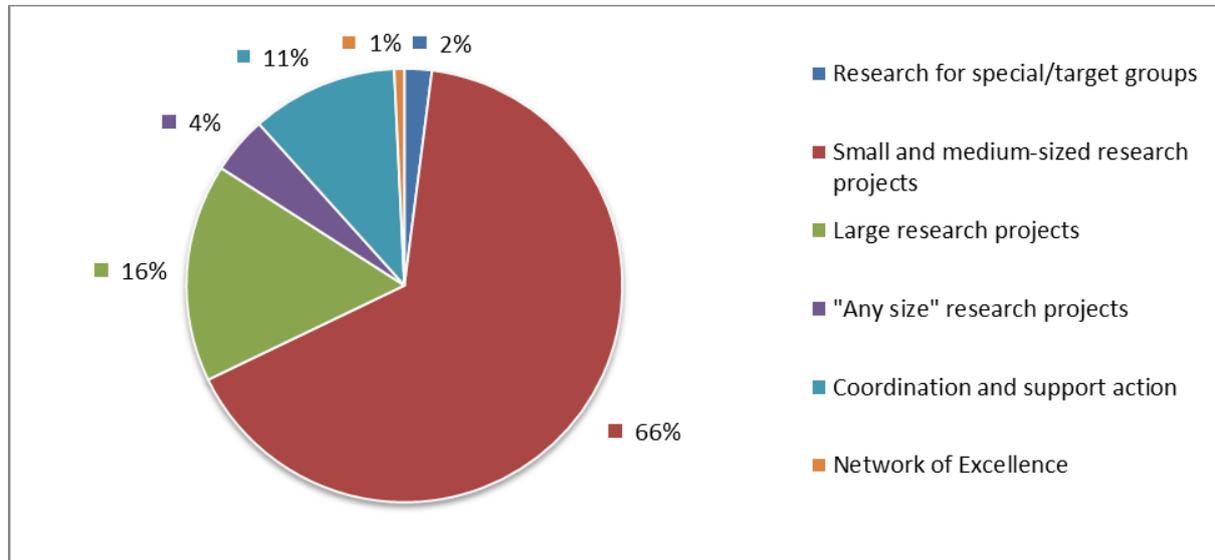
The highest number of projects relevant for SDG 3 was recorded in 2007 - about 220 projects or 16 % of all projects carried out in SP ‘Cooperation’ and SP ‘Capacity’ that year. The highest number of topics with relevance to SDG 3 were also called for in 2007 - some 114 topics.

Figure 3.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. Some 880 projects or nearly 66 % of all projects that were relevant for the objectives of SDG 3 were small and medium-sized research projects. This type of projects also received the highest financial contribution from the EC – about € 3,350 million or 54 % of all the EC funding allocated to SDG 3 relevant projects. Large scale research projects constituted the second largest scheme in terms of number of projects (about 220) and EC contribution (about € 2,260 million), followed by Coordination and support action (some 145 projects, having received 190 € million).

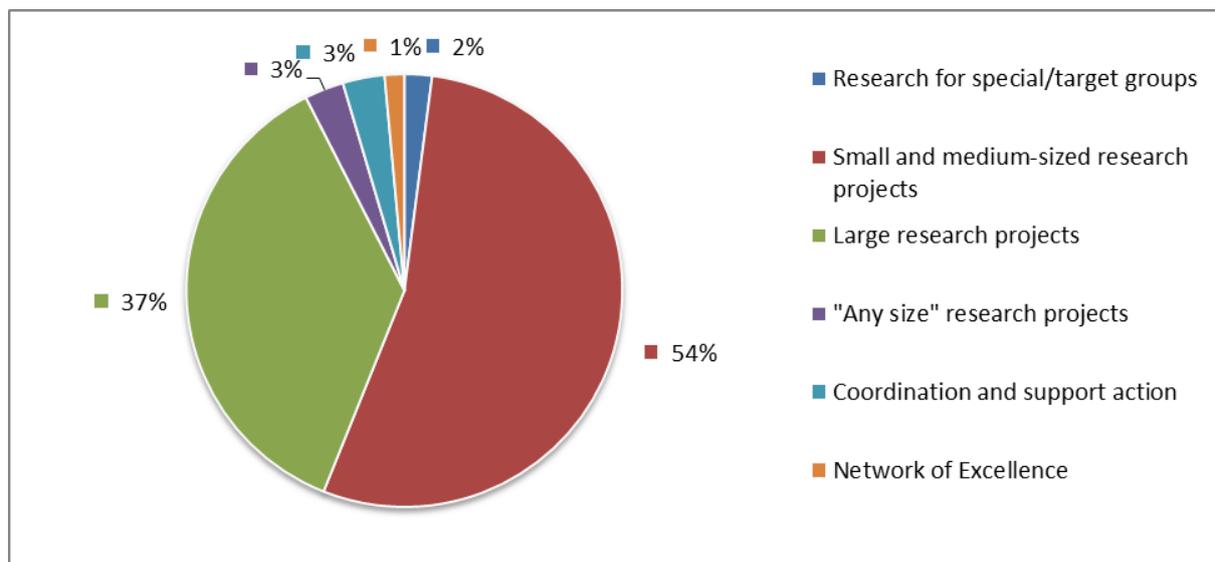
Compared with FP7\* as a whole, a substantially higher share of projects relevant to SDG 3 were small and medium-sized research projects and these received a higher share of the EC contribution. Large-scale research projects were also slightly overrepresented compared with FP7\* as a whole. In contrast, ‘any size’ research projects and coordination and support action projects were underrepresented compared with FP7\* as a whole.

It is interesting to note that despite the dominance of small and medium-sized projects, the average size of projects related to SDG 3 was substantially larger compared with the average size of FP7\* projects. Projects related to SDG 3 received € 4.7 million on average, whereas an average FP7\* project received € 3.7 million. In fact, projects related to SDG 3 had the largest average size compared with projects related to other SDGs.

Looking at the funding schemes, about 6 % of the projects with relevance to SDG 3 were carried out with the aim of strengthening international cooperation<sup>21</sup>. These received about 5 % of the EC contribution relevant to SDG 3 (some € 280 million). In comparison, a slightly lower share of projects in FP7\* as a whole required international cooperation (about 3 %) and these received about 3 % of the designated EC research budget.



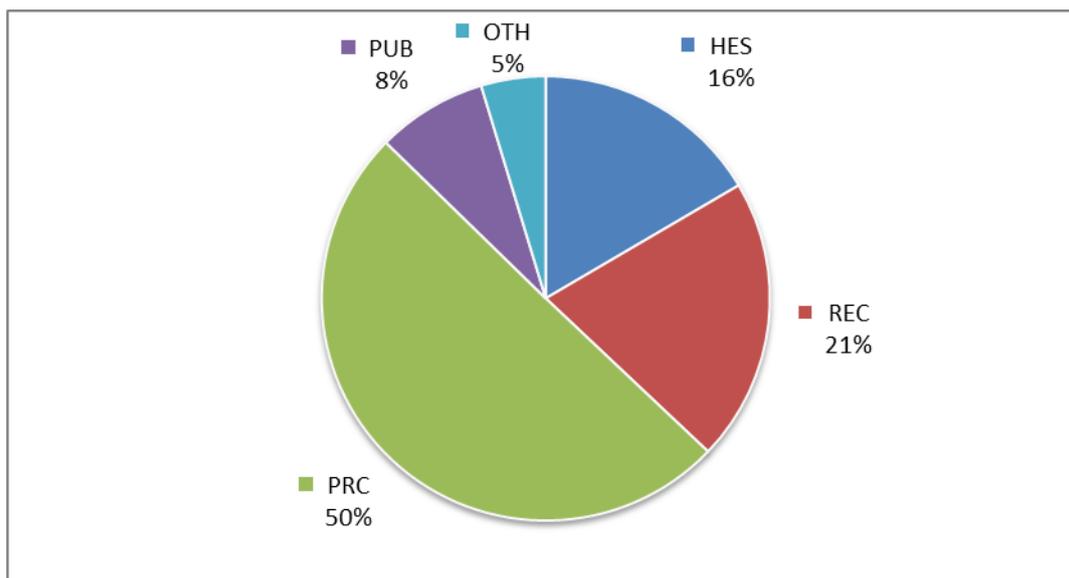
**Figure 3.4:** Projects related to SDG 3, by funding scheme



**Figure 3.5:** EC contribution to projects related to SDG 3, by funding scheme

For the entire period between 2007 and 2013, over 5,660 organisations participated in projects related to SDG 3. As shown in Figure 3.6, private for-profit organisations accounted for about 50 % of all participants, followed by research organisations (about 21 %) and higher education institutions (about 16 %). Public bodies and other types of organisations were also involved but to a more limited extent - with only 8 % and 5 % of all participating organisations falling in these categories respectively.

<sup>21</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.



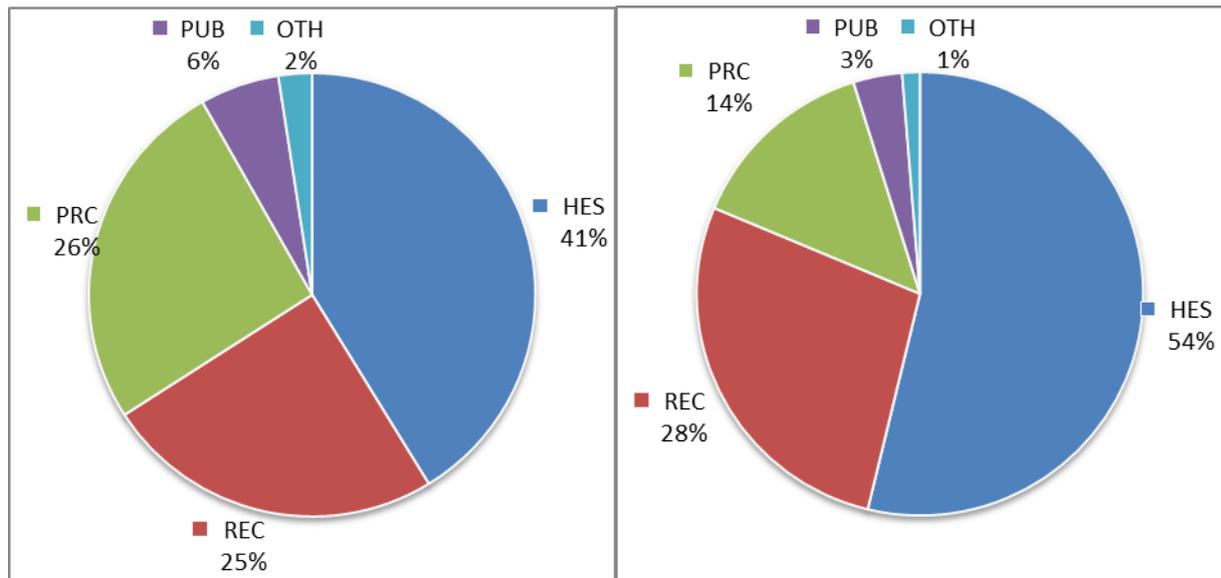
**Figure 3.6:** Organisations participating in projects related to SDG 3

The distribution across organisation types is different when looking at the number of project participations<sup>22</sup> relevant for SDG 3. The large number of private-for-profit organisations participated in one to two projects on average, whereas research organisations participated on average in three projects and higher education institutions in seven projects. This explains the high share of project participations from higher education institutions and research organisations, at 41 % and 25 % respectively (see Figure 3.7). Although not in a leading position, private organisations also constituted a large number of project participations related to SDG 3 (26 %).

Not only did higher education institutions participate in more projects related to SDG 3, but the majority of them also acted as project coordinators. As shown in Figure 3.7, 54 % of the projects with relevance to SDG 3 were coordinated by higher education institutions, 28 % by research organisations and only 14 % by private for-profit organisations. In contrast, public bodies and other types of organisations were involved as project coordinators to a very limited extent.

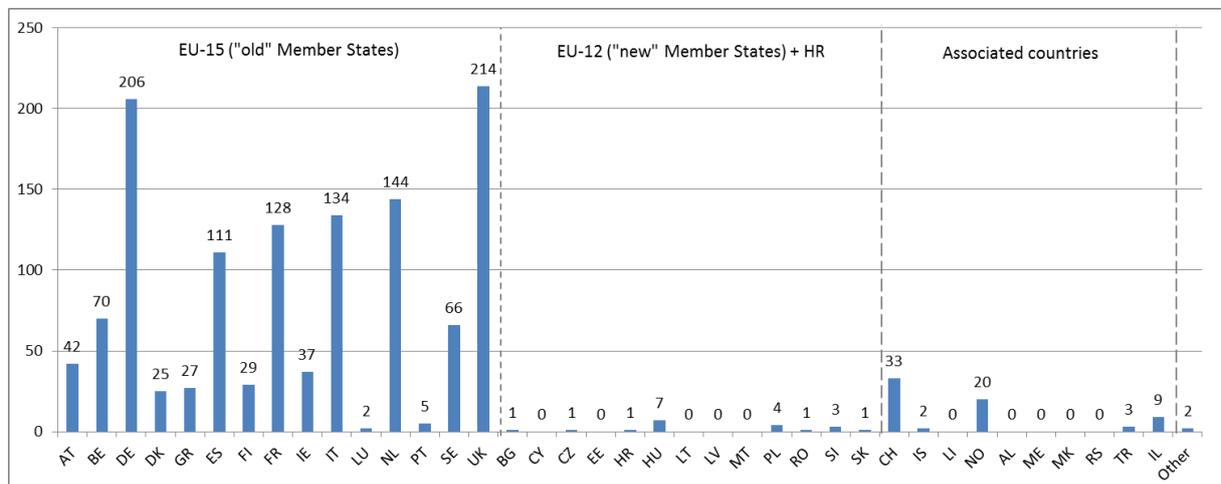
Compared with FP7\* as a whole, private-for-profit organisations were underrepresented in projects related to SDG 3, whereas higher education institutions were substantially overrepresented, especially as coordinators.

<sup>22</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 3.7:** Participations in projects related to SDG 3, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, 93 % of the projects related to SDG 3 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 3.8), in particular the UK and Germany (16 % each), followed by the Netherlands (11 % each), France and Italy (10 % each). In contrast, just over 1 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), mainly from Hungary, Poland and Slovenia. Some 4 % of the projects coordinators came from other European (non-EU) countries, in particular Switzerland and Norway.



**Figure 3.8:** Geographical location of coordinators of projects related to SDG 3

### 3.3.3 Project cases

**Project title:** *Advanced Immunization Technologies (ADITEC)*

**Project coordinator:** SCLAVO VACCINES ASSOCIATION (ITALY)

**Duration:** 10/01/2011 to 09/30/2016

**Costs:** € 40 million; **EC contribution:** € 30 million

**Funding scheme:** Large-scale integrating project

**Project abstract:** Vaccines so far have been developed mostly by following an empiric approach. To prevent and possibly cure unresolved and emerging infectious diseases we need to fully exploit the potential of the human immune system. Progress in science and technology makes it possible to achieve what was previously deemed impossible. The scope of this project is to produce knowledge necessary to develop novel and powerful immunization technologies for the next generation of human vaccines. This goal requires a multidisciplinary approach in which diverse but complementary scientific disciplines and technologies converge. Therefore some of the most competitive European research groups from public institutions and biotechs have agreed to join forces in ADITEC, together with top US groups on systems biology and adjuvants to support this enterprise. A systems biology approach will be used to study licensed and experimental vaccines in patient characterization studies and in clinical trials, to investigate the effect of adjuvants, vectors, formulations, delivery devices, routes of immunization, homologous and heterologous prime-boost schedules, as well as the impact of host factors such as age, gender, genetics and pathologies. Animal models will be used to complement human studies, and to select novel immunization technologies to be advanced to the clinic. To address these issues in a coordinated manner, ADITEC is organised on a matrix structure in which research themes and experimental approaches feed into each other. Training curricula will be created to impact on the formation of the next generation of EU researchers in the field. ADITEC scientists and institutions are part of the "Sclavo Vaccines Association" (SVA), which is dedicated to vaccines and vaccine research. SVA, acting as the coordinating institution, guarantees the long-term commitment and sustainability of this initiative, beyond the duration of ADITEC itself.

**Website:** <http://www.aditecproject.eu/>

**Project title:** *Inhibiting Nef: a novel drug target for HIV-host interactions (INEF)*

**Project coordinator:** UNIVERSITEIT GENT (BELGIUM)

**Duration:** 01/01/2008 to 06/30/2011

**Costs:** € 3 million; **EC contribution:** € 2.5 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** Although HIV-1 Nef was originally named “negative factor”; it has been shown to be critical for efficient persistence of HIV-1 infected humans thus playing a major role in the progression to AIDS. Remarkably; until now Nef has not been evaluated as an antiretroviral drug target. It is well established that Nef promotes HIV-1 replication and facilitates viral immune evasion by interacting with various host factors. Disrupting these essential interactions may delay or even prevent disease progression. Partners in this consortium have already identified small molecule inhibitors targeting Nef function. The first objective of this project is therefore to validate the molecular events elicited by these molecules in both virus-free as well as in HIV infection in vitro assays. In a complementing approach, small compound libraries already available to the consortium will be used and adapted to screen for inhibitors of Nef induced modulation of cellular receptors, NFAT activation and the Nef SH3 binding domain, that likely contribute to the importance of Nef in HIV-1 pathogenicity. In addition, functional screenings to discover drugable cellular Nef partners using RNA interference libraries will be performed. After validation of their importance in relation to the established host proteins co-interacting in the Nef cellular pathways, a selection will be additionally targeted by the developed small molecule inhibitors. Our ultimate goal is to deliver a complementary portfolio of candidate drugs that target the most important parameters in the Nef-host interaction pathway.

Critical cellular interaction partners are much more conserved than viral enzymes that are usually targeted in highly-active-antiretroviral therapy (HAART). Therefore, it is believed by the partners that the novel approach presented in this project proposal will yield compounds less likely to be subject to the occurrence of drug resistance

**Website:** <http://www.inef.ugent.be/>

## 3.4 SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

### 3.4.1 Overview – main results

#### Main findings:

- SDG 4 is one of the least addressed in FP7\* research in terms of topics and projects and also received some of the smallest EC budget contribution
- SDG 4 could be defined as cross-cutting by projects, i.e. SDG 4 related projects appear in almost all themes of SP 'Cooperation' and SP 'Capacities'\*.
- SDG 4-related projects were significantly smaller than the FP7\*average. Compared to FP7\*, a disproportionate high share of SDG 4 related projects was carried out and coordinated by universities. Projects requiring international cooperation were somewhat overrepresented.

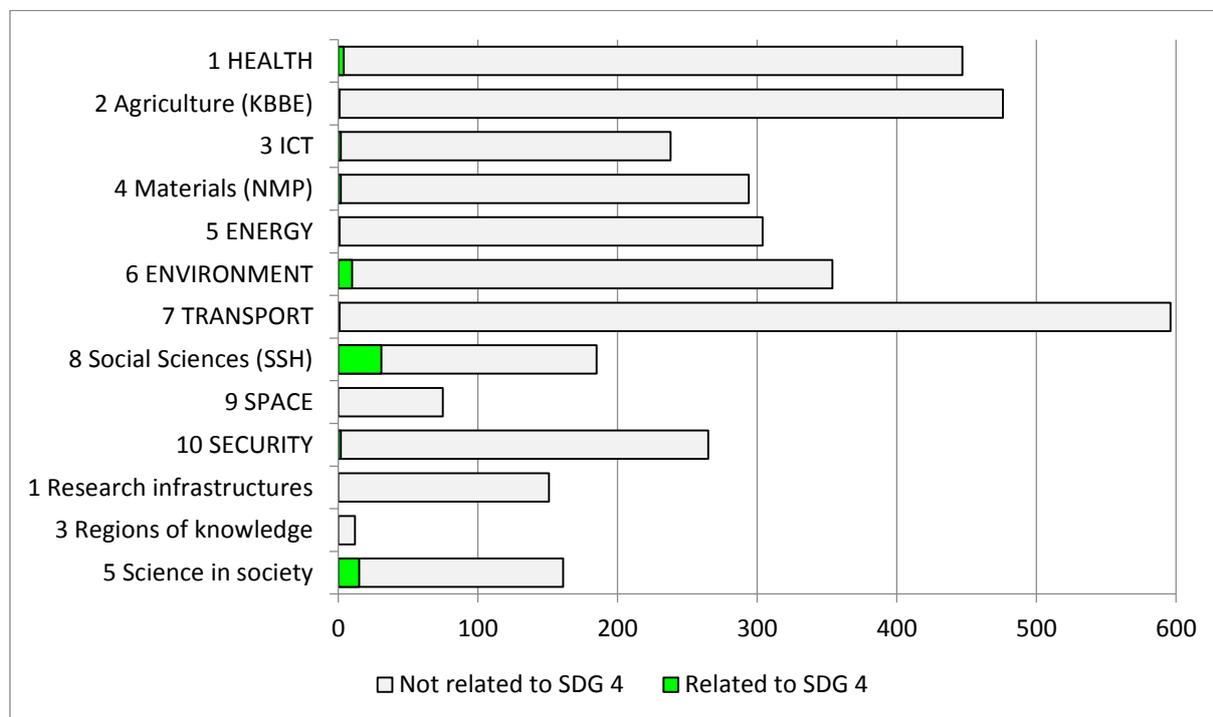
#### Summary of results:

- 70 topics or 2 % of all topics called for in FP7\* were relevant to the objectives of SDG 4
- Under these, some 110 projects were carried out with a financial contribution of € 317 million or 1 % of the designated EC research budget
- The themes Social Sciences (SSH) in SP 'Cooperation' and 'Science in Society' in SP 'Capacities' contained the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 4 was significantly smaller than the average size of projects in FP7\* as a whole
- Over two thirds of the relevant projects were funded as 'small and medium-sized' projects or 'coordination and support action'. Both groups were overrepresented compared with FP7\* as a whole, whereas large-scale projects were underrepresented
- Most of the research was carried out by universities, which were considerably overrepresented compared with FP7\* as a whole, whereas research institutes and private-for-profit organisations were underrepresented
- About 9 % of related projects required international cooperation, which was higher than the FP7\* average
- The largest number of coordinators were from Germany, the UK and the Netherlands. Coordinators from the 'old' Member States (EU-15) were somewhat underrepresented compared with FP7\* as a whole

### 3.4.2 Detailed analysis

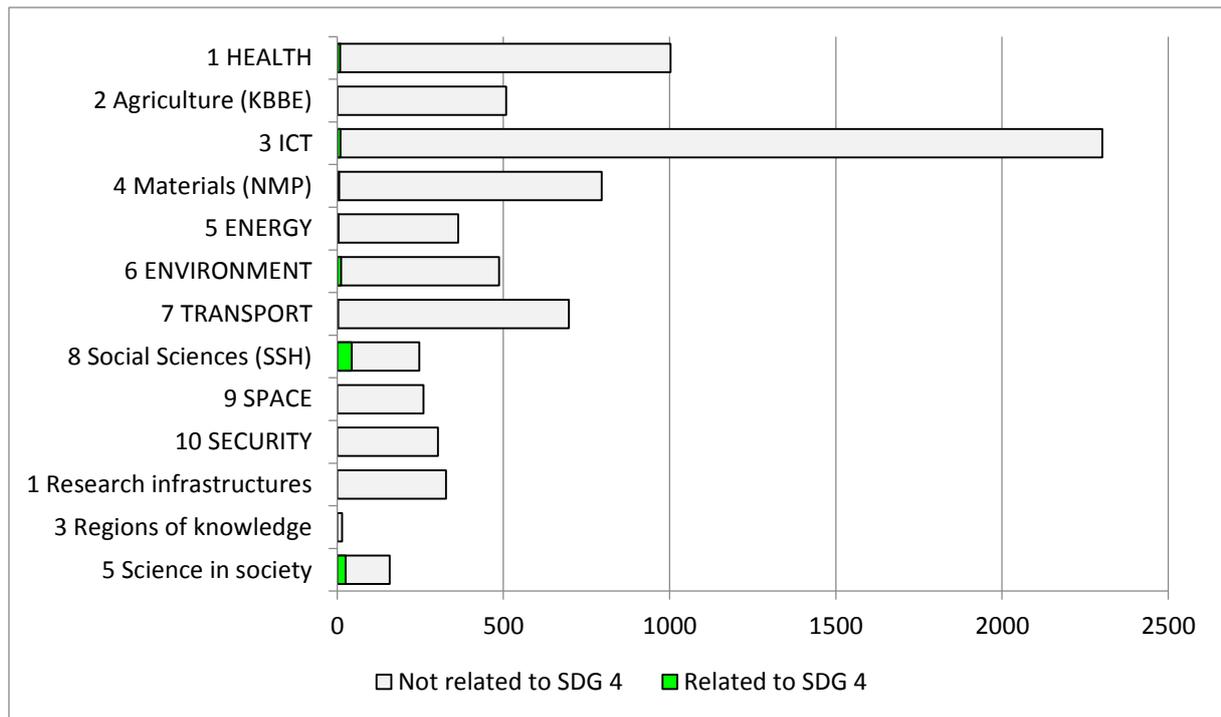
In the period between 2007 and 2013, some 70 topics relevant for the objectives SDG 4 were called for in SP 'Cooperation' and SP 'Capacities'\*. These corresponds to just 2 % of all topics called for in FP7\*. Within the different themes, the number of topics having a direct link to SDG 4 is also low (see Figure 4.1). The highest number of topics relevant for SDG 4 can see seen in the theme Social Sciences (SSH) in SP 'Cooperation' (about 30 topics) and the theme 'Science in society' in SP 'Capacities' (about 15 topics). These correspond to 17 % and 9 % of all topics in the respective themes. The relatively higher share of topics relevant for SDG 4 in the above themes is not surprising since the provision of education and vocational skills is a predominantly social issue.

The theme ENVIRONMENT in SP ‘Cooperation’ contains some 10 topics relevant for SGD 4, which is equivalent to 3 % of all topics in the theme. These are mostly related to SDG 4.7, which calls for the education of people in the principles of sustainable development. In the rest of the themes, under 1 % of topics relate to SDG 4.



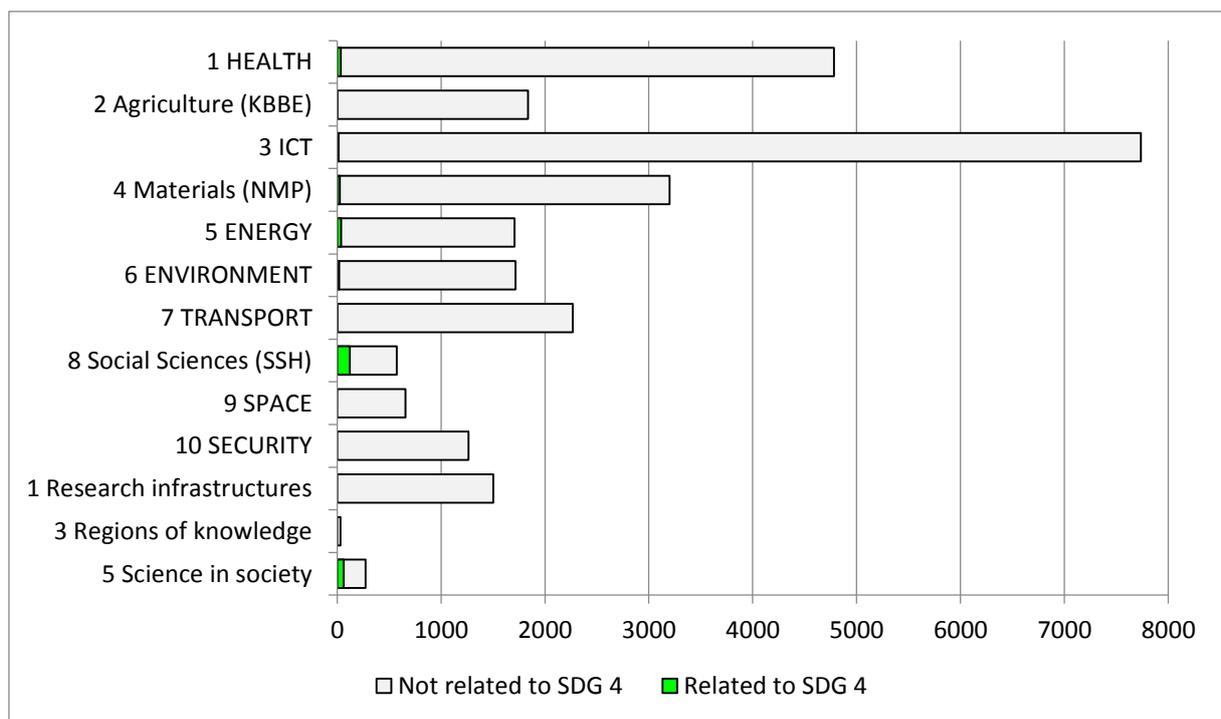
**Figure 4.1:** Number of topics related to SDG 4 in SP ‘Cooperation’ and SP ‘Capacities’\*

Only 1.5 % of all projects carried out in SP ‘Cooperation’ and SP ‘Capacities’\* are relevant for the objectives of SDG 4 (Figure 4.2). This corresponds to some 110 projects, most of which were carried out under the themes Social Sciences (SSH) (about 45 projects) and ‘Science in society’ (about 25 projects). These correspond to 18 % and 16 % of all projects in the respective themes. Around 10 projects relevant for SDG 4 could also be seen in the themes ICT and ENVIRONMENT.



**Figure 4.2:** Number of projects related to SDG 4 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of the financial contribution provided by the EC to FP7\* projects, some € 317 million or 1.2 % of the total budget were allocated to projects relevant for SDG 4 (Figure 4.3). SP ‘Capacities’\* had a higher share of its budget (3.5 %) allocated to projects relevant for SDG 4 than SP ‘Cooperation’ (1 %). The theme Social Sciences (SSH) was the largest source of funding with € 121 million. This constituted half of the budget related to SDG 4 in SP ‘Cooperation’. SP ‘Capacities’\*, in particular the ‘Science in society’ theme, contributed € 63 million. This constituted 23 % of the total budget of the theme ‘Science in society’.



**Figure 4.3:** Total EC contribution (€ million) to projects related to SDG 4

In the period between 2007 and 2013, the highest EC contribution to projects relevant for SDG 4 was reached in 2013 (€ 0.08 billion). However, in relative terms this was only 1.7 % of the total EC contribution that year. In 2009 and 2013, over 2 % of the projects and 3 % of the topics in FP7\* had a direct link to SDG 4. These are the highest shares recorded in the considered time period. In absolute terms, the highest number of projects related to SDG 4 was recorded in 2013 (some 26 projects). The highest number of relevant topics was also recorded that year and in 2009 (some 12 topics).

There are different schemes through which FP7\* projects receive funding, illustrated in Figure 4.4 below. Regarding those projects that are relevant for the objectives of SDG 4, more than half (52 %) were small and medium-sized research projects. This corresponds to some 60 projects. This scheme also received the highest budget - € 0.13 billion or 40 % of the total budget relevant for SDG 4 (see Figure 4.5). The second largest scheme in terms of number of projects was coordination and support action (28 %), followed by large-scale research projects (10 %).

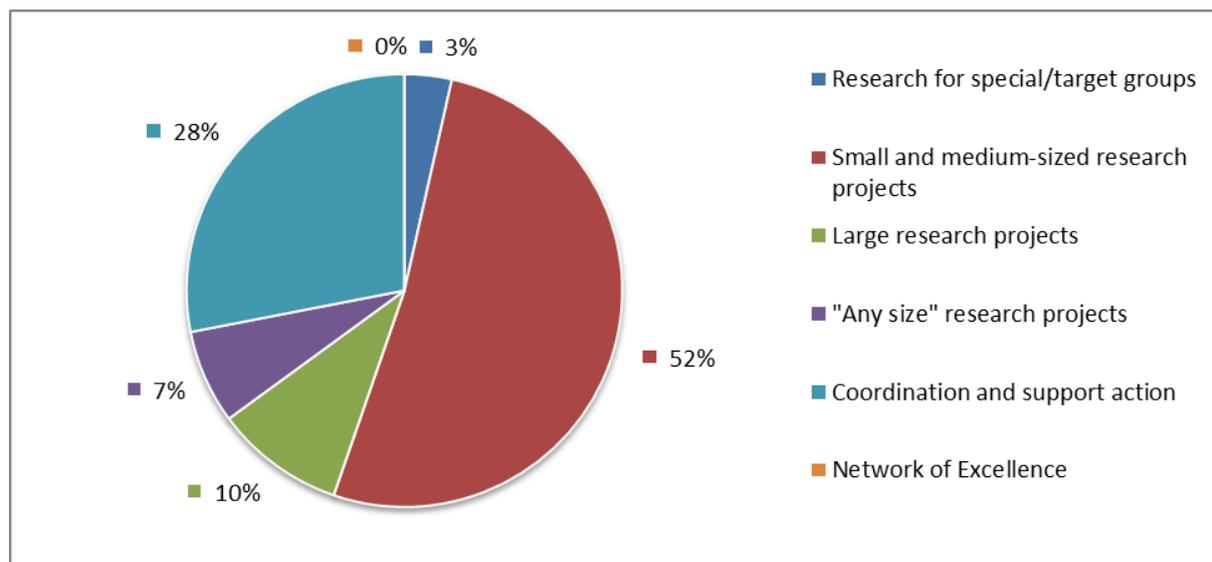
In terms of financial contribution, however, large-scale research projects received slightly higher share of the budget (21 %) than projects defined as coordination and support action (20 %). Projects without a pre-defined size (categorised as 'any-size') constituted only 7 % of all projects relevant for SDG 4, but received 15 % of the designated budget.

At the other end of the scale, projects for the benefit of special/target groups constituted only 3 % of all projects relevant for SDG 4 and received 4 % of the allocated funding. None of the considered projects fell under the scheme 'network of excellence'.

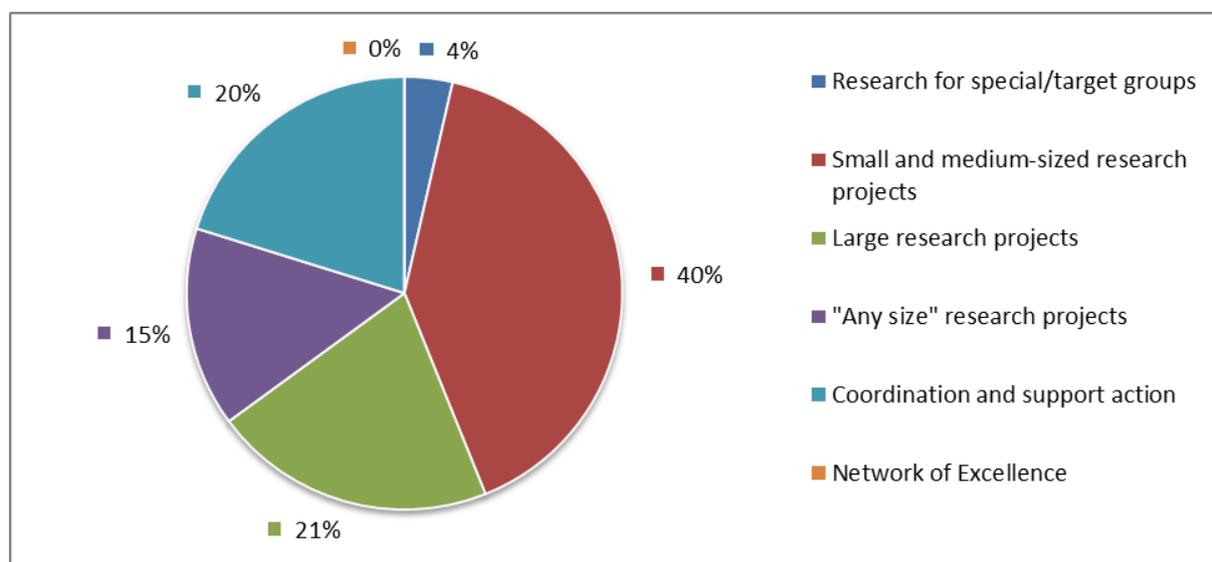
Compared with FP7\* as a whole, a higher share of projects relevant to SDG 4 were small and medium-sized research projects and these received a higher share of the EC contribution. Projects for coordination and support action were also substantially overrepresented compared with FP7\* as a whole. In contrast, large-scale projects and 'any-size' projects were underrepresented compared with FP7\* as a whole.

The relatively small size of projects relevant to SDG 4 is also reflected in their smaller financial contribution from the EC as compared with the contribution to FP7\* as a whole - projects related to SDG 4 received € 2.8 million on average, whereas projects in FP7\* as a whole received € 3.7 million on average.

Regarding the projects that require international cooperation with third countries, about 9 % of the projects and 6 % of the funding relevant for SDG 4 fell in this category. In comparison, a lower share of projects in FP7\* as a whole required international cooperation (about 3 %) and these received about 3 % of the designated EC research budget.



**Figure 4.4:** Projects related to SDG 4, by funding scheme



**Figure 4.5:** EC contribution to projects related to SDG 4, by funding scheme

Overall, more than 940 organisations participated in projects related to SDG 4 (see Figure 4.6). Majority of these were research organisations, with higher education institutions accounting to 45 % of all participants and non-profit research organisation accounting to 21 %. A high share of the participants were also private for-profit organisations (20 %). In contrast, only 6 % of the participating organisation were public bodies.

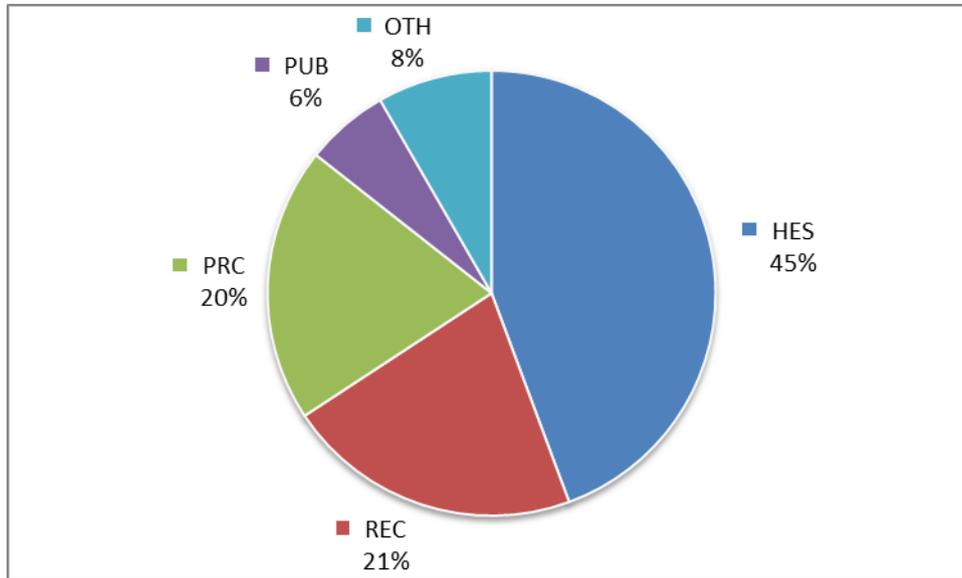
The picture is very similar when looking at the total number of project participations relevant for SDG 4<sup>23</sup> (see Figure 4.7). Higher education institutions were the most involved group (57 % of all project participations). They were also the most common project coordinator (63 % of coordinators). On average, higher education institution participated in two projects, whereas the rest of the organisations participated in one project only.

Non-profit research organisations were the second most involved group, with 19 % of project participations and 21 % of project coordinators. Third in line were private for-profit organisations,

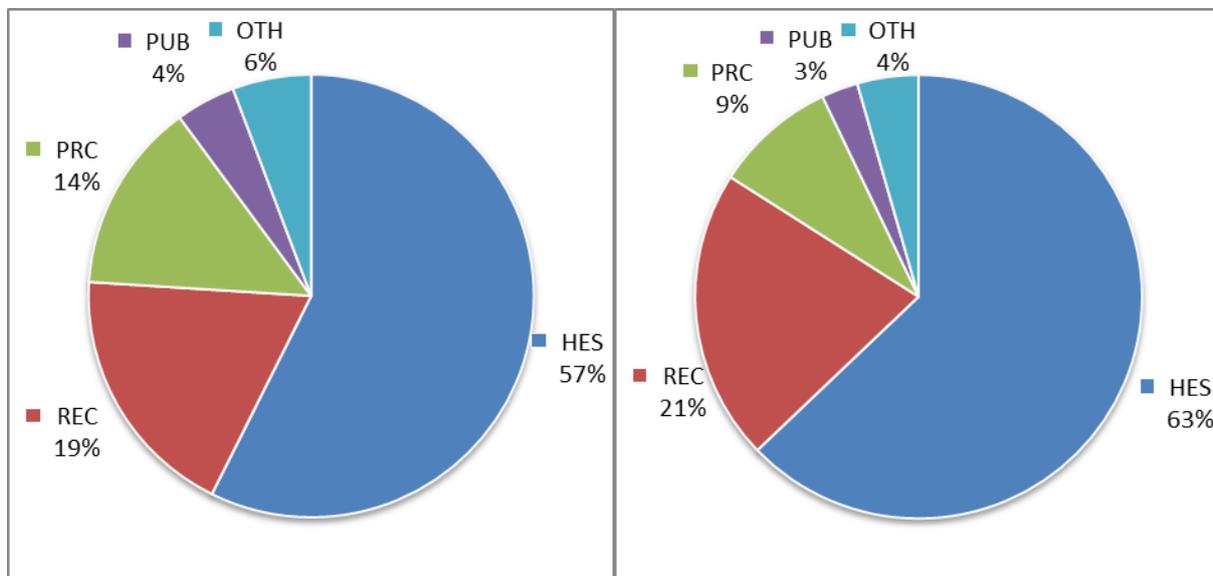
<sup>23</sup> Project participations refer to the number of organisations times their participation in projects.

with 14 % of the participations and 9 % of the coordinators. Public bodies were again the least involved, with only 6 % of participations and 3 % of coordinators coming from the public sector.

Compared with FP7\* as a whole, higher education institutions were substantially overrepresented in projects related to SDG 4. In contrast, research institutes and private-for-profit organisations were significantly underrepresented.



**Figure 4.6:** Organisations participating in projects related to SDG 4



**Figure 4.7:** Participations in projects related to SDG 4, by organisation type type - all project partners (left), project coordinators (right)

In terms of geographical distribution, the majority of organisations coordinating projects relevant for SDG 4 were located in the ‘old’ (EU-15) Member States (about 89 %), which is a lower share than in FP7\* as a whole. Almost 50 % of the coordinators were from Germany, the Netherlands or the United Kingdom alone (see Figure 4.8). Spain, France and Italy were underrepresented in projects related to SDG 4, whereas the Netherlands was overrepresented. About 5 % of the coordinators were located in the ‘new’ Member States (EU-12 plus Croatia). A slightly higher share of coordinators were from other European (non-EU) countries (about 6 %).

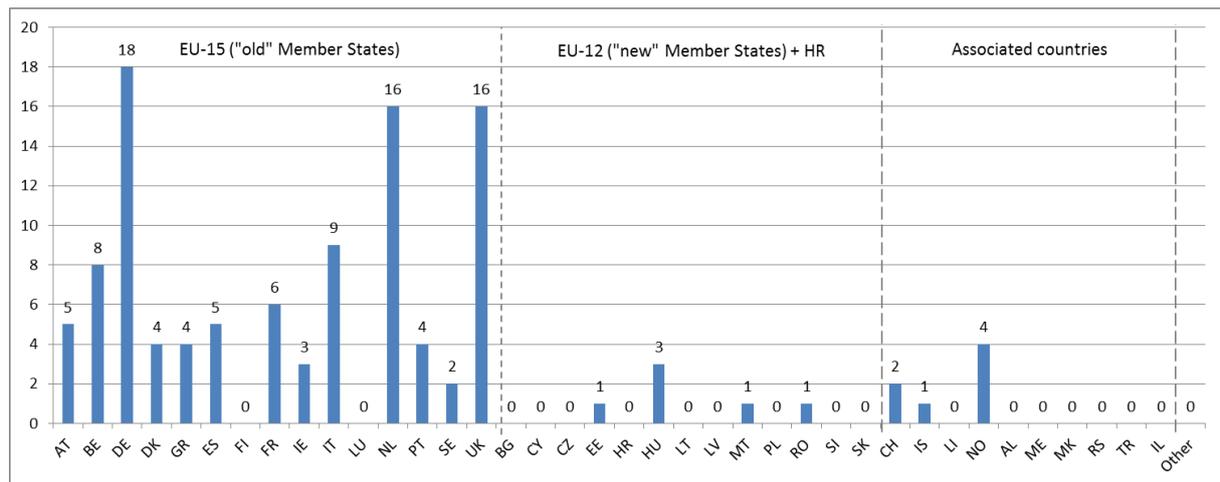


Figure 4.8: Geographical location of coordinators of projects related to SDG 4

### 3.4.3 Project cases

**Project title:** *Reducing Early School Leaving in the EU. (RESL.EU)*

**Project coordinator:** UNIVERSITEIT ANTWERPEN (BELGIUM)

**Duration:** 02/01/2013 to 01/31/2018

**Costs:** € 8 million; **EC contribution:** € 6.4 million

**Project abstract:** Where the available research data on ESL only explains isolated aspects of the evolution towards ESL, the RESL.eu project analyses ESL from a holistic perspective. By framing the complex and often subtle interplay of factors influencing ESL on macro/meso/micro level; and by deconstructing these configurations of influencing factors in the specific contexts where they occur, we expect to uncover specific combinations of variables and contexts influencing the processes related to ESL. This allows us to formulate conceptual models useful for the development and implementation of policies and specific measures to influence ESL, making the project not only relevant to academics, but also to policy makers, school staff and civil society. RESL.eu aims to provide insights into the mechanisms and processes influencing a pupil's decision to leave school/training early; as well as into the decision of ESLers to enroll in alternative learning arenas unrelated to a regular school - but wherein specific creative or innovative methods of knowledge and skill transfer are used. Additionally, RESL.eu focuses on the vulnerable group of youngsters that left education or training early and are identified as NEET (Not in Education, Employment or Training). RESL.eu also aims to identify and analyze the intervention and compensation measures that succeeded in transferring knowledge and in keeping pupils in education/training, although they showed high (theoretical) risk of ESL. In order to be able to compare the data gathered in 7 partner countries, RESL.eu will develop and refine the theoretical framework on ESL, formulating a workable yet nuanced definition of ESL. Through a mixed-method design, a total of 28140 surveys and 1176 interviews/FGD will be conducted, generating in-depth data while allowing systematic comparisons and quantitative generalizations. Results are targeted at different audiences/stakeholders: EU- & national policy makers, school staff, academics and civil society.

**Website:** <https://www.uantwerpen.be/en/projects/resl-eu/>

**Project title:** *Governance of Educational Trajectories in Europe. Access, coping and relevance of education for young people in European knowledge societies in comparative perspective (GOETE)*

**Project coordinator:** JOHANN WOLFGANG GOETHE UNIVERSITAET FRANKFURT AM MAIN (GERMANY)

**Duration:** 01/01/2010 to 12/31/2012

**Costs:** € 3.5 million; **EC contribution:** € 2.7 million

**Project abstract:** The GOETE project will analyse the role of school in re-conceptualising education in terms of lifelong learning by combining a life course and a governance perspective. In European knowledge societies adequacy of education means a balance of individual, social and economic aspects. This is operationalised by exploring how educational institutions conceptualise and organise individual educational trajectories. The study covers the period from transition into lower secondary education to transition into upper secondary education/vocational education and training, i.e. the age group between 10 and 16 years. Comparative analysis will focus on the regulation of access to education, of support measures for coping with education and of securing the relevance of education for social integration and the labour market. In 8 EU countries the mixed-method study involves surveys with students, parents and school principals; comparison of teacher training; case studies of local school spaces; discourse analysis; expert interviews with policy makers and stakeholders. On a scientific level, the comparison of the regulation of educational trajectories involves re-conceptualising the social aspects of learning and education under conditions of late modern knowledge societies. It reflects the need for formal education to be embedded in social life worlds, enabled by social support, and complemented by informal and non-formal learning. On a practice and policy level, it will provide information about alternative means of providing children and young people with access to education; of supporting them in coping with education and ensuring the relevance of education by communication and cooperation between school, labour market, other educational actors, students and parents. The communication of findings will include a dialogic model of educational policy planning at local level, training workshops with teachers, youth workers and policy makers, and a European policy seminar.

**Website:** <http://www.goete.eu/>

## 3.5 SDG 5: Achieve gender equality and empower all women and girls

### 3.5.1 Overview – main results

#### Main findings:

- SDG 5 is one of the least addressed in FP7\* research in terms of topics and projects.
- SDG 5 was narrowly addressed by projects in the theme HEALTH.
- SDG 5-related projects were significantly smaller than the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 5 related projects was carried out and coordinated by universities. Projects requiring international cooperation were significantly overrepresented.

#### Summary of results:

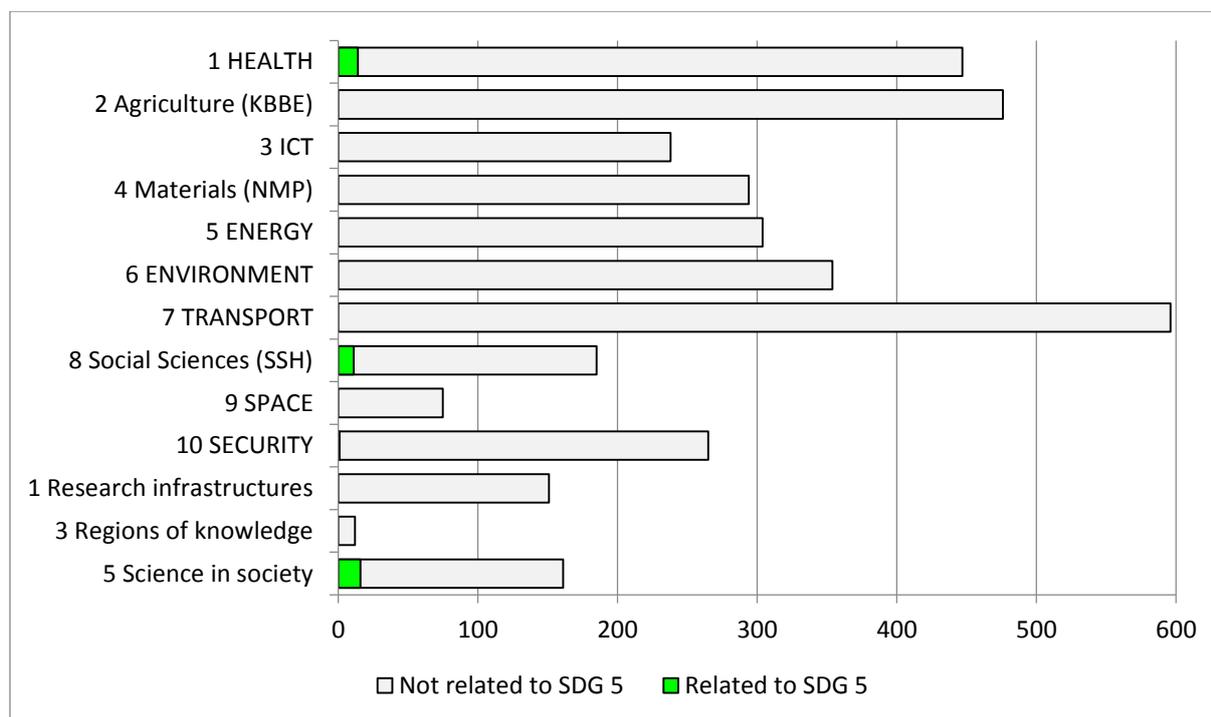
- 43 topics or 1% of all topics called for in FP7\* were relevant to the objectives of SDG 5
- Under these, some 82 projects were carried out with a financial contribution of € 240 million or under 1 % of the designated EC research budget
- The themes HEALTH and Social Sciences (SSH) in SP ‘Cooperation’ and ‘Science in Society’ in SP ‘Capacities’ contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 4 was significantly smaller than the average size of projects in FP7\* as a whole
- Half of the relevant projects were funded as small and medium-sized projects. These were overrepresented compared with FP7\* as a whole, whereas large-scale projects were underrepresented
- Most of the research was carried out by universities, which were considerably overrepresented compared with FP7\* as a whole, whereas private-for-profit organisations were underrepresented
- Almost 40 % of the SDG5 relevant projects required international cooperation, which is significantly higher than FP7\* as a whole
- The largest number of coordinators were from the UK, Belgium and France, all of which were overrepresented compared with FP7\* as a whole, whereas Germany was considerably underrepresented

### 3.5.2 Detailed analysis

Only 1% of the topics called for in SP ‘Cooperation’ and SP ‘Capacities’\* have a direct link to SDG 5. This corresponds to some 43 topics published in the period between 2007 and 2013. The share of relevant topics is higher in SP ‘Capacities’\* (5 %) than in SP ‘Cooperation’ (less than 1 %).

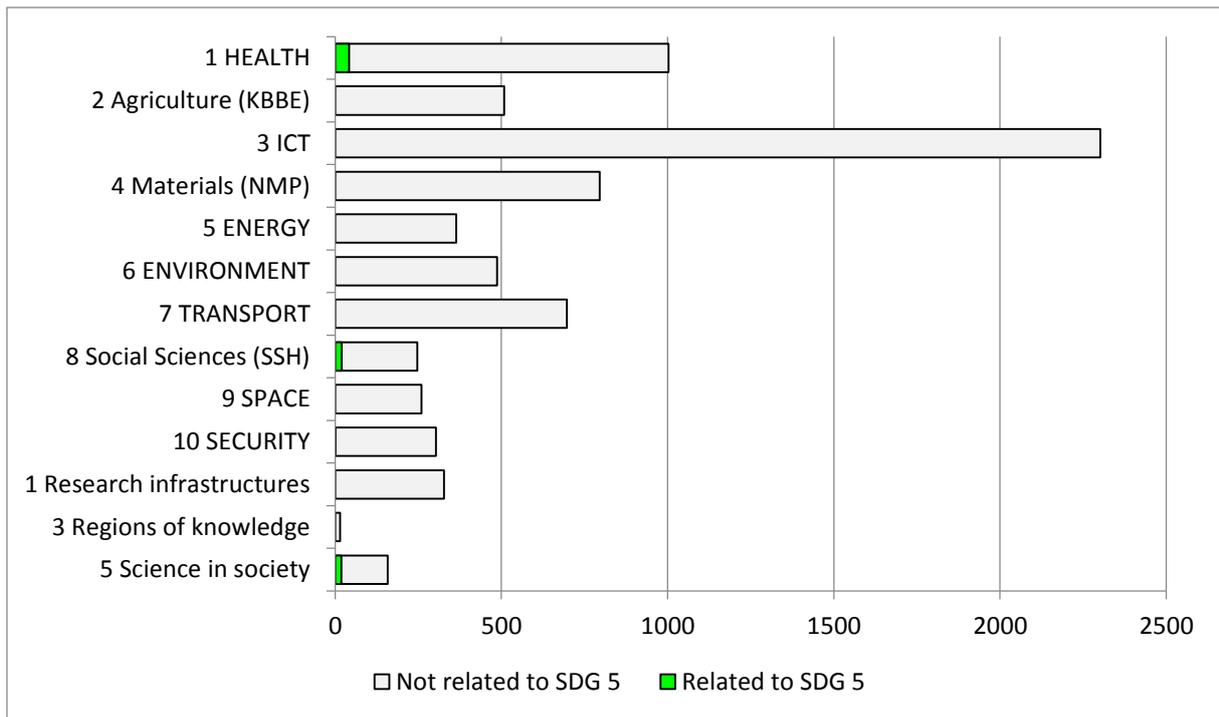
In terms of the distribution across themes, the theme ‘Science in society’ in SP ‘Capacities’\* contains the largest number of topics relevant for SDG 5 – 16 topics or 10 % of all topics in the theme (see Figure 5.1). Only three of the themes in SP ‘Cooperation’ contain relevant topics, namely Social Sciences (SSH), HEALTH and SECURITY. About 6 % of the topics in the theme Social Sciences (SSH) relate to SDG 5. This corresponds to some 11 topics, most of which concern access to economic resources, equal rights and employment opportunities of women. In the theme HEALTH about 14 topics relate to SDG 5, in particular to sub-goal 5.6 which deals with sexual and reproductive health

issues. Only 1 topic in the theme SECURITY has a direct link to SDG 5. It is particularly related to sub-goal 5.2 and addresses the issue of trafficking of women.



**Figure 5.1:** Number of topics related to SDG 5 in SP 'Cooperation' and SP 'Capacities'\*

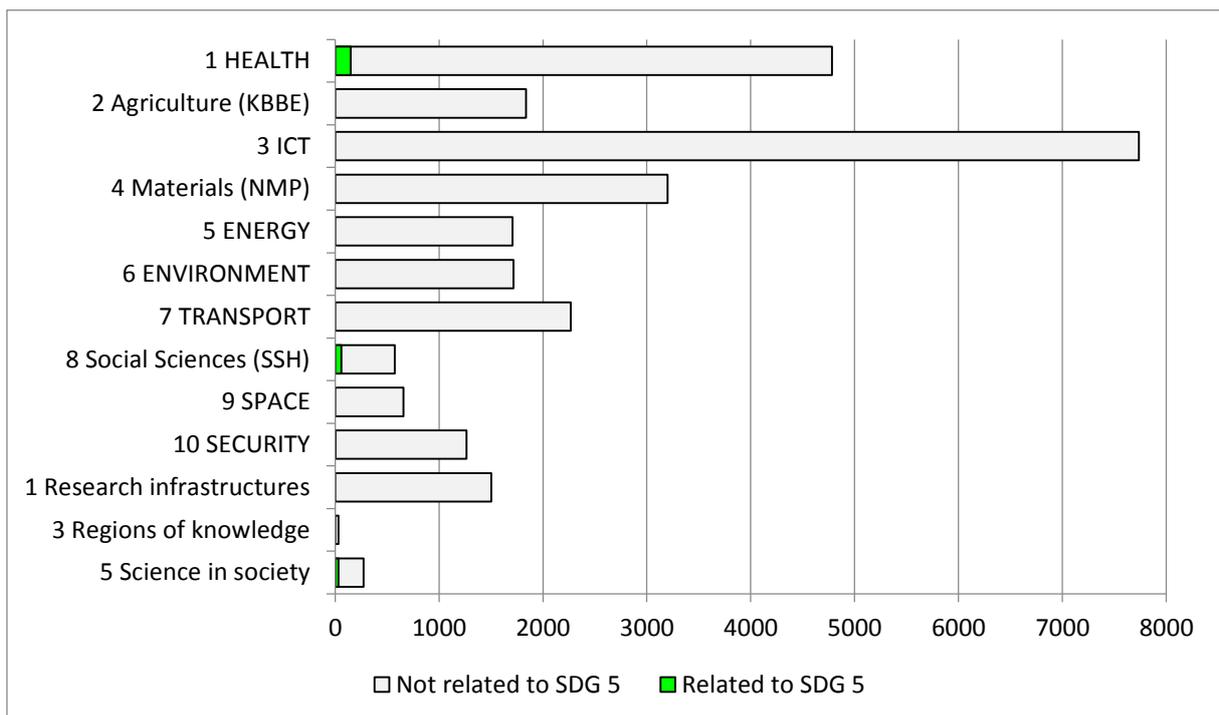
The picture is similar when looking at the number projects with a direct link to SDG 5. About 4 % of projects carried out in SP 'Capacities'\* and 1 % of projects in SP 'Cooperation' relate to the objectives of SDG 5 (see Figure 5.2). This is equivalent to some 82 projects, two thirds of which were carried out in SP 'Cooperation' and one third in SP 'Capacities\*'. The theme HEALTH contained the largest number of relevant projects (42 projects), followed by the themes Social Sciences (SSH) (20 projects), 'Science in society' (19 projects) and SECURITY (1 project). In relative terms, however, it was the theme 'Science in society' that had the highest share of projects related to SDG 5 (12 %). The theme Social Sciences (SSH) came second with 8 %, followed by HEALTH (4 %) and SECURITY (less than 1 %).



**Figure 5.2:** Number of projects related to SDG 5 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, the EC contributed € 240 million to FP7\* projects relevant for SDG 5. As seen in Figure 5.3, more than 85 % of this financial contribution went to projects in SP ‘Cooperation’, in particular in the themes HEALTH (€ 150 million) and Social Sciences (SSH) (€ 60 million). Some additional € 30 million were allocated to the theme ‘Science in society’ in SP ‘Capacities’.

In relative terms, less than 1 % of the budget of SP ‘Cooperation’ and almost 2 % of the budget of SP ‘Capacities’\* had a direct link to the objectives of SDG 5. The themes ‘Science in society’ and Social Sciences (SSH) had the highest share of their budgets going to relevant projects, 11 % and 10 % respectively.



**Figure 5.3:** Total EC contribution (€ million) to projects related to SDG 5

Between 2007 and 2013, the EC contribution to projects relevant for SDG 5 varied substantially. The highest contribution was provided in 2012 (€ 0.66 billion) and the lowest in 2011 (€ 0.24 billion). In relative terms, this constituted 2.2 % and 0.4 % of the total EC contribution to FP7\* projects in the respective years.

The share of topics and projects relevant for SDG 5 was relatively low throughout the period 2007 to 2013. The highest shares of topics relevant for SDG 5 were observed in 2008 (1.7 %) and 2013 (1.6 %). In contrast, less than 1 % of topics were relevant for SDG 5 in 2007 and 2011. Concerning the projects carried out in FP7\*, almost 2 % were relevant for SDG 5 in 2008 and 2012. In contrast, only 0.5 % of the projects carried out in 2011 were related to SDG 5.

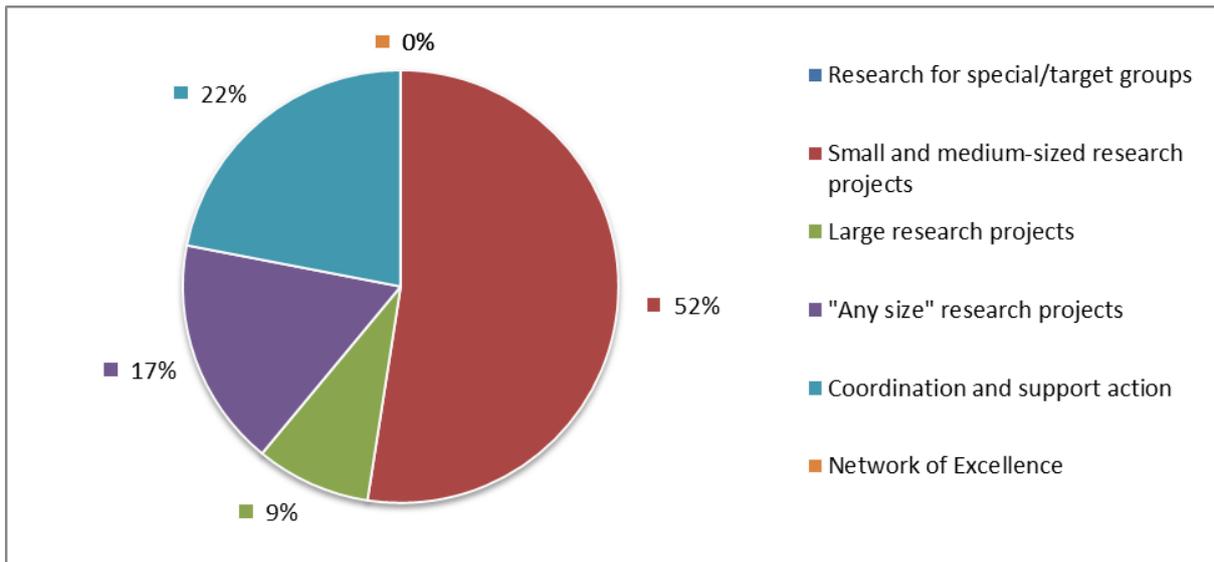
FP7 projects received funding under different schemes, depending on their type and size (see Figure 5.4). Regarding those projects that are relevant for SDG 5, more than 50 % were funded as small and medium-sized research projects (some 43 projects). The second largest group was coordination and support action, with 22 % of the project relevant for SDG 5 funded under this scheme. It was followed by projects without a predefined size (referred as 'any size') and large-scale research projects, with 17 % and 9 % of projects relevant for SDG 5 funded under these schemes respectively. None of the projects relevant for SDG 5 were funded under the scheme 'network of excellence'.

Regarding the financial contribution from the EC going to projects relevant for SDG 5, small and medium-sized research projects received the highest share (54 %). Large-scale research projects came second with 20 % of the designated EC budget, although only 9 % of the topics related to SDG 5 fell under this category. 14 % of the budget was allocated to projects without a predefined size and 12 % to projects involving coordination and support action.

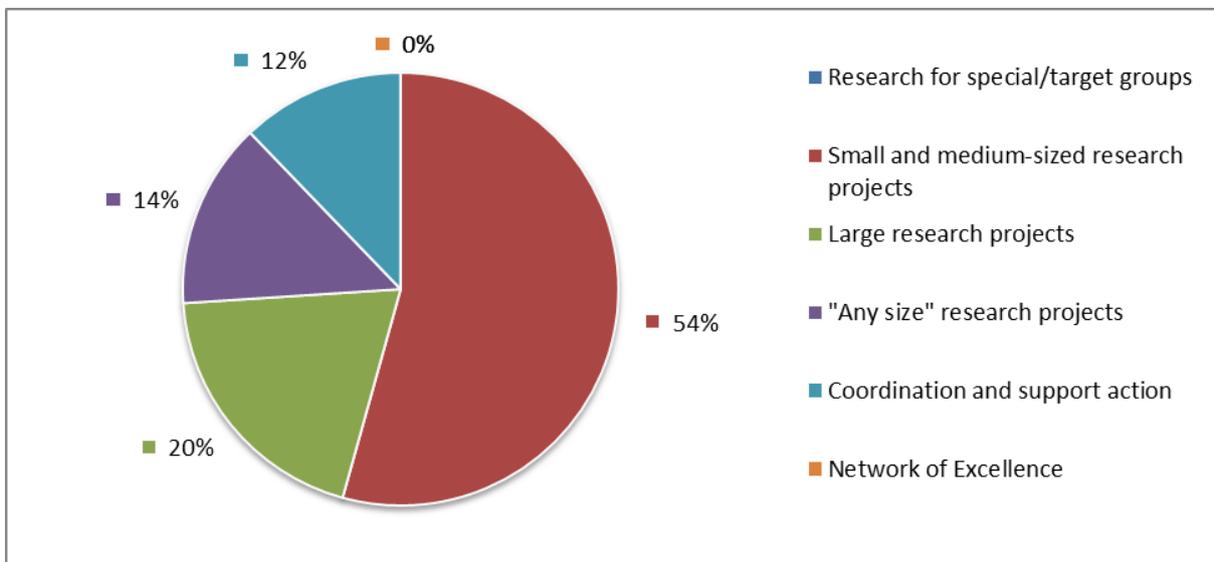
Compared with FP7\* as a whole, a slightly higher share of projects relevant to SDG 5 were small and medium-sized research projects and cooperation and support action. In contrast, large-scale projects and projects addressing the needs of special/targets groups were underrepresented. In particular, a significantly lower share of the designated budget was received by large-scale projects, compared with FP7\* as a whole.

Looking at the funding schemes, a significant share of the projects relevant for SDG 5 required international cooperation (about 40 %). However, due to the overall limited number of projects with a direct link to SDG 5 this corresponds to 31 projects only. An equivalent share of the EC contribution relevant for SDG 5 went to projects requiring international cooperation, 40 % or some € 0.1 billion. In comparison, a much lower share of projects in FP7\* as a whole required international cooperation (about 3 %) and these received about 3 % of the designated EC research budget.

The relatively small size of projects relevant to SDG 5 is reflected in their smaller budgetary contribution from the EC as compared with the contribution received by FP7\* as a whole - projects related to SDG 5 received € 2.9 million on average, whereas projects in FP7\* as a whole received € 3.7 million on average.



**Figure 5.4:** Projects related to SDG 5, by funding scheme



**Figure 5.5:** EC contribution to projects related to SDG 5, by funding scheme

Overall, about 520 organisations have participated in PF7 projects relevant for SDG 5 (see Figure 5.6). Higher education institutions constituted the largest group, with 50 % of the participating organisations coming from academia. About 30 % of the participants were non-profit research organisations. Private organisations and public bodies were less involved, constituting 8 % and 7 % of the participating organisations respectively.

Apart from being the largest groups, higher education institutions and research organisations were also more likely to participate in more than one project. In contrast, private organisations and public bodies participated in only one project on average.

Due to their large number and high average participation, higher education institutions constituted more than half of all project participations<sup>24</sup> related to SDG 5 (6 %). Research organisations constituted the second largest group (30 % of project participations). Private organisations and public bodies held much lower shares, with 8 % and 6 % respectively.

<sup>24</sup> Project participations refer to the number of organisations times their participation in projects.

The picture is very similar when looking at those projects partners who acted as project coordinators. The majority of coordinators (65 %) were higher education institutions, followed by research organisations (24 %). Private organisations and public bodies were less likely to coordinate projects, with only 5 % of coordinators coming from each of these sectors.

Compared with FP7\* as a whole, higher education institutions were substantially overrepresented in projects related to SDG 5, both as project participants and coordinators. In contrast, private-for-profit organisations were significantly underrepresented.

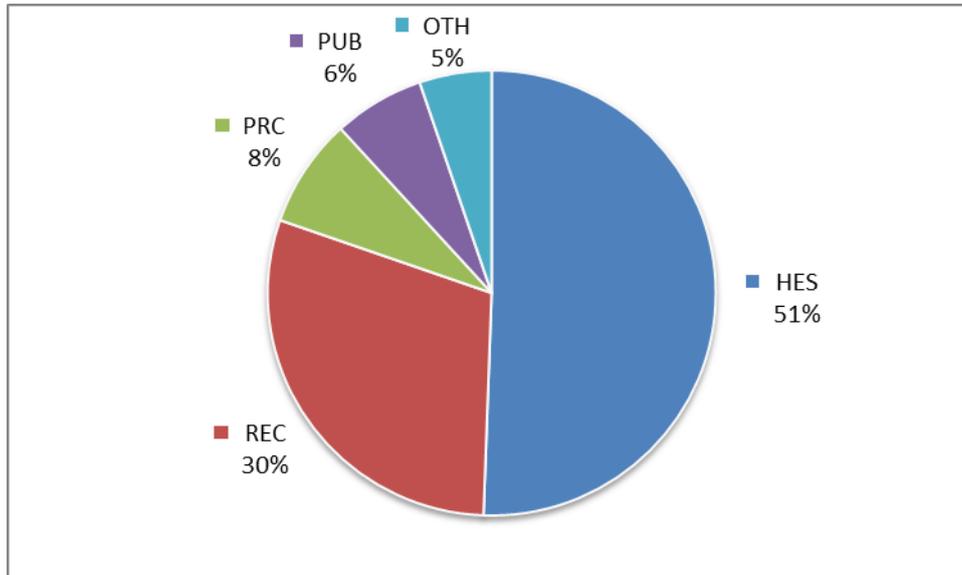


Figure 5.6: Organisations participating in projects related to SDG 5

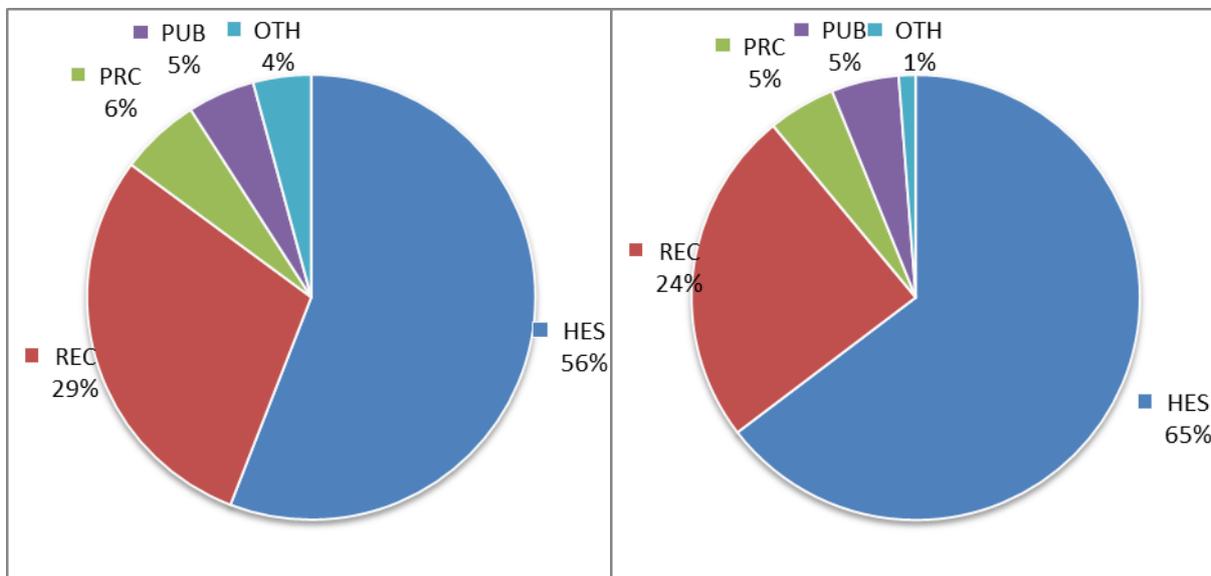


Figure 5.7: Participations in projects related to SDG 5, by organisation type

In terms of geographical distribution, more than 90 % of project coordinators were located in the ‘old’ (EU-15) Member States (see Figure 5.8). The largest number of coordinators were from the UK (17), Belgium (12) and France (11). Coordinators from Belgium and the UK were significantly overrepresented compared with FP7\* as a whole, whereas coordinators from Germany were underrepresented.

Under 3 % of coordinators were from the ‘new’ Member States (EU-12 plus Croatia). In fact, Hungary and Lithuania were the only countries from this group that were represented by project coordinators. Some 6 % of project coordinators were from other European (non-EU) countries, in particular Norway (4 coordinators) and Island (1 coordinator). Coordinators from Norway were slightly overrepresented compared with FP7\* as a whole, whereas coordinators from Switzerland were underrepresented.

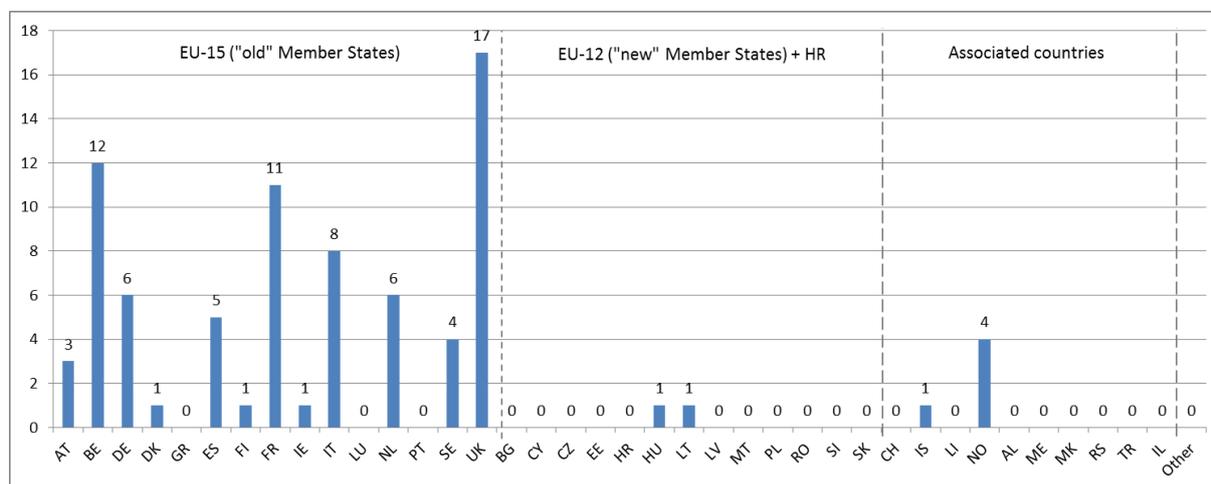


Figure 5.8: Geographical location of coordinators of projects related to SDG 5

### 3.5.3 Project cases

**Project title:** *Expanded Quality management Using Information Power for Maternal and Newborn Health in Africa (EQUIP)*

**Project coordinator:** KAROLINSKA INSTITUTET (SWEDEN)

**Duration:** 11/01/2010 to 10/31/2014

**Costs:** € 3.9 billion; **EC contribution:** € 3 billion

**Funding scheme:** Small or medium-scale focused research project for specific cooperation actions dedicated to international cooperation partner countries

**Project abstract:** Maternal and new-born MDGs 4 and 5 will likely not be met in Africa despite the availability of evidence-based, affordable and appropriate technical interventions. Obstacles persist on both the demand side (low utilization) and supply side (low quality and lack of services), across the continuum of care from pregnancy to postnatal care. Priority must now be given to finding the mechanisms to bridge the "know-do gap". Potential solutions include quality management and community involvement, where both approaches benefit from continuous, locally available, high-quality health information. We propose an innovative intervention in Tanzania and Uganda to improve maternal and new-born health with an expanded health system quality management approach that links communities and facilities using locally generated data. We will use Plan-Do-Study-Act cycles at community, health facility and district level powered by information from continuous multipurpose community and health facility surveys, with results presented in audience-specific report cards. In each country, we will use a plausibility design to evaluate health and quality outcomes in intervention and control districts, each covering 20-30 health facilities and their catchment populations in Tanzania and Uganda. Cost and community effectiveness of this intervention will be estimated with population and facility level indicators. Changes in contextual

factors will be carefully documented to enhance our understanding of how health improvements were achieved. The impact on mortality will be modelled using the Lives Saved Tool. Policymakers will be involved throughout the project. Results will contribute to reaching the MDGs 4&5 in Africa. Furthermore, the intervention could serve as a more general model for scaling-up quality management of other health interventions in low-resource settings.

**Website:** <http://www.equip-project.eu/>

**Project title:** *Effective Gender Equality in Research and the Academia (EGERA)*

**Project coordinator:** FONDATION NATIONALE DES SCIENCES POLITIQUES (France)

**Duration:** 01.01.2014 to 31.12.2017

**Costs:** € 3.9 million; **EC contribution:** € 2.2 million

**Funding scheme:** CSA-SA - Support actions

**Project abstract:** EGERA brings together eight research and higher education institutions in seven EU member states (Belgium, the Czech Republic, France, Germany, the Netherlands, Portugal and Spain) + Turkey, bound by a same commitment to the dual objective of achieving gender equality in research, and strengthening the gender dimension in research. Made up of five universities covering an ample array of disciplines, from social sciences to STEM, a research centre on climate change belonging to the Czech Academy of Science, an independent evaluation structure specialized in the design and monitoring of gender equality plans, EGERA is coordinated by Sciences Po, a leading institution in social sciences in Europe. With view to bring about sustainable and measurable cultural and organizational changes to promote gender equality, EGERA has secured the full support of the top management structures of its respective partner institutions. Fully-fledged Gender Equality Action Plans (GEAPs) will be implemented and continuously enhanced along this four-yearlong project by the seven implementing partners. GEAPs will articulate a structural understanding of gender inequalities and bias in research with a set of actions covering the most salient issues with respect to the recruitment, retention, appraisal and empowerment of women in research, and to the mainstreaming of gender knowledge across disciplinary fields. Drawing upon innovative methods, of which some have been experimented and evaluated under previous/on-going FP7 projects, our cumulative and inclusive approach will notably support the operationalization of structural changes with both an intensive and extensive use of gender training, as an instrument for effective gender mainstreaming strategies. Mobilizing considerable gender expertise and relying upon multi-level women in science policy networks, EGERA will also put efforts into the dissemination of its outputs and achievements across the European Research Area.

**Website:** <http://www.egera.eu/>

## 3.6 SDG 6: Ensure availability and sustainable management of water and sanitation for all

### 3.6.1 Overview – main results

#### Main findings:

- SDG 6 is one of the least addressed in FP7\* research in terms of topics and projects and received some of the smallest EC contribution.
- SDG 6 was narrowly addressed by projects and topics in the theme ENVIRONMENT.
- SDG 6-related projects were similar in size to the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 6 related projects was carried out and coordinated by research organisations. Projects requiring international cooperation were largely overrepresented.

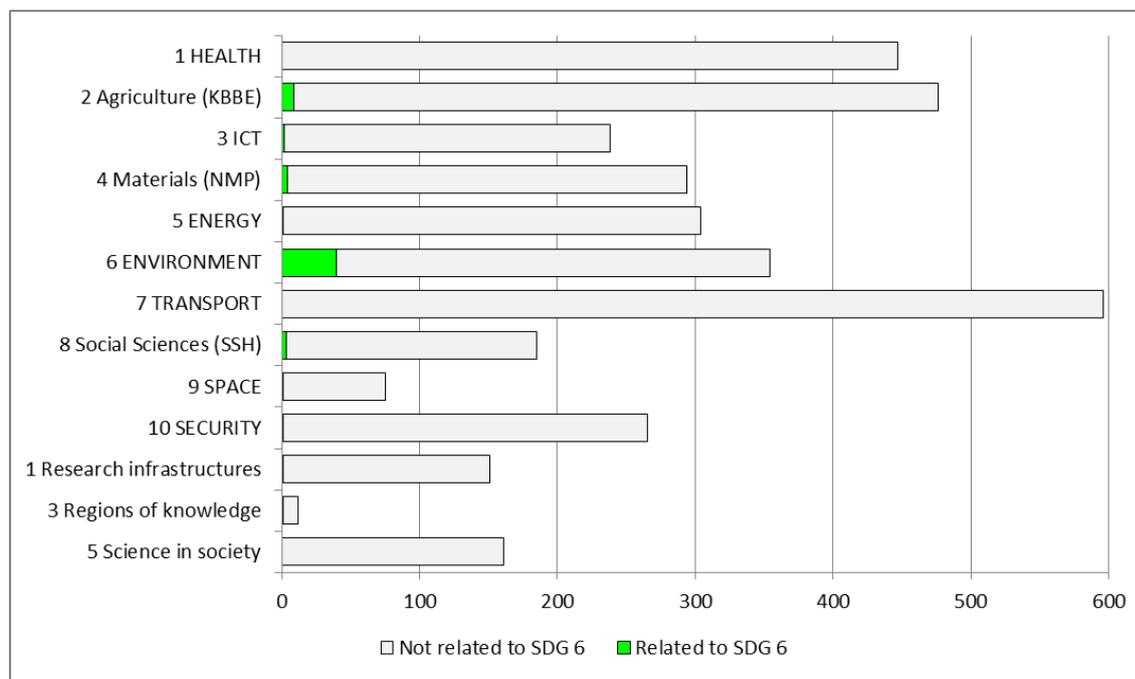
#### Summary of results:

- 63 topics or 1.5 % of all topics called for in FP7\* were relevant to the objectives of SDG 6
- Under these, some 112 projects were carried out with a financial contribution of € 414 million or 1.5 % of the designated EC research budget
- The theme ENVIRONMENT in SP ‘Cooperation’ contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 6 was the same as the average size of projects in FP7\* as a whole
- Small and medium-sized projects constituted the largest share of SDG 6 relevant projects, although they were slightly underrepresented compared with FP7\* as a whole. Coordination and support action projects were also underrepresented, whereas ‘any-size’ projects were largely overrepresented
- Universities, research institutes and private organisations accounted for a third of project participations related to SDG 6. Compared with FP7\* as a whole, universities were underrepresented, especially as coordinators, whereas research organisations were overrepresented as participants and coordinators
- A larger share of SDG 6 relevant projects required international cooperation compared with the FP7\* average
- The largest number of coordinators were from Germany, Spain and the Netherlands, with the last two countries being significantly overrepresented compared with FP7\* as a whole and the UK being significantly underrepresented

### 3.6.2 Detailed analysis

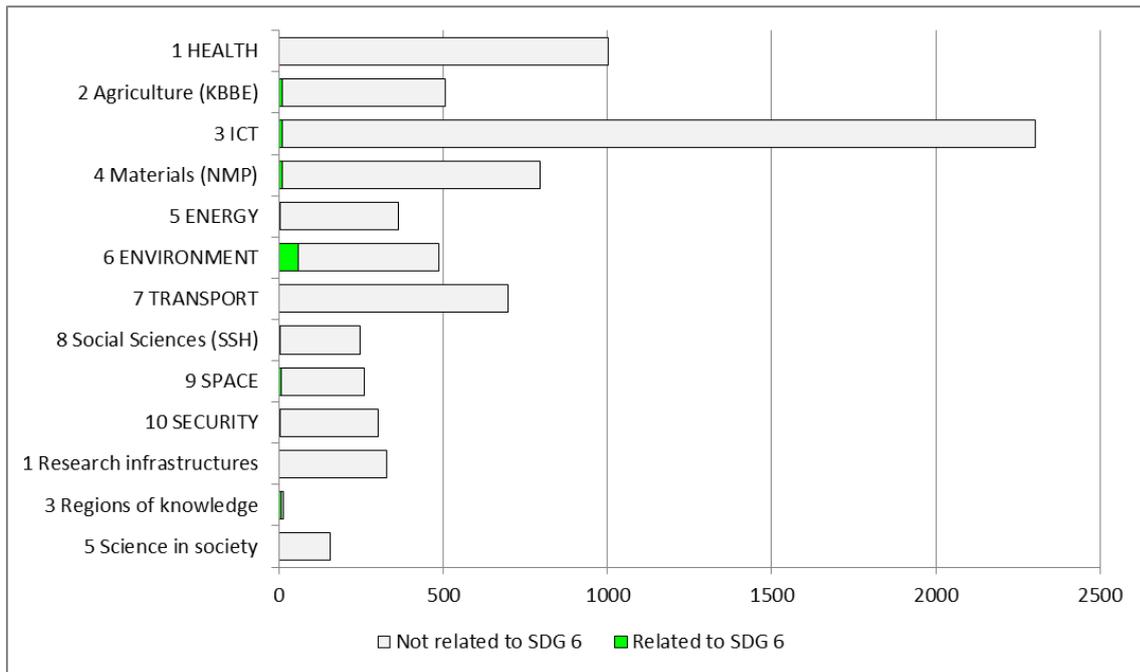
About 2 % of all topics called for under SP ‘Cooperation’ and 1 % under SP ‘Capacities’\* are relevant for the objectives of SDG 6. This is equivalent to some 63 topics called for in the Work Programmes 2007-2013. The theme ENVIRONMENT in SP ‘Cooperation’ contains the largest number of topics related to the objective of SDG 6 – about 40 topics or about 11 % of all topics called for under this theme. This is not surprising since the objectives of SDG 6 for water availability and sustainable water management are closely linked to environmental issues. The second largest number of topics related to SDG 6 were called for under the theme Agriculture (KBBE) in SP ‘Cooperation’ – approximately 10

topics, constituting about 2 % of all topics in this theme. Relevant topics in the theme Agriculture (KBBE) mainly address the SDG 6 objectives of increasing water-use efficiency and wastewater treatment. Other themes in SP ‘Cooperation’ contain only a few or no topics relevant for SDG 6 (See Figure 6.1). SP ‘Capacities’\* contains a very limited number of relevant topics, mainly falling under the themes ‘Research infrastructures’ (under 1 % of all topics in this theme) and ‘Regions of Knowledge’ (about 8 % of all topics in this theme).



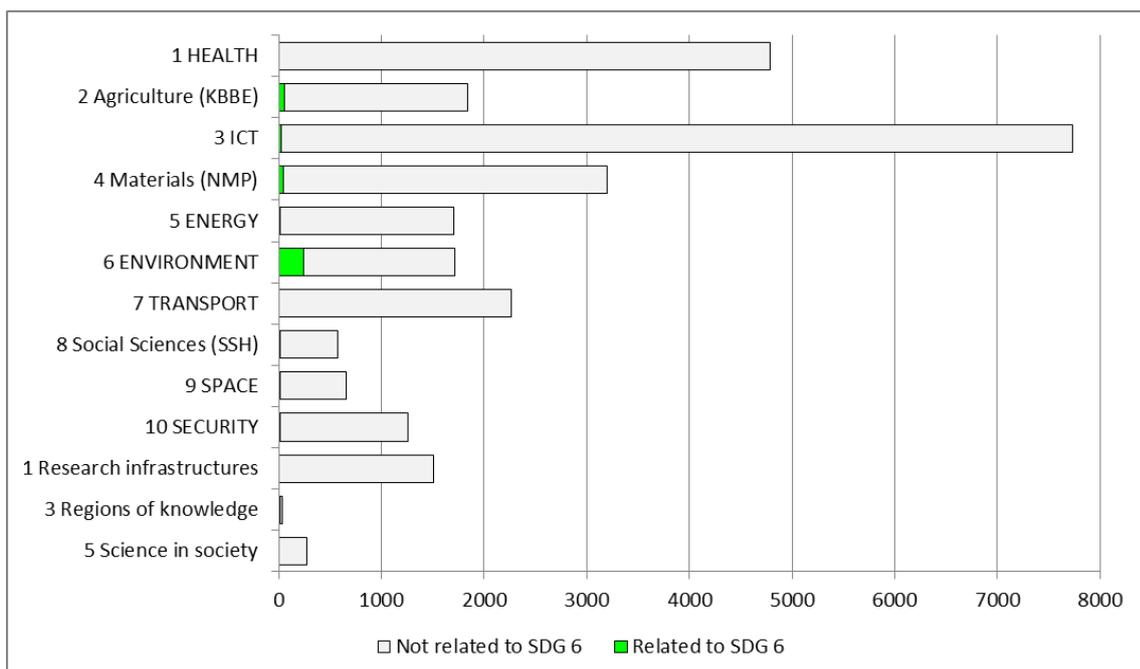
**Figure 6.1:** Number of topics related to SDG 6 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, some 112 projects related to the objectives of SDG 6 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to about 1.5 % of all projects in both specific programmes. The theme ENVIRONMENT again stands out with the largest number of projects with relevance to SDG 6 – about 60 projects or almost 12 % of all projects carried out under this theme. It is followed by the theme Agriculture (KBBE), which contained about 10 projects with relevance to SDG 6. Interestingly, the themes Materials (NMP) and ICT contained a similar number of projects relevant for SDG 6. In relative terms, however, only a small share of their projects related to SDG 6 (about 1 % for Materials (NMP) and 0.4 % for ICT compared with about 2 % for Agriculture (KBBE)). About 7 projects in SP ‘Capacities’\* had relation to SDG 6, all falling under the theme ‘Regions of Knowledge’.



**Figure 6.2:** Number of projects related to SDG 6 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP 7, € 414 million or about 1.5 % of the research budget for SP ‘Cooperation’ and SP ‘Capacities’\* for 2007-2013 was allocated to projects relevant to SDG 6. Most of this financial contribution came from SP ‘Cooperation’ and about 11.6 € million from SP ‘Capacity’. The theme ENVIRONMENT constituted the largest source of funding in this respect, with almost 244 € million or 14 % of its budget being distributed to projects with relevance for the achievement of SDG 6. It was followed by the themes Agriculture (KBBE), Materials (NMP) and ICT, with about 52 € million, 40 € million and 29 € millions of their respective budgets going to projects related to SDG 6. Although the theme SPACE allocated less funding to research relevant for SDG 6 (about 18 € million), in relative terms this constituted almost the same share as the theme Agriculture (KBBE) (about 3 % of the overall budget of both themes).



**Figure 6.3:** Total EC contribution (€ million) to projects related to SDG 6

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 6 was highest in 2013, with almost € 106 million (2 % of the total budget of SP 'Cooperation' and SP 'Capacity' for that year), and lowest in 2007 and 2008, with about € 32 million (0.6 % of the budget in 2007 and 1 % of the budget in 2008 respectively).

In contrast to budget distribution, the highest number of relevant projects was recorded in 2010 - about 25 projects or approximately 3 % of all projects in SP 'Cooperation' and SP 'Capacity' carried out that year. Similarly, the highest number of topics with relevance to SDG 6 were called for in 2010 - about 16 topics or almost 3 % of all topics called for in SP 'Cooperation' and SP 'Capacity' that same year.

Figure 6.4 below illustrates the distribution of projects according to the different funding schemes in FP 7, which define the type and the size of projects carried out. About 50 projects or nearly 43 % of all projects that are relevant for the objectives of SDG 6 were funded as small and medium-sized research projects. Projects without a pre-defined size (categorised as 'any size' in Figure 6.4) constituted the second largest scheme (about 35 or 30 % of all projects), followed by large-scale research projects and coordination and support action (about 15 projects each or 12 % of the projects in each scheme).

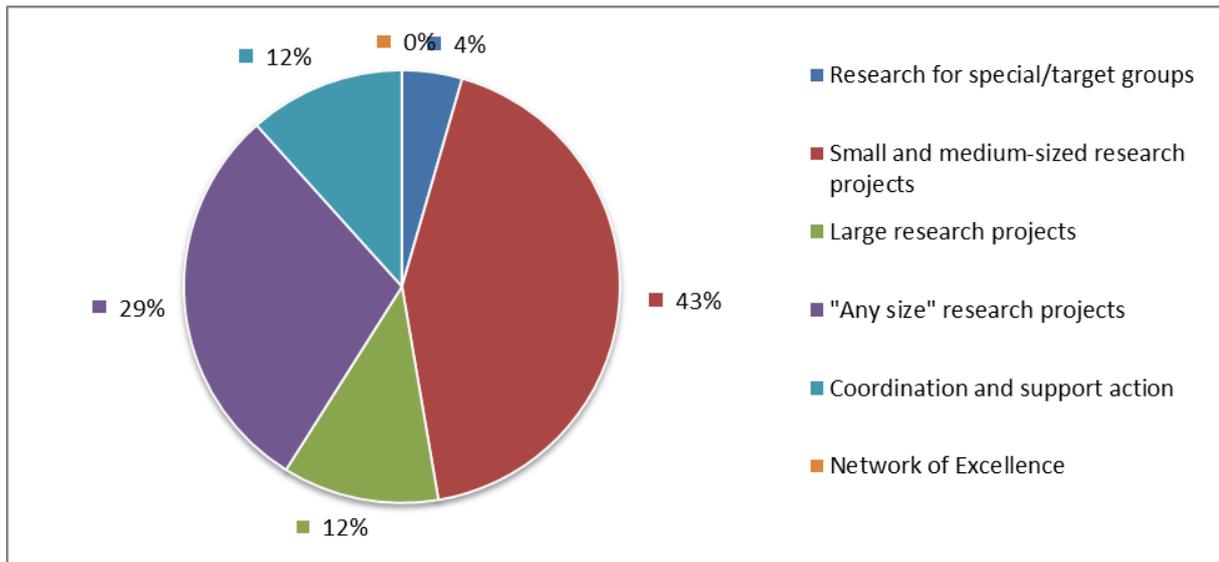
Small and medium-sized research projects received the largest financial contribution from the EC – about € 138 million or approximately 33 % of all EC funding allocated to SDG 6 relevant projects. Although they ranked second in terms of size, projects without a pre-defined size (referred to as 'any size' in Figure 6.4) received an equal share of the designated EC budget as small projects – about 33 % or € 136 million. Although small and medium-sized projects constituted a significant share of SDG 6 relevant projects, they were underrepresented compared with FP7\* as a whole. Projects defined as 'coordination and support action' were also underrepresented, whereas 'any-size' projects were significantly overrepresented.

Looking at funding schemes, about 18 % of the projects with relevance to SDG 6 were carried out with the aim of strengthening international cooperation<sup>25</sup>. These received about 15 % of the EC contribution relevant to SDG 6 (nearly € 62 million). In comparison, only about 3 % of projects in FP7\* as a whole required international cooperation and received about 3 % of the designated EC research budget.

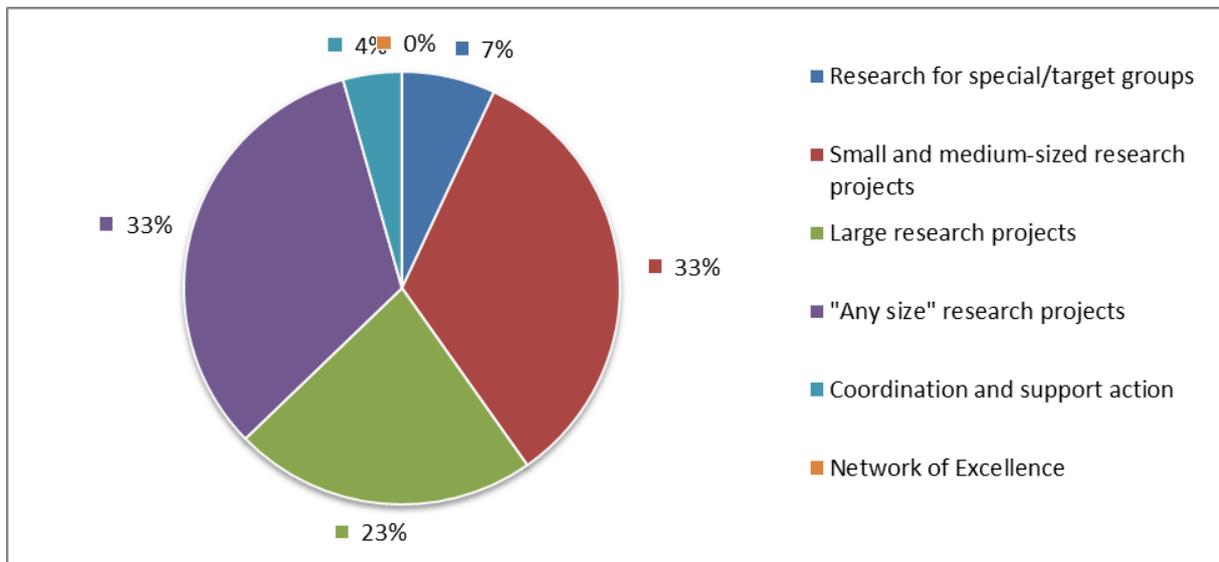
It is interesting to note that projects related to SDG 6 involved on average 15 organisations each, whereas FP7\* projects on average involved 11 to 12 organisations each. In terms of financial contribution from the EC, the average size of projects related to SDG 6 was comparable to the average size of FP7\* projects (€ 3.7 million per project).

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<sup>25</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.

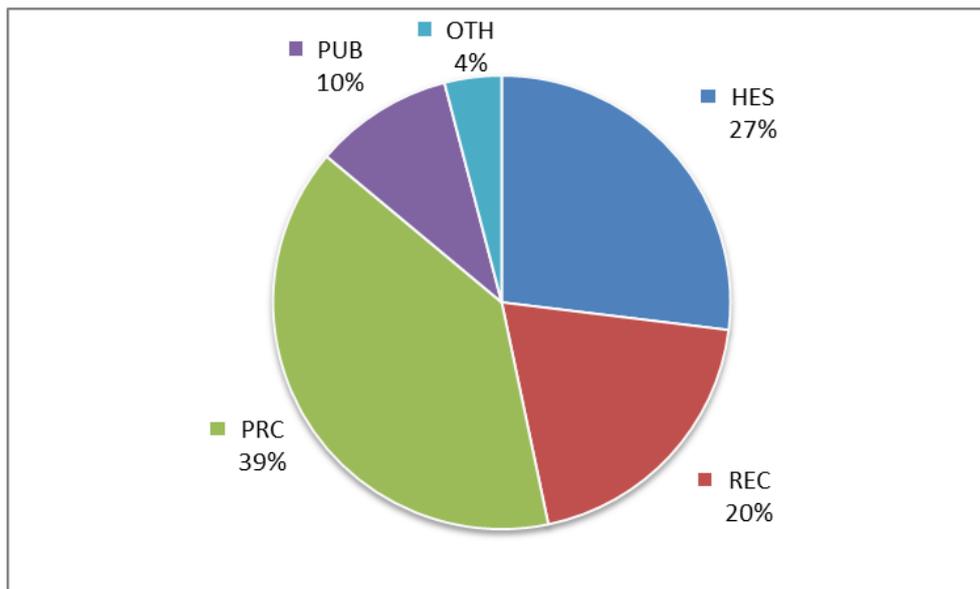


**Figure 6.4:** Projects related to SDG 6, by funding scheme



**Figure 6.5:** EC contribution to projects related to SDG 6, by funding scheme

For the entire period between 2007 and 2013, over 1,115 organisations participated in projects related to SDG 6. As shown in Figure 5.6, private for-profit organisations accounted for about 40 % of these organisations, followed by higher education institutions (about 27 %) and research organisations (about 20 %). Public bodies and other types of organisations were also involved but to a limited extent - with only 10 % and 4 % of all participating organisations falling in these categories respectively.



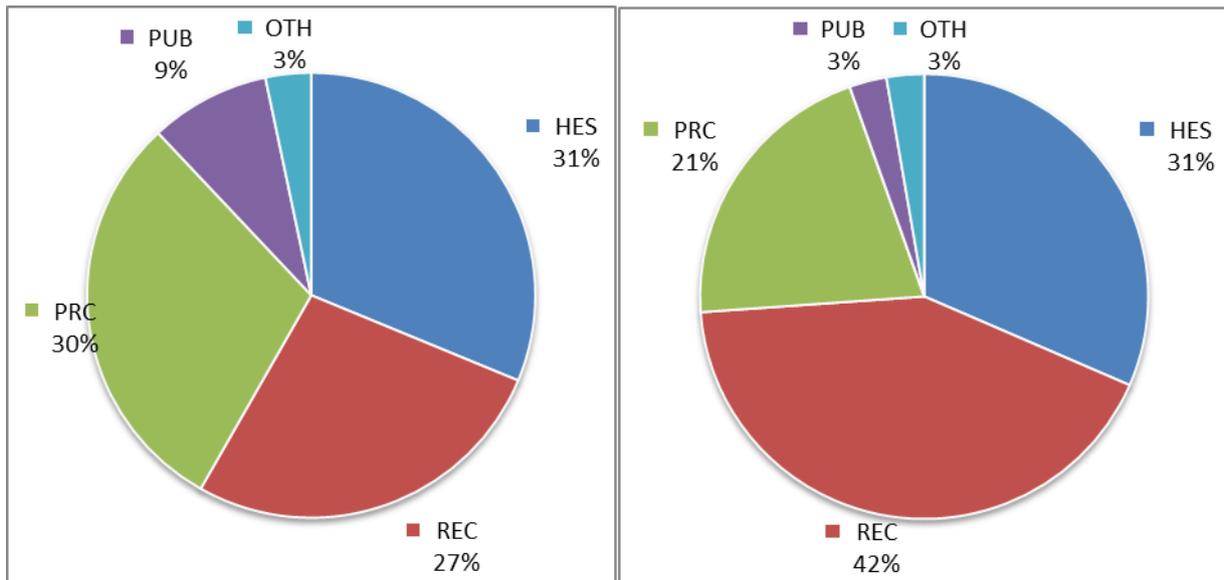
**Figure 6.6:** Organisations participating in projects related to SDG 6

The distribution across organisation types is different when looking at the number of project participations relevant for SDG 6<sup>26</sup>. The large number of private-for-profit organisations on average participated in one project only, whereas research organisations participated on average in two projects and higher education institutions in one to two projects. This explains the high share of project participations from higher education institutions and research organisations, at 31 % and 27 %, accordingly (see Figure 6.7). Private organisations came second in terms of project participations after higher education institutions, with 30 % project participation.

When looking at the distribution of project coordinators according to organisation type, research organisations seem to form the majority (almost 42 %), followed by higher education institutions (about 32 %). Private for-profit organisations were less involved as coordinators, having coordinated about 21 % of all projects relevant to SDG 6. Public and other organisations were involved as project coordinators to a very limited extent (Figure 6.7).

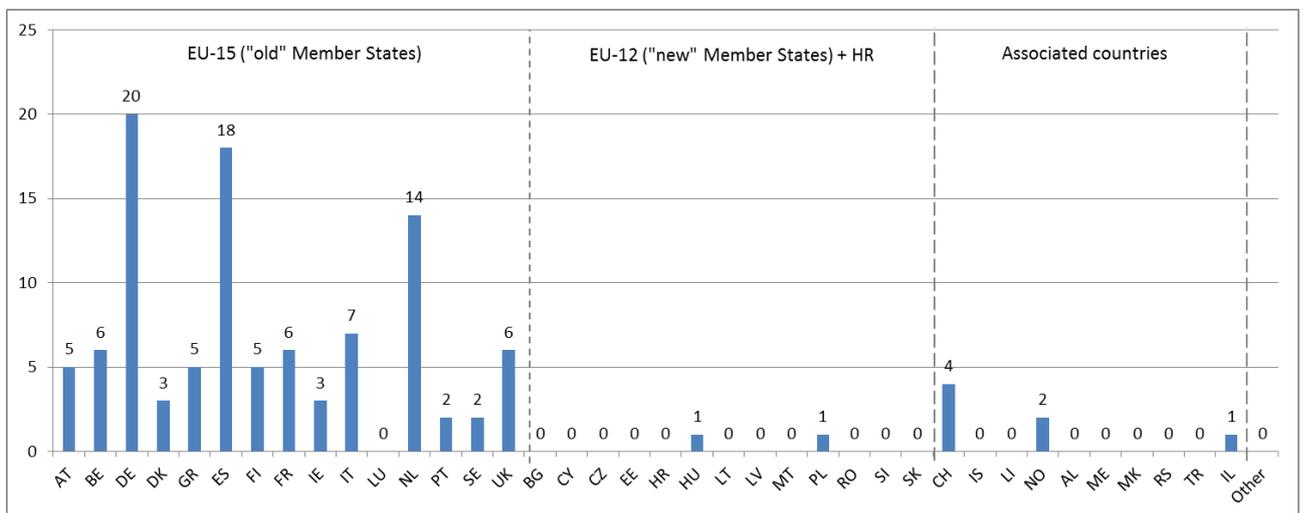
Compared with FP7\* as a whole, higher education institutions were underrepresented in SDG 6 relevant projects, both as participants and coordinators. Private-for-profit organisations were also underrepresented in terms of number of project participations, whereas public bodies and research organisations were overrepresented. Additionally, research organisations were overrepresented as project coordinators compared with FP7\* as a whole.

<sup>26</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 6.7:** Participations in projects related to SDG 6, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, almost 92 % of the projects related to SDG 6 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 6.8), in particular Germany (18 %), Spain (16 %) and Netherlands (13 %). Coordinators from Spain and the Netherlands were overrepresented compared with FP7\* as a whole. In contrast, only 2 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), mainly from Hungary and Poland. Some 6 % of the projects coordinators came from other European (non-EU) countries, in particular Switzerland and Norway.



**Figure 6.8:** Geographical location of coordinators of projects related to SDG 6

### 3.6.3 Project cases

**Project title:** *Water in Industry, Fit-for-Use Sustainable Water Use in Chemical, Paper, textile and Food Industry (AQUAFIT4USE)*

**Project coordinator:** NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK

**ONDERZOEK - TNO (NETHERLANDS)****Duration:** 06/01/2008 to 08/31/2012**Costs:** € 14.6 million; **EC contribution:** € 9.7 million**Funding scheme:** Large-scale integrating project

**Project abstract:** Sustainable water use in industry is the goal of AquaFit4Use, by a cross-sectorial, integrated approach. The overall objectives are: the development and implementation of new, reliable, cost-effective technologies, tools and methods for sustainable water supply, use and discharge in the main water consuming industries in order to significantly reduce water use, mitigate environmental impact and produce and apply water qualities in accordance with industrial own specifications (fit - for - use) from all possible sources, and contributing to a far-going closure of the water cycle in a economical, sustainable and safe way while improving their product quality and process stability. The 4 pillars of the project are Industrial Water Fit-for-use, Integrated water resource management, Strong industrial participation and Cross-sectorial technologies and approach. Water fit-for-use is the basis for sustainable water use; the integrated approach a must. Tools will be developed to define and control water quality. The heart of AquaFit4Use however is the development of new cross-sectorial technologies, with a focus at biofouling and scaling prevention, the treatment of saline streams, disinfection and the removal of specific substances. By intensive co-operation between the industries, the knowledge and the technologies developed in this project will be broadly transferred and implemented. This AquaFit4Use project is based on the work of the Working group 'Water in Industry' of the EU Water Platform WSSTP; 40 % of the project partners of AquaFit4Use were involved in this working group. The expected impacts of AquaFit4Use are: A substantial reduction of fresh water needs (20 to 60%) and effluent discharge of industries; Integrating process technologies for further closing the water cycles; Improved process stability and product quality in the different sectors and strengthening the competitiveness of the European Water Industry.

**Website:** <http://www.aquafit4use.eu/>***Project title: Water Harvesting Technologies Revisited: Potentials for Innovations, Improvements and Upscaling in Sub-Saharan Africa (WHATER)*****Project coordinator:** STICHTING VU-VUMC (NETHERLANDS)**Duration:** 01/01/2011 to 12/31/2014**Costs:** € 2.5 million; **EC contribution:** € 2 million**Funding scheme:** Small or medium-scale focused research project for specific cooperation actions dedicated to international cooperation partner countries

**Project abstract:** The WHaTeR project aims to contribute to the development of appropriate water harvesting techniques (WHTs). These WHTs should be sustainable under dynamic global and regional pressure, and strengthen rainfed agriculture, improve rural livelihood and increase food production and security in Sub-Saharan Africa. In total 3 European and 5 African organisations will be involved; namely VU University Amsterdam (The Netherlands), Newcastle University (United Kingdom), Stockholm Resilience Centre (Sweden), University of Kwazulu Natal (South Africa), Sokoine University (Tanzania), Southern and Eastern Africa Rainwater Network (Kenya), National Institute for Environment and Agricultural Research (Burkina Faso) and Arba Minch University (Ethiopia). Project

activities will be divided over 14 Work Packages. The first Work Package covers project management and the second comprises a situation analysis - through revisits to water harvesting sites in 15 African countries studied previously by participating organisations . The next four Work Packages focus on detailed research and technology development activities on cross-cutting themes (environmental sustainability; technology development; livelihood improvement; uptake and upscaling; and global and regional impact) and will be conducted together with four country-based Work Packages (in Burkina Faso, Ethiopia, South Africa and Tanzania). One Work Package will concentrate on stakeholder communication and outreaching activities, and the final Work Packages consists of synthesis and dissemination of project results, including production of guidelines for WHTs. The project will spend an estimated 74% of the budget on RTD, 13% on other costs related to stakeholder workshops and outreaching and 13% on project management. The expected impacts of the project comprise technology support for farmers, development of stakeholder communication networks, innovative water harvesting systems, tools for impact assessment, upstream-downstream land use, and policy support for integrated water management and adaptation to climate change to promote EU and African strategies on strengthening rainfed agriculture, food security and livelihoods.

**Website:** <http://whater.eu/>

## 3.7 SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

### 3.7.1 Overview – main results

#### Main findings:

- SDG 7 is one of the most well addressed in FP7\* research in terms of topics and projects and it also received some of the largest EC contribution.
- SDG 7 was narrowly addressed by projects in the theme ICT. However, it could be defined as cross-cutting in terms of topics, i.e. SDG 7 related topics appear in almost all themes of SP ‘Cooperation’ and SP ‘Capacities’\*.
- SDG 7 related projects were slightly larger than the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 7 related projects was carried out and coordinated by private companies. Projects requiring international cooperation were slightly underrepresented.

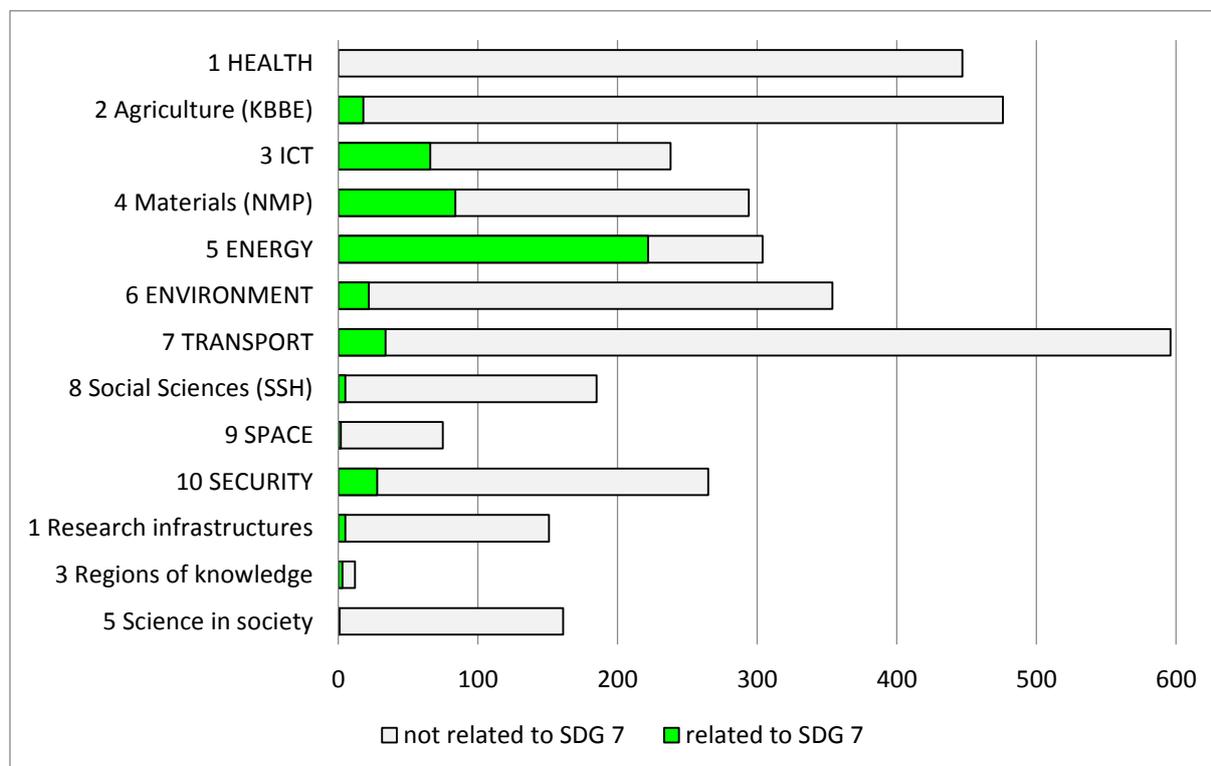
#### Summary of results:

- 490 topics or 14 % of all topics called for in FP7\* were relevant to the objectives of SDG 7
- Under these, some 1390 projects were carried out with a financial contribution of € 5.8 billion or 21 % of the designated EC research budget
- The themes ENERGY contained the highest number of relevant topics but the theme ICT contained the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 7 was slightly larger than the average size of projects in FP7\* as a whole
- Half of the relevant projects were funded under the scheme ‘small and medium-sized’, which is comparable to FP7\* as a whole. Coordination and support action projects were somewhat underrepresented, whereas ‘any size’ projects slightly overrepresented
- SDG 7 relevant projects were mainly carried out by private organisations, which were significantly overrepresented compared with FP7\* as a whole
- Research organisations and universities accounted for more than half of project coordinators. Private organisations were somewhat overrepresented as coordinators whereas universities were underrepresented
- Only 1 % of projects related to SDG 7 required international cooperation, which is lower than the FP7\* average
- The largest number of coordinators were from Germany, Spain and Italy, with Spain being somewhat overrepresented and the UK somewhat underrepresented

### 3.7.2 Detailed analysis

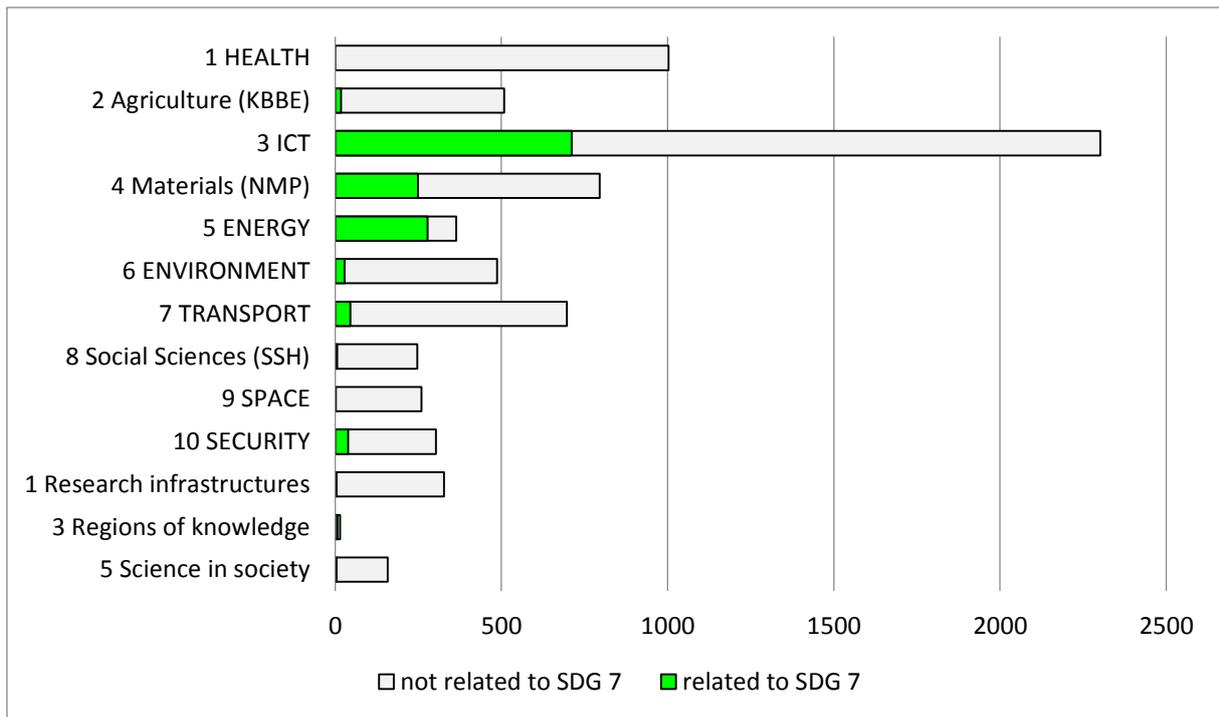
About 14 % of all topics called for and carried out under SP ‘Cooperation’ and SP ‘Capacities’\* were relevant for the objectives of SDG 7. This corresponds to some 490 topics called for in the Work Programmes 2007-2013. The theme ENERGY in SP ‘Cooperation’ stands out in terms of the large number of topics with a direct link to SDG 7, over 220 topics or almost 75 % of all topics in the theme (see Figure 7.1). This strong overlap is explained by the fact that SDG 7 addresses exclusively energy

issues related to sustainable development. The themes ICT and Materials also contain a notable share of topics relevant for SDG 7, almost 30 % of the topics in both themes. In contrast, SP ‘Capacities’\* generally contains a low number of related topics – some 10 only - most of which come from the theme Research Infrastructures.



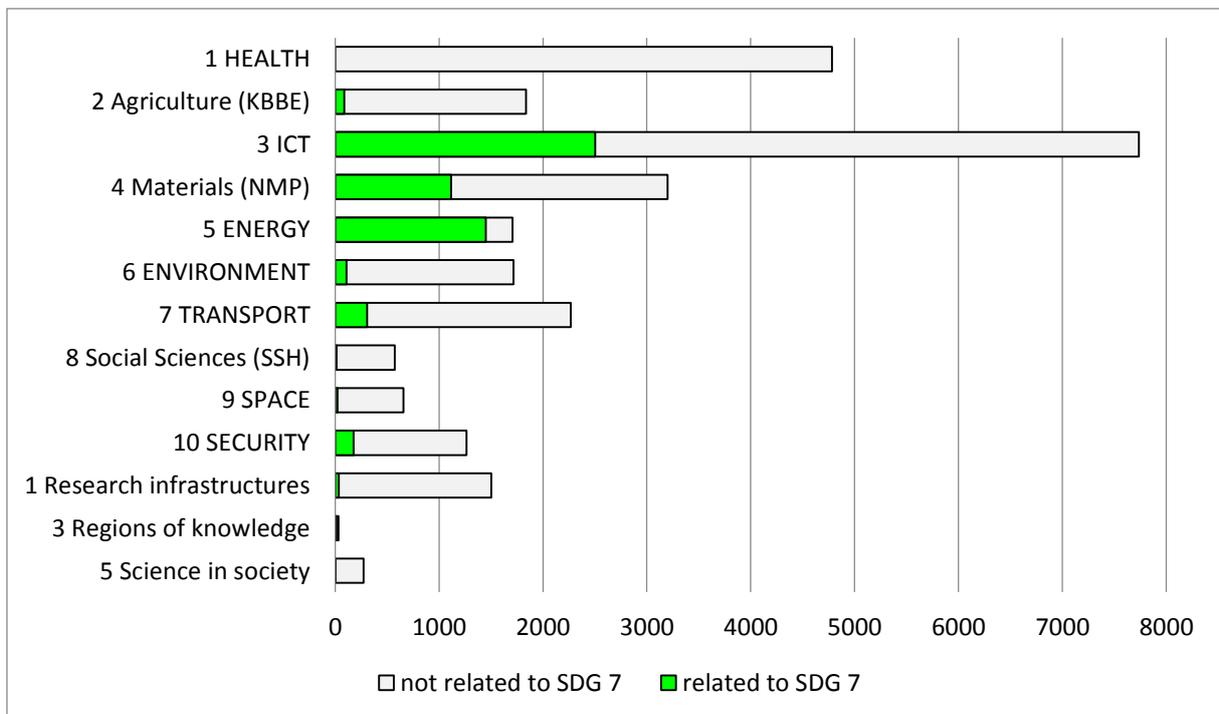
**Figure 7.1:** Number of topics related to SDG7 in SP ‘Cooperation’ and SP ‘Capacities’\*

The picture changes when looking at the number of projects carried out in each theme (see Figure 7.2). Overall, some 1390 projects related to the objectives of SDG 7 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to 19 % of all projects in both specific programmes. More than half of the projects related to SDG 7 come from the theme ICT (more than 710 projects), followed by the themes ENERGY (about 280 projects) and Materials (NMP) (about 250 projects). In relative terms, however, it is the theme ENERGY that holds the highest share of projects relevant for SDG 7, with over 75 % of all projects in the theme. About 50 % of the projects in the SP ‘Capacities’ theme ‘Regions of Knowledge’ are relevant for SDG 7, however due to the small size of the theme this is equivalent to 7 projects only.



**Figure 7.2:** Number of projects related to SDG 7 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of the financial contribution provided by FP7\*, over 20 % of the budget allocated to SP ‘Cooperation’ and under 3 % of the budget allocated to SP ‘Capacities’\* relate to the objectives of SDG 7 (see Figure 7.3). The theme ICT constitutes the largest source of funding, with € 2.5 billion going to projects relevant for SDG 7. In relative terms, this is about 30 % of the funding provided in the theme ICT. A much higher share of the budget allocated to the theme ENERGY was related to the objectives of SDG 7 (85 %), also 35 % of the budget of the theme Materials (NMP).



**Figure 7.3:** Total EC contribution (€ million) to projects related to SDG 7

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 7 was highest in 2011, with over € 1.6 billion, and lowest in 2008, with about € 0.4 billion. The highest number of

relevant projects was also recorded in 2011, over 400 projects or almost a third of all projects with relevance to SDG 7 conducted between 2007 and 2013. This constitutes a significant increase from 2007 when the number of related projects was about 100. The number of topics related to SDG 7 has remained more stable over time, ranging between almost 100 in 2007 to about 50 in 2010.

In relative terms, almost 30 % of all FP7\* projects considered in this study were related to SDG 7 in 2009 and 2011. The share is similar in terms of EC financial contribution in both years. In contrast, the lowest share of projects (7 %) and EC contribution (under 10 %) relevant for the objectives of SDG 7 were recorded in 2007, the first year of FP7\*. The share of topics related to SDG 7 again remained more stable over time, ranging between 9 % in 2010 and almost 18 % in 2013.

Figure 7.4 below shows the different funding schemes in FP7, which define the type and the size of projects carried out. Regarding those projects that are relevant for the objectives of SDG 7, about 50 % or more than 670 projects were small and medium-sized research projects. This group also received the highest financial contribution by the EC, with almost € 2 billion. Projects without a pre-defined size (categorised as 'any size' in Figure 7.4) constituted the second largest scheme in terms of number of projects (about 270), followed by large-scale research projects (about 240).

Due to their size, large-scale research projects received a substantial share of the EC budget, with 33 % or € 1.9 billion. This is almost equivalent to the share received by small and medium-sized research projects (34 %), which are more than twice in number.

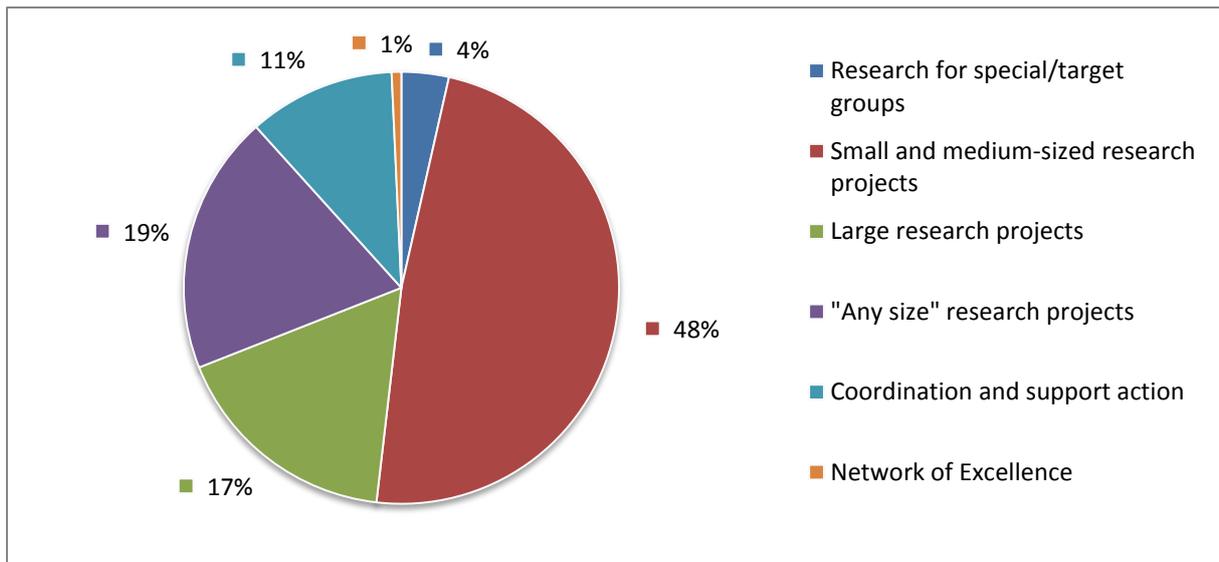
At the other end of the scale, coordination and support action projects received less than 4 % of the designated EC budget, although more than 10 % of the projects fall in this category. Research for special groups and networks of excellence received 4 % and 1 % of the budget, which corresponds to their respective share of the projects.

Compared with FP7\* as a whole, large-scale projects and 'any-size' projects were overrepresented. In contrast, coordination and support action projects and small and medium-sized projects were underrepresented. However, the average project size of SDG 7 relevant research (€ 4.2 million per project) was slightly larger than the average FP7\* project size (€ 3.7 million per project).

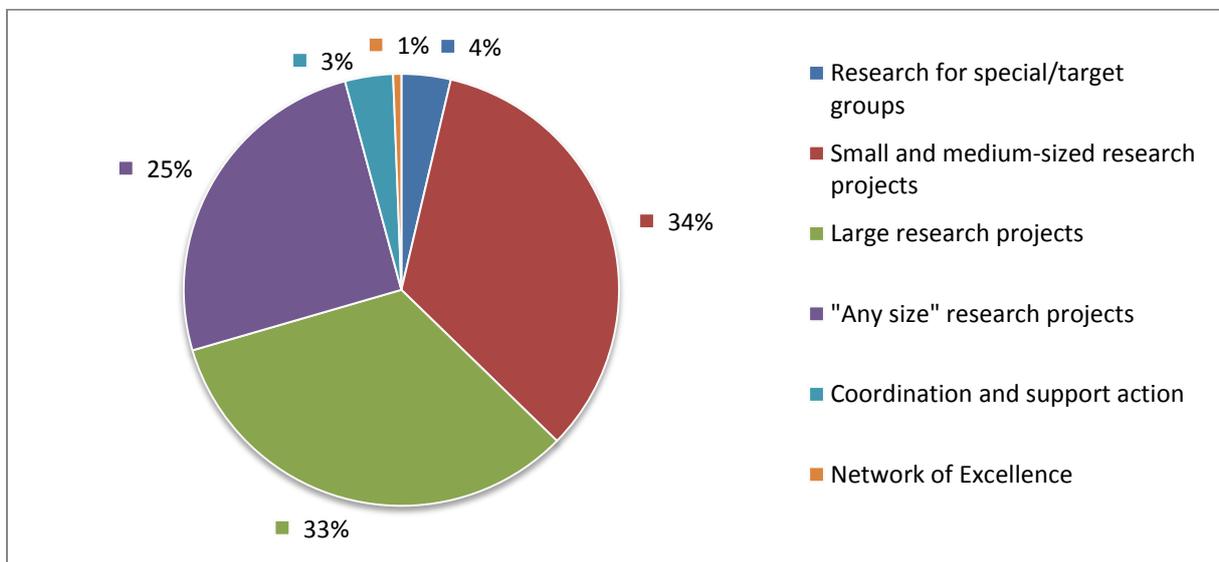
Looking at funding schemes, about 1 % of the projects with relevance to SDG 7 were carried out with the aim of strengthening international cooperation<sup>27</sup>. These received about 4 % of the EC contribution relevant to SDG 7 (nearly € 57 million). This is comparable to the share of projects requiring international cooperation in FP7\* as a whole (3 %).

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<sup>27</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.



**Figure 7.4:** Projects related to SDG 7, by funding scheme



**Figure 7.5:** EC contribution to projects related to SDG 7, by funding scheme

For the entire period between 2007 and 2013, over 6,300 organisations participated in projects related to SDG 7. As shown in Figure 7.6, private-for-profit organisations accounted for about 67 % of all organisations, followed by research organisations (12 %) and higher education institutions (11 %). Public bodies were less involved, with only 6 % of organisations falling in this category.

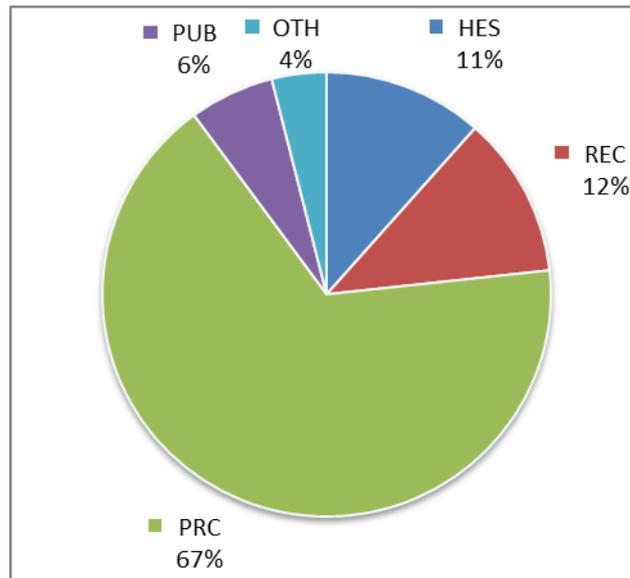
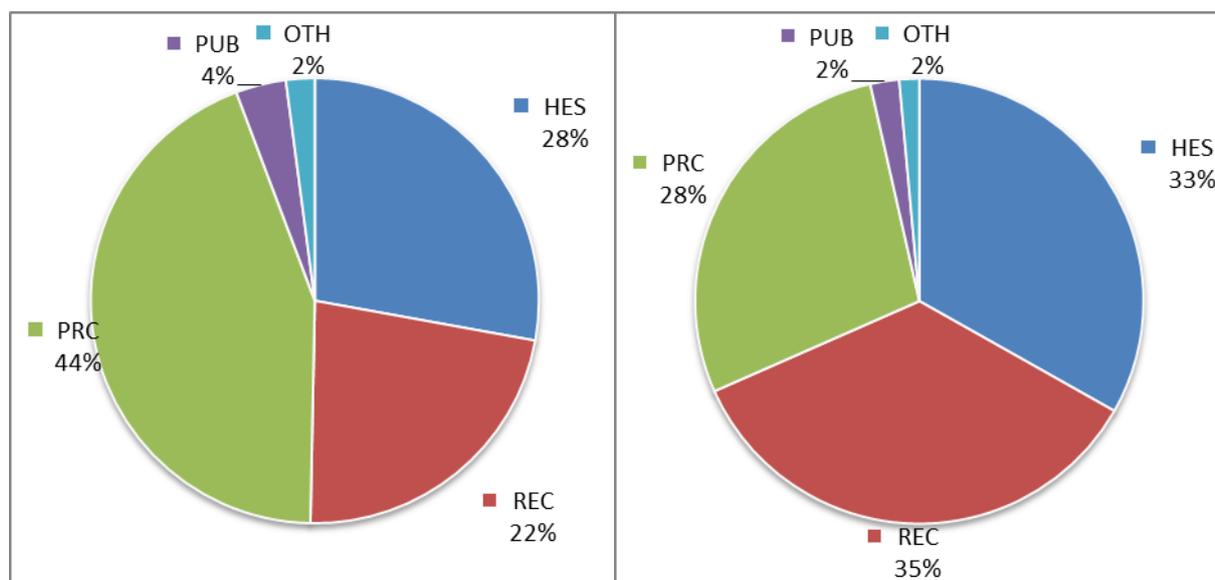


Figure 7.6: Organisations participating in projects related to SDG 7

The distribution across organisation types is different when looking at the number of project participations<sup>28</sup> relevant for SDG 7. The large number of private-for-profit organisations on average participated in one to two projects only, whereas research organisations participated on average in 5 projects and higher education institutions in 6 projects. This explains the high share of project participations from research and higher education institutions, at 22 % and 28 % respectively (see Figure 7.7). Private organisations were still the largest group in terms of project participations (44 %). The picture however changes when looking only at those project partners who act as project coordinators: More than two thirds of the projects were coordinated by research organisations (35 %) or higher education institutions (33 %). Private organisations ranked third, with 28 %, and only 2 % of the projects were coordinated by public bodies.

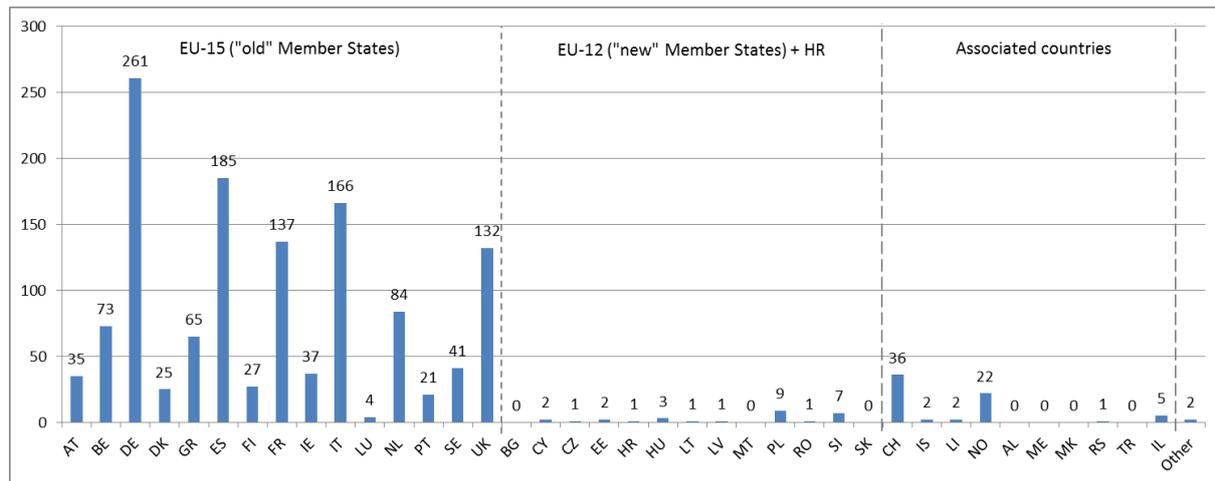
Higher education institutions were underrepresented in projects related to SDG 7, compared with FP7\* as a whole, both as project participants and as coordinators. In contrast, private-for-profit organisations were significantly overrepresented.



<sup>28</sup> Project participations refer to the number of organisations times their participation in projects.

**Figure 7.7:** Participations in projects related to SDG 7, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, 93 % of the projects related to SDG 7 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 7.8), in particular Germany (19 %), Spain (13 %), Italy (12 %) and France and UK (10 % each). In contrast, only 2 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia). Some 5 % of the projects coordinators came from other European (non-EU) countries, in particular Switzerland and Norway.



**Figure 7.8:** Geographical location of coordinators of projects related to SDG 7

### 3.7.3 Project cases

**Project title:** *Low Emissions Core-Engine Technologies (LEMCOTEC)*

**Project coordinator:** ROLLS-ROYCE DEUTSCHLAND LTD & CO KG (GERMANY)

**Duration:** 10/01/2011 to 09/30/2015

**Costs:** € 68 million; **EC contribution:** € 40 million

**Funding scheme:** Large-scale integrating project

**Project abstract:** The main objective of the LEMCOTEC project will be the improvement of core-engine thermal efficiency by increasing the overall pressure ratio (OPR) to up to 70 leading to a further reduction of CO<sub>2</sub>. Since NO<sub>x</sub> increases with OPR, combustion technologies have to be further developed, at the same time, to at least compensate for this effect. The project will attain and exceed the ACARE targets for 2020 and will be going beyond the CO<sub>2</sub> reductions to be achieved by on-going FP6 and FP7 programmes including Clean Sky: 1.) CO<sub>2</sub>: minus 50% per passenger kilometre by 2020, with an engine contribution of 15 to 20%, 2.) NO<sub>x</sub>: minus 80% by 2020 and 3.) Reduce other emissions: soot, CO, UHC, SO<sub>x</sub>, particulates. The major technical subjects to be addressed by the project are: 1.) Innovative compressor for the ultra-high pressure ratio cycle (OPR 70) and associated thermal management technologies, 2.) Combustor-turbine interaction for higher turbine efficiency & ultra-high OPR cycles, 3.) Low NO<sub>x</sub> combustion systems for ultra-high OPR cycles, 4.) Advanced structures to enable high OPR engines & integration with heat exchangers, 5.) Reduced cooling requirements and stiffer structures for turbo-machinery efficiency, 6.) HP/IP compressor stability control. The first four subjects will enable the engine industry to extend their design space beyond

the overall pressure ratio of 50, which is the practical limit in the latest engines. Rig testing is required to validate the respective designs as well as the simulation tools to be developed. The last two subjects have already been researched on the last two subjects by NEWAC. The technology developed in NEWAC (mainly component and / or breadboard validation in a laboratory environment) will be driven further in LEMCOTEC for UHPR core engines. These technologies will be validated at a higher readiness level of up to TRL 5 (component and / or breadboard validation in a relevant environment) for ultra-high OPR core-engines.

**Website:** <http://www.lemcotec.eu/>

**Project title:** *Transmission system operation with large penetration of Wind and other renewable Electricity sources in Networks by means of innovative Tools and Integrated Energy Solutions (TWENTIES)*

**Project coordinator:** RED ELECTRICA DE ESPANA S.A.U. (SPAIN)

**Duration:** 04/01/2010 to 03/31/2013

**Costs:** € 56.7 million; **EC contribution:** € 31.8 million

**Project abstract:** A group of 6 Transmission System Operators (Belgium, Denmark, France, Germany, The Netherlands and Spain) with 2 generator companies, 5 manufacturers and research organisations, propose 6 demonstration projects to remove, in 3 years, several barriers which prevent the electric system from welcoming more wind electricity, and wind electricity from contributing more to the electric system. The full scale demonstrations aim at proving the benefits of novel technologies (most of them available from manufacturers) coupled with innovative system management approaches. The contribution of wind energy to the system will show how aggregated wind farms can provide system services (voltage and frequency control) in Spain. The aggregation of wind farms with flexible generation and loads will be demonstrated in Denmark using a scalable IT platform developed by a generator. Increasing the flexibility of transmission networks will be tested in Belgium (existing sensors and coordinated power flow control devices avoiding possible large scale instabilities induced by wind farms in the CWE region) and in Spain (dynamic wind power evacuation capacity using real-time computations based on short-term generation forecasts and use of a mobile Overload Line Controller). Off-shore wind farms are addressed from a security viewpoint. Secure HVDC meshed networks will be validated in France using simulations and full scale experiments of two different HVDC circuit breaker technologies. Off-shore wind farm shut downs under stormy conditions will be demonstrated in Denmark using the world largest off-shore wind farm with balancing power provided by the Norwegian hydro capacities through a HVDC link. The experimental results will be integrated into European impact analyses to show the scalability of the solutions: routes for replication will be provided with benefits for the pan European transmission network and the European electricity market as soon as 2014, in line with the SET plan objectives.

**Website:** <http://www.twenties-project.eu>

## 3.8 SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

### 3.8.1 Overview – main results

#### Main findings:

- SDG 8 seems moderately narrow in terms of topics; it was predominantly addressed by topics in two themes (ENERGY and Materials (MNP)). However, it could be defined as cross-cutting in terms of projects, i.e. SDG 8 related projects appear in almost all themes of SP 'Cooperation' and SP 'Capacities'\*.
- SDG 8 related projects were slightly larger than the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 8 related projects was carried out and coordinated by private companies. Projects requiring international cooperation were slightly underrepresented.

#### Summary of results:

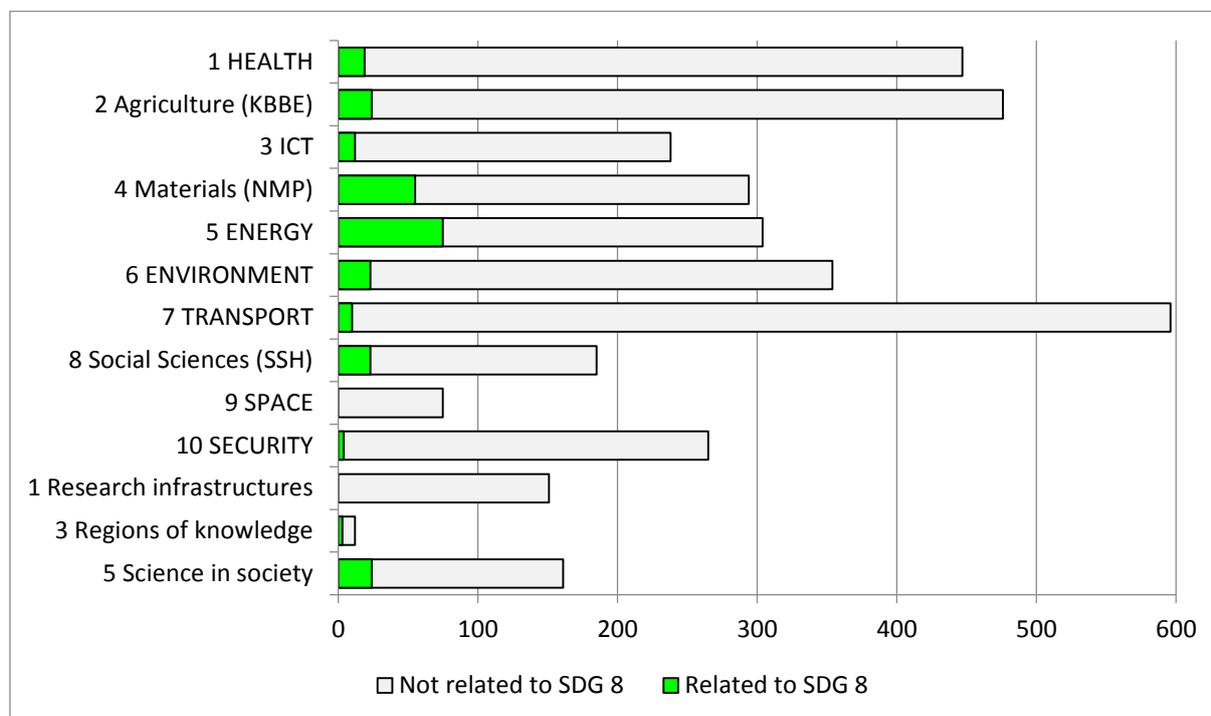
- 270 topics or 8 % of all topics called for in FP7\* were relevant to the objectives of SDG 1
- Under these, some 590 projects were carried out with a financial contribution of € 2.3 billion or almost 9 % of the designated EC research budget
- The themes Materials (MNP), ENERGY and ICT in SP 'Cooperation' contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 8 was slightly larger than the average size of projects in FP7\* as a whole
- Projects relevant to SDG 8 were mainly funded as 'small and medium-sized' projects and 'any-size' projects, with the former being underrepresented compared with FP7\* as a whole and the latter overrepresented
- Private organisations were the most involved in terms of project participations and were largely overrepresented as participants compared with FP7\* as a whole
- Majority of coordinators were universities or research institutions, with the latter being somewhat overrepresented and the former underrepresented
- Generally, low share of projects required international cooperation
- The largest number of coordinators were from Germany, Spain and Italy, with coordinators from Spain overrepresented compared with FP7\* as a whole

### 3.8.2 Detailed analysis

About 8 % of the topics called for in SP 'Cooperation' and SP 'Capacities'\* were relevant for the objectives of SDG 8. This is equivalent to some 270 topics, most of which (more than 240 topics) were called for in SP 'Cooperation'. As seen in Figure 8.1, the theme ENERGY contained the largest number of topics relevant for SDG 8 (some 75 topics), followed by the theme Materials (MNP) with some 55 topics. The themes Agriculture (KBBE), ENVIRONMENT and Social Sciences (SSH) also featured a moderate number of topics relevant for SDG 8 - over 20 topics in each theme.

In SP ‘Capacities’\* some 27 topics were relevant for SDG 8. Most of these were called for in the theme ‘Science in society’ (some 24 topics) and the rest in the theme ‘Regions of knowledge (some 3 topics).

The themes ENERGY and ‘Regions of knowledge’ had the highest share of topics relevant for SDG 8 - 25 % of all topics in the respective themes. Additionally, over 10 % of the topics in the themes Materials (MNP), Social Sciences (SSH) and ‘Science in society’ had a direct link to SDG 8.



**Figure 8.1:** Number of topics related to SDG 8 in SP ‘Cooperation’ and SP ‘Capacities’\*

About 590 projects related to SDG 8 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\* (see figure 8.2). This was equivalent to 8 % of all project carried out in the specific programmes. The share of projects relevant for SDG 8 was slightly higher in SP ‘Cooperation’ (8 %) than in SP ‘Capacities’\* (6 %).

The highest number of projects contributing to SDG 8 were carried out under the theme Materials (NMP) (some 160 projects), followed by the theme ENERGY (some 120 projects). However, it was the theme ‘Regions of knowledge’ that contained the highest share of relevant projects (almost 50 %), followed by the themes ENERGY (over 30 %). More than 10 % of projects were relevant for SDG 8 also in the themes Materials (MNP), ENVIRONMENT, Social Sciences (SSH) and ‘Science in society’.

Concerning the financing of projects, the EC contributed some € 2.3 billion to FP7\* projects relevant for SDG 8. This is equivalent to 8.5 % of the total EC contribution to FP7\* projects. About 9 % of the budget allocated to SP ‘Cooperation’ was relevant for SDG 8, whereas under 3 % of the budget allocated to SP ‘Capacities’\* contributed to this particular goal.

Figure 8.3 shows the allocation of funding across different themes. Considering the EC contribution relevant for SDG 8, the themes Materials (NMP) and ENERGY received the highest share, about 30 % each. The themes HEALTH, ICT and ENVIRONMENT also received substantial shares of the budget contributing to SDG 8, between 8 % and 10 %. It is interesting to note that approximately 40 % of the

total budget allocated to the themes ENERGY and ‘Regions of knowledge’ was relevant for SDG 8. Additionally, more than 20 % of the budget allocated to the theme Materials (NMP) was related to the objectives of SDG 8.

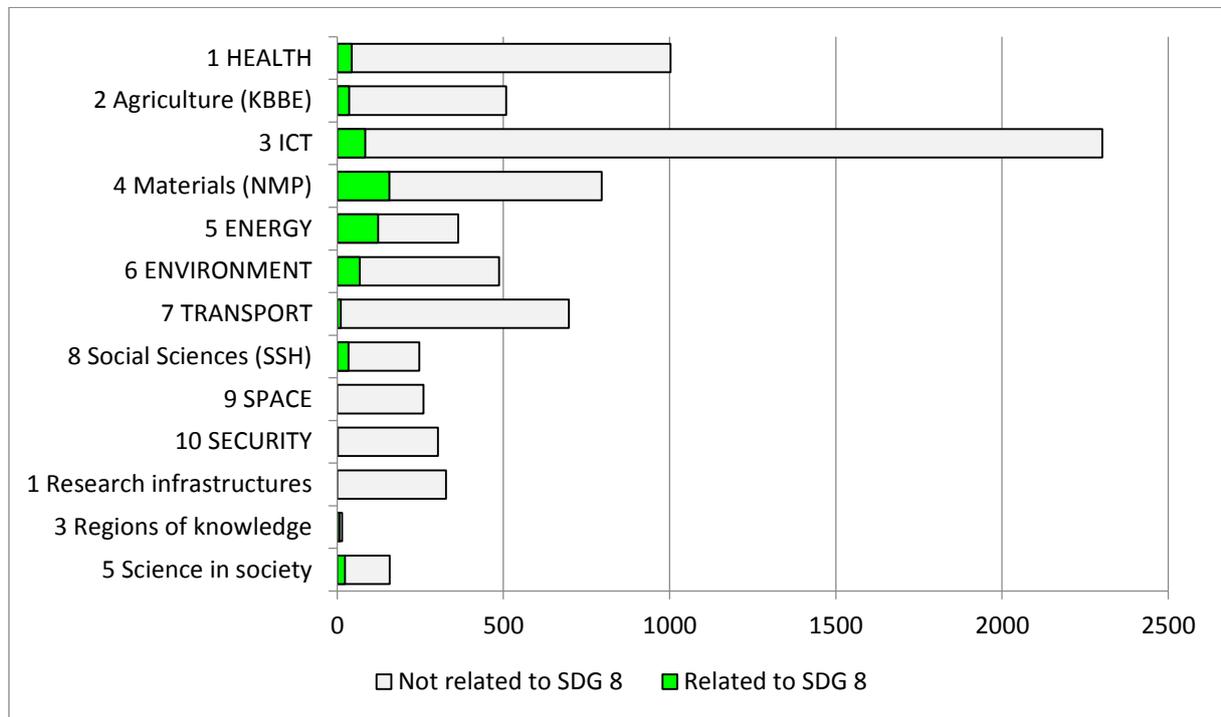


Figure 8.2: Number of projects related to SDG 8 in SP ‘Cooperation’ and SP ‘Capacities’\*

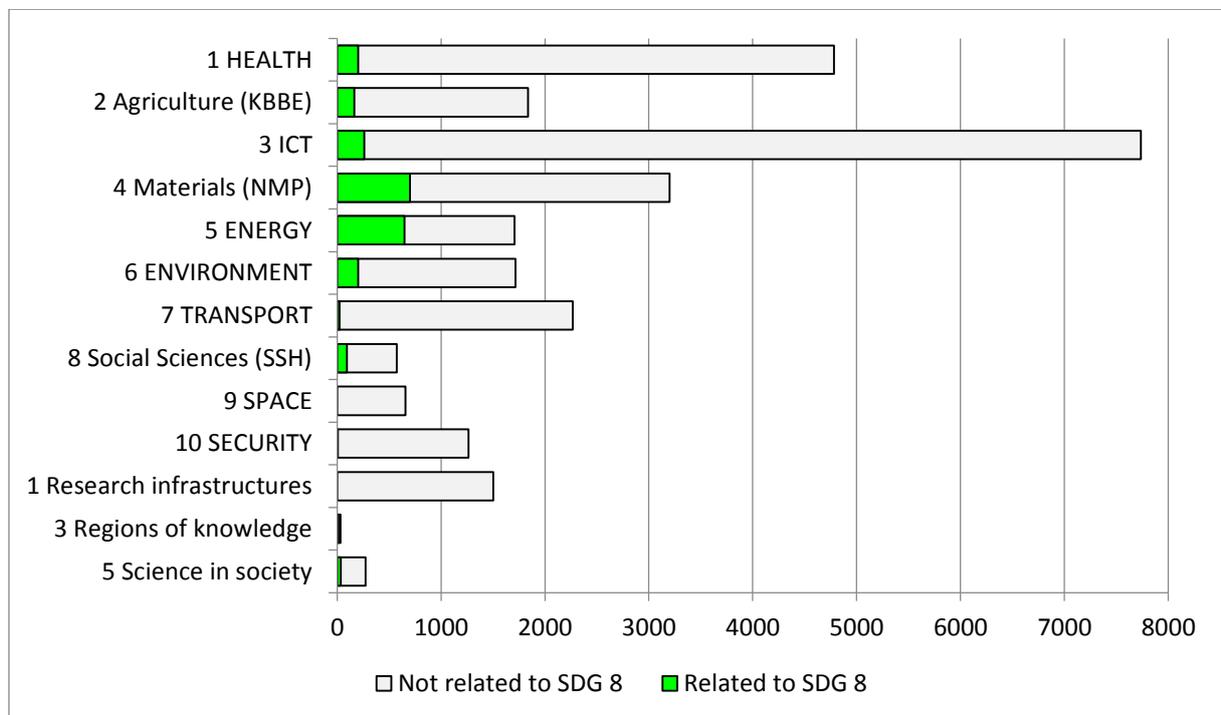


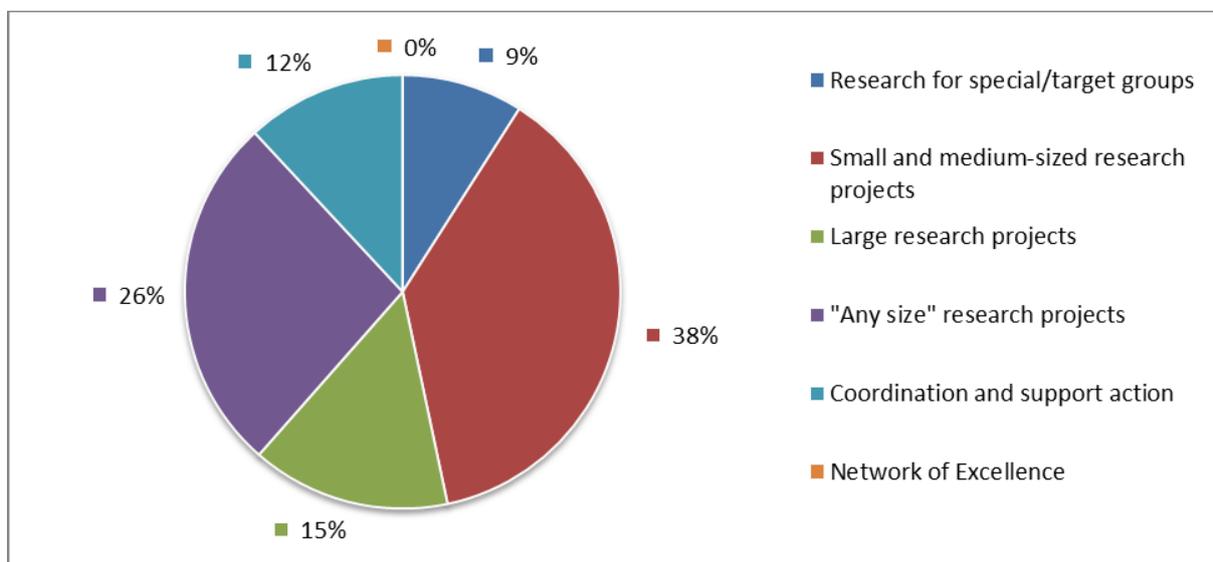
Figure 8.3: Total EC contribution (€ million) to projects related to SDG 8

In the period between 2007 and 2013, the EC contribution to projects relevant for SDG 8 has varied substantially. The highest contributions were made in 2011 and 2012, amounting to about € 0.5 billion each year. In contrast, the lowest contribution was made in 2010 (some € 0.1 billion). In relative terms, the highest share of the EC contribution relevant for SDG 8 was recorded in 2012,

about 16 % of the designated budget. In contrast, only 4 % of the EC contribution made in 2010 was relevant for this SDG.

The number of topics related to SDG 8 also varied from year to year. The highest number can be seen in 2011 (about 50 topics) and the lowest in 2008 (some 28 topics). Overall, between 5 % and 11 % of topics had a direct link to SDG 8 in the period between 2007 and 2013. The number of projects relevant for SDG 8 varied more strongly, from 35 projects in 2010 to over 120 projects in 2011. This was equivalent to 4 % and 15 % of all projects carried out in 2010 and 2011 respectively.

Projects in FP7 received funding through different schemes, depending on the size and type of project carried out (see Figure 8.4). Regarding those projects that are relevant for the objectives of SDG 8, approximately 40 % were small and medium-sized research projects. This was equivalent to some 220 projects. Projects without a pre-defined size (categorised as ‘any size’) constituted the second largest scheme with some 160 projects or 26 % of all projects relevant for SDG 8. It was followed by large-scale research projects (15 %) and projects requiring coordination and support action (12 %). Only 9 % of the projects relevant for SDG 8 involved research for special/target groups and none were financed under the scheme ‘network of excellence’.

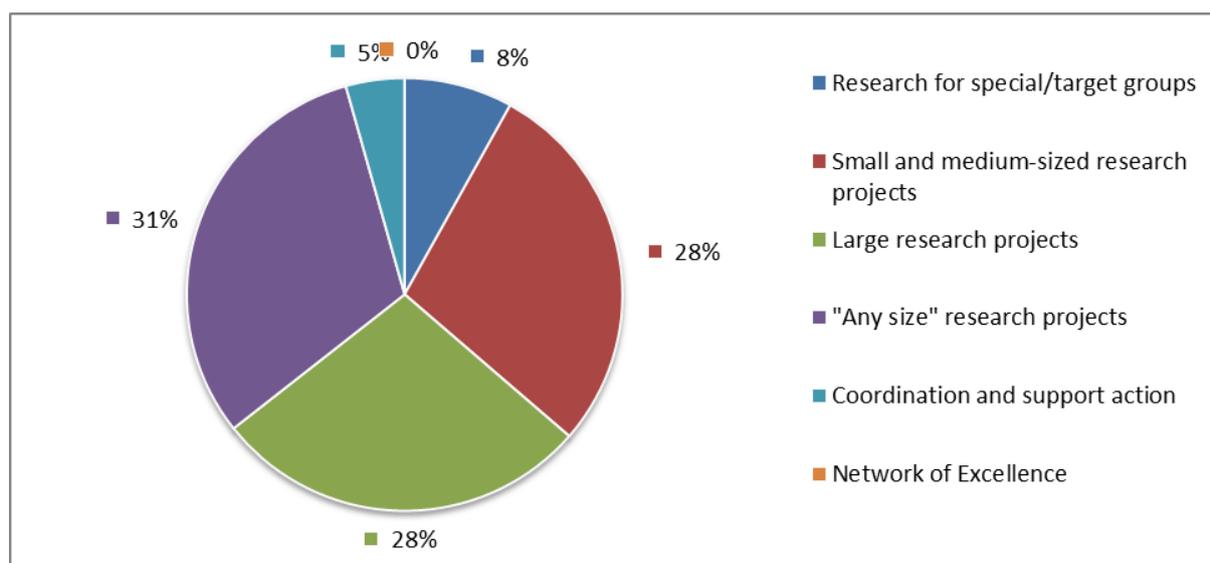


**Figure 8.4:** Projects related to SDG 8, by funding scheme

An equal share of the EC contribution relevant for SDG 8 was allocated to small and medium-sized research projects and large-scale research projects (28 %), although the number of projects in the first group was more than twice the number of projects in the second group (see figure 8.5). A slightly higher share of the budget was allocated to projects without a pre-defined size (31 %). The schemes ‘research for special/target groups’ and ‘coordination and support action’ received only 8 % and 5 % of the designated EC budget respectively.

Compared with FP7\* as a whole, a significantly lower share of projects relevant to SDG 8 were small and medium-sized research projects and these received a lower share of the designated EC contribution. In contrast, ‘any-size’ projects were overrepresented compared with FP7\* as a whole.

About 2 % of the projects relevant for SDG 8 required international cooperation and received approximately 1 % of the EC contribution. This is slightly lower than the share of projects requiring international cooperation in the FP7\* as a whole (3 %).



**Figure 8.5:** EC contribution to projects related to SDG 8, by funding scheme

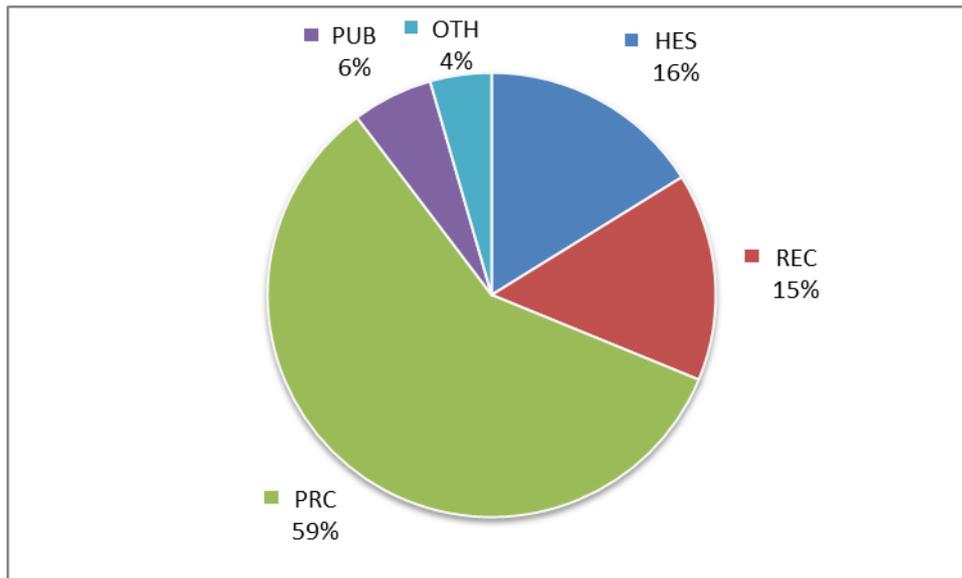
Some 3,900 organisations have participated in projects related to SDG 8 in the period between 2008 and 2013. As seen in figure 8.6, majority of these were private for-profit organisations (almost 60 %). Higher education institutions and non-profit research organisations accounted for 16 % and 15 % of the participating organisations respectively. Only 6 % of the participants were public bodies.

The picture changes when considering the number of times organisations participated in projects relevant for SD 8 (Figure 8.7). Higher education institutions were took part in 3 projects on average and thus held a high share of project participations<sup>29</sup> (30 %). Non-profit research organisations also had a high participation rate, 2 or 3 projects on average, and accounted for 22 % of the project participations. Private for-profit organisations were still the most involved, accounting for 41 % of all project participations. However, they took part in only 1 project on average. Public bodies were also likely to participate in 1 project only and held 4 % of all project participations related to SDG 8.

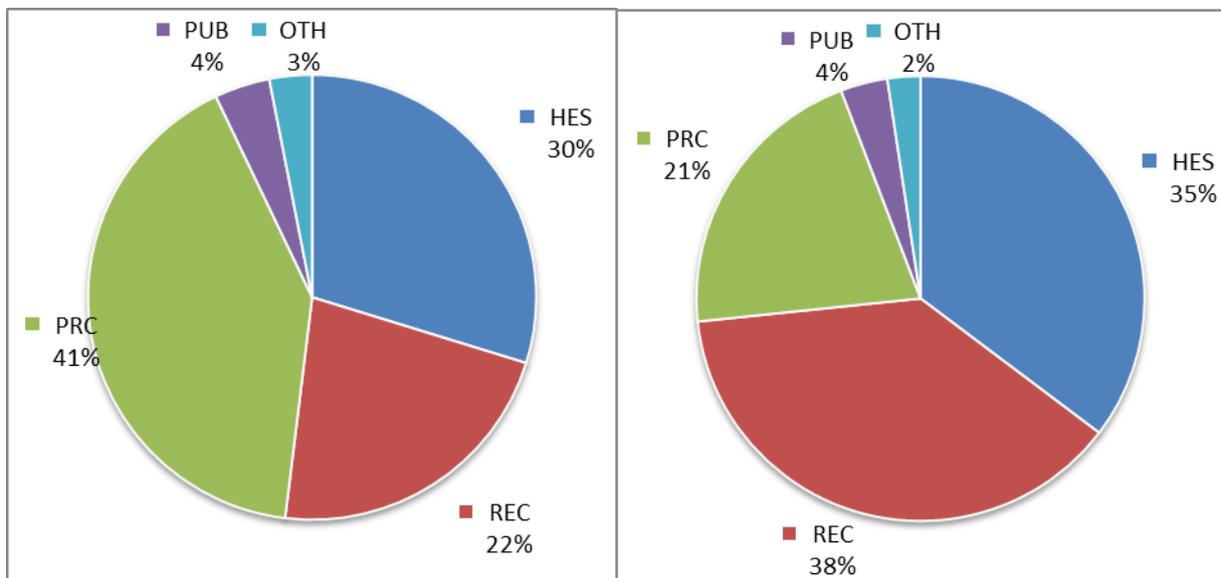
Figure 8.7 shows that most projects related to SDG 8 were coordinated by research organisations (38 %) or higher education institutions (35 %). Only 21 % of projects were coordinated by private organisations, although they were the largest group involved. Public bodies coordinated 4 % of the projects relevant for SDG 8, which corresponds to their respective share of project participations.

Compared with FP7\* as a whole, private-for-profit organisations were overrepresented in terms of project participations related to SDG 8. In contrast, higher education institutions and research organisations were slightly underrepresented in terms of project participations. Higher education institutions were also underrepresented as project coordinators, whereas research organisations were overrepresented as coordinators.

<sup>29</sup> Project participations refer to the number of organisations times their participation in projects.

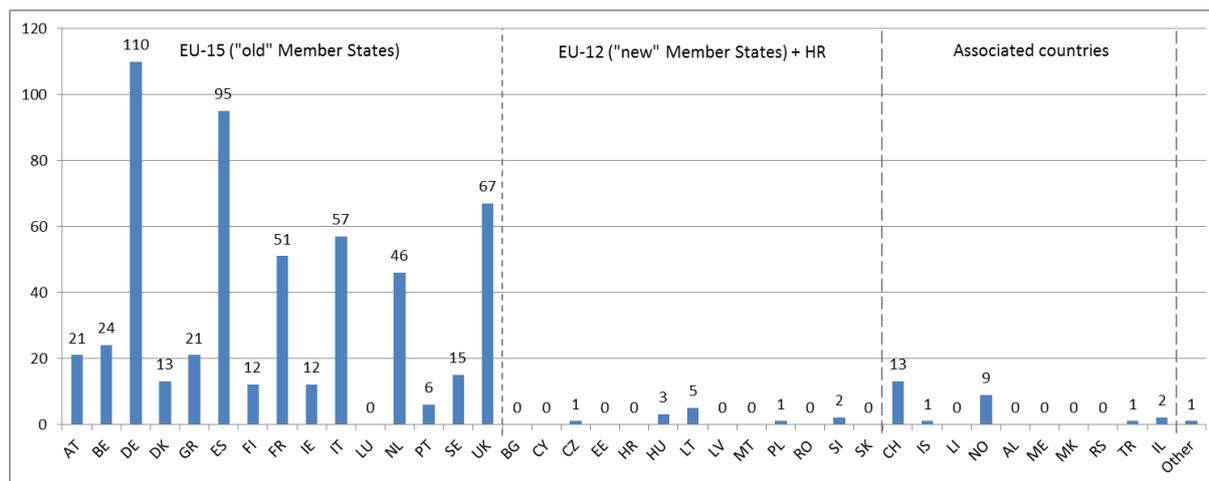


**Figure 8.6:** Organisations participating in projects related to SDG 8



**Figure 8.7:** Participations in projects related to SDG 8, by organisation type - all project partners (left), project coordinators (right)

Regarding the geographical distribution of project coordinators, majority of them were located in the ‘old’ (EU-15) Member States (see Figure 8.8). Almost 20 % of the coordinators were from Germany, 16 % from Spain and 11 % from the United Kingdom. Coordinators from Spain were significantly overrepresented compared with FP7\* as a whole. Italy, France and the Netherlands were also highly represented, with 10 %, 9 % and 8 % of the coordinators coming from these countries respectively. In contrast, only 2 % of coordinators were from the ‘new’ Member States (EU-12 plus Croatia), in particular Lithuania, Hungary, Slovenia, the Czech Republic and Poland. Better represented were other European (non-EU) countries, with 4 % of coordinators located in Switzerland, Norway and Island.



**Figure 8.8:** Geographical location of coordinators of projects related to SDG 8

### 3.8.3 Project cases

**Project title:** *Sustainable products from economic processing of biomass in highly integrated biorefineries (SUPRA-BIO)*

**Project coordinator:** BRUNEL UNIVERSITY (UNITED KINGDOM)

**Duration:** 02/01/2010 to 01/31/2014

**Costs:** € 17.5 million; **EC contribution:** € 12.3 million

**Funding scheme:** Collaborative project

**Project abstract:** Economic and sustainable production of fuels, chemicals and materials from biomass requires capture of the maximum energy and monetary value from sustainable feedstock. SUPRA-BIO achieves this by focussing on innovative research and development of critical unit operations, by using process intensification to match economic production to the scale of available feedstock and by process integration that provides energy from process waste, optimises utilities to minimise environmental impact and maximises value from the product mix. A technology toolbox for conversion and separation operations is developed that adapts to various scenarios of product mix and feedstock. These are contextualized by full life cycle and economic analysis of potential biorefinery schemes. Based on lignocellulose, microbial/organic waste or microalgae feedstock, innovation and intensification are used to improve the economics and carbon efficiency of fractionation, separation, bio and thermochemical conversions to produce biofuels, intermediates and high value products. Strain selection, genetic manipulation, molecular design and nanocatalysis are used to improve productivity and selectivity; reactor design, intensification and utilities integration for economics. Fermentation to 2,3 butanediol is demonstrated. Mono and multiculture processes are researched for high value products and feedstock streams. Separation is developed for omega oils and specific lignochemicals. Nano and biocatalytic processes are developed for biofuels and bioactive molecules. Integration into potential biorefinery schemes is explored in laboratory pilots of integrated reactors, by piloting on sidestreams, by exchanging separated fractions between partners and by process evaluations. The project includes all the scientific, engineering and industrial skills required to produce the step changes required for biorefineries to impact significantly on realising the aims of the European Strategic Energy Technology Plan

**Website:** <http://www.suprabiio.eu>

**Project title:** *Innovative Social and Employment Policies for Inclusive and Resilient Labour Markets in Europe (INSPIRES)*

**Project coordinator:** ERASMUS UNIVERSITEIT ROTTERDAM (NETHERLANDS)

**Duration:** 01/01/2013 to 06/30/2016

**Costs:** € 3.1 million; **EC contribution:** € 2.5 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** The INSPIRES project aims to contribute to resilient and inclusive labour markets in Europe. It comparatively assesses the resilience and inclusiveness of labour markets in European countries, it identifies innovative policies that have contributed to resilience and inclusiveness and it analyzes strategies of policy learning that facilitate the development and transfer of these innovations within and across European nation states. In order to do so, it analyzes in-depth the evolution of labour markets policies, employment policies and social policies. Moreover, it qualitatively and quantitatively assesses the labour market position of vulnerable groups from 2000 onwards. INSPIRES covers eleven countries from all European welfare traditions: Mediterranean, Eastern-European, Anglo-Saxon, Scandinavian and the continental regimes. The consortium consists of a multidisciplinary team of leading European scholars that focus on the labour market, employment issues and social policies. The INSPIRES project aims to accumulate practice-oriented knowledge on the factors that positively and negatively affect resilience and inclusiveness. It seeks to explain differences within and between countries, and within and between the labour market positions of different vulnerable groups on the labour market. INSPIRES intends to isolate the impact of national policies from the structural demographic, social and economic characteristics on labour market resilience. Building upon this analysis, it tries to identify processes of policy learning and innovation that occur in the interactions between policy makers, politicians, non-profit organizations, trade unions, business associations and other stakeholders at the European, national and regional level. The outcomes of INSPIRES contribute to facilitating policy learning and innovation processes across territorial and sectoral boundaries and to the creation of inclusive and resilient labour markets in European countries.

**Website:** <http://www.inspires-research.eu/>

## 3.9 SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

### 3.9.1 Overview – main results

#### Main findings:

- SDG 9 seems moderately narrow in terms of topics; it was predominantly addressed by topics in two themes (ENERGY and Materials (MNP)), but cross-cutting in terms of projects.
- SDG 9-related projects were larger than the FP7\* average. Compared to FP7\*, a disproportionate share of SDG 9 related projects was carried out and coordinated by private companies.

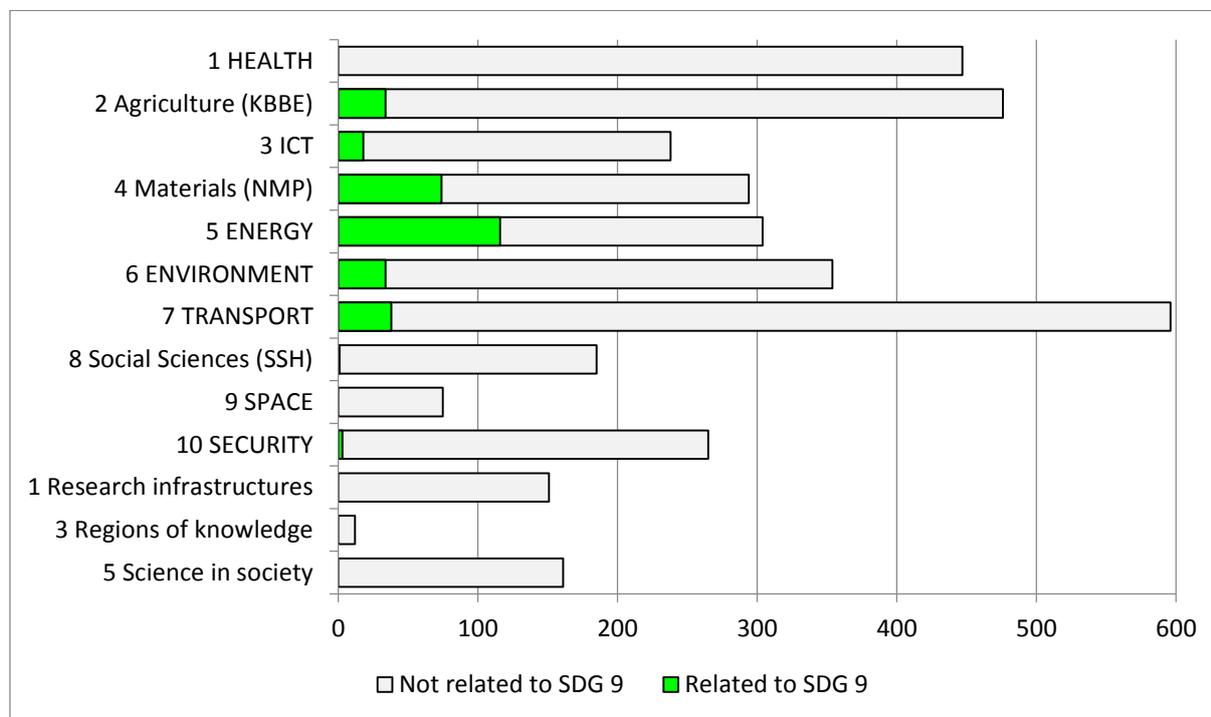
#### Summary of results:

- About 320 topics or 9 % of all topics called for in FP7\* were relevant to the objectives of SDG 9
- Under these, some 705 projects were carried out with a financial contribution of almost € 3 billion or about 11 % of the designated EC research budget
- The theme ENERGY and Materials (MNP) in SP ‘Cooperation’ contained the highest number of relevant topics and the themes Materials (MNP), ENERGY and ICT – the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 10 was larger than the average size of projects in FP7\* as a whole
- Almost one third of SDG 9 relevant projects were funded under the scheme of ‘small and medium-sized’ and one third under ‘any size’ projects, with the former being considerably underrepresented and the latter substantially overrepresented. Coordination and support action projects were also largely underrepresented
- About half of the relevant projects were carried out by private organisations, which were significantly overrepresented. Most related projects were coordinated by research organisations. Higher education institutions were largely underrepresented both as participants and coordinators
- About 3 % of the relevant projects required international cooperation, which was not significantly different from the FP7\* average
- The largest number of coordinators were from Germany, Spain and Italy. The EU-15 Member States, in particular Spain, were somewhat overrepresented, whereas France was underrepresented.

### 3.9.2 Detailed analysis

About 9 % of the topics called for in SP ‘Cooperation’ and SP ‘Capacities’\* were relevant for the objectives of SDG 9. This is equivalent to some 320 topics, all of which were called for in SP ‘Cooperation’. As seen in Figure 9.1, the theme ENERGY contained the largest number of topics relevant for SDG 9 (some 115 topics), followed by the theme Materials (NMP) (some 75 topics). The themes ENERGY and Materials (NMP) also had the highest share of topics relevant for SDG 9 – about 40 % and 25 % of all topics in the respective themes. The themes Agriculture (KBBE), ENVIRONMENT and TRANSPORT also featured a moderate number of topics relevant for SDG 9 - over 30 topics in

each of these theme. The above distribution of topics across themes is not surprising since SDG 9 is about infrastructure, industrialisation and innovation in the context of sustainable development, which relates most closely to the FP7 thematic areas of energy and materials but also transport, agriculture and environment.



**Figure 9.1:** Number of topics related to SDG 9 in SP 'Cooperation' and SP 'Capacities'\*

About 705 projects related to SDG 9 were carried out in SP 'Cooperation' (see figure 9.2). This was equivalent to about 10 % of all project carried out in this specific programme. None of the projects carried out in SP 'Capacities'\* had a relevance for SDG 9.

The highest number of projects contributing to SDG 9 were carried out under the theme Materials (NMP) (some 215 projects), followed by the themes ENERGY (some 165 projects) and ICT (some 140 projects). However, it was the theme ENERGY that contained the highest share of relevant projects (45 % from all its projects), followed by the theme Materials (NMP) (almost 30 % from all its projects). More than 10 % of projects were relevant for SDG 9 also in the themes ENVIRONMENT and Agriculture (KBBE).

Concerning the financing of projects, the EC contributed some € 3 billion to FP7\* projects relevant for SDG 9. This is equivalent to 11 % of the total EC contribution to FP7\* projects. About 12 % of the budget allocated to SP 'Cooperation' was relevant for SDG 9, whereas none of the budget allocated to SP 'Capacities'\* contributed to this particular goal.

Figure 9.3 shows the allocation of EC funding across the different themes in SP 'Cooperation'. It is interesting no note that the themes Materials (NMP) and ENERGY received similar financial contributions with relevance for SDG 9 (approximately € 0.9 billion each). While this was equivalent to more than 50 % of the entire budget of the theme ENERGY, it constituted 30 % of the budget of the theme Materials (NMP). The theme ICT also received a substantial share of the EC contribution (some € 0.5 billion), however due to the large size of the theme, this constituted only 6 % of its

overall budget. Much higher shares of the budget of the themes ENVIRONMENT and Agriculture (KBBE) contributed to the objectives of SDG 9, 15 % and 14 % respectively.

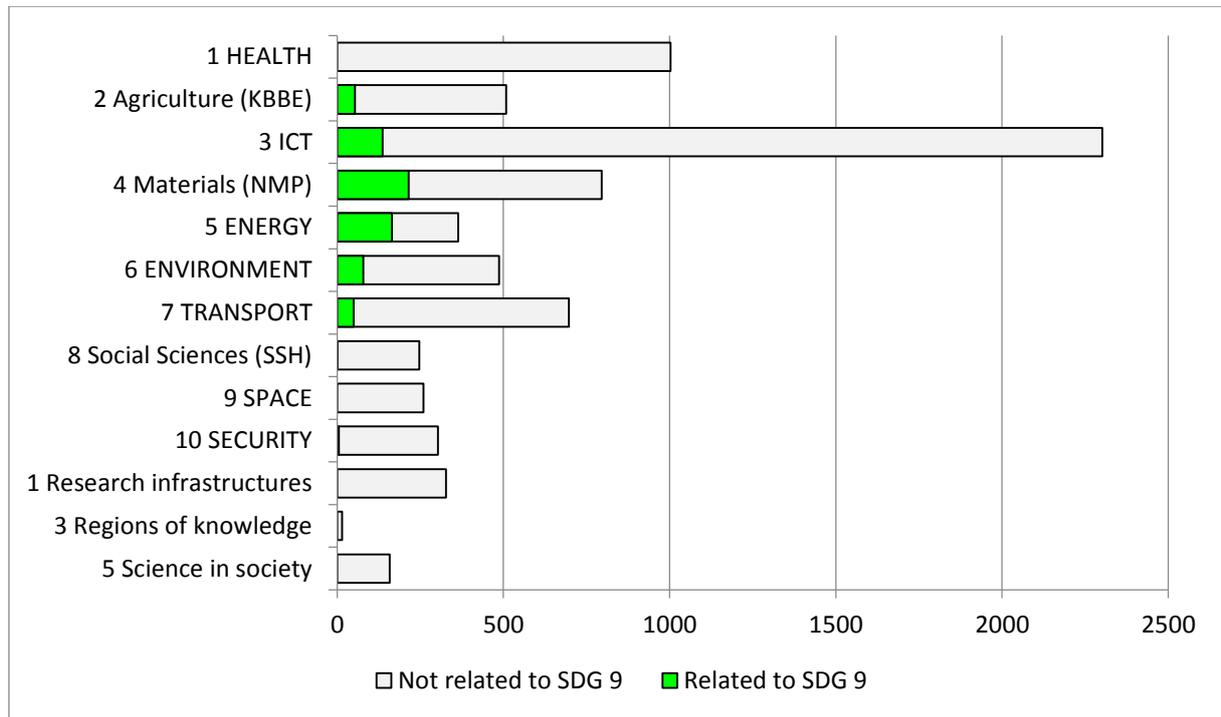


Figure 9.2: Number of projects related to SDG 9 in SP ‘Cooperation’ and SP ‘Capacities’\*

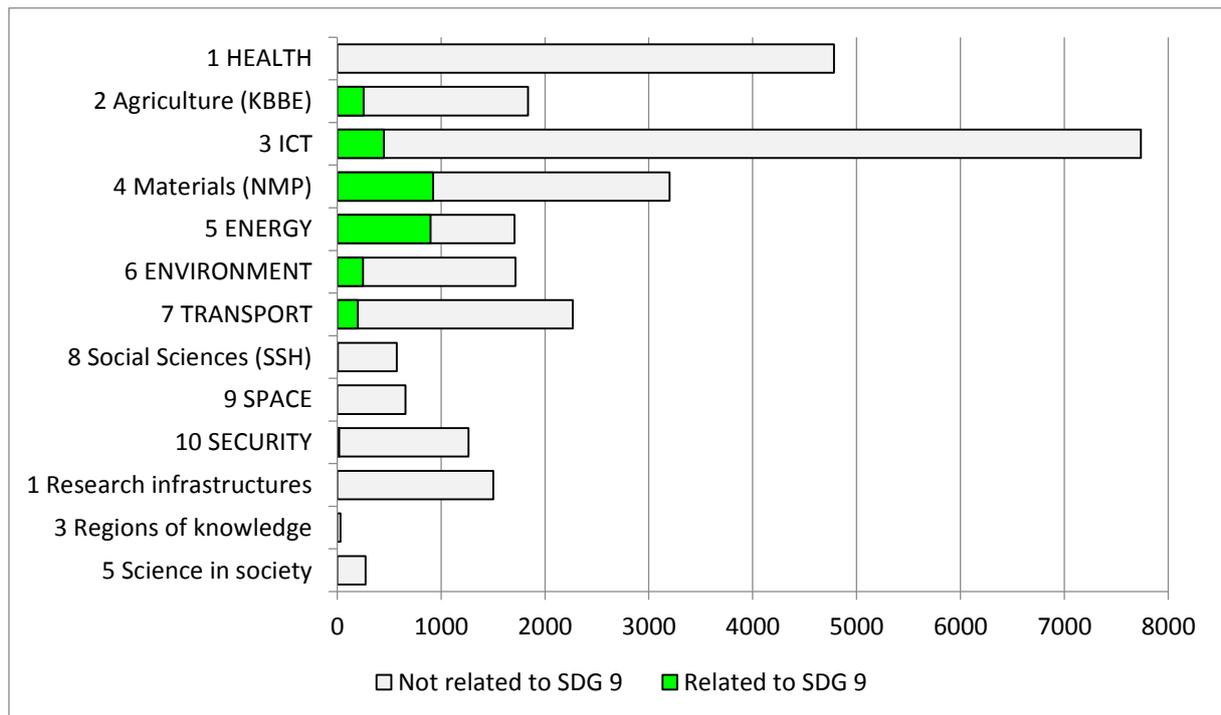
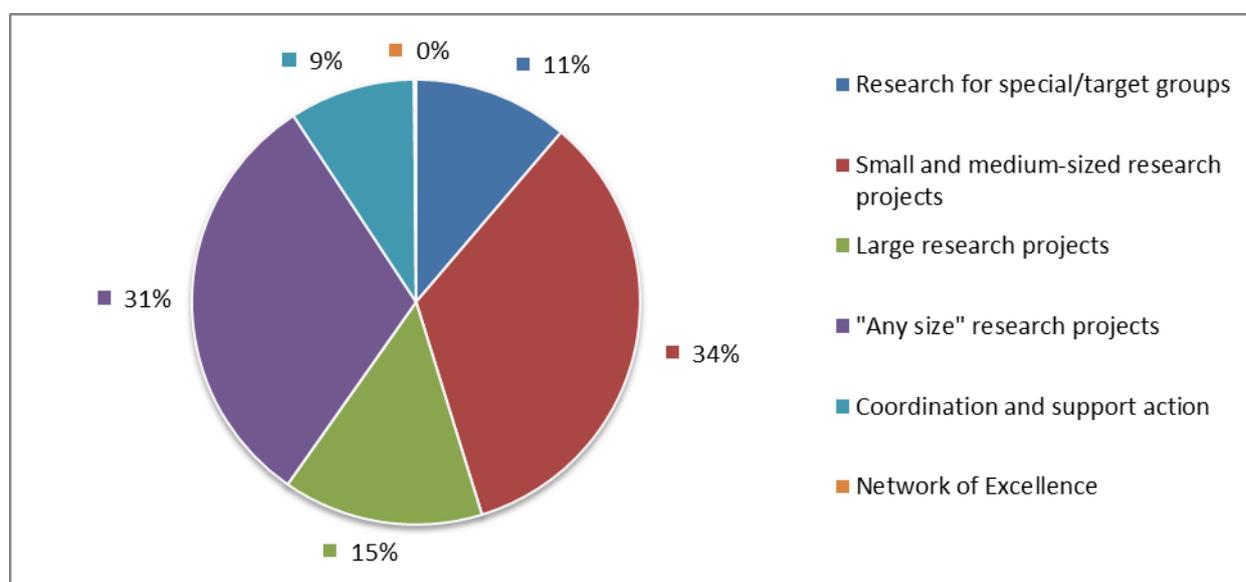


Figure 9.3: Total EC contribution (€ million) to projects related to SDG 9

In the period between 2007 and 2013, the EC contribution to projects relevant for SDG 9 has varied substantially. The highest contributions were made in 2012 and 2013, amounting to about € 0.6 billion each year. In contrast, the lowest contribution was made in 2010. In relative terms, the highest share of the FP7\* budget was relevant for SDG 9 in 2012, almost 20 %.

The number of topics related to SDG 9 also varied from year to year. The highest number can be seen in 2007 and 2012 (about 55 topics) and the lowest in 2008 (some 30 topics). Overall, between 6 % and 12 % of topics had a direct link to SDG 9 in the period between 2007 and 2013. The number of projects relevant for SDG 9 varied as well, from about 70 projects in 2008 to about 130 projects in 2013.

Projects in FP7 received funding through different schemes, depending on the size and type of project carried out (see Figure 9.4). Regarding those projects that are relevant for the objectives of SDG 9, approximately 34 % were small and medium-sized research projects. This was equivalent to some 240 projects. Projects without a pre-defined size (categorised as ‘any size’) constituted the second largest scheme with some 220 projects or 31 % of all projects relevant for SDG 9. It was followed by large-scale research projects (15 %) and projects for special/target groups (11 %). Only 9 % of the projects relevant for SDG 9 involved coordination and support action and none were financed under the scheme ‘network of excellence’.

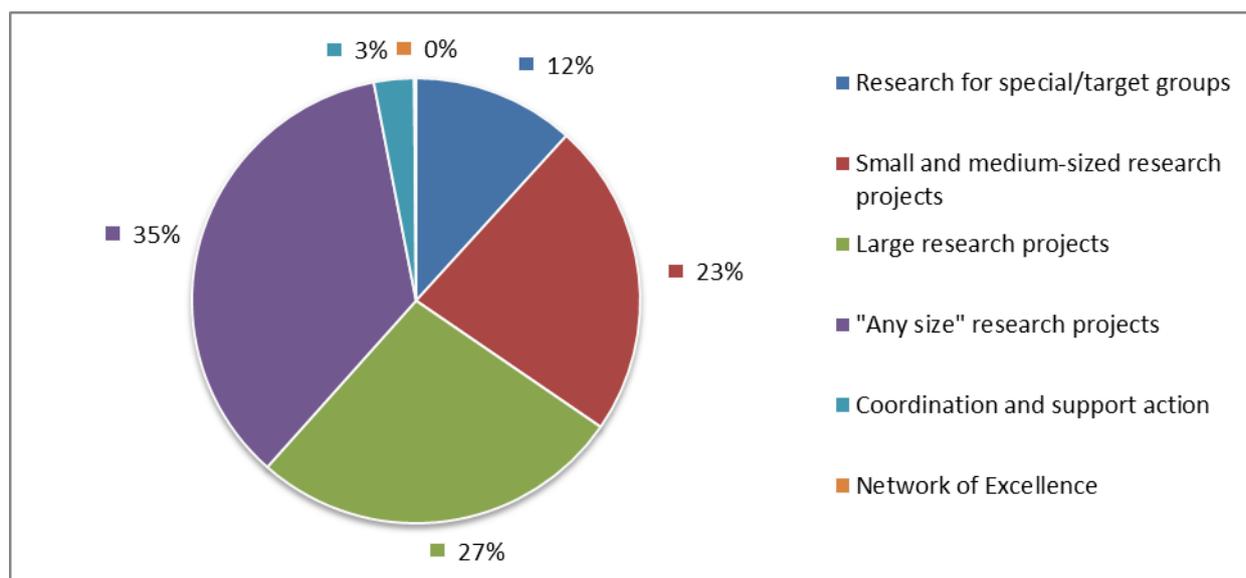


**Figure 9.4:** Projects related to SDG 9, by funding scheme

A third of the EC contribution relevant for SDG 9 was allocated to projects without a pre-defined size (35 %). Small and medium-sized research projects and large-scale research projects received similar shares, 23 % and 27 % respectively, although the number of projects in the first group was more than twice the number of projects in the second group (see figure 9.5). The schemes ‘research for special/target groups’ and ‘coordination and support action’ received only 12 % and 3 % of the designated EC budget respectively.

Based on the average EC project contribution, SDG 9 was addressed by larger projects (€ 4.3 million per project on average) compared with FP7\* as a whole (€ 3.7 million per project on average). This is also reflected in the fact that small and medium-sized research projects were largely underrepresented in SDG 9 related research compared with FP7\* as a whole. There was also a significantly smaller share of coordination and support action projects. Instead, SDG 9 related research was dominated by ‘any size’ research projects.

About 3 % of the projects relevant for SDG 9 required international cooperation and received approximately 2 % of the relevant EC contribution, which is comparable to the respective shares in FP7\* as a whole.



**Figure 9.5:** EC contribution to projects related to SDG 9, by funding scheme

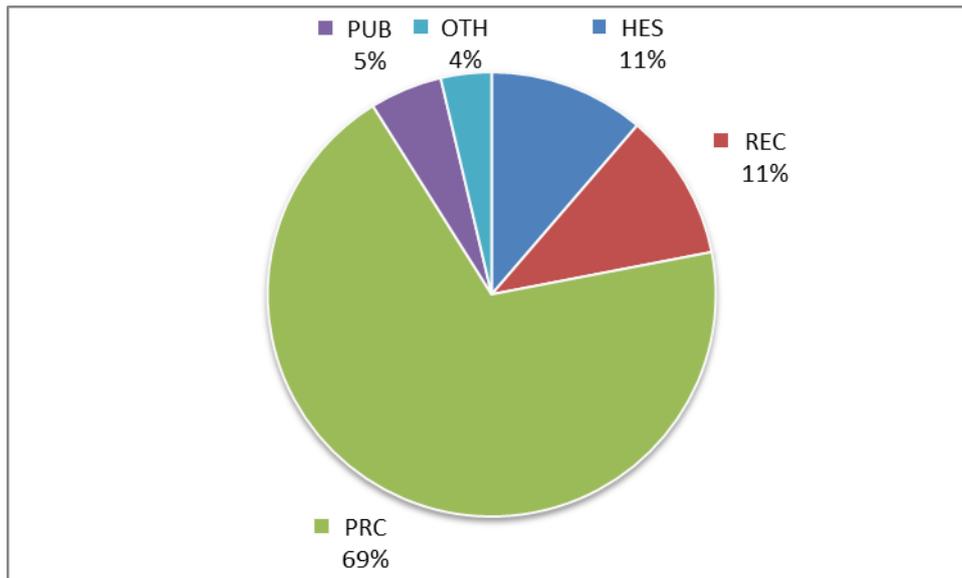
Some 4,760 organisations participated in projects related to SDG 9 in the period between 2007 and 2013. As seen in figure 9.6, majority of these were private for-profit organisations (almost 70 %). Higher education institutions and non-profit research organisations accounted for 11 % of the participating organisations each. Only 5 % of the participants were public bodies.

The picture changes when considering the number of times organisations participated in projects relevant for SD 9 (Figure 9.7). Higher education institutions and research organisations took part in three to four projects on average and thus held a high share of project participations<sup>30</sup> (about 20 % each). Private for-profit organisations were still the most involved, accounting for more than 50 % of all project participations. However, they took part in only 1 project on average. Public bodies were also likely to participate in 1 project only and held approximately 3 % of all project participations related to SDG 9.

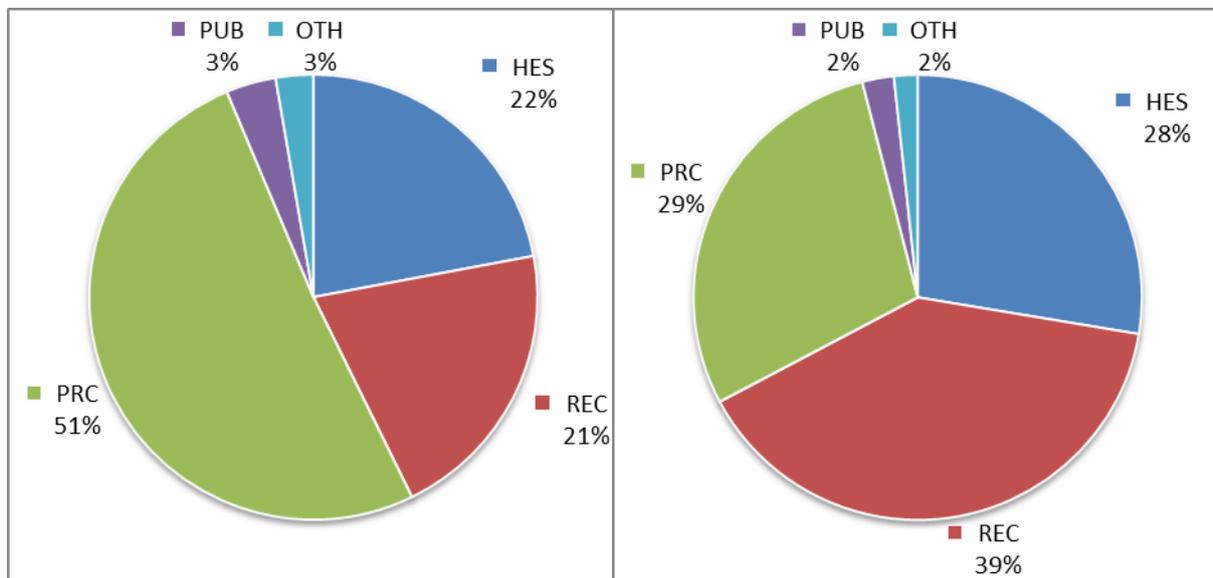
Figure 9.7 shows that most projects related to SDG 9 were coordinated by research organisations (almost 40 %). Higher education institutions and private organisations accounted for an equal share of project coordinators (almost 30 % each). Only 2 % of projects relevant for SDG 9 were coordinated by public bodies.

Compared with the overall number of FP7\* project participations, private for-profit organisations were considerably overrepresented both as participants and coordinators of projects related to SDG 9, whereas higher education institutions were largely underrepresented.

<sup>30</sup> Project participations refer to the number of organisations times their participation in projects.

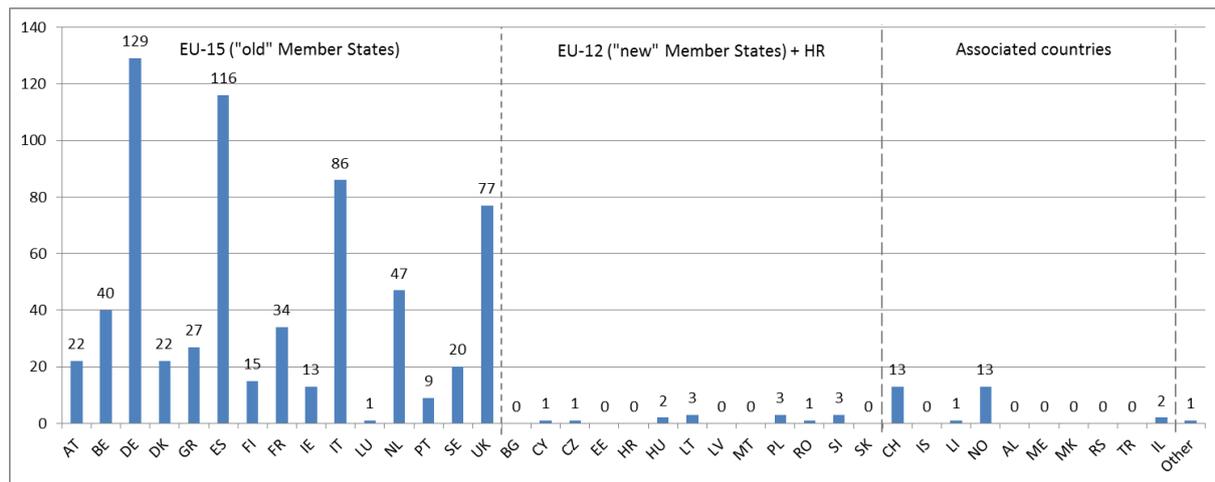


**Figure 9.6:** Organisations participating in projects related to SDG 9



**Figure 9.7:** Participations in projects related to SDG 9, by organisation type

Regarding the geographical distribution of project coordinators, majority of them were located in the ‘old’ (EU-15) Member States (see Figure 9.8). Almost 60 % of the coordinators were either from Germany, Spain, Italy or the United Kingdom. The Netherlands and Belgium were also well represented, with more than 5 % of the coordinators coming from these countries. In contrast, only 2 % of coordinators were from the ‘new’ Member States (EU-12 plus Croatia), mostly from Lithuania, Slovenia and Poland. Better represented were other European (non-EU) countries, with 4 % of coordinators located in Switzerland, Norway and Lichtenstein. Compared with the overall FP7\* distribution of coordinators, a higher share of projects related to SDG 9 were coordinated by organisations from the EU-15 Member States, with Spain being particularly overrepresented. Significantly less coordinators of SDG 9 related projects came from France.



**Figure 9.8:** Geographical location of coordinators of projects related to SDG 9

### 3.9.3 Project cases

**Project title:** *sunliquid® large scale demonstration plant for the production of cellulosic ethanol (SUNLIQUID)*

**Project coordinator:** Clariant Produkte (Deutschland) GmbH (GERMANY)

**Duration:** 04/01/2014 to 03/31/2018

**Costs:** € 224.6 million; **EC contribution:** € 23 million

**Funding scheme:** Collaborative project

**Project abstract:** The aim of the proposal is to build a sunliquid® pre-commercial industrial scale demonstration plant for the production of lignocellulosic ethanol based on Clariant Produkte (Deutschland) GmbH's sunliquid® process. The sunliquid® technology is an innovative process for the production of cellulosic ethanol from lignocellulosic feedstock. It features highly optimized enzymes for maximum yield, an integrated enzyme production to ensure lowest production costs, simultaneous C5 and C6 fermentation which increases the overall ethanol yield by about 50% and an energy saving separation technology. The resulting cellulosic ethanol shows CO<sub>2</sub> emission savings of almost 95%, the process is energy self-sufficient as the whole process energy is obtained from the residual lignin fraction. For this purpose work packages were designed to reproduce the entire value chain. Feedstock supply including transportation and selection of an appropriate plant site will be assessed by project partners ExportHungary and BayWa. Basic and Detail Engineering will be performed for full scale-up of the process into a commercial plant taking into account the experience from the demonstration site in Straubing (Germany) and other large scale production plant construction projects of the applicant CPG. Furthermore, applicant CPG will secure the supply of high quality starter cultures including stringent quality controls and management. The innovative biocatalysts produced from these starter cultures are of central importance for the ramp-up and operation of the plant. To demonstrate commercial viability distribution and testing of the cellulosic ethanol will be focused in another work package. A full life cycle assessment (LCA) of the process will assess and confirm the overall sustainability of the process supported by in depth expertise of the Energieinstitut Linz. Project partners BioM WB and BayFOR will be responsible for the dissemination of project results, to ensure knowledge transfer and maximum impact.

**Website:** <http://sunliquid-project-fp7.eu/project/overview/>

**Project title:** *Flexible Processes and Improved Technologies for Urban Infrastructure Construction Sites (PANTURA)*

**Project coordinator:** CHALMERS TEKNISKA HOEGSKOLA AB (SWEDEN)

**Duration:** 01/01/2011 to 12/31/2013

**Costs:** € 4.7 million; **EC contribution:** € 3.2 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** More than 50% of bridges in European cities are older than 40 years and bridges are a vital part of the infrastructure. Bridge managers are currently dealing with a large number of structurally deficient, obsolete bridges. The need to maintain, renew, strengthen and upgrade this part of the infrastructure will increase dramatically in the near future. PANTURA has bridges as its focal point. It is, however, important to stress that the approach proposed here can be applied to all infrastructure projects. The aims are to improve highly flexible off-site production processes, create resource-efficient construction sites, improve technologies and tools for bridge construction in densely populated areas and enhance communication between local authorities and construction companies. The main benefits of PANTURA are relevant to the Work Programme and are as follows: a) equip authorities, stakeholders and experts with a comprehensive instrument (methods, tools and techniques) to prepare and perform bridge construction, maintenance, repair and renovation processes in the most effective and efficient way, in the shortest possible time, with the most efficient, sustainable use of resources and with zero disturbance and disruption for the urban environment and urban life of the inhabitants, b) reduce lifecycle costs, i.e. the more efficient use of public funds by saving a significant amount of time and money, c) use new materials to increase off-site industrial production, technical innovations and new markets for SMEs and d) improve benchmarking systems to promote a performance-based, innovative, creative construction industry. PANTURA applies research based on a multidisciplinary, holistic approach and promotes innovative yet practical solutions, while covering the entire lifecycle process. PANTURA aims to realise these objectives by taking current research on construction processes, ICT tools and infrastructure technologies one step further.

**Website:** <http://www.pantura-project.eu/>

## 3.10 SDG 10: Reduce inequality within and among countries

### 3.10.1 Overview – main results

#### Main findings:

- SDG 10 is one of the least addressed in FP7\* in terms of topics.
- SDG 10-related projects were considerably smaller than the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 9 related projects was carried out and coordinated by universities.

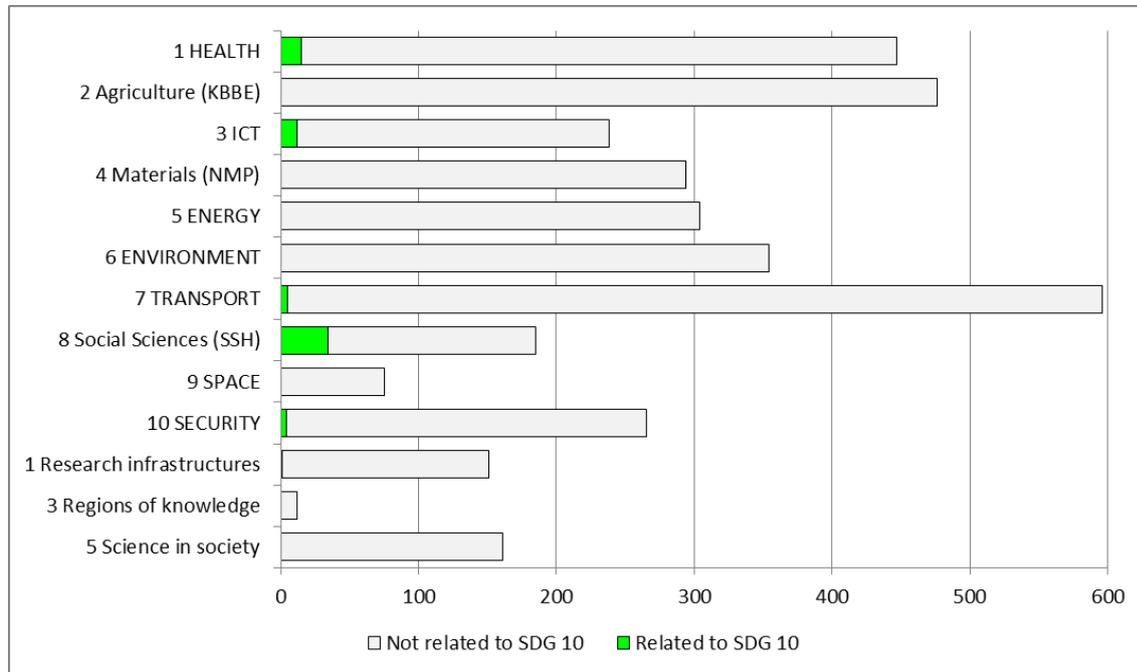
#### Summary of results:

- About 70 topics or 2 % of all topics called for in FP7\* were relevant to the objectives of SDG 10
- Under these, some 215 projects were carried out with a financial contribution of € 0.6 billion or about 2 % of the designated EC research budget
- The theme Social Sciences (SSH) in SP ‘Cooperation’ contained the highest number of relevant topics and the themes ICT and Social Sciences (SSH) – the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 10 was much smaller than the average size of projects in FP7\* as a whole
- About two thirds of SDG 10 relevant projects were funded under the scheme of ‘small and medium-sized’, which was considerably higher compared with FP7\* as a whole. ‘Any size’ projects were largely underrepresented.
- Majority of relevant projects were carried out and coordinated by higher education institutions, which were considerably overrepresented. Private organization and research organisations were largely underrepresented
- About 2 % of the relevant projects required international cooperation, which was slightly below the FP7\* average
- The largest number of coordinators were from Germany, Italy and Spain. The EU-15 Member States, in particular the UK and France, were underrepresented, whereas Switzerland was overrepresented.

### 3.10.2 Detailed analysis

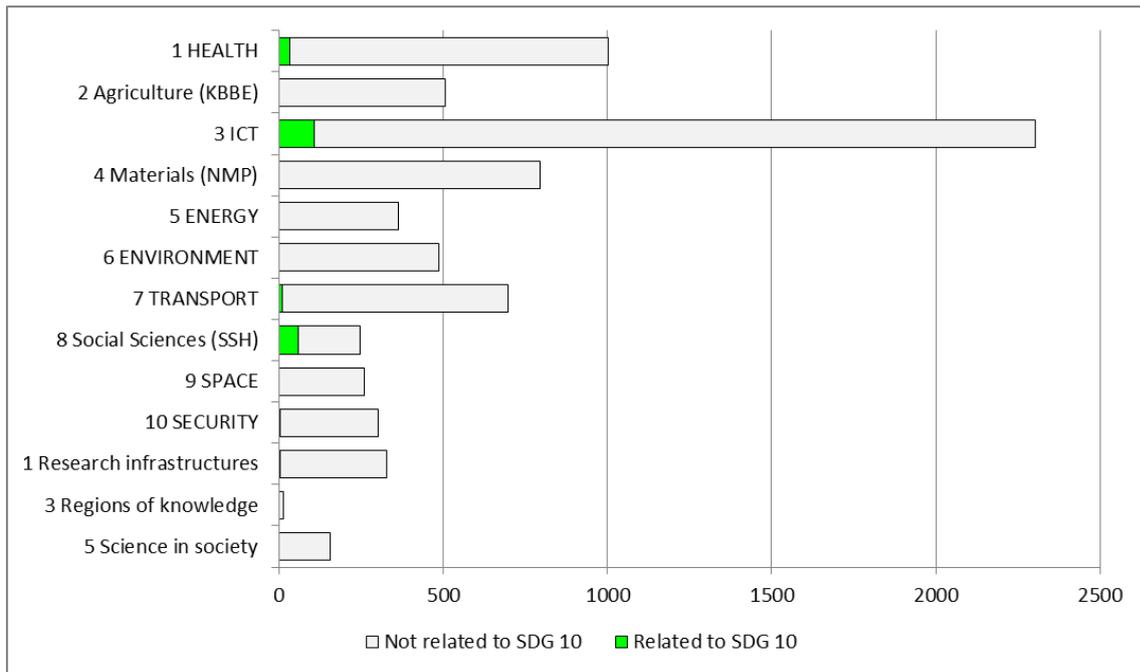
About 2 % of all topics called for in SP ‘Cooperation’ and 0.3 % in SP ‘Capacities’\* are relevant for the objectives of SDG 10. This is equivalent to approximately 70 topics called for in the Work Programmes 2007-2013. The theme Social Sciences (SSH) in SP ‘Cooperation’ contains the largest number of topics related to the objective of SDG 10 – about 35 topics or approximately 18 % of all topics called for under this theme. This is not surprising since the objectives of SDG 10 for reduction of inequalities are mainly a social issue. The second largest number of topics related to SDG 10 are covered in the HEALTH theme in SP ‘Cooperation’ – approximately 15 topics or 3 % of all topics called for under this theme. However, in relative terms the ICT theme comes second in terms of share of topics with relevance to SDG 10 – approximately 10 topics, constituting about 5 % of all topics called for under this theme. Topics in the ICT theme mainly address the SDG 10 objectives of increasing empowerment and political inclusion through ICT solutions, whereas topics in the HEALTH theme

focus on promoting equalities through social protection policies. Other themes in SP ‘Cooperation’ that contain few or no topics relevant for SDG 10 (See Figure 10.1). In comparison to SP ‘Cooperation’, SP ‘Capacity’ contains a very limited number of topics related to SDG 10, all falling under ‘Research infrastructures’ (about 1 % of all its topics in this theme).



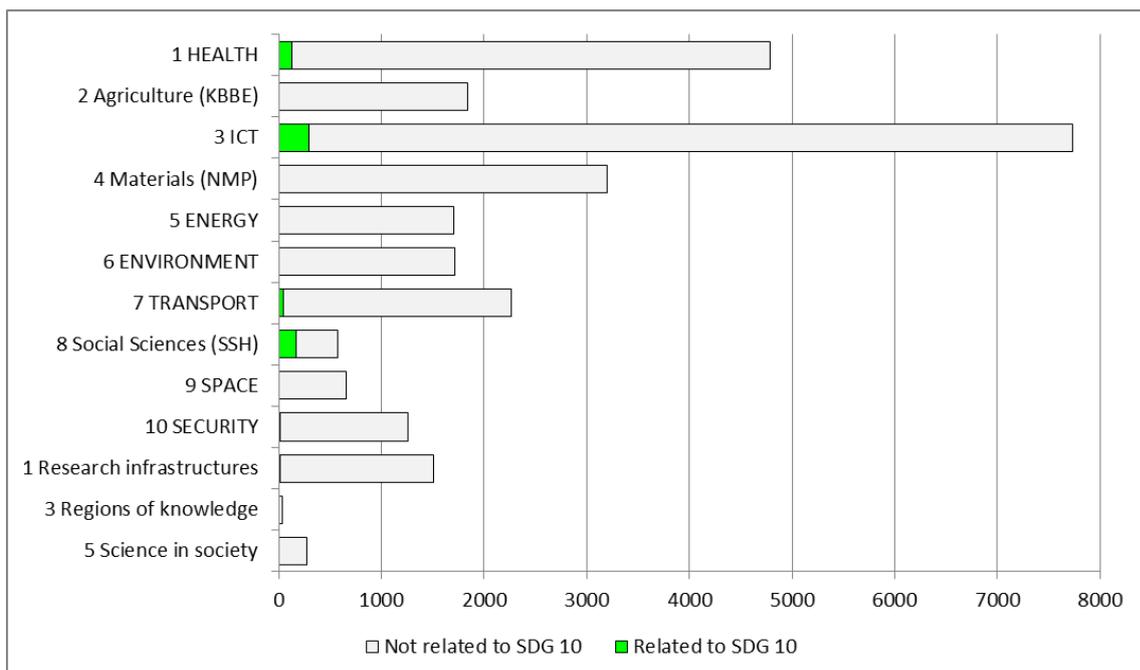
**Figure 10.1:** Number of topics related to SDG 10 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, some 215 projects related to the objectives of SDG 10 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to 3 % of all projects in both specific programmes. Although the Social Sciences (SSH) theme still stands out with the largest share of projects related to SDG 10 – about 24 % of all projects carried out under this theme, it is the ICT theme that contains the largest number of projects with relevance to SDG 10 in real terms – about 110 projects or almost 5 % of all projects in this theme. The theme HEALTH comes third both in real and relative terms, covering about 35 projects with relevance to SDG 10 (about 3 % of all projects under this theme). A limited number of projects related to SDG 10 were also financed under the themes TRANSPORT (2 % of all projects under this theme) and SECURITY (0.3 % of all projects under this theme). Only a few projects with relation to SDG 10 were covered in SP ‘Capacities’\*, all falling under the theme ‘Research Infrastructures’.



**Figure 10.2:** Number of projects related to SDG 10 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP7\*, 641 € million or about 2 % of the research budget for SP ‘Cooperation’ and SP ‘Capacities’\* for 2007-2013 was allocated to projects relevant to SDG 10. Most of this financial contribution - 636 € - came from SP ‘Cooperation’ and about 5 € million from SP ‘Capacity’. In absolute terms, the ICT theme constituted the largest source of funding, with nearly € 296 million or 4 % of its budget being distributed to projects relevant for SDG 10. However, in relative terms the biggest contributor was the Social Sciences (SSH) theme, which allocated some € 165 million or nearly 30 % of its budget to projects related to SDG 10. The financial contribution from the HEALTH theme was also substantial, amounting to about 132 € million or 3 % of its overall budget.



**Figure 10.3:** Total EC contribution (€ million) to projects related to SDG 10

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 10 was highest in 2011, with almost € 137 million (almost 3 % of the total budget of SP 'Cooperation' and SP 'Capacity' in 2011), and lowest in 2010, with some € 41 million (1 % of the budget in 2010). The highest number of relevant projects was also recorded in 2011 - about 45 projects or approximately 3 % of all projects in SP 'Cooperation' and SP 'Capacity' carried out that year. Similarly, the highest number of topics with relevance to SDG 10 were observed in 2011 and 2012 - about 13 topics or almost 3 % of all topics called for in SP 'Cooperation' and SP 'Capacity' in both years.

Figure 10.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. About 145 projects or nearly 67 % of all projects that are relevant for the objectives of SDG 10 were small and medium-sized research projects. Coordination and support action constituted the second largest group in terms of number of projects (about 35 projects or 16 % of all projects relevant for SDG 10), followed by a comparable number of large-scale research projects (about 30 projects or 14 % of all projects relevant for SDG 10).

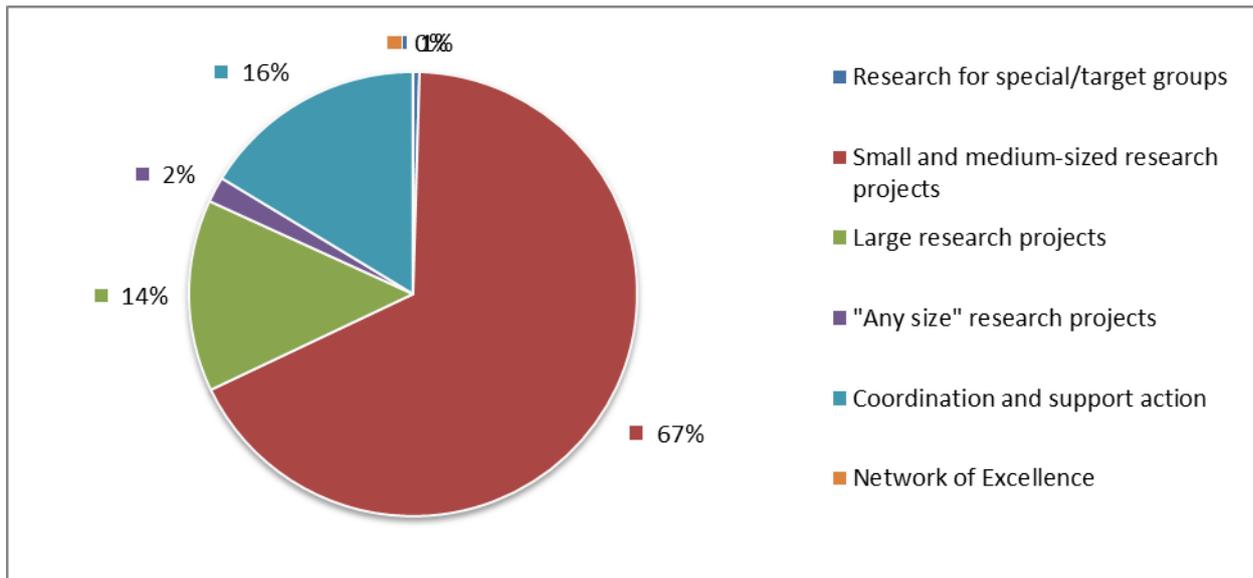
Small and medium sized research projects also received the biggest financial contribution from the EC – about € 363 million or approximately 57 % of the EC funding allocated projects relevant for SDG 10. Although large research projects were ranked third in terms of number of projects with relevance for SDG 10, they received the second highest EC contribution – about € 224 million or about 35 % of all EC funding allocated to SDG 10 relevant projects. In comparison, the funding scheme ranked second in terms of number of projects relevant for SDG 10 - coordination and support action projects – received four times smaller contribution from the EC, about € 42 million. This discrepancy could be explained by the different nature and scale of the project types and therefore the different funding requirements.

Based on the average EC project contribution, SDG 10 was addressed by much smaller projects (€ 3 million per project on average) compared with FP7\* as a whole (€ 3.7 million per project on average). This is also reflected in the fact that research related to SDG 10 was dominated by small and medium-sized projects, which were substantially overrepresented compared with FP7\* as a whole. In addition, 'any size' research projects were considerably underrepresented in SDG 10 relevant research and received a significantly smaller share of the EC budget compared with FP7\* as a whole.

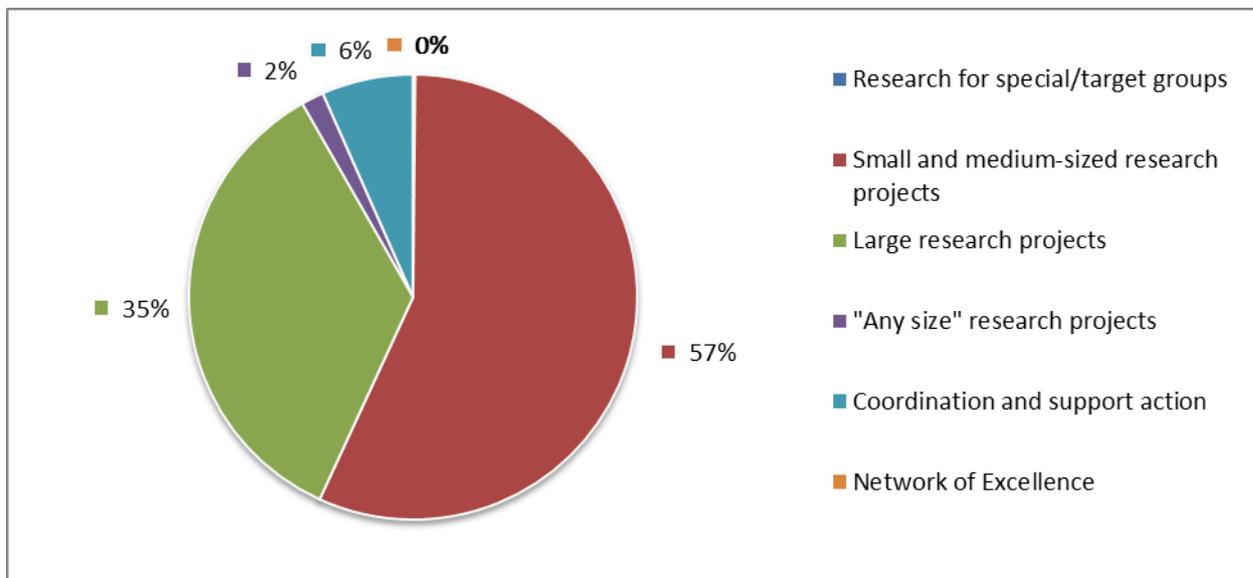
Looking at funding schemes, about 2 % of the projects with relevance to SDG 10 were carried out with the aim of strengthening international cooperation<sup>31</sup>. These received about 3 % of the EC contribution relevant to SDG 10 (nearly € 19 million).

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<sup>31</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.

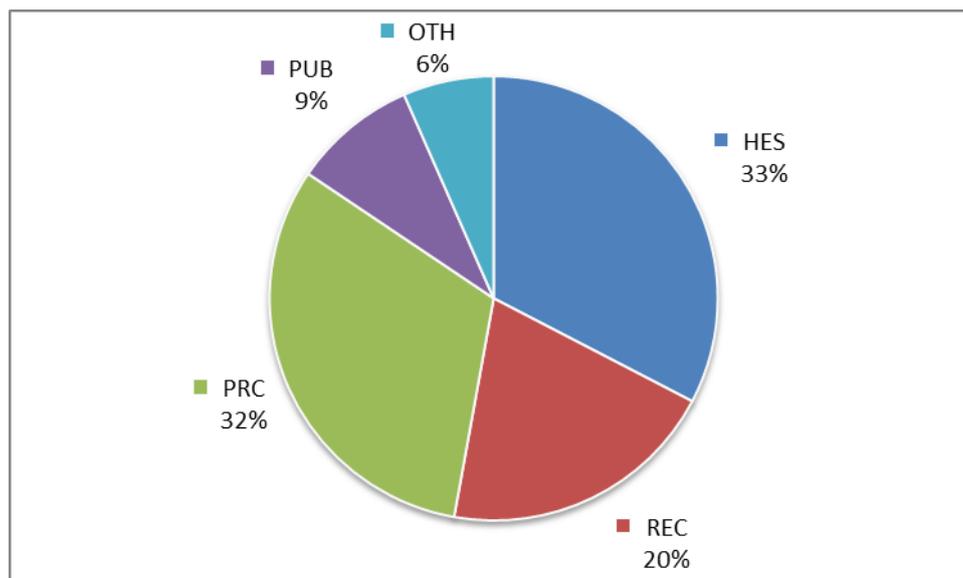


**Figure 10.4:** Projects related to SDG 10, by funding scheme



**Figure 10.5:** EC contribution to projects related to SDG 10, by funding scheme

For the entire period between 2007 and 2013, some 1360 organisations participated in projects related to SDG 10. As shown in Figure 10.6, higher education institutions accounted for about 33 % of these organisations, followed by private for-profit organisations (about 32 %) and research organisations (about 20 %). Public and other organisations were also involved, but to a more limited extent - with only 9 % and 6.5 % of all participating organisations falling in these categories, respectively.

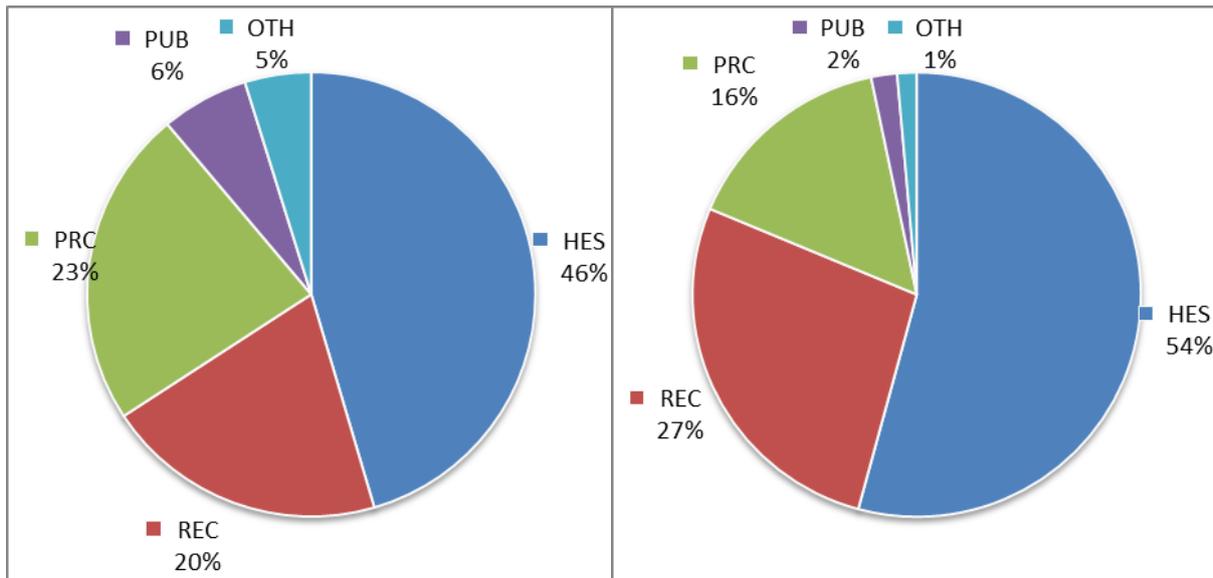


**Figure 10.6:** Organisations participating in projects related to SDG 10

The distribution across organisation types is similar when looking at the number of project participations relevant for SDG 10<sup>32</sup>. Higher education institutions participated on average in two to three projects and showed the highest participation rate – almost 46%. Private for-profit organisations participated in one project on average and came second in terms of project participation (23%). Although research organisations participated in one to two projects on average, they had the third largest share of project participations (20%). The representation of higher education institutions is even more pronounced when looking at the distribution of project coordinators. These organisations formed the large majority of project coordinators (54%) and were followed by research organisations (27%). Private for-profit organisations were less present as coordinators, having coordinated about 16% of all projects relevant for SDG 10. Public bodies and other types organisations were involved as project coordinators to a very limited extent (Figure 10.7).

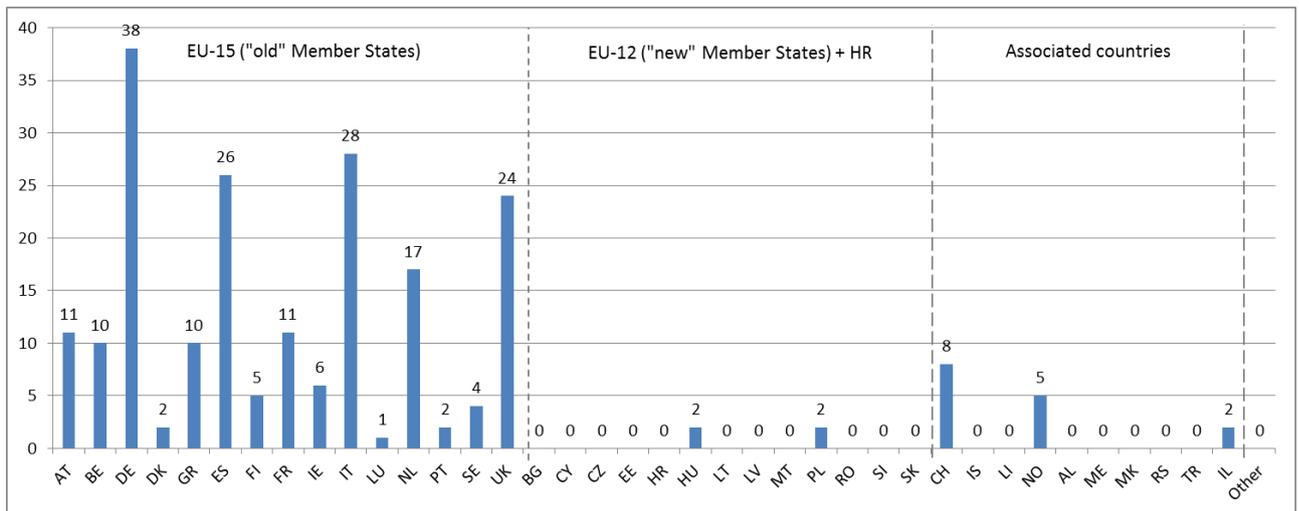
Compared with the overall number of FP7\* project participations, higher education institutions were considerably overrepresented as participants and coordinators for projects related to SDG 10, whereas private for-profit organisations and research organisations were largely underrepresented.

<sup>32</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 10.7:** Participations in projects related to SDG 10, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, about 91 % of the projects related to SDG 10 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 10.8), in particular Germany (18 %), Italy (13 %), Spain (12 %) and the UK (11 %). In contrast, only 2 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), mainly from Hungary and Poland. Some 6 % of the projects coordinators came from other European (non-EU) countries, in particular Switzerland and Norway. Compared with the overall FP7\* distribution of coordinators, a lower number of projects related to SDG 10 were coordinated by organisations from the EU-15 Member States, with the UK and France being particularly underrepresented. Instead, much more organisations acting as coordinators came from Switzerland.



**Figure 10.8:** Geographical location of coordinators of projects related to SDG 10

### 3.10.3 Project cases

**Project title:** *Financialisation, economy, society and sustainable development. (FESSUD)*

**Project coordinator:** UNIVERSITY OF LEEDS (UNITED KINGDOM)

**Duration:** 12/01/2011 to 11/30/2016

**Costs:** € 10 million; **EC contribution:** € 7.9 million

**Funding scheme:** Large-scale integrating project

**Project abstract:** The research programme will integrate diverse levels, methods and disciplinary traditions with the aim of developing a comprehensive policy agenda for changing the role of the financial system to help achieve a future which is sustainable in environmental, social and economic terms. The programme involves an integrated and balanced consortium involving partners from 14 countries that has unsurpassed experience of deploying diverse perspectives both within economics and across disciplines inclusive of economics. The programme is distinctively pluralistic, and aims to forge alliances across the social sciences, so as to understand how finance can better serve economic, social and environmental needs. The central issues addressed are the ways in which the growth and performance of economies in the last 30 years have been dependent on the characteristics of the processes of financialisation; how has financialisation impacted on the achievement of specific economic, social, and environmental objectives?; the nature of the relationship between financialisation and the sustainability of the financial system, economic development and the environment?; the lessons to be drawn from the crisis about the nature and impacts of financialisation? ; what are the requisites of a financial system able to support a process of sustainable development, broadly conceived?

**Website:** <http://fessud.eu/>

**Project title:** *Combating inequalities through innovative social practices of, and for, young people in cities across Europe (CITISPYCE)*

**Project coordinator:** ASTON UNIVERSITY (UNITED KINGDOM)

**Duration:** 01/01/2013 to 12/31/2015

**Costs:** € 3 million; **EC contribution:** € 2.5 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** This project builds on research that shows the disproportionate impact of the economic crisis on young people across Europe, including excessively high rates of youth unemployment and threats to the social provision enjoyed by previous generations. This is compounded by the 'coming of age' of the descendants of recent migrant communities - who now form significant proportions of the young population in major European cities. They are Europeans in language, social habit and cultural repertoire, yet continue to face longstanding barriers as a result of membership of communities already marginalised from mainstream labour markets and wider civic life. The project brings together stakeholders from civil society experienced in practical policy-making and implementation with well-established academic researchers to: i) Map the changing demographic landscape of inequalities as seen in major cities in the EU today and the specific challenges facing young people disadvantaged by ethnic origin, cultural background, neighbourhood, family and educational and economic situation; ii) Review approaches of different levels of government to engaging with disadvantaged youth and addressing inequality concerning young people, including state approaches and 3rd sector actions for promoting economic activity and entry into the labour market and ensuring effective distribution of services and community-led initiatives to enhance economic chances and participation in civic life; iii) Uncover innovative strategies for

navigating, surviving and overcoming inequalities that have emerged, and are emerging, among young people (16-24) in deprived parts of large cities through ethnographical research with young people themselves; iv) Examine the extent to which these strategies might be regarded as socially innovative, explore through a series of pilot projects how such strategies might be transferable across Europe and use the findings for reshaping policies at EU, national and local levels.

**Website:** <http://citispycevoices.eu/>

## 3.11 SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

### 3.11.1 Overview – main results

#### Main findings:

- SDG 11 is one of the most well addressed in FP7\* in terms of topics and projects.
- SDG 11 could be defined as moderately narrow both in terms of topics and projects – it was mainly addressed by topics in the themes TRANSPORT and ENVIRONMENT and projects in the themes ICT and TRANSPORT.
- SDG 11-related projects were similar in size to the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 11 related projects was carried out and coordinated by private organisations.

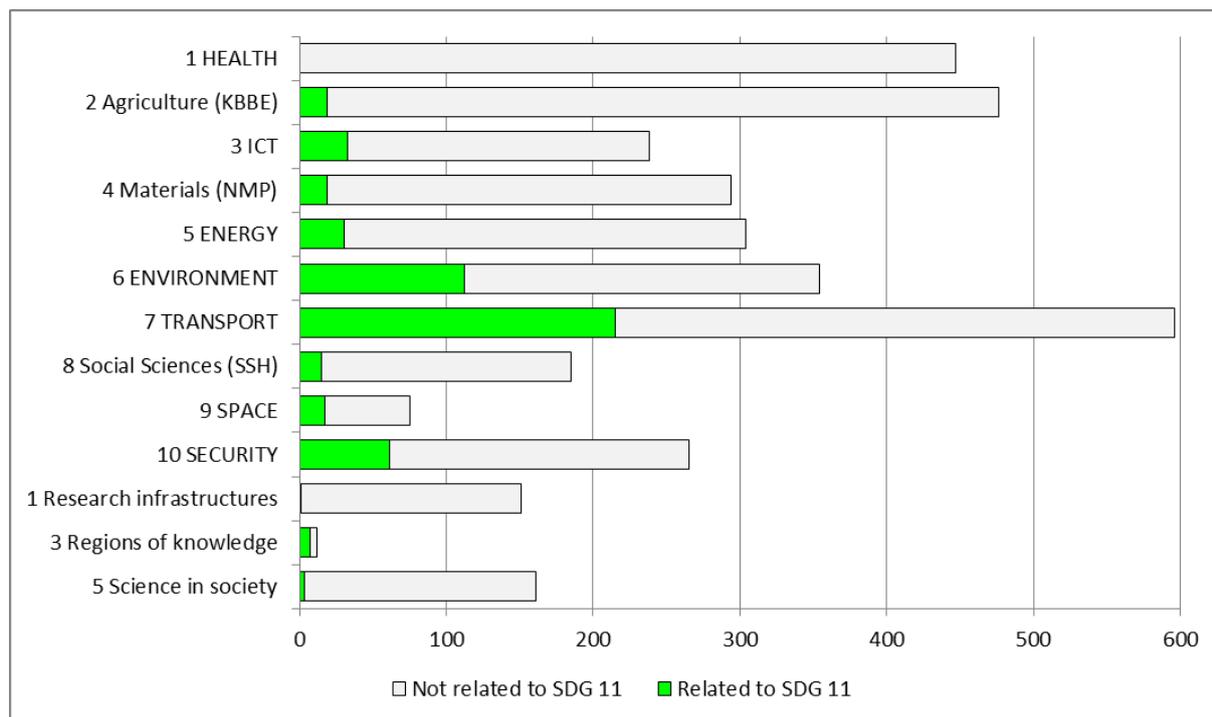
#### Summary of results:

- About 530 topics or 15 % of all topics called for in FP7\* were relevant to the objectives of SDG 11
- Under these, some 1030 projects were carried out with a financial contribution of € 4 billion or almost 15 % of the designated EC research budget
- The themes TRANSPORT and ENVIRONMENT in SP ‘Cooperation’ contained the highest number of relevant topics and the themes ICT, TRANSPORT and ENVIRONMENT – the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 11 was similar to the average size of projects in FP7\* as a whole
- About 53 % of SDG 11 relevant projects were funded under the scheme of ‘small and medium-sized’, which was slightly higher compared with FP7\* as a whole. Research for special/target groups was slightly underrepresented.
- Majority of relevant projects were carried out by private organisations, which were considerably overrepresented both as participants and coordinators. Almost an equal share of research organisations, private organisations and higher education institutions acted as project coordinators, with higher education institutions being largely underrepresented.
- About 3 % of the relevant projects required international cooperation, which was not significantly different from the FP7\* average
- The largest number of coordinators were from Germany, Italy and the UK, with France and the UK being slightly underrepresented

### 3.11.2 Detailed analysis

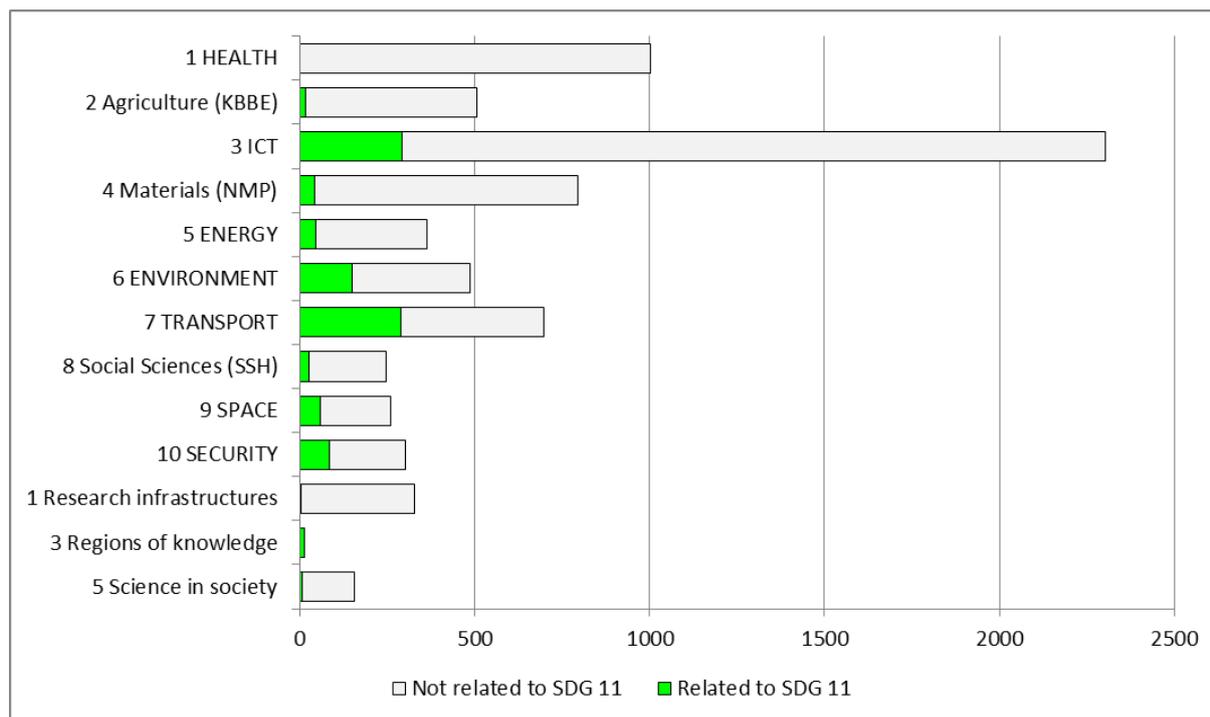
About 15 % of all topics called for and carried out under SP ‘Cooperation’ and SP ‘Capacities’\* are relevant for the objectives of SDG 11. This corresponds to some 530 topics called for in the Work Programmes 2007-2013. The theme TRANSPORT in SP ‘Cooperation’ contained the largest number of topics with a direct link to SDG 11, about 215 topics or over 35 % of all topics in the theme (see Figure 11.1). The themes ENVIRONMENT and SECURITY also contained a relatively high number of topics relevant for SDG 11, about 110 and 60 topics respectively. In contrast, SP ‘Capacities’\*

contained a low number of related topics – some 10 topics only - most of which in the theme ‘Regions of knowledge’.



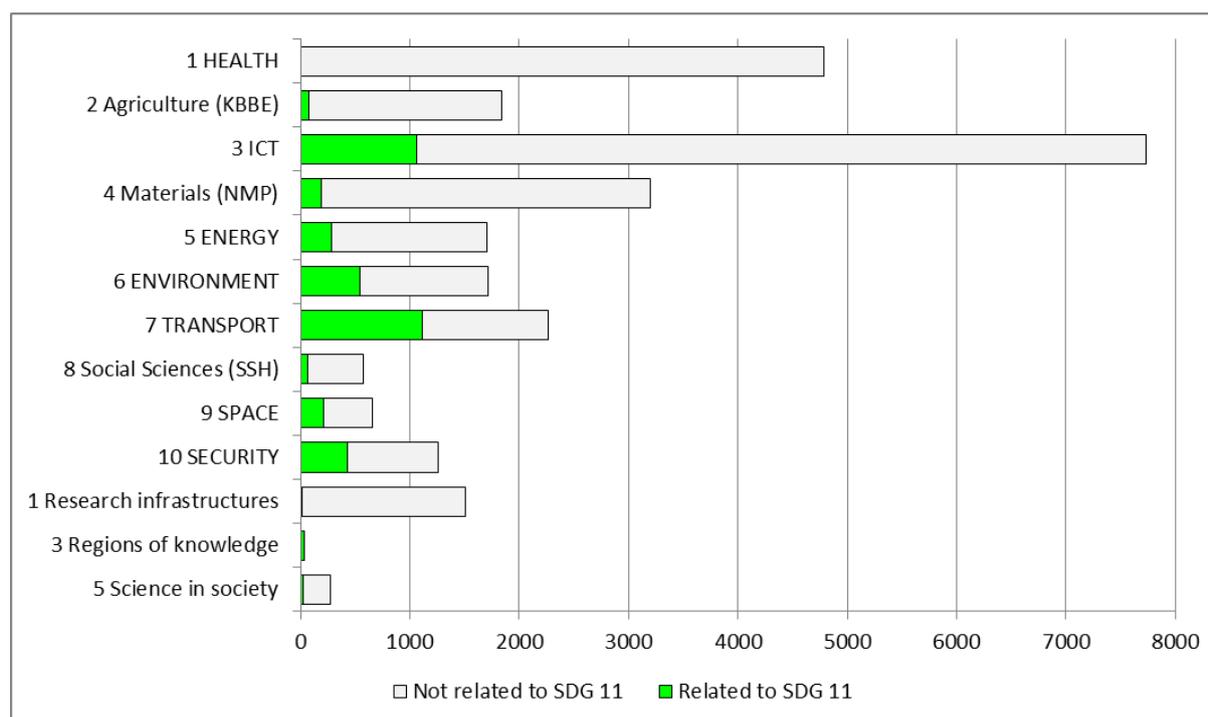
**Figure 11.1:** Number of topics related to SDG 11 in SP ‘Cooperation’ and SP ‘Capacities’\*

The picture is somewhat different when looking at the number of projects carried out in each theme (see Figure 11.2). Overall, some 1030 projects related to SDG 11 were carried out in FP7\*, which corresponds to almost 14 % of all projects in SP ‘Cooperation’ and SP ‘Capacities’\*. Almost a third of these were carried out under the theme ICT (more than 290 projects) and TRANSPORT (about 290 projects). The theme ENVIRONMENT also featured a high number of projects related to SDG 11 (about 150 projects) . However, in relative terms the themes TRANSPORT, ENVIRONMENT and SECURITY contained the highest share of projects relevant for SDG 11 – 40 %, 30 % and 28 % of projects in the respective theme. It is interesting to note that all projects implemented under the theme ‘Regions of knowledge’ in SP ‘Capacities’ had a direct link to SDG 11.



**Figure 11.2:** Number of projects related to SDG 11 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of the financial contribution provided by FP7\*, about 15 % of the budget allocated to SP ‘Cooperation’ and under 4 % of the budget allocated to SP ‘Capacities’\* contributed to the objectives of SDG 11 (see Figure 11.3). This was equivalent to about € 4 billion. The themes TRANSPORT and ICT constituted the largest source of funding, with € 1 billion of each theme going to projects relevant for SDG 11. In relative terms, this was about 50 % of the funding provided by the theme TRANSPORT and 14 % provided by the theme ICT. A high share of the budget allocated to the themes ENVIRONMENT, SPACE and SECURITY also contributed to the objectives of SDG 11 (above 30 % of the budget of each theme). Considering that all projects carried out under the theme ‘Regions of knowledge’ were relevant for SDG 11, the entire budget of the theme (some € 0.03 billion) contributed to the objectives of resilient and sustainable cities.



**Figure 11.3:** Total EC contribution (€ million) to projects related to SDG 11

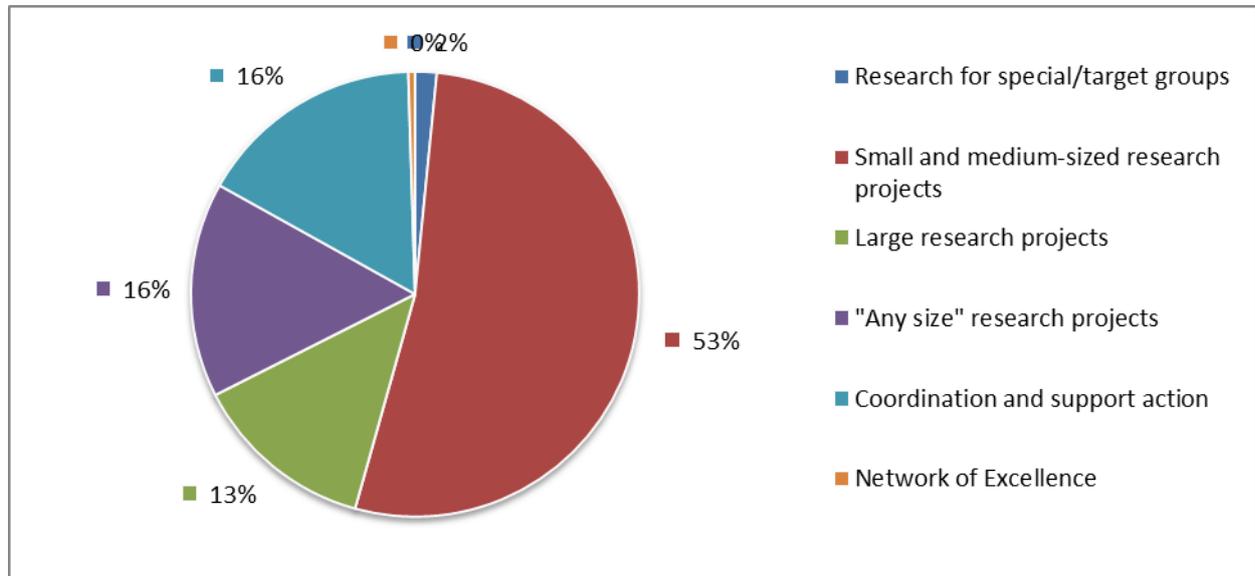
Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 11 was highest in 2011, with some € 0.9 billion, and lowest in 2010, with about € 0.4 billion. The highest number of relevant projects was recorded in 2011 - some 230 projects. In contrast, in 2012 the number of related projects was just 100. The number of topics related to SDG 11 also varied over time, from over almost 100 in 2007 to under 50 in 2009.

Figure 11.4 below shows the different funding schemes in FP7, which define the type and the size of projects carried out. Regarding those projects that are relevant for the objectives of SDG 11, about 50 % or more than 540 projects were small and medium-sized research projects. This group also received the highest financial contribution from the EC, over € 1.5 billion. Projects that required coordination and support action constituted the second largest scheme in terms of number of projects related to SDG 11 (about 170), followed by the group of projects without a pre-defined size (categorised as 'any size' in Figure 11.4) (about 160).

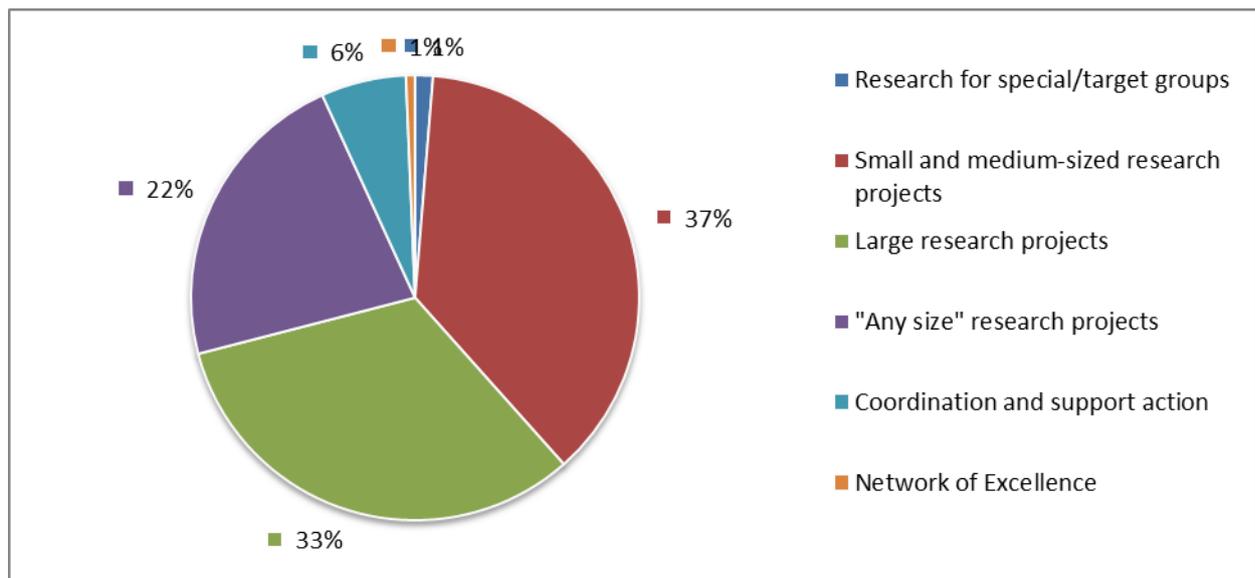
Due to their size, large-scale research projects received a substantial share of the EC budget, € 1.3 billion. This is similar to the share received by small and medium sized research projects, which are more than three times higher in number. At the other end of the scale, projects requiring coordination and support action received only 6 % of the designated EC budget, although 16 % of the projects fell in this category. Research for special/target groups and networks of excellence received 1 % and 0.6 % of the designated budget, which corresponds to their respective shares of the projects.

Based on the average EC project contribution, SDG 11 was addressed by average size projects. SDG 11 related research was characterised by a slightly higher share of small and medium sized projects and a slightly lower share of "targeted" research compared with FP7\* as a whole. Interestingly, although 'any size' projects were slightly underrepresented in SDG 11 related research they received a higher share of EC contribution compared with the FP7\* budget distribution for this project type.

Looking at funding schemes, about 3 % of the projects with relevance to SDG 11 were carried out with the aim of strengthening international cooperation<sup>33</sup>. These received about 2 % of the EC contribution related to SDG 11 (some € 0.09 billion).



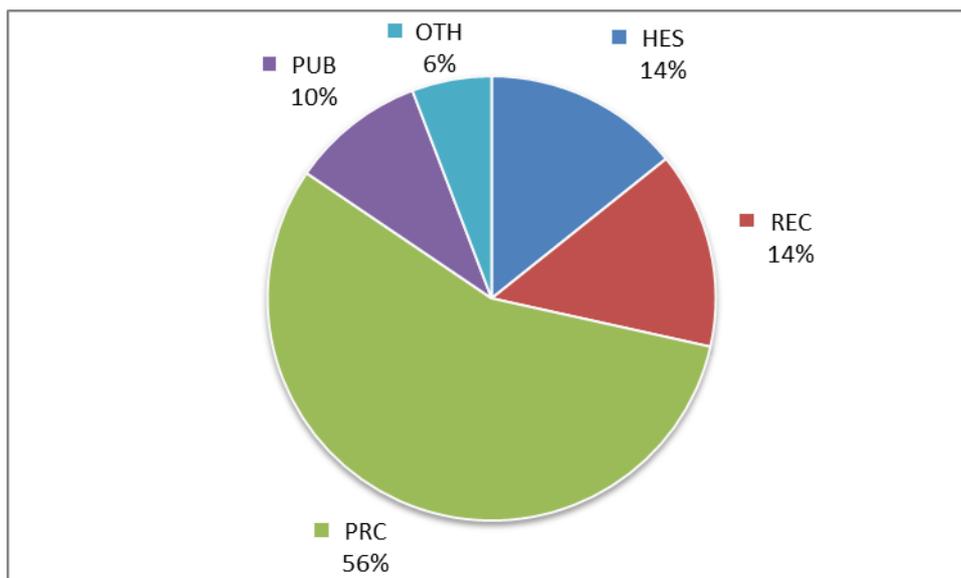
**Figure 11.4:** Projects related to SDG 11, by funding scheme



**Figure 11.5:** EC contribution to projects related to SDG 11, by funding scheme

For the entire period between 2007 and 2013, some 5, 800 organisations participated in projects related to SDG 11. As shown in Figure 11.6, private-for-profit organisations accounted for 56 % of these organisations. Research organisations and higher education institutions were also somewhat involved, with about 14 % of the participating organisations falling in either category. Public bodies were less involved, with 10 % of organisations falling in this category.

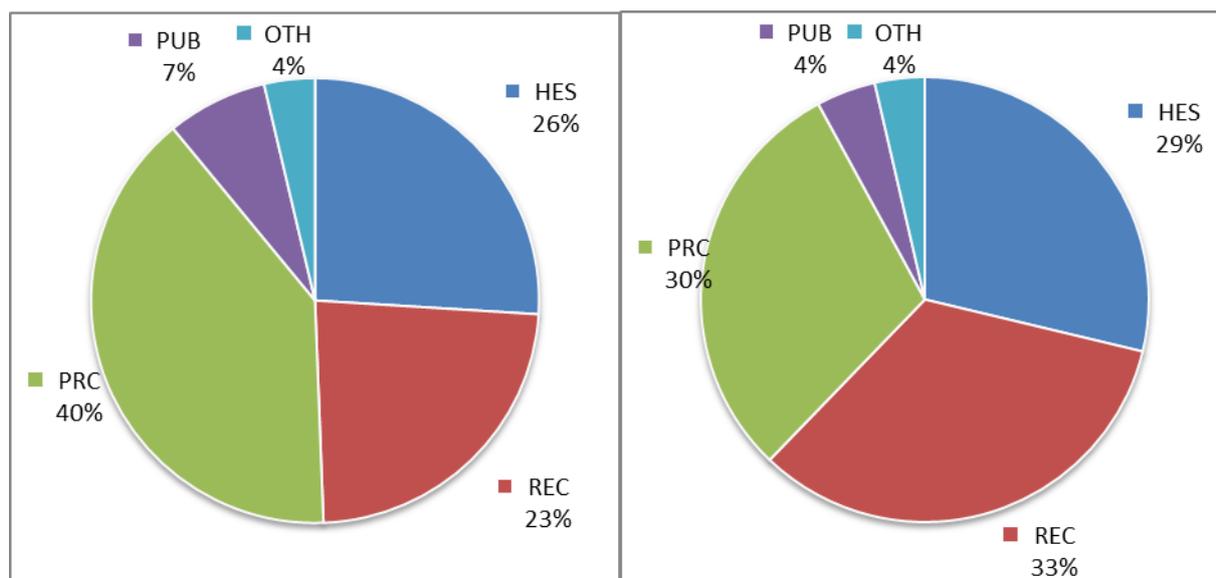
<sup>33</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.



**Figure 11.6:** Organisations participating in projects related to SDG 11

The distribution across organisation types is different when looking at the number of project participations<sup>34</sup> relevant for SDG 11. The large number of private-for-profit organisations on average participated in one to two projects only, whereas research organisations and higher education institutions participated on average in four projects. This explains the high share of project participations from research organisations and higher education institutions, at 23 % and 26 % respectively (see Figure 11.7). Nevertheless, private organisations were still the largest group in terms of project participations (40 %).

The picture, however, changes when looking only at those project partners that acted as project coordinators: two thirds of the projects were coordinated by research organisations (33 %). Almost an equal share of higher education institutions and private organisations acted as project coordinators (about 30 % each).



**Figure 11.7:** Participations in projects related to SDG 11, by organisation type - all project partners (left), project coordinators (right)

<sup>34</sup> Project participations refer to the number of organisations times their participation in projects.

Compared with the overall number of FP7\* project participations, private for-profit organisations were considerably overrepresented both as participants and coordinators for projects related to SDG 11, whereas higher education institutions were largely underrepresented.

In terms of the geographical distribution of coordinators, more than 90 % of the projects related to SDG 11 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 11.8), in particular Germany (18 %), Italy (13 %) and the UK (12 %). In contrast, under 3 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia). Some 5 % of the projects coordinators came from other European (non-EU) countries, in particular Switzerland and Norway. compared with the overall FP7\* geographical distribution of coordinators, a slightly lower number coordinators involved in SDG 11 relevant research came from France and the UK.

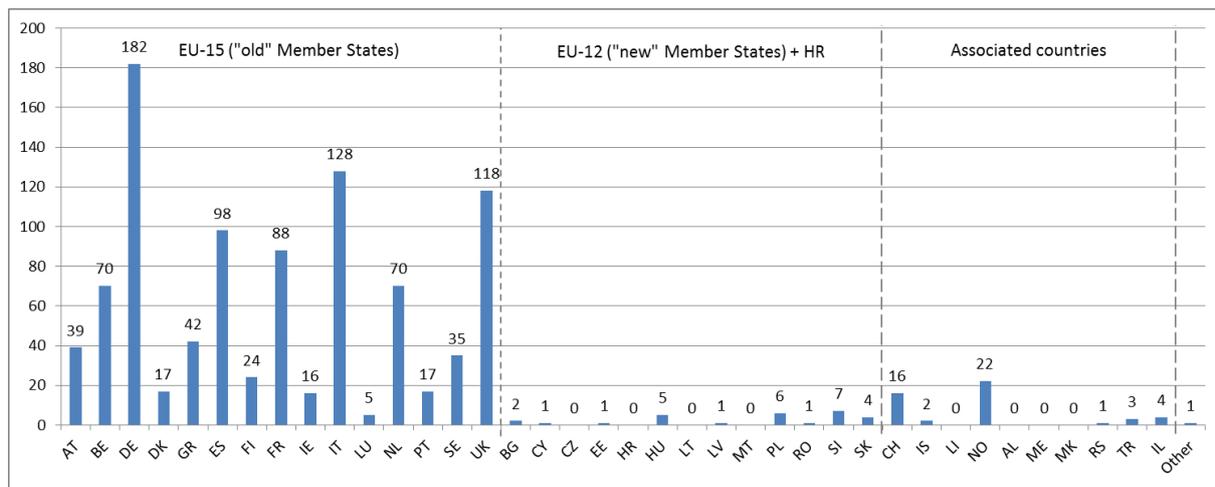


Figure 11.8: Geographical location of coordinators of projects related to SDG 11

### 3.11.3 Project cases

**Project title:** *Services and Applications For Emergency Response (SAFER)*

**Project coordinator:** SPOT IMAGE (SI) SA (France)

**Duration:** 2009-01-01 to 2012-03-31

**Costs:** € 40.3 million; **EC contribution:** € 26.9 million

**Funding scheme:** CP - Collaborative project (generic)

**Project abstract:** SAFER aims at implementing preoperational versions of the Emergency Response Core Service. SAFER will reinforce European capacity to respond to emergency situations: fires, floods, earthquakes, volcanic eruptions, landslides, humanitarian crisis. The main goal is the upgrade of the core service and the validation of its performance with 2 priorities: First priority is the short term improvement of response when crisis occurs, with the rapid mapping capacity after disastrous events, including the relevant preparatory services (reference maps). For validation purposes, the project will deliver as from 2008 services at full scale for real events or during specific exercises. The main performance criterion is the response time. RTD work addresses technical, operational and organisational issues. The content of this first action is consistent with the definition of the preparatory action recently decided. The second priority is the extension to core service components before and after the crisis. It targets the longer term service evolution, through the provision of thematic products, to be added in the portfolio of services. The main performance criterion is the added-value of products with risk-specific information. In SAFER, thematic products will cover mainly

the meteorological and geophysical risks. SAFER includes also some transverse RDT actions, with the objective to increase added-value of the overall service chain. Users' involvement is a key driver and a specific task addresses the federation of the key users, both for interventions in Europe and outside Europe. The emphasis put on quality assurance and validation methodology is reflected in the work plan. The consortium is built around a core team of European service providers, already involved in the former or ongoing projects, in the frame of FP6 or ESA programmes. A wide network of scientific partners and service providers will extend the European dimension, in particular in the new member states.

**Website:** <http://www.emergencyresponse.eu/>

*Project title: POst-Carbon Cities of TOMorrow – foresight for sustainable pathways towards liveable, affordable and prospering cities in a world context (POCACITO)*

**Project coordinator:** ECOLOGIC INSTITUT gemeinnützige GmbH (GERMANY)

**Duraiton:** 01/01/2014 to 12/31/2016

**Costs:** € 3 million; **EC contribution:** € 2.5 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** The project POst-Carbon Cities of TOMorrow - foresight for sustainable pathways towards liveable, affordable and prospering cities in a world context (POCACITO) will develop an evidence-based 2050 roadmap for EU post-carbon cities. POCACITO facilitates the transition of EU cities to a forecasted sustainable or "post-carbon" economic model. The project focuses on towns, cities, megacities, metropolitan areas and urban clusters larger than 1 million people as well as small and medium-sized cities. POCACITO's approach uses participatory scenario development as a mutual learning and living lab environment strategy. The project recognises that post-carbon city transitions should improve urban resilience to fluctuating environmental and socio-economic pressure. Pressure in this context includes long-term changes in urban resident demographics, city and rural migration patterns, and potential city health concerns. Further, POCACITO develops innovative long-term outlooks for European post-carbon cities to address climate adaptation and urban environmental metabolism concerns by using a participatory city case study approach. Case study cities include Barcelona, Copenhagen/Malmö, Istanbul, Lisbon, Litomerice, Milan/Turin, Offenburg and Zagreb. These cities will develop qualitative post-carbon visions with local stakeholders. Visions will be chosen based on selected best-practice measures and preliminary city assessments. Accompanying studies will yield a typology of post-carbon cities and a post-carbon city index. A "marketplace of ideas" will spread best practices from other EU cities and global cities in global emerging nations, allowing an international exchange of urban best practices. Related research will produce case study city roadmaps and an evidence-based 2050 roadmap for post-carbon EU cities within a global context. The project's research supports the sustainable development objective of the Europe 2020 strategy and the Innovation Union flagship initiative.

**Website:** <http://pocacito.eu/>

## 3.12 SDG 12: Ensure sustainable consumption and production patterns

### 3.12.1 Overview – main results

#### Main findings:

- SDG 12 is the most well addressed in FP7\* in terms of topics, one of the most well addressed in terms of projects and received the largest contribution from the EC budget.
- SDG 12 could be defined as cross-cutting both in terms of topics and projects, i.e. SDG 12-related projects appear in almost all themes of SP ‘Cooperation’ and SP ‘Capacities’\*.
- SDG 12 related projects were slightly larger than the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 12 related projects was carried out by private organisations and coordinated by research organisations.

#### Summary of results:

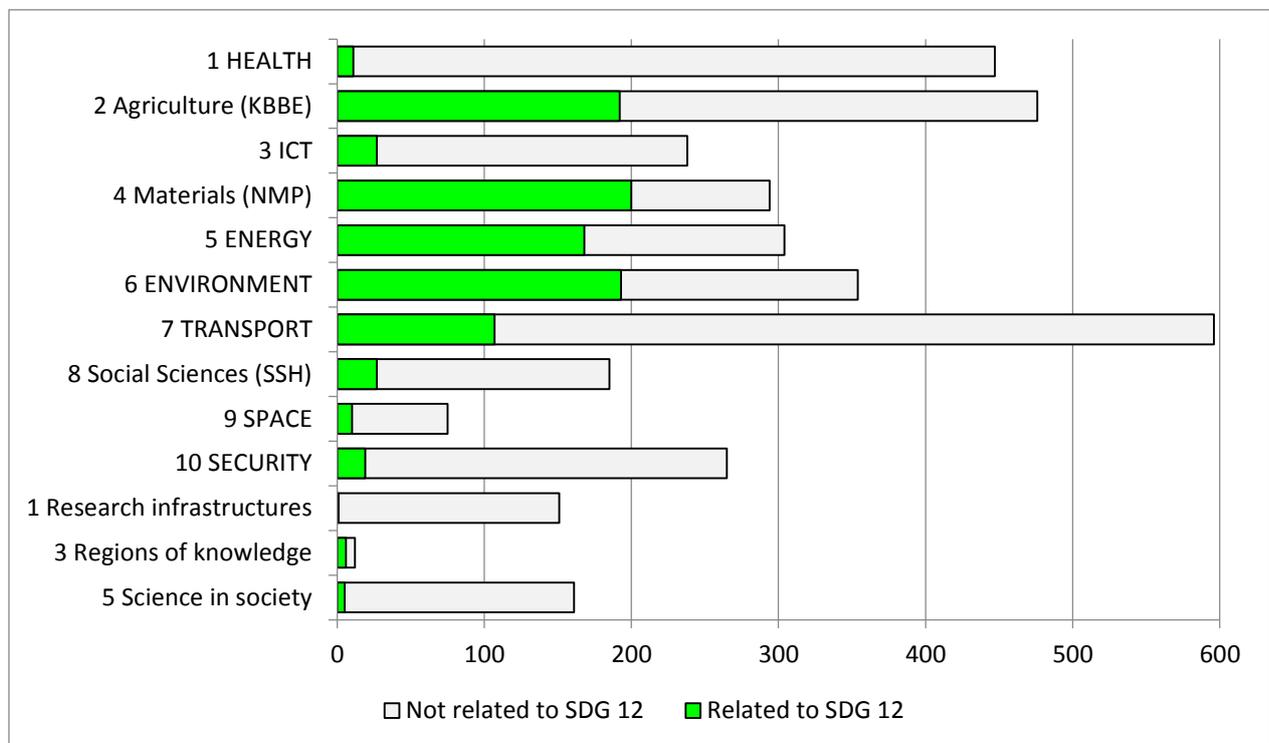
- About 970 topics or 27 % of all topics called for in FP7\* were relevant to the objectives of SDG 12
- Under these, some 1775 projects were carried out with a financial contribution of € 7 billion or almost 26 % of the designated EC research budget
- The themes Materials (MNP), ENVIRONMENT, Agriculture (KBBE) and ENERGY in SP ‘Cooperation’ contained the highest number of relevant topics and the themes Materials (MNP), ENVIRONMENT, ICT, Agriculture (KBBE) and ENERGY– the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 12 was slightly larger than the average size of projects in FP7\* as a whole
- About 40 % of SDG 12 relevant projects were funded under the scheme of ‘small and medium-sized’, which was considerably lower compared with FP7\* as a whole. Coordination and support action projects were also underrepresented, whereas research for special/target groups was overrepresented
- Majority of relevant projects were carried out by private organisations, which were considerably overrepresented. Most of the related projects were coordinated by research organisations, which were also somewhat overrepresented. Higher education institutions were underrepresented both as participants and coordinators
- About 4 % of the relevant projects required international cooperation, which was not significantly different from the FP7\* average
- The largest number of coordinators were from Germany, Spain and the UK, with Spain being slightly overrepresented and France slightly underrepresented

### 3.12.2 Detailed analysis

About 30 % of all topics called for in SP ‘Cooperation’ and 4 % in SP ‘Capacities’\* were relevant for the objectives of SDG 12. This is equivalent to approximately 970 topics called for in the Work Programmes 2007-2013. The themes Materials (MNP) in SP ‘Cooperation’ contained the largest number of topics related to the objective of SDG 12 – about 200 topics or approximately 68 % of all topics called for in this theme. It was closely followed by the themes ENVIRONMENT (about 190 topics or 55 % of all topics in this theme), Agriculture (KBBE) (about 190 topics or 40 % of all topics in

this theme) and ENERGY (about 170 topics or 55 % of all topics in this theme). The TRANSPORT theme also covered a considerable number of topics with relevance for SDG 12 – about 110 topics or 18 % of all topics under this theme. Other themes in SP ‘Cooperation’ contained topics relevant for SDG 12, in particular Social Sciences (SSH) (about 30 topics or 15 % of all SSH topics), ICT (about 30 topics or 11 % of all ICT topics), SPACE (about 10 topics or 13 % of all SPACE topics) and HEALTH (about 11 topics or 3 % of all HEALTH topics) (See Figure 12.1).

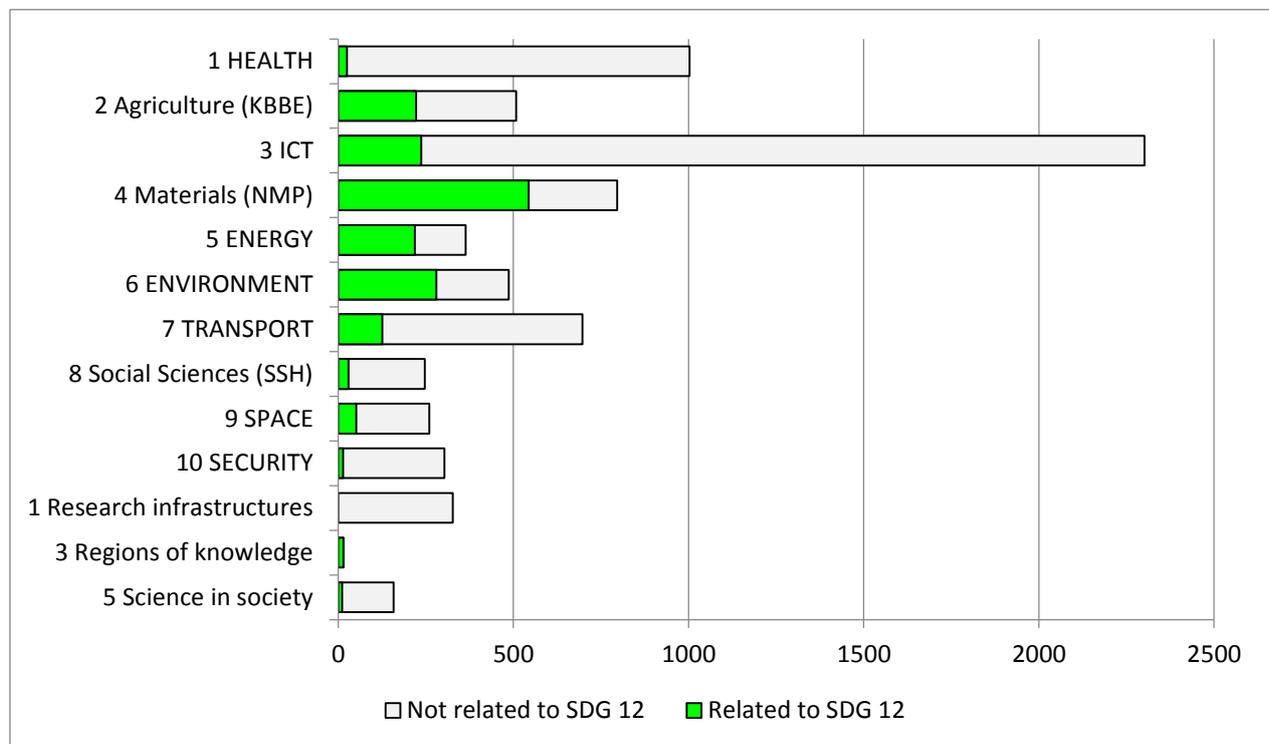
In contrast to SP ‘Cooperation’, SP ‘Capacities’\* contained a limited number of topics relevant for SDG 12, most of them in the themes ‘Regions of knowledge’ and ‘Science in Society’ and only a few in the theme ‘Research Infrastructures’. Although the theme ‘Regions of knowledge’ and ‘Science in Society’ contained a very similar number of topics relevant for SDG 12, a much greater share of the topics in ‘Regions of Knowledge’ were relevant (about 50 % of all topics under this theme, compared with 3 % of all topics in the theme ‘Science in society’), due to the large difference in the size of the two themes.



**Figure 12.1:** Number of topics related to SDG 12 in SP ‘Cooperation’ and SP ‘Capacities’\*

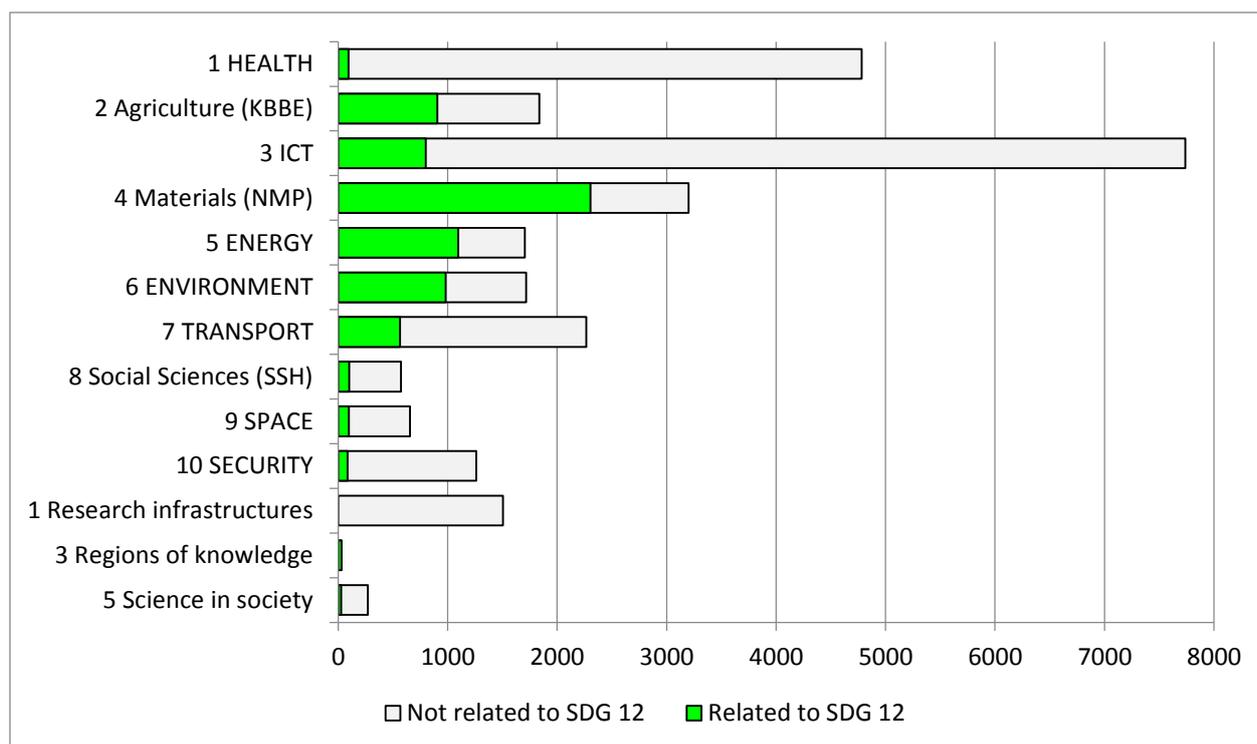
The picture looks somewhat different when looking at the number of projects carried out in each theme. Overall, some 1,775 projects related to the objectives of SDG 12 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to 24 % of all projects in both specific programmes. The theme Materials (NMP) again stands out with the largest number of projects related to SDG 12 – about 540 projects or nearly 70 % of all projects carried out in this theme. In absolute terms, this is again followed by the theme ENVIRONMENT with about 280 projects relevant for SDG 12 (58 % of all projects in the theme). Interestingly, the ICT theme comes third in terms of number of projects related to SDG 12 (about 240 projects or 10 % of all ICT projects). It is followed by the themes Agriculture (KBBE) and ENERGY, which have a comparable number of projects related to SDG 12 as the ICT theme (220 projects each), but these comprise a much higher share of their overall number of projects – 44 % and 60 % respectively. The TRANSPORT theme is again well represented with 126

projects or 18 % of all its projects being related to SDG 12. Although the themes HEALTH and Social Sciences (SSH) contain a very similar number of projects with relevance to SDG 12 (25 and 30 respectively), these constitute a much larger share of the overall projects in the SSH theme (about 12 % , compared with about 3 % in the HEALTH theme). Interestingly, almost all of the projects financed under ‘Regions of knowledge’ and a few projects financed under ‘Science in Society’ seem to be related to the objectives of SDG 12.



**Figure 12.2:** Number of projects related to SDG 12 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP 7, some 7 091 € million or about 26 % of the research budget for SP ‘Cooperation’ and SP ‘Capacities’\* was allocated to projects relevant for SDG 12. Most of this financial contribution - € 7 035 - came from SP ‘Cooperation’ and about € 56 million from SP ‘Capacity’. The Materials (NMP) theme constituted the largest source of funding in this respect, with nearly € 2 306 million or 72 % of its budget being distributed to projects with relevance to SDG 12. The ENERGY theme provided the second largest financial contribution both in real and relative terms – about € 1 096 million or 64 % of its budget. These were followed by the themes ENVIRONMENT (€ 983 million or 57 % of its budget), Agriculture (KBBE) (€ 905 million or nearly 50 % of its budget), ICT (€ 801 million or 10 % of its budget) and TRANSPORT (€ 563 million or 25 % of its budget). The themes HEALTH, Social Sciences (SSH) and SPACE each allocated between € 95 and € 100 million for SDG 12 related projects. The highest financial contribution in SP ‘Capacities’\* came from the theme ‘Regions of knowledge’ (€ 30 million), closely followed by ‘Science and Society’ (€ 26 million).



**Figure 12.3:** Total EC contribution (€ million) to projects related to SDG 12

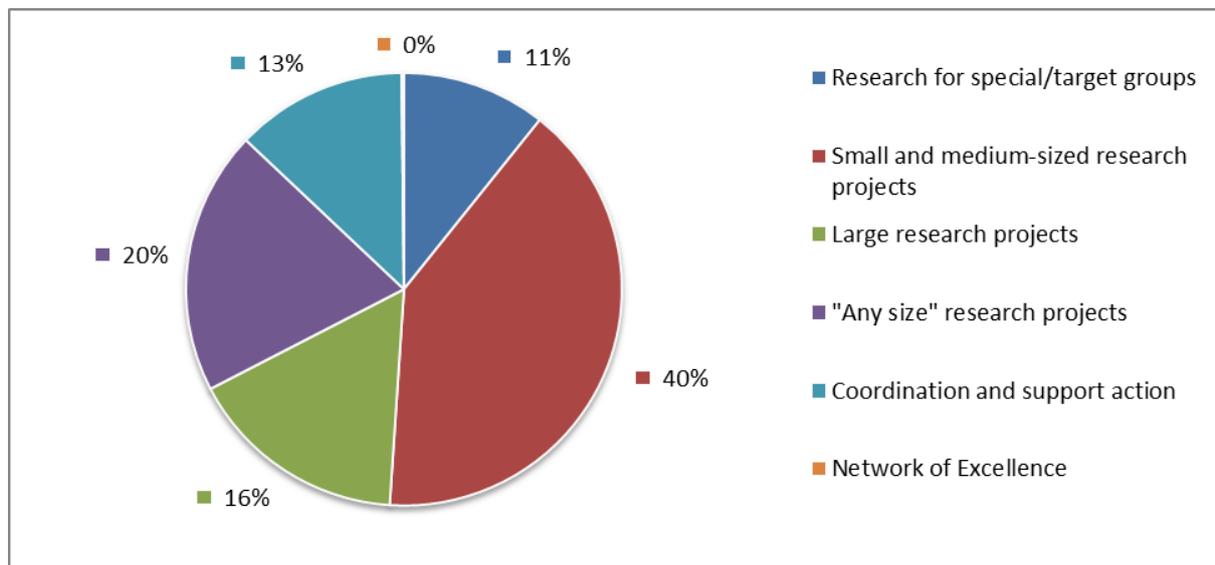
Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 12 was highest in real terms in 2013, with about € 1 530 million (32 % of the total budget of SP ‘Cooperation’ and SP ‘Capacity’ for that year) and in relative terms in 2012 – 39 % of the total budget in SP ‘Cooperation’ and SP ‘Capacity’ for that year (equal to approx. € 1 186 million). The EC research funding for SDG 12 relevant projects was lowest in 2008, with about € 658 million (23 % from the budget for 2008). The highest number of relevant projects in real terms was also recorded in 2013 - some 355 projects (approx. 30 % of all projects in SP ‘Cooperation’ and SP ‘Capacities’\* conducted that year) and in relative terms in 2012 – about 33 % of all projects carried out that year (approx. 260 projects). Contrary to this, the highest number of topics with relevance to SDG 12 were called for in 2007 - about 190 topics (almost 27 % of all topics called for in SP ‘Cooperation’ and SP ‘Capacities’\* that year). However, in relative terms, the share of topics with relevance to SDG 12 was highest in 2013 (about 32 % of topics called for that year).

Figure 12.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. About 720 projects or nearly 40 % of all projects that are relevant for the objectives of SDG 12 were small and medium-sized research projects. Projects without a pre-defined size (categorised as ‘any size’ in Figure 12.4) constituted the second largest type in terms of number of projects (about 350 or 20 % of all projects), followed by large-scale research projects (about 290 or 16 % of all projects). Although they rank third in terms of number of projects, large scale research projects received the biggest financial contribution from the EC – about € 2 252 million or approximately 32 % of all EC funding allocated to SDG 12 relevant projects. Small and medium-sized research projects received a similar allocation – about € 2 074 million or almost 30 % of the overall funding for SDG 12 relevant projects. The second-largest funding scheme in terms of number projects relevant to SDG 12 – ‘any size’ projects – received considerably smaller financial contribution from the EC – about € 1 640 million or 23 % of the overall funding

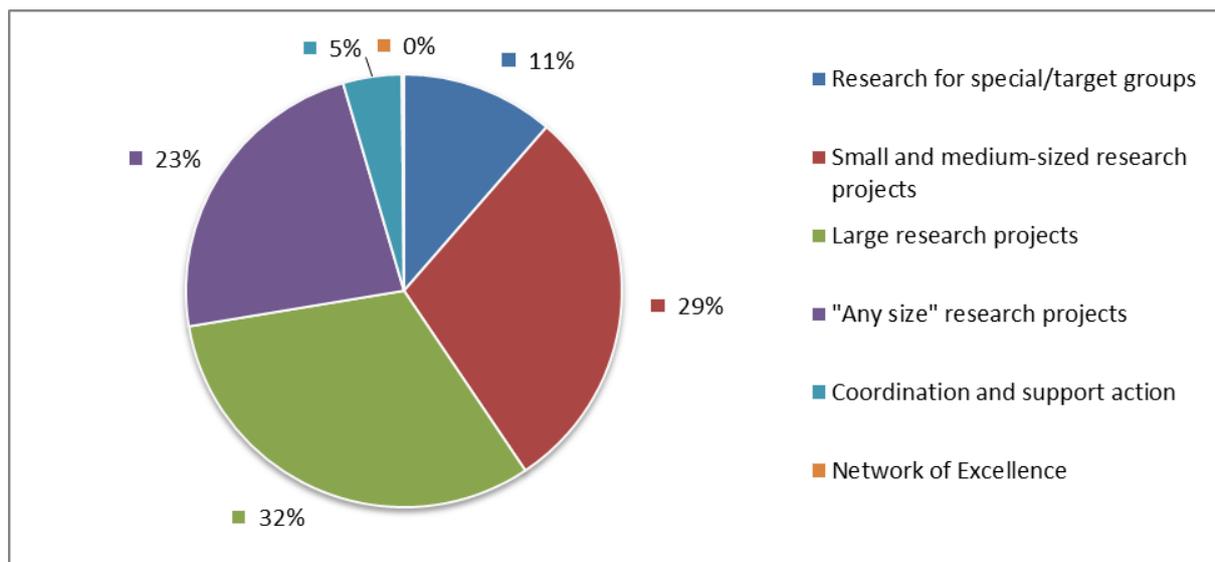
relevant to SDG 12. This discrepancy could be explained by the different nature and scale of the project types and therefore the different funding requirements.

Based on the average EC project contribution, SDG 12 was addressed by slightly larger projects than FP7\* as a whole. This is also reflected in the fact that small and medium-sized research projects were largely underrepresented in SDG 12 related research. Coordination and support action projects were also significantly less compared with average FP7\* figures. Looking at the total FP7\* distribution of projects types, research related to SDG 12 was characterised by a high share of “targeted” projects (research for special/target groups).

Looking at funding schemes, about 4 % of the projects with relevance to SDG 12 were carried out with the aim of strengthening international cooperation<sup>35</sup>. These received 3 % of the EC contribution relevant to SDG 12 (nearly € 213 million).



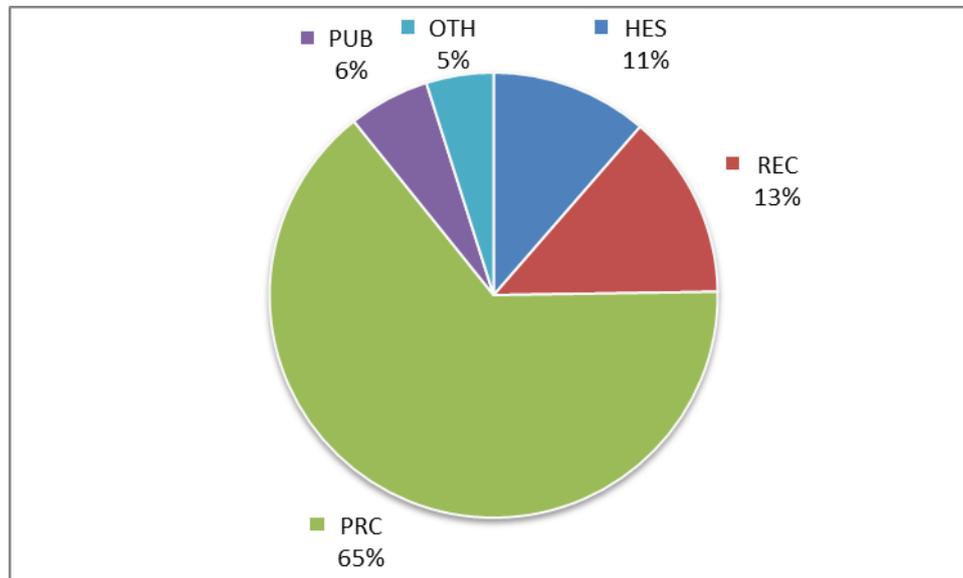
**Figure 12.4:** Projects related to SDG 10, by funding scheme



**Figure 12.5:** EC contribution to projects related to SDG 12, by funding scheme

<sup>35</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.

For the entire period between 2007 and 2013, over 9 520 organisations participated in projects related to SDG 12. As shown in Figure 12.6, private for-profit organisations formed the large majority, accounting for about 65 % of all organisations. Involvement of research organisations and higher education institutions was much more modest – 13 % and 11 % of all participating organisations respectively. Public bodies and other types organisations were also involved, but to a more limited extent, with only 6 % and 5 % of all participating organisations falling in these categories respectively.



**Figure 12.6:** Organisations participating in projects related to SDG 12

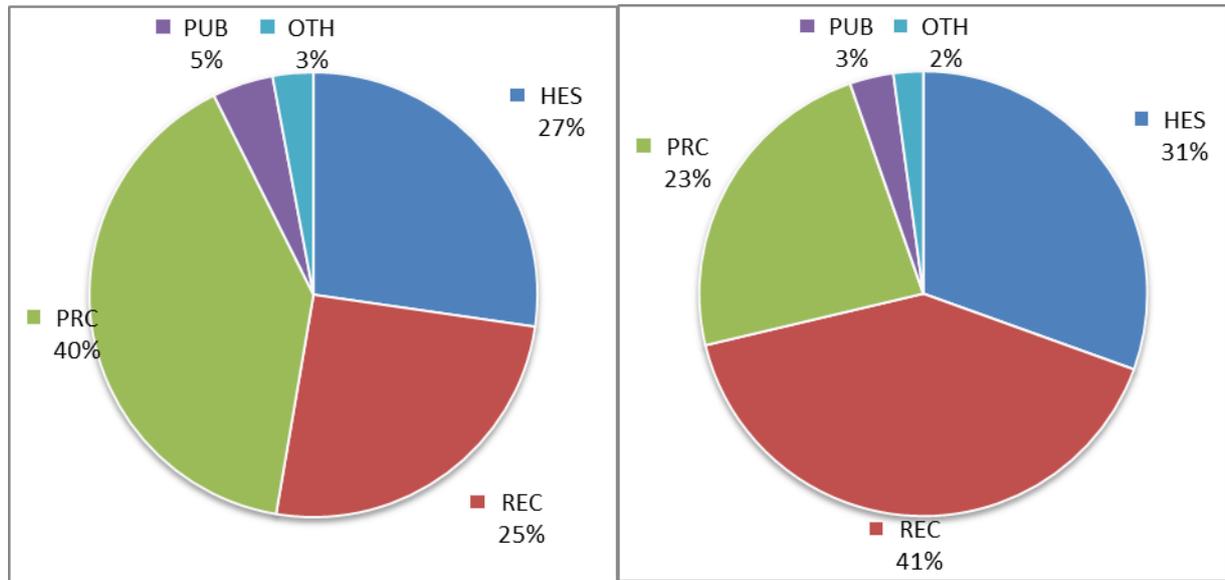
The distribution across organisation types is quite different when looking at the number of project participations relevant for SDG 12<sup>36</sup>. Private for-profit organisations still had the highest share of participations (40 %), but it was lower than expected given the large number of participating organisations from this type. On the other hand, higher education institutions and research organisations showed a strong participation, given the smaller number of organisations involved from these groups – 27 % of the participations were from higher education institutions and 25 % from research organisations. This discrepancy between number of participating organisations and participation rate could be explained by the difference in average number of participation per organisation. Whereas private for-profit organisations participated on average in one to two projects related to SDG 12, research organisations participated in four to five and higher education institutions in about six.

The representation of research organisations and higher education institutions is even more pronounced when looking at the distribution of project coordinators. Research organisations formed the largest group of project coordinators (41 %) and were followed by higher education institutions (31 %). Private for-profit organisations were less involved as coordinators, having coordinated about 23 % of all projects relevant to SDG 12. Public and other organisations were involved as project coordinators to a very limited extent (Figure 12.7).

Compared with the overall number of FP7\* project participations, private for-profit organisations were considerably overrepresented as participants for projects related to SDG 12. In contrast, higher education institutions were underrepresented both as participants and as coordinators. There was a

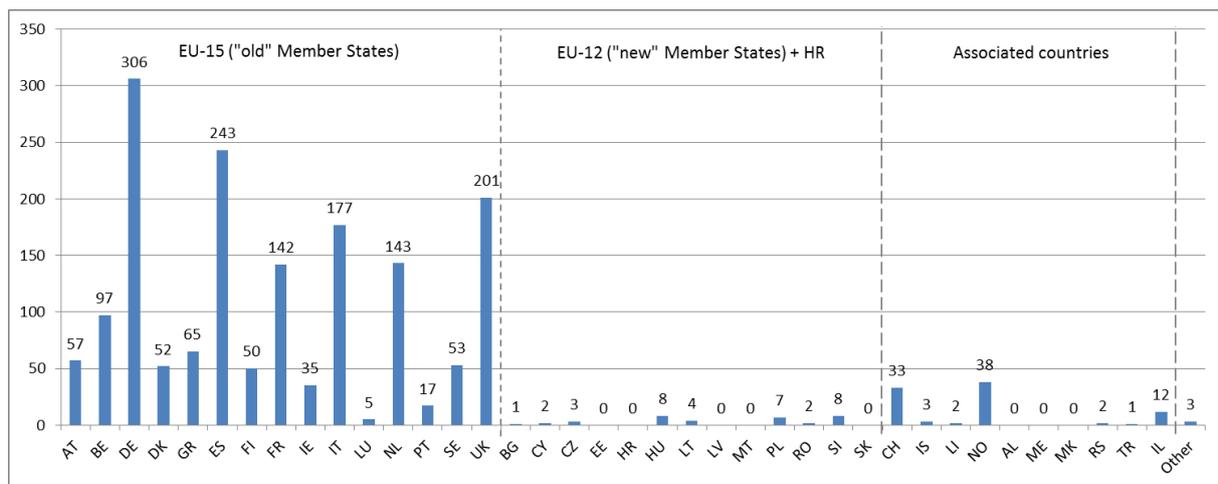
<sup>36</sup> Project participations refer to the number of organisations times their participation in projects.

higher number of research organisations acting as coordinators for SDG 12 related projects compared with FP7\* as a whole.



**Figure 12.7:** Participations in projects related to SDG 12, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, almost 93 % of the projects related to SDG 12 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 12.8), in particular Germany (17 %), Spain (14 %) and the UK (11 %) and Italy (10 %). In contrast, only 2 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), mainly from Hungary, Poland and Slovenia. Some 5 % of the projects coordinators came from other European (non-EU) countries, in particular Norway and Switzerland. Concerning the geographic distribution of coordinators compared with FP7\* as a whole, there were no significant differences. There was only a slightly higher share of coordinators coming from Spain and slightly lower from France.



**Figure 12.8:** Geographical location of coordinators of projects related to SDG 12

### 3.12.3 Project cases

**Project title:** *Green eMotion: Development and demonstration of a unique and user-friendly framework for green electromobility in Europe (GREEN EMOTION)*

**Project coordinator:** SIEMENS AKTIENGESELLSCHAFT (GERMANY)

**Duration:** 03/01/2011 to 02/28/2015

**Costs:** € 40.7 million; **EC contribution:** € 24.2 million

**Funding scheme:** Collaborative project

**Project abstract:** Green eMotion aims at enabling mass deployment of electromobility in Europe. To achieve this, major players from industry, the energy sector, municipalities as well as universities and research institutions have joined forces to develop and demonstrate a commonly accepted and user-friendly framework consisting of interoperable and scalable technical solutions in connection with a sustainable business platform. The Smart Grids development, innovative ICT solutions, different types of electric vehicles (EV) as well as urban mobility concepts will be taken into account for the implementation of this framework. Green eMotion will connect ten ongoing regional and national electromobility initiatives leveraging on the results and comparing the different technology approaches to ensure the best solutions prevail for the EU single market. A virtual marketplace will be created to enable the different actors to interact and to allow for new high-value transportation services as well as EV-user convenience in billing (EU Clearing House). Furthermore, the project will contribute to the improvement and development of new and existing standards for electromobility interfaces. The elaborated technological solutions will be demonstrated in all participating demonstration regions to prove the interoperability of the framework. Green eMotion will facilitate the understanding of all stakeholders about the parameters which influence the achievement of best possible results for society, environment as well as economy and thus ensure transfer of best practices. As a result, policy makers, urban planners and electric utilities will receive a reference model for a sustainable rollout of electromobility in Europe. The commitment of industry players ensures the focus of the project on the market after demonstration. By proving efficient and user-friendly solutions which are also profitable for businesses, the Green eMotion framework plans to accomplish EU wide acceptance of all stakeholders.

**Website:** <http://www.greenemotion-project.eu/>

**Project title:** *Transforming urban and agricultural residues into high performance biomaterials for green construction (INNOBITE)*

**Project coordinator:** FUNDACION TECNALIA RESEARCH & INNOVATION (SPAIN)

**Duration:** 09/01/2012 to 08/31/2015

**Costs:** € 4 million; **EC contribution:** € 3.2 million

**Funding scheme:** Collaborative project

**Project abstract:** INNOBITE project will transform urban and agricultural residues into high performing resource efficient products for the construction sector. The project finds support in two innovative ideas: (1) adding value to the inorganic fraction of wheat straw and (2) obtaining cellulose nanofibres out of highly recycled paper. Once isolated via environmentally friendly processes, these two renewable compounds will be used as high-performance additives for the development of a new

series of bio-composites. The incorporation of those natural components will improve current solutions in two construction applications: panels for indoor structures (interior walls, ceiling, flooring...) and profiles (decking, fencing...) by, respectively, increasing the resistance-to-weight ratio and improving the surface hardness and water absorbency. Other commercial bio-plastics as well as the two major fractions of what straw, cellulose and lignin, will be also incorporated into such materials (cellulose after chemical modification and lignin after being polymerised into both thermosetting and thermoplastic resins), and the resulting products will be finally tested for biodegradability. In the same way as wood, which is at the same time biodegradable and exceptional building material, the use of plant-derived products will increase the biodegradability of the biomaterials without compromising their structural quality. The project will destine more than 10% of the total budget to maximize the effectiveness of the exploitation activities, which will include thorough analysis of the cost effectiveness and environmental credentials of the products/processes developed and of new possible business lines and new business models. Also, the validation of developed technologies under the Environmental Technology Verification programme is expected to have a big impact on the exploitation.

**Website:** <http://www.innobite.eu>

### 3.13 SDG 13: Take urgent action to combat climate change and its impacts

#### 3.13.1 Overview – main results

##### Main findings:

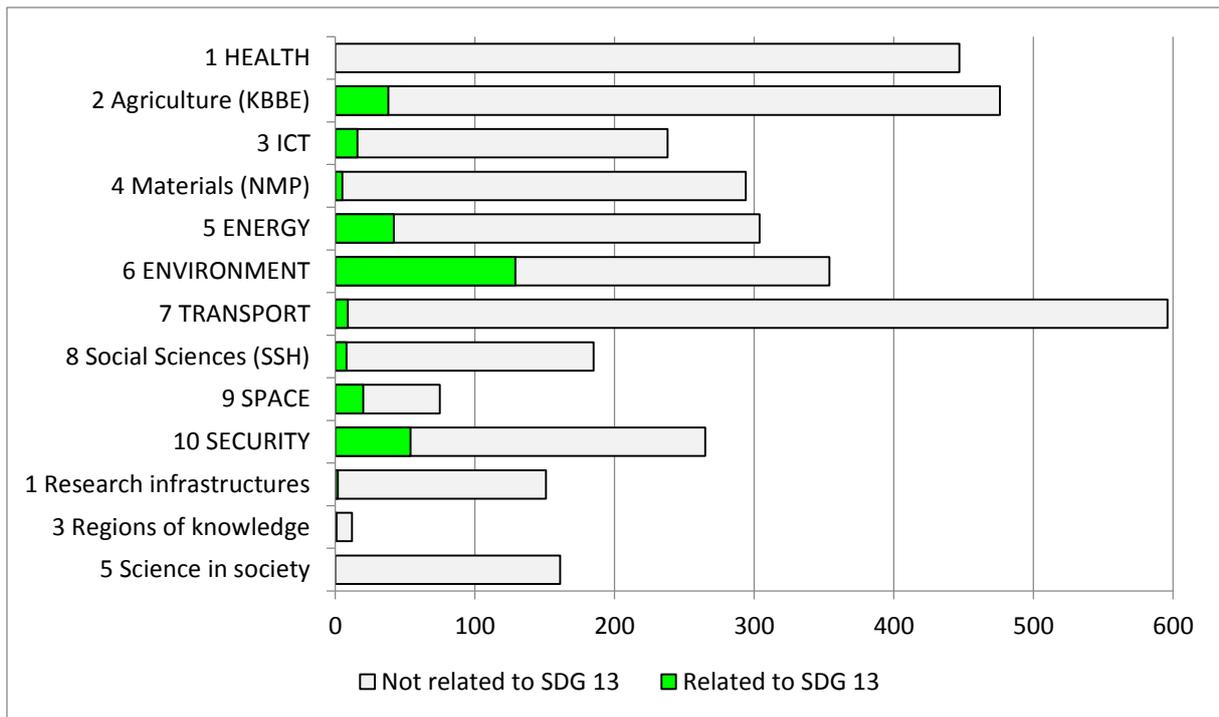
- SDG 13 could be defined as cross-cutting in terms of topics, i.e. SDG 13 related topics appear in almost all themes of SP ‘Cooperation’ and SP ‘Capacities’\*.
- SDG 13-related projects were larger than the FP7\* average. Compared to FP7\*, a disproportionate high share of SDG 13 related projects was carried out and coordinated by research organisations. Projects requiring international cooperation were slightly overrepresented.

##### Summary of results:

- About 320 topics or 9 % of all topics called for in FP7\* were relevant to the objectives of SDG 13
- Under these, some 570 projects were carried out with a financial contribution of € 2.4 billion or almost 9 % of the designated EC research budget
- The themes ENVIRONMENT in SP ‘Cooperation’ contained the highest number of relevant topics and the themes ENVIRONMENT and ICT – the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 13 was larger than the average size of projects in FP7\* as a whole
- About 42 % of SDG 13 relevant projects were funded under the scheme of ‘small and medium-sized’, which was considerably lower compared with FP7\* as a whole. Coordination and support action projects were also underrepresented, whereas ‘any size’ projects were overrepresented
- Majority of relevant projects were carried out and coordinated by research organisations and higher education institutions, with the former being somewhat overrepresented both as participants and coordinators. Private organisations were underrepresented both as participants and coordinators.
- About 6 % of the relevant projects required international cooperation, which is two times more than the FP7\* average
- The largest number of coordinators were from Germany, the UK and Italy. The EU-15 Member States were slightly underrepresented, whereas Norway was overrepresented

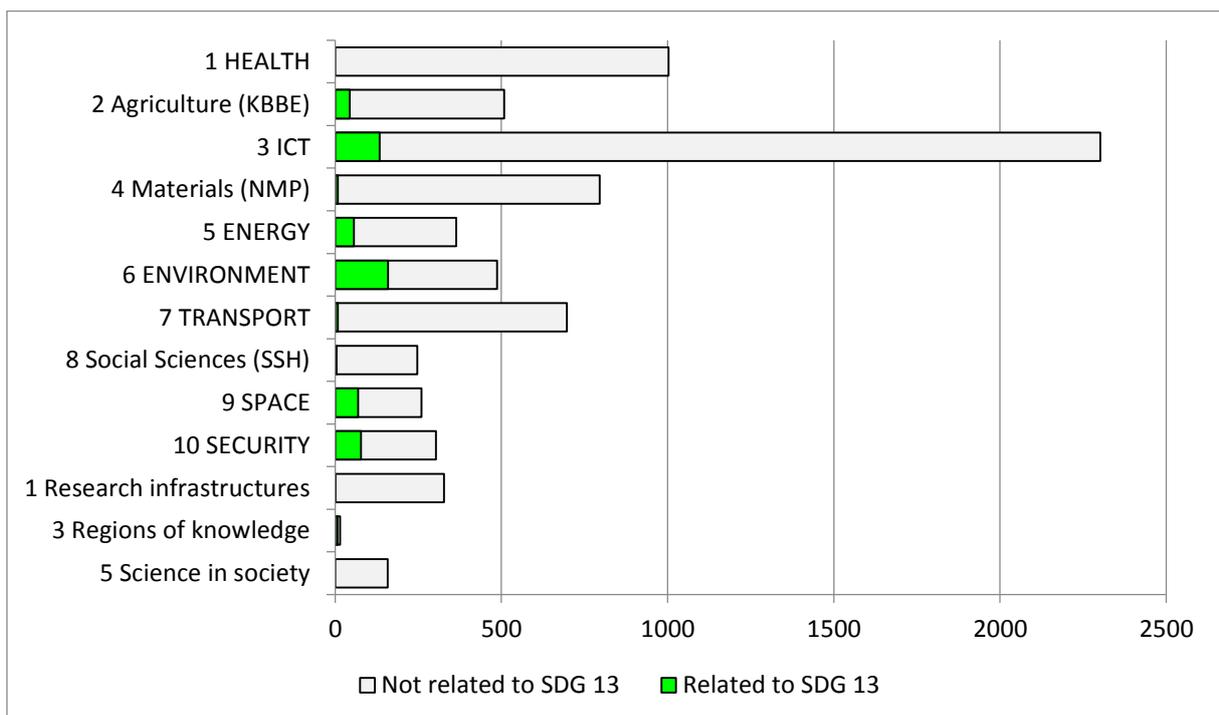
#### 3.13.2 Detailed analysis

About 9 % of all topics called for and carried out under SP ‘Cooperation’ and SP ‘Capacities’\* are relevant for the objectives of SDG 13. This corresponds to some 320 topics called for in the Work Programmes 2007-2013. The theme ENVIRONMENT in SP ‘Cooperation’ contained the largest number of topics with a direct link to SDG 13, about 130 topics or over 35 % of all topics in the theme (see Figure 13.1). The theme SECURITY also contained a relatively high number of topics relevant for SDG 13, about 50 topics. More than 20 % of topics in the themes SECURITY and SPACE had a direct link to SDG 13. In contrast, SP ‘Capacities’\* contained a low number of related topics – some 3 topics only.



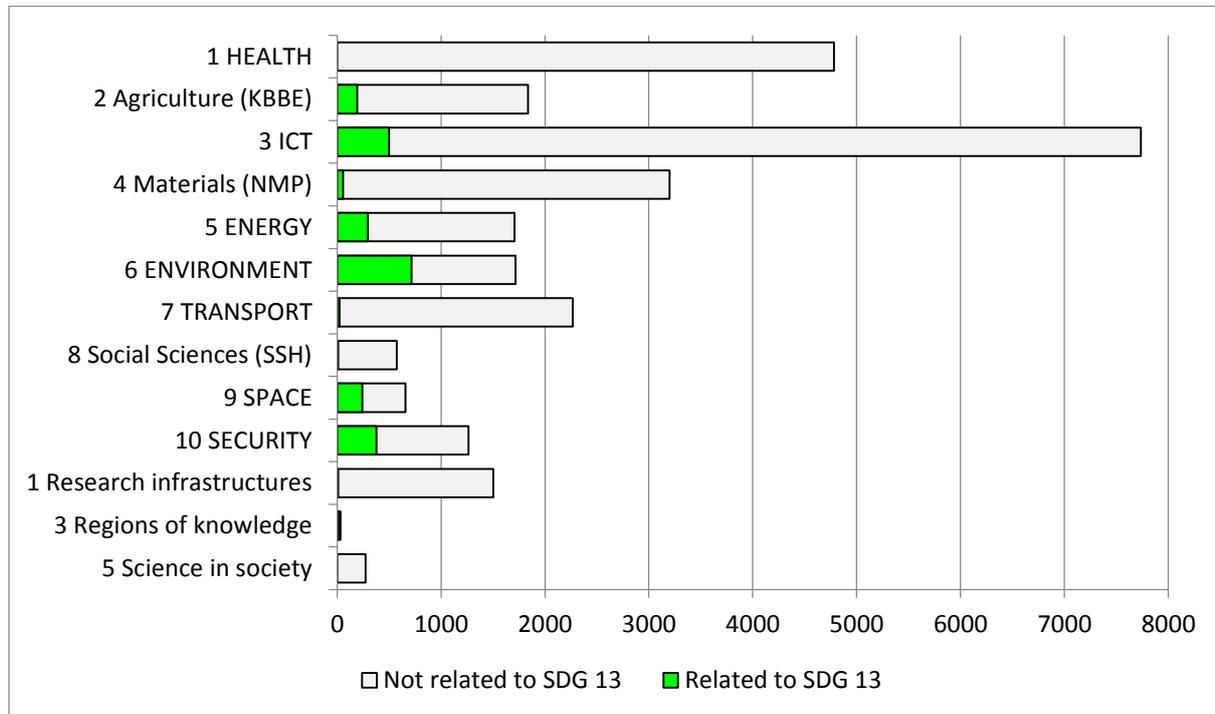
**Figure 13.1:** Number of topics related to SDG 13 in SP ‘Cooperation’ and SP ‘Capacities’\*

The picture is similar when looking at the number of projects carried out in each theme (see Figure 13.2). Overall, some 570 projects related to SDG 13 were carried out in FP7\*, which corresponds to almost 8 % of all projects in SP ‘Cooperation’ and SP ‘Capacities’\*. A third of these were carried out under the theme ENVIRONMENT (some 160 projects). The theme ICT also included a substantial number of projects related to SDG 13 (some 130 projects), although they constituted only 6 % of all projects in the theme. The themes SECURITY and SPACE also featured a high number of projects related to SDG 13, some 80 and 70 projects respectively.



**Figure 13.2:** Number of projects related to SDG 13 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of the financial contribution provided by FP7\*, about 9 % of the budget allocated to SP ‘Cooperation’ and 1 % of the budget allocated to SP ‘Capacities’\* contributed to the objectives of SDG 13 (see Figure 13.3). This was equivalent to some € 2.4 billion. The theme ENVIRONMENT constituted the largest source of funding, with some € 0.7 billion going to projects relevant for SDG 13. In relative terms, this was over 40 % of the funding provided by the theme ENVIRONMENT. A high share of the budget allocated to the themes SPACE and SECURITY also contributed to the objectives of SDG 13 (37 % and 30 % respectively).



**Figure 13.3:** Total EC contribution (€ million) to projects related to SDG 13

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 13 was highest in 2011, with some € 0.5 billion, and lowest in 2008, with about € 0.2 billion. The highest number of relevant projects was recorded in 2011 as well (some 120 projects). In contrast, in 2012 the number of related projects was the lowest (about 50). The number of topics related to SDG 13 has also varied over time, from almost 60 in 2011 to under 40 in 2013.

Figure 13.4 below shows the different funding schemes in FP7, which define the type and the size of projects carried out. Regarding those projects that are relevant for the objectives of SDG 13, about 42 % or some 240 projects were small and medium-sized research projects. Projects without a pre-defined size (categorised as ‘any-size’ in figure 13.4) constituted the second largest group (some 150 projects), followed by large-scale research projects (some 90 projects).

Although projects without a pre-defined size ranked second in terms of number of projects related to SDG 13, the scheme received the highest EC contribution, € 0.8 billion. The schemes of large-scale research projects and small and medium-sized projects received a similar share of the EC budget, some € 0.7 billion each. This is despite the fact that small and medium-sized research projects were two times more in number than large-scale projects. At the other end of the scale, projects requiring coordination and support action received only 4 % of the designated EC budget, although 12 % of the projects fell in this category. Research for special/target groups received 5 % of the designated budget, which is close to their respective shares of the projects (4 %).

Based on the average EC project contribution, SDG 13 was addressed by larger projects (€ 4.3 million per project on average) compared with FP7\* as a whole (€ 3.7 million per project on average). This is also reflected in the fact that small and medium-sized research projects were largely underrepresented in SDG 13 relevant research compared with FP7\* as a whole. Coordination and support action projects were also significantly underrepresented. Looking at the total FP7\* distribution of projects types, ‘any size’ research projects related to SDG 13 were overrepresented and they also received a considerably higher share of the EC budget compared with the average FP7\* contribution for ‘any size’ projects.

Looking at funding schemes, about 6 % of the projects with relevance to SDG 13 were carried out with the aim of strengthening international cooperation<sup>37</sup>. These received about 4 % of the EC contribution related to SDG 13 (some € 0.1 million).

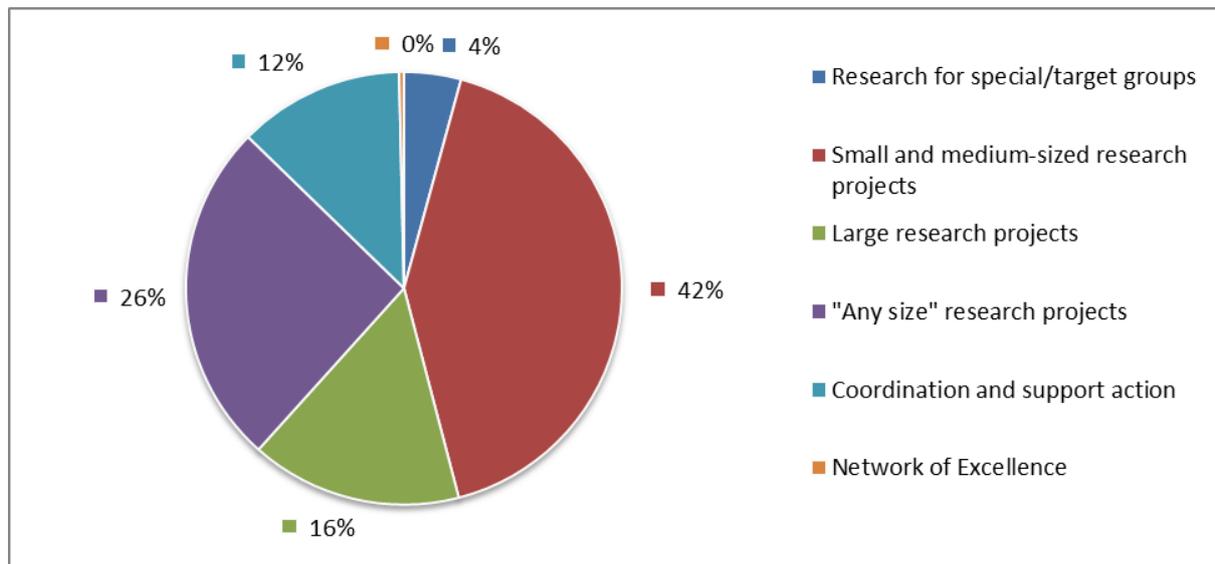


Figure 13.4: Projects related to SDG 13, by funding scheme

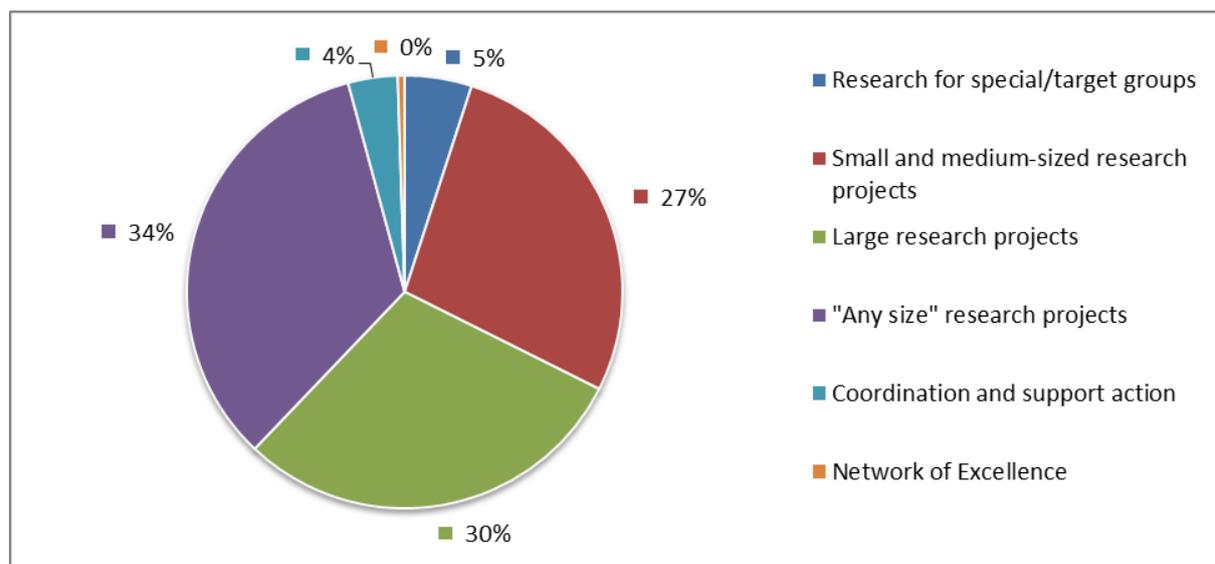
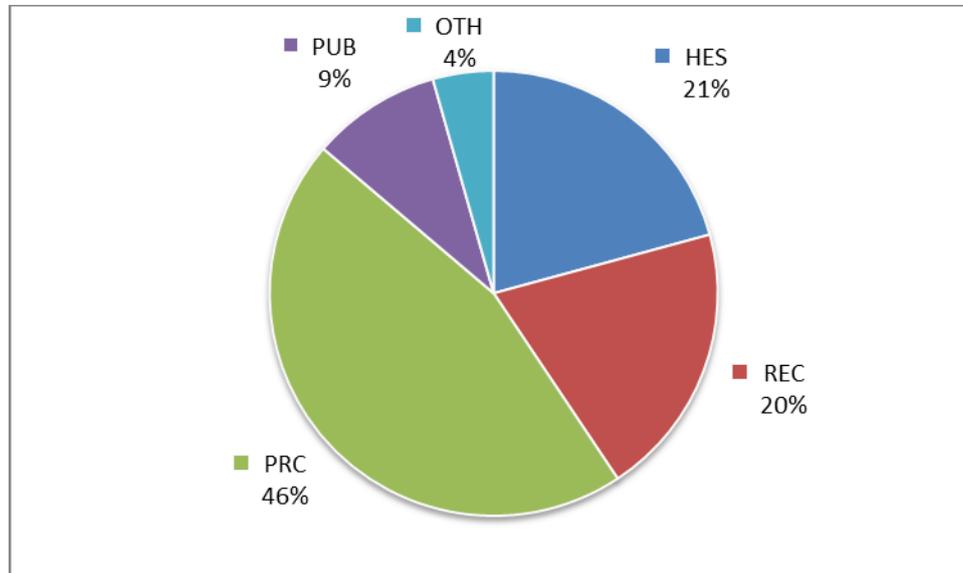


Figure 13.5: EC contribution to projects related to SDG 13, by funding scheme

<sup>37</sup> Refers to projects under the SICA (Specific International Cooperation Action) funding scheme.

For the entire period between 2007 and 2013, some 3,310 organisations participated in projects related to SDG 13. As shown in Figure 13.6, private-for-profit organisations accounted for 46 % of these organisations. Higher education institutions and research organisations were also highly involved, with 21 % and 20 % of the participating organisations falling in these categories respectively. Public bodies were less involved, with 9 % of organisations falling in this category.

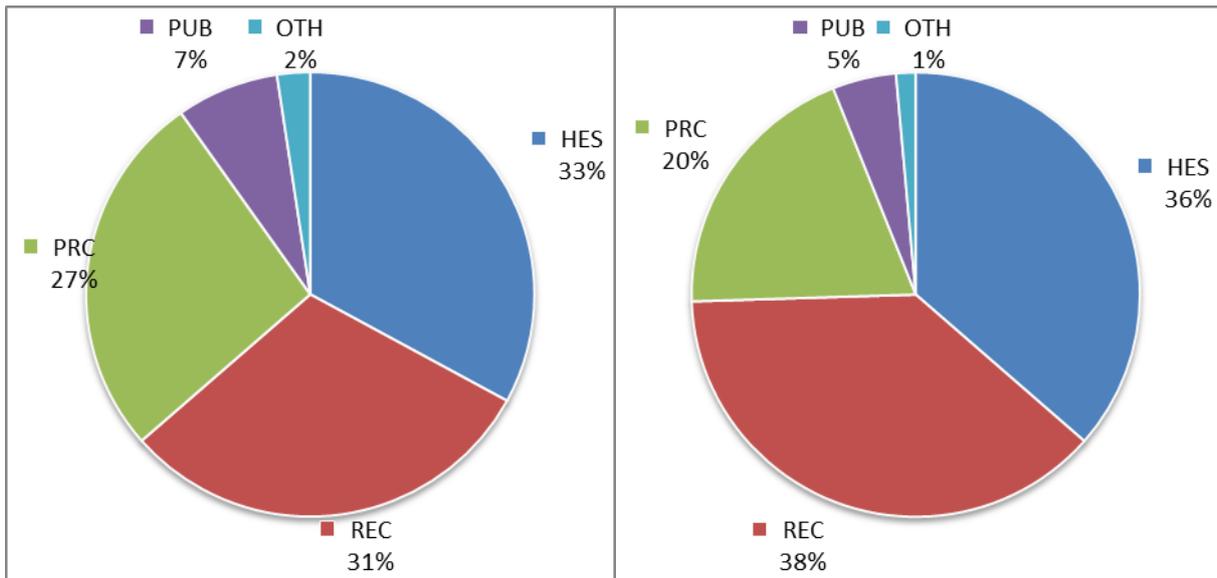


**Figure 13.6:** Organisations participating in projects related to SDG 13

The distribution across organisation types is different when looking at the number of project participations<sup>38</sup> relevant for SDG 13. The large number of private-for-profit organisations on average participated in one project only, whereas higher education institutions and research organisations participated on average in 3 to 4 projects. This explains the high share of project participations from higher education institutions and research organisations, at 33 % and 31 % respectively (see Figure 13.7). Private organisations constituted the third largest group in terms of project participations (27 %).

When looking only at those project partners that acted as project coordinators, higher education institutions and research organisations were even more involved. More than two thirds of projects were coordinated by research organisations (38 %) or higher education institutions (36 %). Private organisations ranked third, with 20 %, and only 5 % of the projects were coordinated by public bodies.

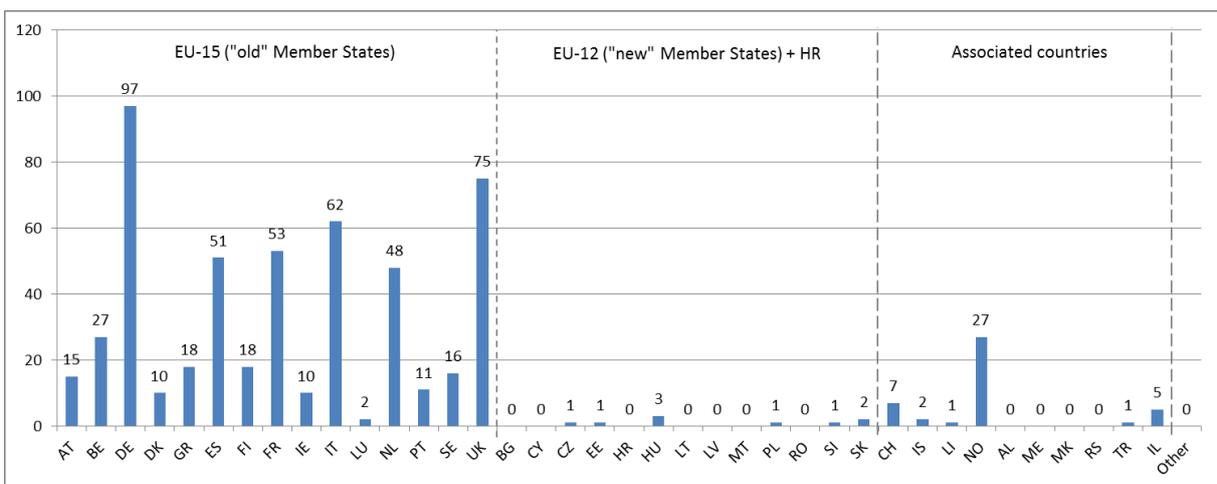
<sup>38</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 13.7:** Participations in projects related to SDG 13, by organisation type - all project partners (left), project coordinators (right)

Compared with the overall number of FP7\* project participations, research organisations were considerably overrepresented as participants and coordinators for projects related to SDG 13, whereas private for-profit organisations were largely underrepresented. Considerably less projects related to SDG 13 were coordinated by higher education institutions compared with FP7\* as a whole.

In terms of the geographical distribution of coordinators, about 90 % of the projects related to SDG 13 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 13.8), in particular Germany (17 %), the UK (13 %) and Italy (11 %). In contrast, under 2 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia). Some 7 % of the projects coordinators came from other European (non-EU) countries, in particular Norway and Switzerland. Compared with the overall FP7\* distribution of coordinators, a slightly lower number of projects related to SDG 13 were coordinated by organisations from the EU-15 Member States. Instead, significantly more organisations acting as coordinators came from Norway.



**Figure 13.8:** Geographical location of coordinators of projects related to SDG 13

### 3.13.3 Project cases

**Project title:** *DRiving InnoVation in crisis management for European Resilience*

**Project coordinator:** ATOS SPAIN SA (Spain)

**Duration:** 2014/05/01 to 2018/10/31

**Costs:** € 46.3; **EC contribution:** € 33.5

**Funding scheme:** CP-IP - Large-scale integrating project

**Project abstract:** DRIVER starts from the experience that neither successful R&D nor strong end-user demand always lead to innovation in the Crisis Management (CM) domain. This is a problem since as societies become more complex, increasing scope and unpredictability of potential crises and faster dynamics of major incidents put increasingly stringent demands on CM. European CM capabilities already constitute a mature System of Systems; hence wholesale redesign would often be too costly and might critically destabilise existing CM capabilities. Therefore DRIVER focuses on augmenting rather than replacing existing capabilities and will aim at producing a comprehensive, well-balanced and cost-effective Portfolio of CM tools exploiting high potential RTD work from the last decade, not least in FP7 and FP6 projects. This portfolio will address not only needs of professional responders but also of society at large. DRIVER will carry out experimentation campaigns in three strands: tools and methods for responders, resilience of civil society and learning by both. The intra-strand experimentation leads into two Joint Experiment campaigns and a Final Demo focusing on challenges requiring highly complex interaction between CM tools. To evaluate and benchmark these CM tools, a strong evidence base for tool selection is crucial; to this end DRIVER will build a distributed European CM Test-bed, itself a major innovation. To maximise impact beyond the scope of the project and of the DRIVER consortium it is necessary to develop the sustainability of the European Test-bed, the exploitation of the DRIVER Portfolio of Tools and to make emerge a European CM community, which shares a common CM understanding and is increasingly willing to share capabilities and collaborate in CM innovation. These three objectives need and feed each other, thus developing Europe's ability to continue adapting its CM capabilities to emerging needs long after the project end.

**Website:** <http://driver-project.eu/>

**Project title:** *Bottom-up Climate Adaptation Strategies towards a Sustainable Europe (BASE)*

**Project coordinator:** AARHUS UNIVERSITET (Denmark)

**Duration:** 2012/10/01 to 2016/09/30

**Costs:** € 7.6 million; **EC contribution:** € 5.9 million

**Funding scheme:** CP - Collaborative project

**Project abstract:** Climate change can disrupt ecological, social and economic systems, with some regions and sectors suffering significantly. Therefore, adaptation plays a paramount role in responding to climate change. Progress has been made, but there are still important obstacles. Knowledge of the benefits and costs of adaptation is sparse, unsystematic and unevenly distributed across sectors and countries. Planning suffers from substantial uncertainties in terms of precise impacts. It is also difficult to reconcile the bottom-up nature of adaptation with top-down strategic policy making on adaptation. To address these challenges BASE will: Improve adaptation knowledge

availability, integration and utilization Case studies will be used to understand facilitators of, and barriers to, adaptation. Over 20 cases have been selected to cover the diversity of adaptation, simultaneously paying attention to the need for generalization and comparability. The gap between top-down strategic assessments of costs and benefits and empirical context-sensitive bottom-up analyses will be bridged using novel combinations of models and qualitative analyses. Promote and strengthen stakeholder participation in adaptation BASE will support stakeholder involvement through novel participatory and co-design techniques. Successful bottom-up initiatives will be studied, and the use of knowledge, two-way learning, the role of social media and other awareness raising methods and tools will be explored. Support coherent, multi-level, multi-sector integrated adaptation policies BASE will provide policy guidelines by integrating lessons from past experiences, case studies, insights provided by modeling and stakeholder participation. Issues of multilevel, cross sectoral and inter-temporal governance that are presently weakly tackled will be highlighted. Potential conflicts and synergies of adaptation with other important policies will be explored to overcome constraints caused by context-related inertias.

**Website:** <http://base-adaptation.eu/>

## 3.14 SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

### 3.14.1 Overview – main results

#### Main findings

- SDG 14 was addressed by a low number of topics and projects in FP7\* and received a relatively small share of the EC contribution. In terms of budget, on average SDG 14-relevant projects were larger compared to the FP7\* average project size.
- SDG 14 appears moderately narrow both in terms of topics and projects, i.e. it was addressed by topics and projects mainly from the themes ENVIRONMENT and Agriculture (KBBE).
- SDG 14-related projects were larger than the FP7\* average. Research organisations were considerably overrepresented both as participants and coordinators, whereas private organisations were underrepresented.

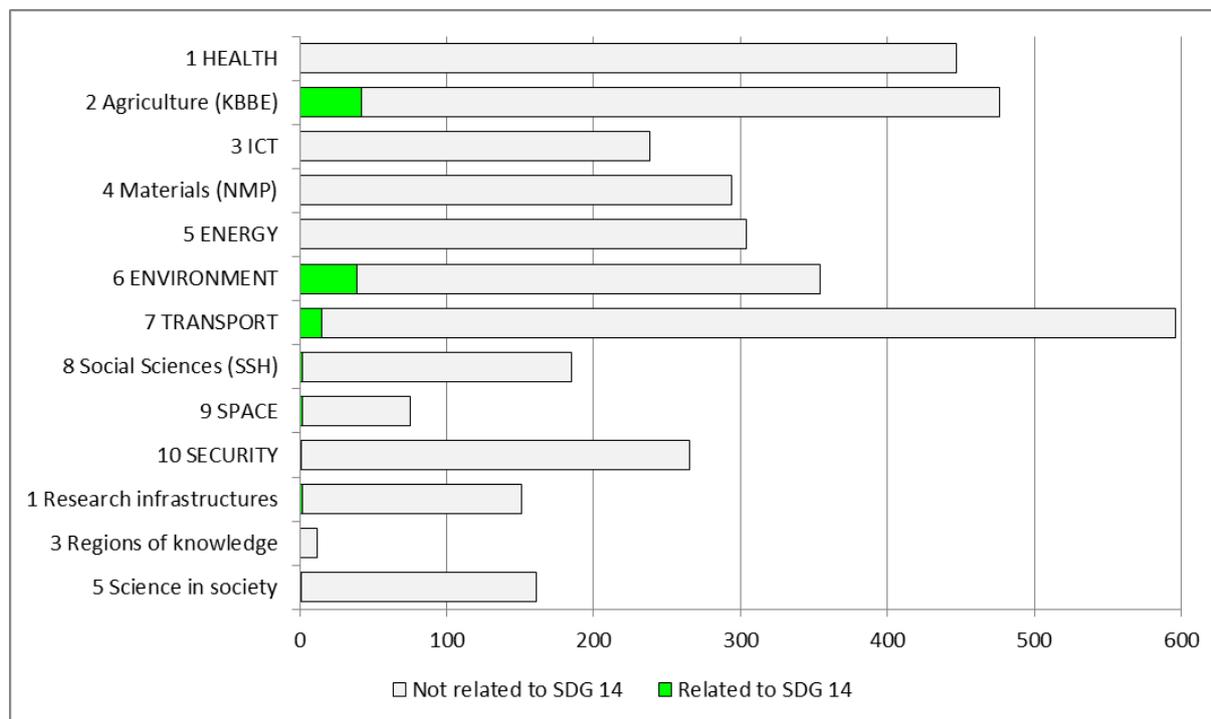
#### Summary of results

- About 100 topics or 3 % of all topics called for in FP7\* were relevant to the objectives of SDG 14
- Under these, some 100 projects were carried out with a financial contribution of € 0.4 billion or 1.6 % of the designated EC research budget
- The themes Agriculture (KBBE) and ENVIRONMENT in SP ‘Cooperation’ contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 14 was larger than the average size of projects in FP7\* as a whole
- About one third of SDG 14 relevant projects were funded under the scheme of ‘small and medium-sized’, which was significantly lower compared with FP7\* as a whole
- Majority of relevant projects were carried out and coordinated by research organisations and higher education institutions, with the former being considerably overrepresented, both as participants and coordinators. Private organisations were significantly underrepresented both as participants and coordinators
- About 6 % of the relevant projects required international cooperation, which is two times more than the FP7\* average
- The largest number of coordinators were from the UK, the Netherlands and Spain. The EU-15 Member States, in particular Germany, were considerably underrepresented, whereas Norway and Denmark were overrepresented

### 3.14.2 Detailed analysis

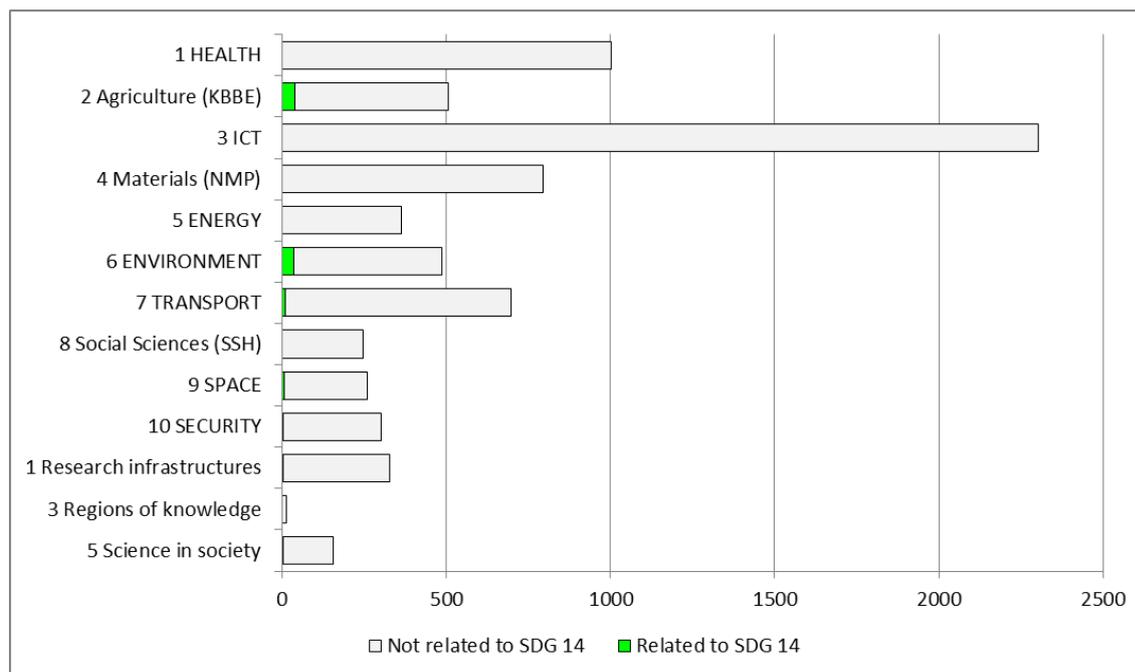
About 3 % of all topics called for under SP ‘Cooperation’ and SP ‘Capacities’\* are relevant for the objectives of SDG 14. This is equivalent to approximately 100 topics called for in the Work Programmes 2007-2013. The themes Agriculture (KBBE) and ENVIRONMENT in SP ‘Cooperation’ contain the largest number of topics related to the objective of SDG 14 – about 40 topics each or approximately 9 % of all topics called for in the theme Agriculture (KBBE) and 11 % in the theme ENVIRONMENT. The TRANSPORT theme also covers a number of topics with relevance for SDG 12 – about 15 topics or 2.5 % of all topics in this theme. Other themes in SP ‘Cooperation’ featuring only a

few topics relevant to SDG 14 are Social Sciences, Space and Security (See Figure 14.1). In comparison to SP ‘Cooperation’, SP ‘Capacities’\* contains just a limited number of related topics – about 1 %, falling under the theme ‘Research Infrastructures’ and ‘Science in Society’.



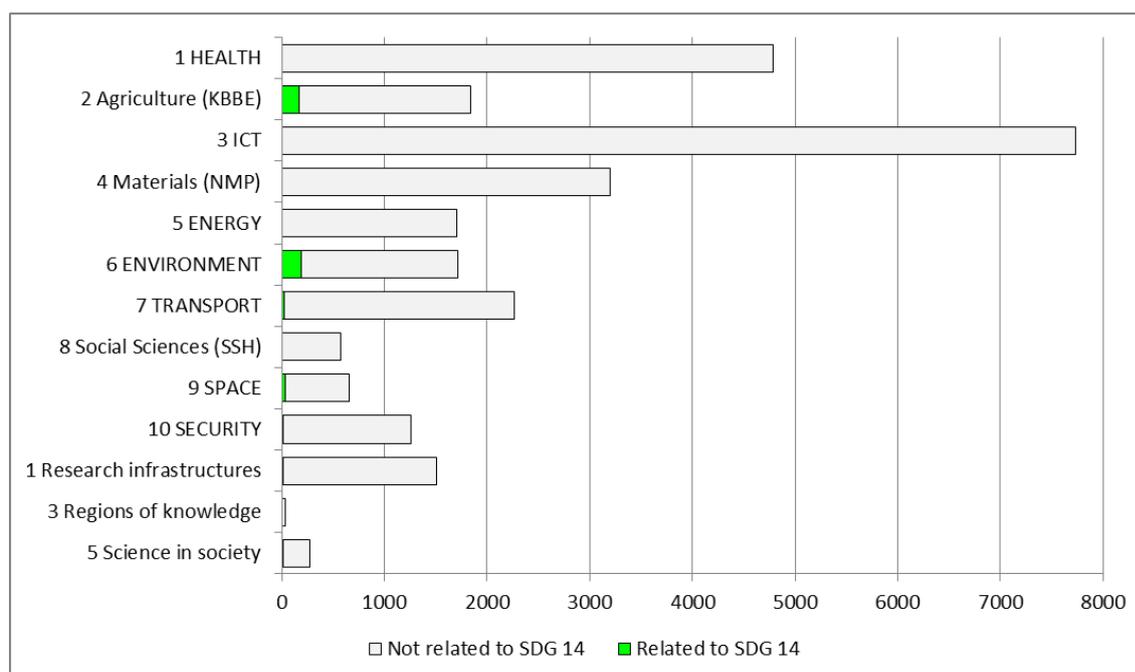
**Figure 14.1:** Number of topics related to SDG 14 in SP ‘Cooperation’ and SP ‘Capacities’\*

The picture looks somewhat similar when looking at the number of projects carried out in each theme. Overall, some 100 projects related to the objectives of SDG 1 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to 1 % of all projects in both specific programmes. The theme Agriculture (KBBE) stands out with the largest number of projects related to SDG 14 – about 40 projects or 8 % of all projects carried out under this theme. It is closely followed by the theme ENVIRONMENT with some 35 projects or 7 % of all projects in the theme. The TRANSPORT theme comes third in terms of number of projects related to SDG 14 - about 10 projects or 1 % of all projects in the theme. A limited number of projects also appear in the theme SPACE and one in the theme SECURITY. Only a few projects financed under ‘Research Infrastructures’ and ‘Science in Society’ seem to be related to the objectives of SDG 14, altogether accounting for only about 1 % of projects in SP ‘Capacity’.



**Figure 14.2:** Number of projects related to SDG 14 in SP 'Cooperation' and SP 'Capacities'\*

In terms of financial contribution provided by FP7\*, some € 0.4 billion or about 1.6 % of the research budget for SP 'Cooperation' and SP 'Capacities'\* was allocated to projects relevant to SDG 14. Most of this financial contribution came from SP 'Cooperation' and about € 22 million from SP 'Capacity'. The ENVIRONMENT theme constituted the largest source of funding in this respect, with nearly € 185 million or 11 % of its budget being distributed to projects with relevance for the achievement of SDG 14. Although the Agriculture (KBBE) theme contained the largest number of projects with relevance to SDG 14, it provided the second largest financial contribution both in real and relative terms – about € 164 million or 9 % of all its budget. These were followed by the themes SPACE (€ 38 million or 6 % of its budget) and TRANSPORT (€ 22 million or 1 % of its budget). The highest financial contribution from SP 'Capacities'\* came from the theme 'Science in Society' (€ 16 million), followed by the theme 'Research Infrastructures' (€ 6 million).



**Figure 14.3:** Total EC contribution (€ million) to projects related to SDG 14

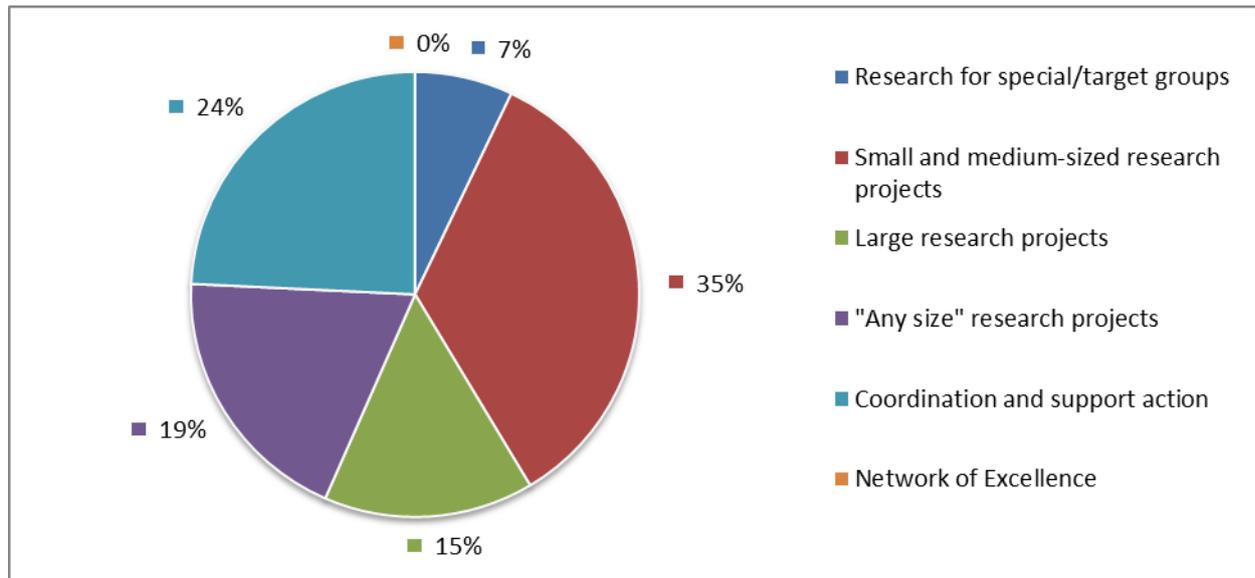
Over the period 2007 to 2013, the financial contribution from the EC relevant to SDG 14 was highest in 2011 and 2013, with about € 0.1 billion or 2 % of the total budget of SP ‘Cooperation’ and SP ‘Capacities’\* each year. The financial allocation to projects relevant for SDG 14 was lowest in 2008, with about € 34 million (1 % from the budget for 2008). The highest number of relevant projects was also recorded in 2011 - about 18 projects. In relative terms, the highest share of relevant projects was recorded in 2009 and 2012 - about 1.5 % of all projects in the respective years. Contrary to this, the highest number of topics with relevance to SDG 14 were called for in 2007 - about 20 topics. However, in relative terms, the share of topics with relevance to SDG 14 was highest in 2009 (almost 4 % of topics called for that year).

Figure 14.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. About 35 projects or nearly 35 % of all projects that are relevant for the objectives of SDG 14 were small and medium-sized research projects. Coordination and support action projects constituted the second largest group in terms of number of projects (about 24 or 24 % of all projects), followed by projects without a pre-defined size (20 projects or about 20 % of all projects) and large-scale research projects (about 15 or 15 % of all projects). Although they rank third in terms of number of projects, ‘any size’ research projects received the largest financial contribution from the EC– some € 141 million or about 33 % of all EC funding allocated to SDG 14 relevant projects. Large research projects, which were only the fourth most common type, received a comparable amount– some € 119 million or about 27 % of the overall funding allocated to SDG 14 relevant projects. The first-ranked funding scheme in terms of number of projects with relevance to SDG 14 – small and medium-sized research projects – received considerably smaller contribution – about € 96 million or almost 22 % of the overall funding. This discrepancy could be explained by the different nature and scale of the projects and therefore the different funding requirements.

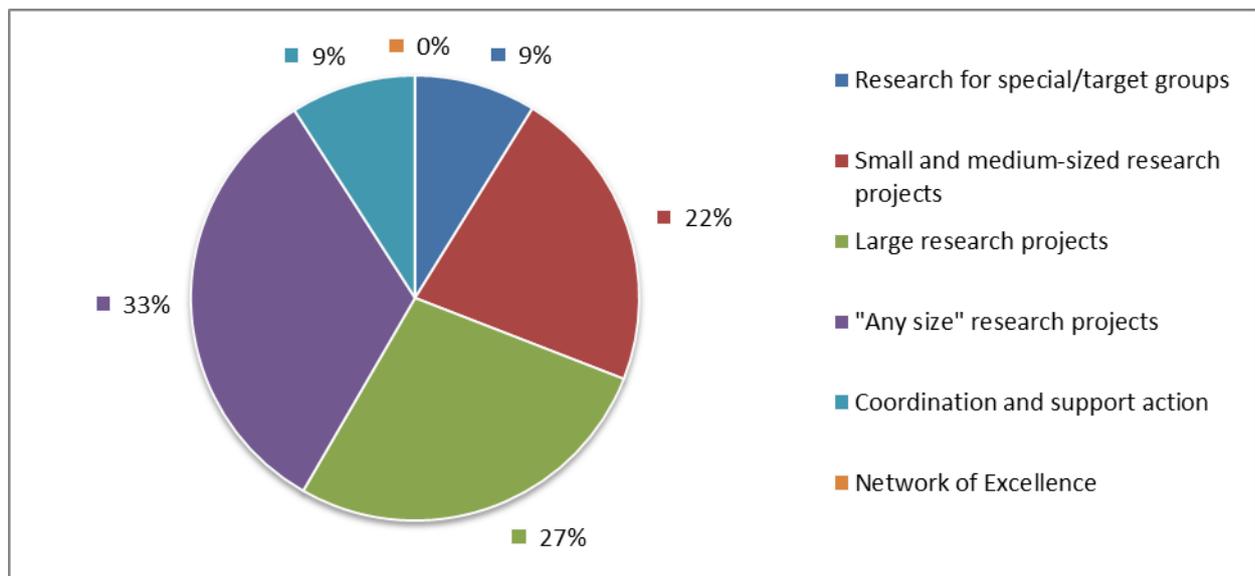
Based on the average EC project contribution, SDG 14 was addressed by larger projects (€ 4.4 million per project on average) compared with FP7\* as a whole (€ 3.7 million per project on average). It is

also interesting to note that 17 organisations were involved in an average SDG 14 relevant project, whereas 11 to 12 organisations were involved in an average FP7\* project. The larger size of projects in SDG 14 relevant research is also reflected in the fact that small and medium-sized research projects were significantly underrepresented compared with FP7\* as a whole.

Looking at funding schemes, about 6 % of the projects with relevance to SDG 14 were carried out with the aim of strengthening international cooperation. This number is relatively large compared with the overall share of projects in FP7\* as a whole which required international cooperation (3 %). Projects requiring international cooperation received about 10 % of the EC contribution relevant to SDG 14 (nearly € 42 million).



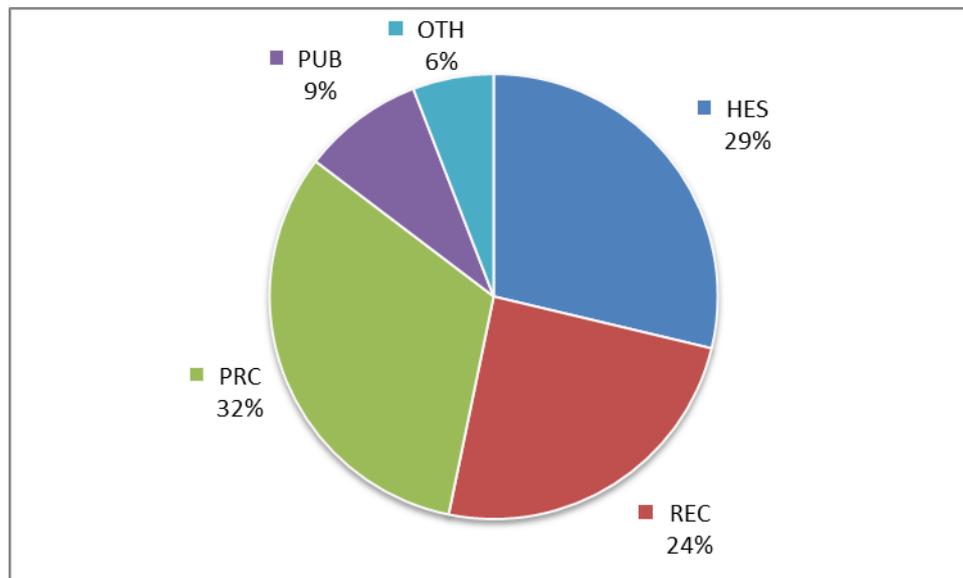
**Figure 14.4:** Projects related to SDG 14, by funding scheme



**Figure 14.5:** EC contribution to projects related to SDG 14, by funding scheme

For the entire period between 2007 and 2013, over 820 organisations participated in projects related to SDG 14. As shown in Figure 14.6, private for-profit organisations formed the largest group, accounting for 32 % of all organisations. Involvement of higher education institutions and research

organisations was also strong as they accounted for 29 % and 24 % of all participating organisations respectively. Public bodies were less involved, with only 9 % of all participating organisations falling in this category.

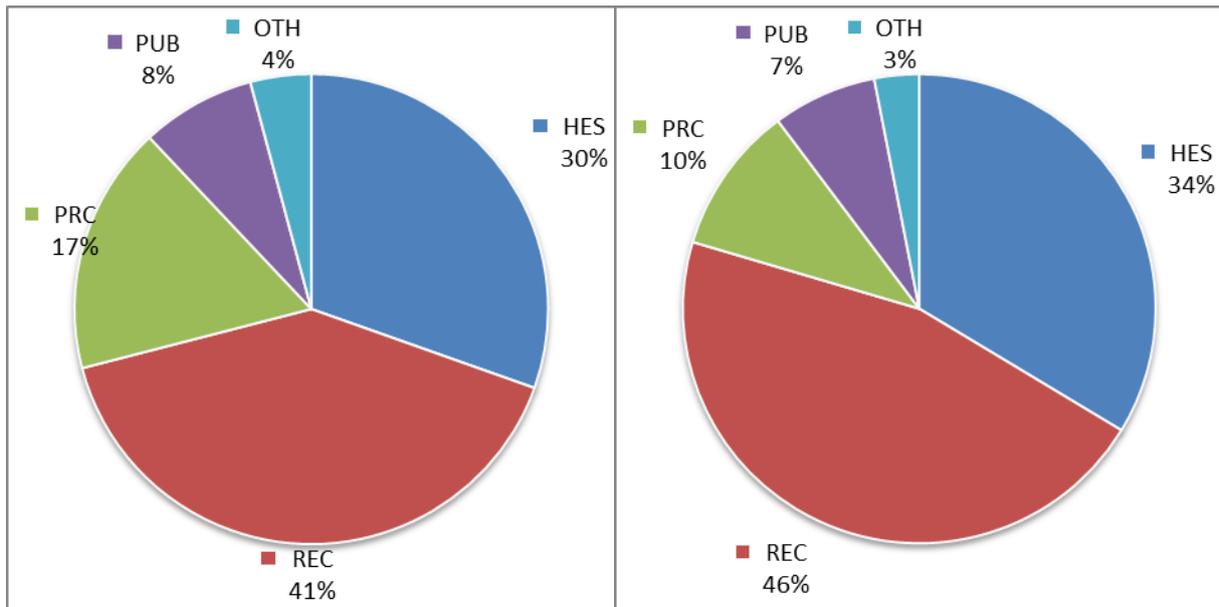


**Figure 14.6:** Organisations participating in projects related to SDG 14

The distribution across organisation types is quite different when looking at the number of project participations<sup>39</sup> relevant for SDG 14. Non-profit research organisations had the highest share of participations (41 %), followed by higher education institutions (30 %). The participation of private for-profit organisations was about 17 % - considerably lower than expected, given the large number of participating organisations from this type. This discrepancy between number of participating organisations and share of participations could be explained by the difference in average number of participation per organisation. Whereas private for-profit organisations participated on average in one project related to SDG 14, research organisations participated in three to four of them and higher education institutions in about two. The representation of research organisations and higher education institutions is even more pronounced when looking at the distribution of project coordinators. Research organisations formed the largest group of project coordinators (46 %) and were followed by higher education institutions (34 %). Private for-profit organisations were less present as coordinators, having coordinated about 10 % of all projects relevant to SDG 14. Public bodies and other organisations were involved as project coordinators to a very limited extent (Figure 14.7).

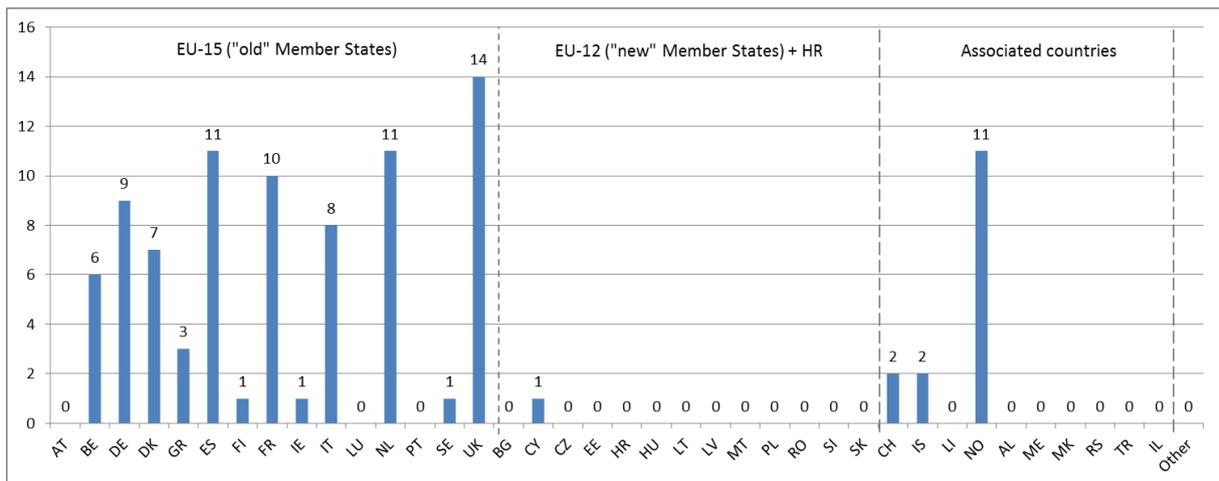
Compared with the overall number of FP7\* project participations, research organisations were considerably overrepresented as participants and coordinators for projects related to SDG 14, whereas private for-profit organisations were largely underrepresented.

<sup>39</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 14.7:** Participations in projects related to SDG 14, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, 84 % of the projects related to SDG 14 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 14.8), in particular UK (14 %), Netherlands and Spain (11 %), France (10 %) and Germany (9 %). In contrast, only 1 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), in particular Cyprus. Some 15 % of the project coordinators came from other European (non-EU) countries, in particular Norway (11 %), Iceland (2 %) and Switzerland (2 %). Compared with the overall FP7\* distribution of coordinators, a significantly lower number of projects related to SDG 14 were coordinated by organisations from the EU-15 Member States, with Germany being particularly underrepresented. Instead, significantly more organisations acting as coordinators came from Norway and Denmark.



**Figure 14.8:** Geographical location of coordinators of projects related to SDG 14

### 3.14.3 Project cases

**Project title:** *Prototype Operational Continuity for the GMES Ocean Monitoring and Forecasting Service (MYOCEAN2)*

**Project coordinator:** MERCATOR OCEAN (FRANCE)

**Duration:** 04/01/2012 to 09/30/2014

**Costs:** € 41.1 million; **EC contribution:** € 28 million

**Funding scheme:** Combination of CP and CSA

**Project abstract:** The main objective of the MyOcean2 project will be to operate a rigorous, robust and sustainable Ocean Monitoring and Forecasting component of the GMES Marine Service (OMF/GMS) delivering ocean physical state and ecosystem information to intermediate and downstream users in the areas of marine safety, marine resources, marine and coastal environment and climate, seasonal and weather forecasting. This is highly consistent with the objective of the FP7 Space Work Programme to support a European Space Policy focusing on applications such as GMES (Global Monitoring for Environment and Security), with benefits for citizens, but also other space foundation areas for the competitiveness of the European space industry. In the period from April 2012 to September 2014, MyOcean2 will ensure a controlled continuation and extension of the services and systems already implemented in MyOcean, a previous funded FP7 project that has advanced the pre-operational marine service capabilities by conducting the necessary research and development. To enable the move to full operations as of 2014, MyOcean2 is targeting the prototype operations, and developing the necessary management and coordination environment, to provide GMES users with continuous access to the GMES service products, as well as the interfaces necessary to benefit from independent R&D activities. MyOcean2 will produce and deliver services based upon the common-denominator ocean state variables that are required to help meet the needs for information of those responsible for environmental and civil security policy making, assessment and implementation. MyOcean2 is also expected to have a significant impact on the emergence of a technically robust and sustainable GMES service infrastructure in Europe and significantly contribute to the environmental information base allowing Europe to independently evaluate its policy responses in a reliable and timely manner

**Website:** <http://marine.copernicus.eu/>

**Project title:** *European Project on Ocean Acidification (EPOCA)*

**Project coordinator:** CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (FRANCE)

**Duration:** 05/01/2008 to 04/30/2012

**Costs:** € 9.8 million; **EC contribution:** € 6.6 million

**Funding scheme:** Large-scale integrating project

**Project abstract:** The overall goal of the European Project on Ocean Acidification (EPOCA) is to fill the numerous gaps in our understanding of the effects and implications of ocean acidification. EPOCA aims to document the changes in ocean chemistry and biogeography across space and time. Paleo-reconstruction methods will be used on several archives, including foraminifera and deep-sea corals, to determine past variability in ocean chemistry and to tie these to present-day chemical and biological observations. EPOCA will determine the sensitivity of marine organisms, communities and ecosystems to ocean acidification. Molecular to biochemical, physiological and ecological approaches will be combined with laboratory and field-based perturbation experiments to quantify biological responses to ocean acidification, assess the potential for adaptation, and determine the consequences for biogeochemical cycling. Laboratory experiments will focus on key organisms selected on the basis of their ecological, biogeochemical or socio-economic importance. Field studies will be carried out in systems deemed most sensitive to ocean acidification. Results on the chemical, biological and biogeochemical impacts of ocean acidification will be integrated in biogeochemical, sediment and coupled ocean-climate models to better understand and predict the responses of the Earth system to ocean acidification. Special special attention will be paid to the potential feedbacks of the physiological changes in the carbon, nitrogen, sulfur and iron cycles. EPOCA will assess uncertainties, risks and thresholds ('tipping points') related to ocean acidification at scales ranging from sub-cellular, to ecosystem and from local to global. It will also assess pathways of CO<sub>2</sub> emissions required to avoid these thresholds and describe the state change and the subsequent risk to the marine environment and Earth system should these emissions be exceeded.

**Website:** <http://www.epoca-project.eu/>

### 3.15 SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

#### 3.15.1 Overview – main results

##### Main findings

- SDG 15 was among the least addressed in terms of number of topics.
- SDG 15 could be defined as moderately narrow in terms of topics, i.e. it was addressed mainly by topics in the themes ENVIRONMENT and Agriculture (KBBE), but cross-cutting in terms of projects, i.e. it was addressed by projects from most themes.
- SDG 15 related projects were similar in size to the FP7\* average. Research organisations were significantly overrepresented, whereas private organisations were underrepresented. A higher share of SDG 15-relevant projects required international cooperation compared to FP7\* as a whole.

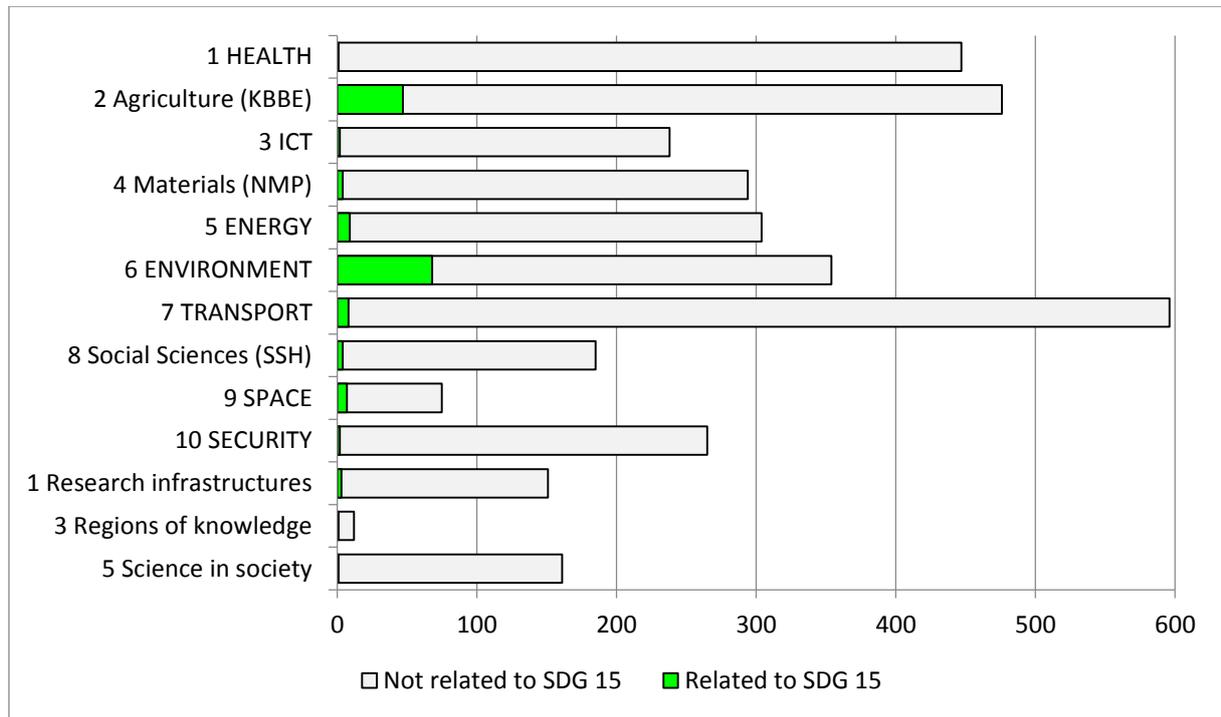
##### Summary of results

- 160 topics or 4 % of all topics called for in FP7\* were relevant to the objectives of SDG 15
- Under these, some 220 projects were carried out with a financial contribution of € 0.8 billion or 3 % of the designated EC research budget
- The themes ENVIRONMENT and Agriculture (KBBE) in SP ‘Cooperation’ contained the highest number of relevant topics and projects
- In terms of budget, the average size of projects relevant to SDG 15 was similar to the average size of projects in FP7\* as a whole
- About 45 % of SDG 15 relevant projects were funded under the scheme of ‘small and medium-sized’, which was slightly lower compared with FP7\* as a whole. Coordination and support action were also underrepresented, whereas ‘any size’ projects were overrepresented in SDG 15 relevant research.
- Majority of relevant projects were carried out and coordinated by higher education institutions and research organisations. Private organisations were significantly underrepresented both as participants and coordinators, whereas research organisations were considerably overrepresented as participants
- About 12 % of the relevant projects required international cooperation, which is considerably higher than FP7\* as a whole
- The largest number of coordinators were from Germany, the UK and the Netherlands, with Italy, Spain and Germany being somewhat underrepresented and Norway and the Netherlands overrepresented

#### 3.15.2 Detailed analysis

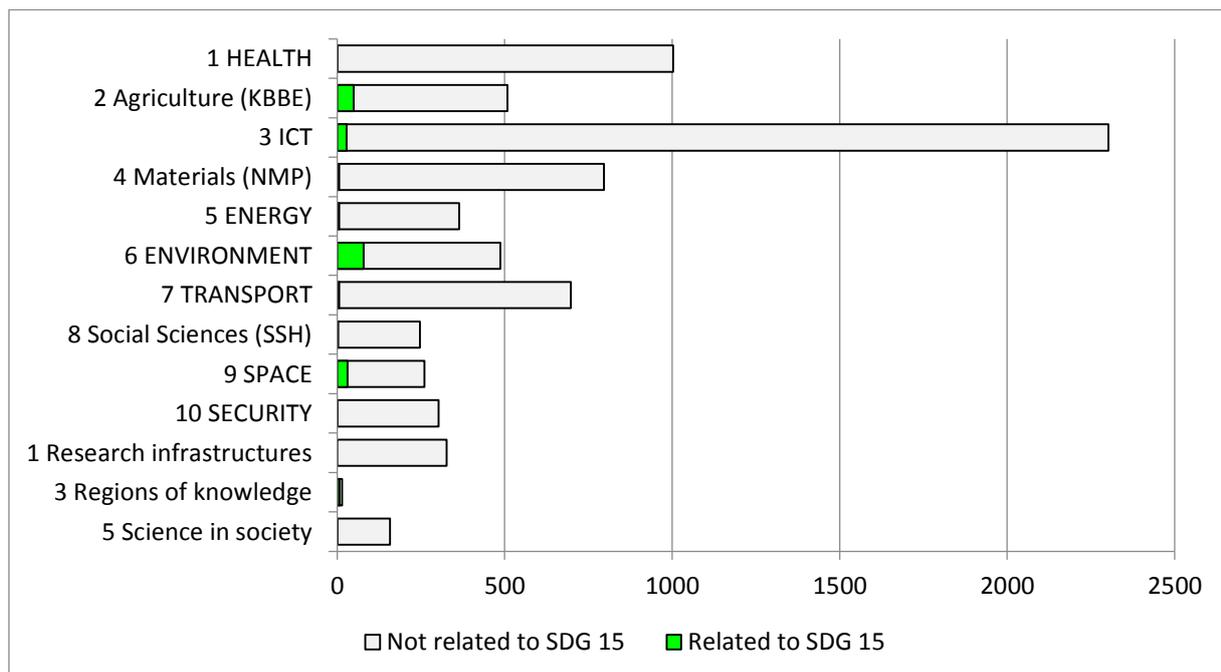
About 4 % of all topics called for and carried out under SP ‘Cooperation’ and SP ‘Capacities’\* were relevant for the objectives of SDG 15. This corresponds to some 160 topics called for in the Work Programmes 2007-2013. The theme ENVIRONMENT in SP ‘Cooperation’ contained the largest number of topics with a direct link to SDG 15, about 70 topics or almost 20 % of all topics in the theme (see Figure 15.1). The theme Agriculture (KBBE) also contained a relatively high number of

topics relevant for SDG 15, about 50 topics. In contrast, SP ‘Capacities’\* contained a low number of related topics – some 5 topics only.



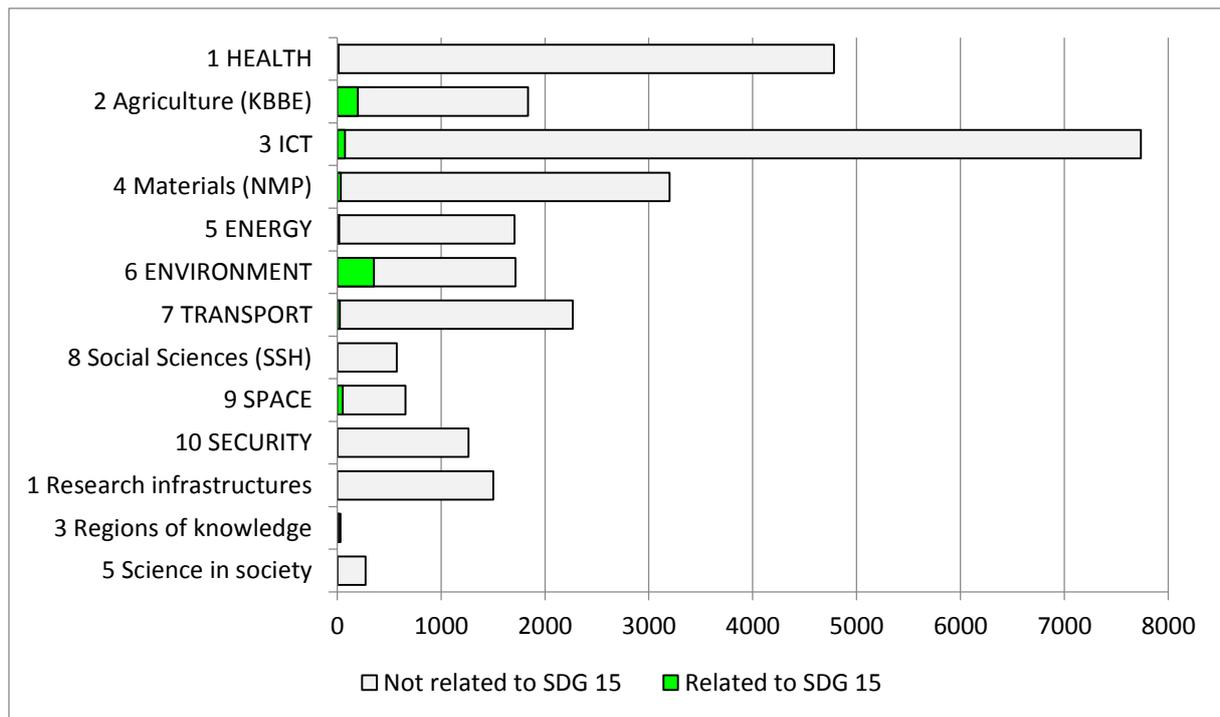
**Figure 15.1:** Number of topics related to SDG 15 in SP ‘Cooperation’ and SP ‘Capacities’\*

The picture is similar when looking at the number of projects carried out in each theme (see Figure 15.2). Overall, some 220 projects related to SDG 15 were carried out in FP7\*, which corresponds to 3 % of all projects in SP ‘Cooperation’ and SP ‘Capacities’\*. A third of these were carried out under the theme ENVIRONMENT (some 80 projects). The themes Agriculture (KBBE) came second in terms of relevant projects, some 50 projects, followed by the themes SPACE and ICT, some 30 projects each.



**Figure 15.2:** Number of projects related to SDG 15 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of the financial contribution provided by FP7\*, about 3 % of the budget allocated to SP ‘Cooperation’ and under 1 % of the budget allocated to SP ‘Capacities’\* contributed to the objectives of SDG 15 (see Figure 15.3). This was equivalent to some € 0.8 billion. The theme ENVIRONMENT constituted the largest source of funding, with some € 0.4 billion going to projects relevant for SDG 15. In relative terms, this constituted 20 % of the funding provided by the theme ENVIRONMENT. A relatively high share of the budget allocated to the themes Agriculture (KBBE) also contributed to the objectives of SDG 15 (10 % or some € 0.2 billion).

**Figure 15.3:** Total EC contribution (€ million) to projects related to SDG 15

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 15 was about € 0.1 billion each year. The number of relevant projects and topics varied more strongly over time. The highest number of relevant projects was recorded in 2010 (44 projects) and the lowest in 2013 (18 projects). The number of topics related to SDG 13 was also highest in 2010 (30 topics) and lowest in 2013 (15 topics).

Figure 15.4 below shows the different funding schemes in FP7, which define the type and the size of projects carried out. Regarding those projects that are relevant for the objectives of SDG 15, about 45 % or some 100 projects were small and medium-sized research projects. Projects without a pre-defined size (categorised as ‘any-size’ in figure 15.4) constituted the second largest group (some 45 projects), followed by large-scale research projects (some 30 projects).

Due to their size, large-scale research projects received a substantial share of the EC budget relevant for SDG 15, € 0.25 billion. This is equivalent to the share received by small and medium sized research projects, which were three times more in number. A quarter of the relevant EC budget was received by projects without a pre-defined size. At the other end of the scale, projects requiring coordination and support action received only 5 % of the designated EC budget, although 12 % of the projects fell in this category. Research for special/target groups received 7 % of the designated budget, which is similar to their respective share of the projects (6 %).

Based on the average EC project contribution, SDG 15 was addressed by average-sized projects. Looking at the total FP7\* distribution of project types, ‘any size’ research projects were overrepresented in SDG 15 relevant research. They also received a higher share of the EC budget compared with the average FP7\* contribution for ‘any size’ projects. In contrast, the two schemes – small and medium-sized research and coordination and support action - were underrepresented in SDG 15 relevant research.

Looking at funding schemes, about 12 % of the projects with relevance to SDG 15 were carried out with the aim of strengthening international cooperation. These received about 11 % of the EC contribution relevant to SDG 15 (€ 86 million). This is a considerable share, given that about 3 % of projects in FP7\* as a whole required international cooperation and received about 3 % of the designated EC research budget.

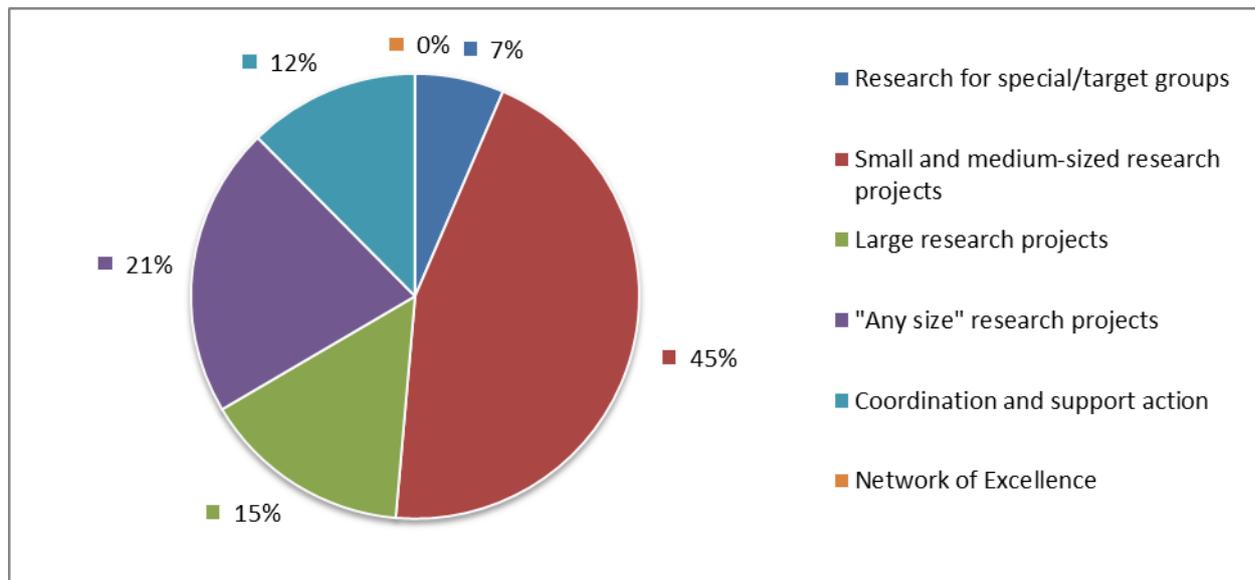


Figure 15.4: Projects related to SDG 15, by funding scheme

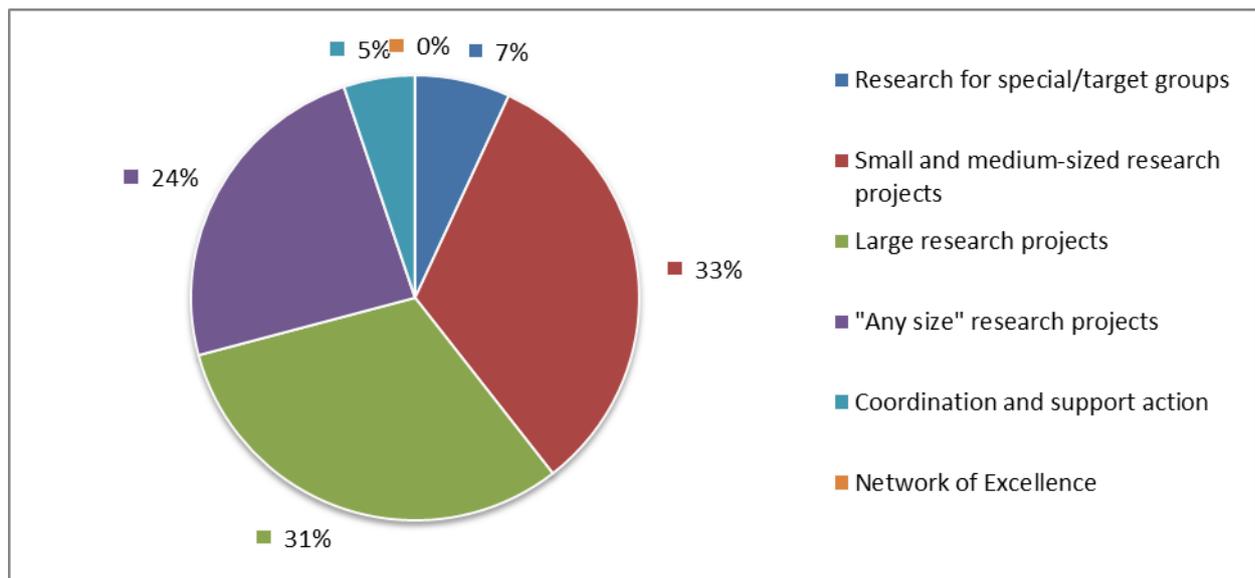
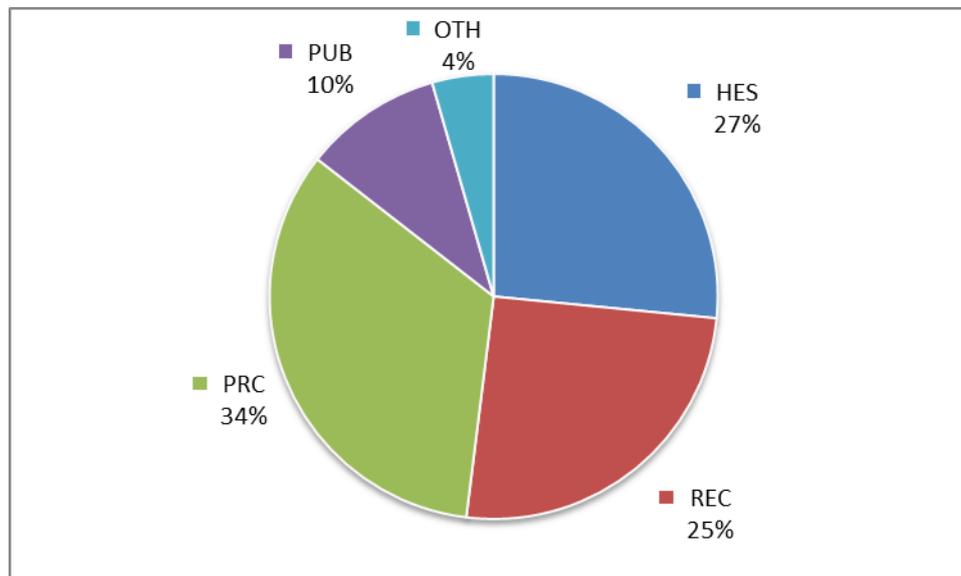


Figure 15.5: EC contribution to projects related to SDG 15, by funding scheme

For the entire period between 2007 and 2013, some 1,710 organisations participated in projects related to SDG 15. As shown in Figure 15.6, private-for-profit organisations accounted for a third of

these organisations (34 %). Education institutions and research organisations were also highly involved, with 27 % and 25 % of the participating organisations falling in these categories respectively. Public bodies were less involved, with 10 % of organisations falling in this category.

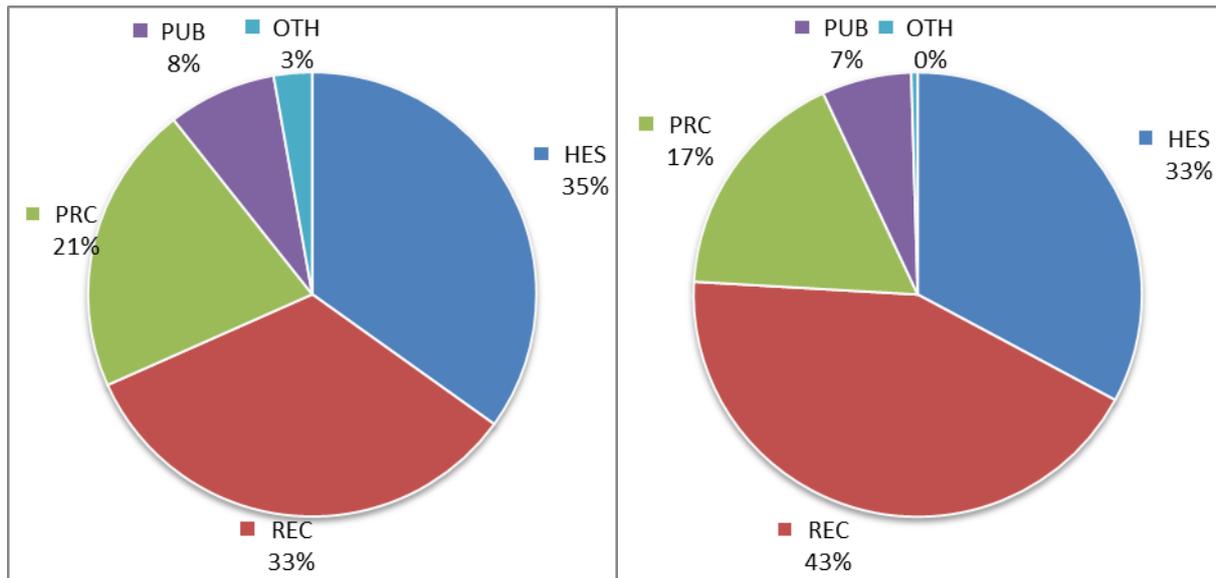


**Figure 15.6:** Organisations participating in projects related to SDG 15

The distribution across organisation types is different when looking at the number of project participations<sup>40</sup> relevant for SDG 15. The large number of private-for-profit organisations on average participated in one project only, whereas higher education institutions and research organisations participated on average in two projects. This explains the high share of project participations from higher education institutions and research organisations, at 35 % and 33 % respectively (see Figure 15.7). Private organisations constituted the third largest group in terms of project participations (21 %). Compared with the overall number of FP7\* project participations, research organisations were considerably overrepresented as participants in projects related to SDG 15, whereas private for-profit organisations were largely underrepresented.

When looking only at those project partners that acted as project coordinators, higher education institutions and research organisations were even more involved. Three quarters of projects related to SDG 15 were coordinated by research organisations or higher education institutions. Private

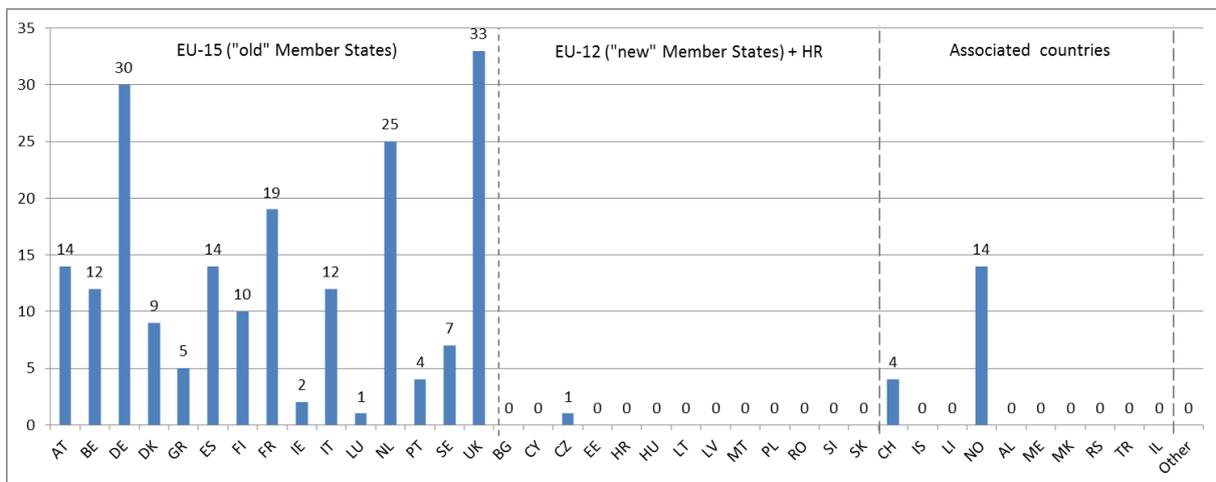
<sup>40</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 15.7:** Participations in projects related to SDG 15, by organisation type - all project partners (left), project coordinators (right)

organisations ranked third, with less than 20 %, and only 7 % of the projects were coordinated by public bodies. However, compared with the overall FP7\* distribution of project coordinators, research organisations were overrepresented, whereas higher education institutions and private for-profit organisations were underrepresented in terms of SDG 15 relevant projects.

In terms of the geographical distribution of coordinators, about 90 % of the projects related to SDG 15 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 15.8), in particular the UK (15 %), Germany (14 %) and the Netherlands (12 %). In contrast, under 1 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia). Some 8 % of the projects coordinators came from other European (non-EU) countries, in particular Norway and Switzerland. Compared with the overall FP7\* distribution of coordinators, Italy, Spain and Germany were somewhat underrepresented as coordinators of projects related to SDG 15, whereas the Netherlands and Norway were overrepresented.



**Figure 15.8:** Geographical location of coordinators of projects related to SDG 15

### 3.15.3 Project cases

**Project title:** *EU BON: Building the European Biodiversity Observation Network (EU BON)*

**Project coordinator:** MUSEUM FÜR NATURKUNDE - LEIBNIZ-INSTITUT FÜR EVOLUTIONS- UND BIODIVERSITÄTSFORSCHUNG AN DER HUMBOLDT-UNIVERSITÄT ZU BERLIN (GERMANY)

**Duration:** 12/01/2012 to 05/31/2017

**Costs:** € 11.6 million; **EC contribution:** € 9 million

**Funding scheme:** Collaborative project

**Project abstract:** Sustainable governance of our biological resources requires reliable scientific knowledge that meets the needs of society. Current biodiversity observation systems and environmental datasets are unbalanced in coverage and not integrated, limiting integrative analyses and implementation of environmental policies. EU BON presents an innovative approach towards integration of biodiversity information systems from on-ground to remote sensing data, for addressing policy and information needs in a timely and customized manner. EU BON will provide integration between social networks of science and policy and technological networks of interoperating IT infrastructures, resulting in a new open-access platform for sharing biodiversity data and tools, and greatly advance biodiversity knowledge in Europe. EU BON's 30 partners from 18 countries are members of networks of biodiversity data-holders, monitoring organisations, and leading scientific institutions. EU BON will build on existing components, in particular GBIF, LifeWatch infrastructures, and national biodiversity data centres. EU BON will 1) enable greater interoperability of data layers and systems through adoption of new standards; 2) advance data integration by new (modelling) technologies; 3) increase data mobilisation via scientific communities, citizen scientists, and potential data users; 4) develop strategies for future harmonizing and mainstreaming of biodiversity recording and monitoring; 5) improve analytical tools and services interpreting biodiversity data; 6) support the science-policy interface by timely information and scenario development; 7) link integrated, customized information to relevant stakeholders, and 8) strengthen overall European capacities and infrastructures for environmental information management. EU BON's deliverables include a comprehensive "European Biodiversity Portal" for all stakeholder communities, and strategies for a global implementation of GEO BON and supporting IPBES.

**Website:** <http://www.eubon.eu/>

**Project title:** *European Union Action to Fight Environmental Crime (EFFACE)*

**Project coordinator:** ECOLOGIC INSTITUT gemeinnützige GmbH (GERMANY)

**Duration:** 12/01/2012 to 03/31/2016

**Costs:** € 2.8 million; **EC contribution:** € 2.3 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** Environmental crime is a threat to environmental, social and economic sustainability and is in conflict with key commitments and strategies of the European Union, including the Europe 2020 Strategy. EFFACE will propose effective and feasible policy options for the EU to combat environmental crime. The recently adopted Environmental Crime Directive, the Ship-Source Pollution Directive, and the new provisions of the Lisbon Treaty have created new instruments and opportunities for increasing the effectiveness of EU measures against environmental

crime through harmonisation and co-ordination. However, utilisation of these opportunities suffers from a serious lack of information on environmental crime: e.g. harmonisation measures based on the new Article 83(2) TFEU depend on the availability of reliable information on the impacts of environmental crime. EFFACE will help to address this gap by generating relevant information. Drawing on a combination of quantitative and qualitative approaches and data and an in-depth investigation of different types of environmental crime, EFFACE will provide an assessment of the main costs, impacts and causes of environmental crime in the EU, including those linked to the EU, but occurring outside its territory, complemented by a comprehensive analysis of the status quo in terms of existing instruments, actors and institutions. A SWOT analysis will identify strengths, weaknesses, threats and opportunities associated with the EU's current efforts to combat environmental crime. Feasible policy options for harmonisation and better co-ordination of actors will then be developed with the help of, i.a., typologies of different approaches to harmonisation, sanctioning and strategic enforcement. These policy options will consider the use of policy mixes and innovative approaches to govern such mixes. Stakeholder involvement in EFFACE through interactive policy analysis will promote mutual learning with and among a broad range of stakeholders.

**Website:** <http://www.efface.eu>

### 3.16 SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

#### 3.16.1 Overview – main results

##### Main findings

- SDG 16 was well addressed by topics and projects in FP7\*. The majority of relevant topics were from the theme SECURITY, whereas the majority of relevant projects were from the themes SECURITY and ICT.
- SDG 16-related projects were similar in size to the FP7\* average. Private organisations were overrepresented in SDG 16 related projects both as participants and coordinators, whereas universities were underrepresented.
- A lower share of projects related to SDG 16 required international cooperation compared to FP7\* as a whole.

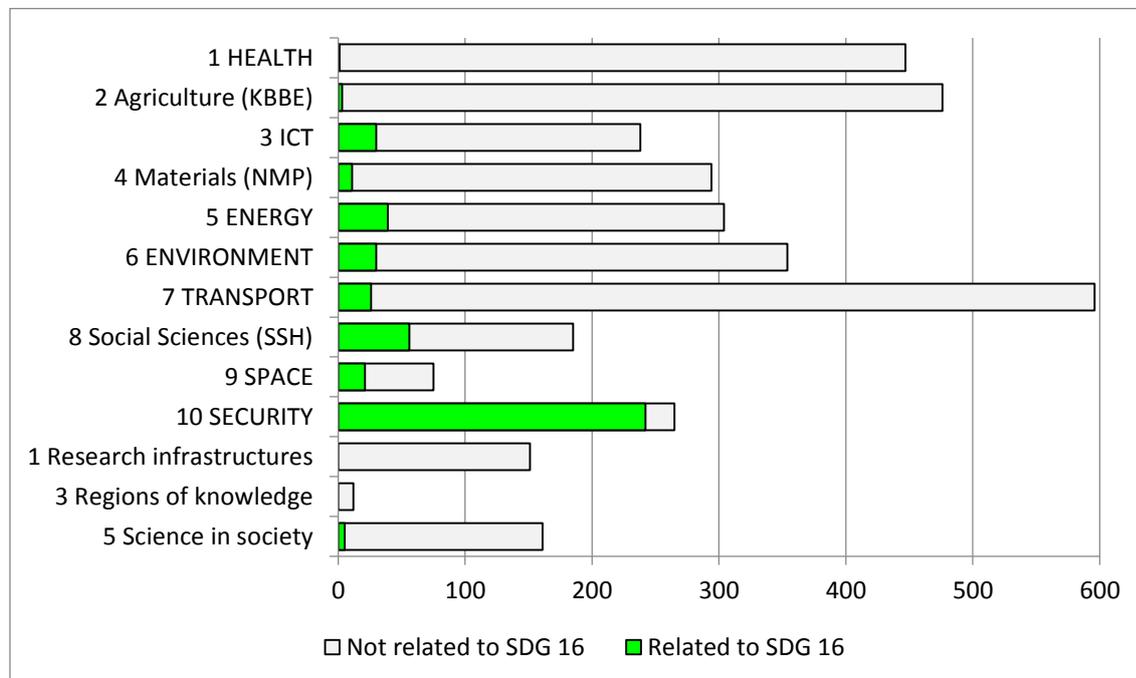
##### Summary of results

- 460 topics or 13 % of all topics called for in FP7\* were relevant to the objectives of SDG 16
- Under these, some 820 projects were carried out with a financial contribution of € 3 billion or 11 % of the designated EC research budget
- The theme SECURITY in SP ‘Cooperation’ contained the highest number of relevant topics and the themes SECURITY and ICT the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 16 was similar to the average size of projects in FP7\* as a whole
- About half of SDG 16 relevant projects were funded under the scheme of ‘small and medium-sized’, but this was not significantly different compared with FP7\* as a whole. However, ‘any size’ projects were overrepresented in SDG 16 relevant research.
- Majority of relevant projects were carried out by private for-profit organisations, but coordinated by an almost equal share of higher education institutions, research organisations and private organisations. Private organisations were overrepresented both as participants and coordinators and higher education institutions underrepresented, both as participants and coordinators
- About 1 % of the relevant projects required international cooperation, which is considerably lower than FP7\* as a whole
- The largest number of coordinators were from Germany, the UK and Italy, with Belgium and Germany being slightly underrepresented and Austria and Israel overrepresented

#### 3.16.2 Detailed analysis

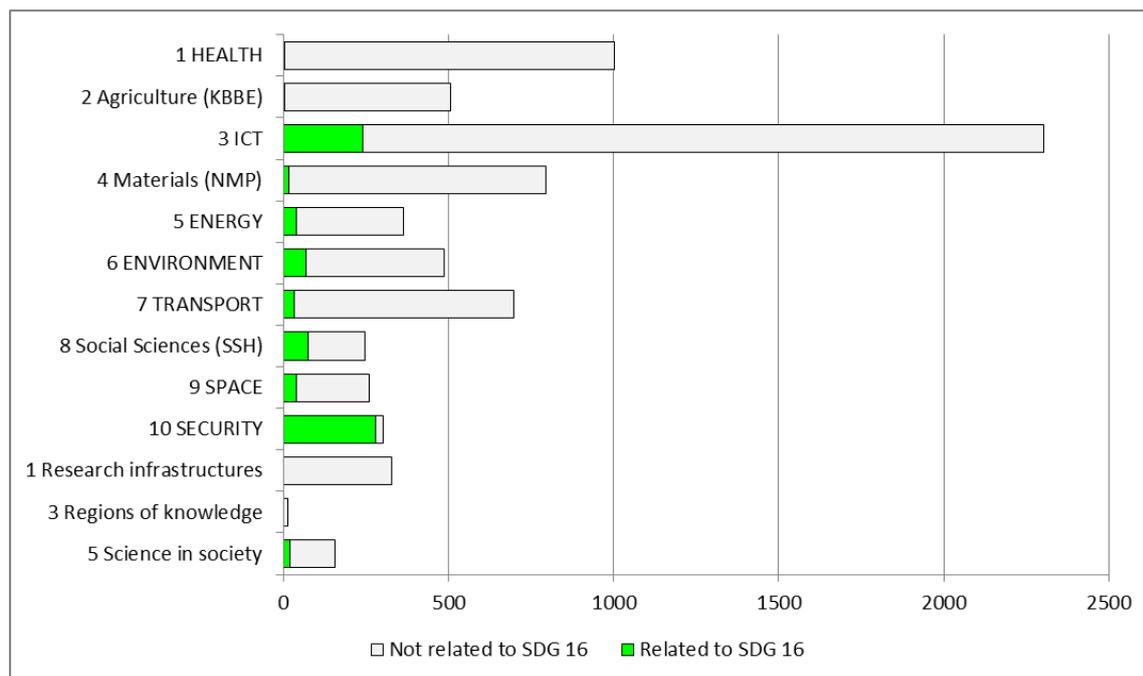
About 13 % of all topics called for in SP ‘Cooperation’ and SP ‘Capacities’\* are relevant for the objectives of SDG 16. This is equivalent to approximately 460 topics called for in the Work Programmes 2007-2013. The theme SECURITY in SP ‘Cooperation’ contains the highest number of topics related to the objective of SDG 16 – about 240 topics or approximately 91 % of all topics called for in this theme. The Social Sciences (SSH) themes comes second in terms of number of topics with relevance to SDG 16 – about 55 topics or 30 % of all topics in this theme. A number of topics relevant

for SDG 16 can also be seen in the themes ENERGY, ICT, ENVIRONMENT and TRANSPORT, between 25 and 40 topics in each theme. In fact, all themes in SP ‘Cooperation’ contain at least a few topics with relevance to the objectives of SDG 16 (See Figure 16.1). In contrast, SP ‘Capacities’\* contains only a limited number of related topics – about 1.5 % of all topics in the specific programme, all of them in the theme ‘Science in society’.



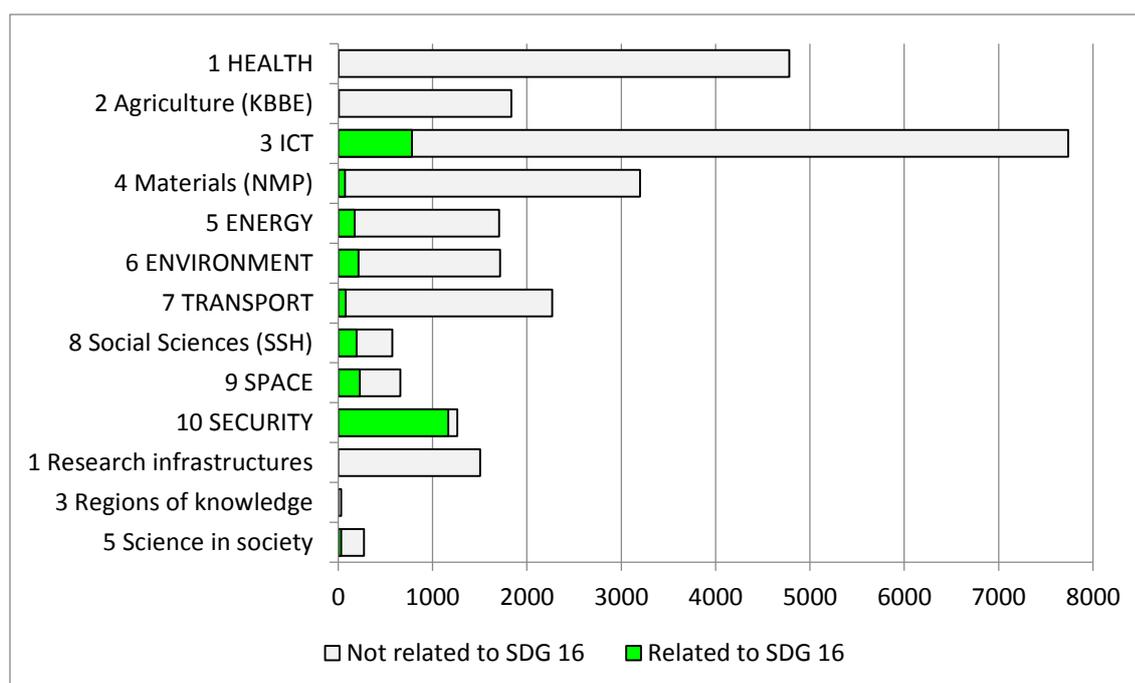
**Figure 16.1:** Number of topics related to SDG 16 in SP ‘Cooperation’ and SP ‘Capacities’\*

The picture looks somewhat different when looking at the number of projects carried out under each theme. Overall, some 820 projects related to the objectives of SDG 16 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, equivalent to 11 % of all projects in both specific programmes. The theme SECURITY still stands out with the largest number of projects related to SDG 16 – about 280 projects or 92 % of all projects carried out under this theme. However, the ICT theme comes second in terms of number of projects relevant to SDG 16, with about 240 projects or 10 % of all its projects. This seems surprising at first sight as the ICT theme ranked only fourth in terms of number of relevant topics, but the result could be explained by the large size of the ICT theme compared with other themes. The themes Social Sciences (SSH) and ENVIRONMENT also contain a sizable number of SDG 16 relevant projects – about 75 and 70 respectively. A comparable amount of SDG 16 relevant projects appear in the themes SPACE, ENERGY and TRANSPORT - between 40 and 30 projects. About 4 % of the projects in SP ‘Capacities’\* seem to be related to the objectives of SDG 16, all of them falling under the theme ‘Science in society’.



**Figure 16.2:** Number of projects related to SDG 16 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP 7, almost € 3 billion or 11 % of the research budget for SP ‘Cooperation’ and SP ‘Capacities’\* was allocated to projects relevant to SDG 16. Most of this financial contribution came from SP ‘Cooperation’ and about € 32 million from SP ‘Capacity’. The SECURITY theme constituted the largest source of funding in this respect, with nearly € 1.2 billion or 92 % of its entire budget. The ICT theme provided the second largest financial contribution to projects relevant to SDG 16 – about € 0.8 billion or 10 % of its entire budget, followed by the themes SPACE and ENVIRONMENT with about € 0.2 billion. However, in relative terms the themes SPACE and Social Sciences (SSH) dedicated the second and third largest shares of their respective budgets to SDG 16 relevant projects (after SECURITY) – about 35 % and 34 % respectively. The only financial contribution from SP ‘Cooperation’ came from the theme ‘Science in Society’ – € 32 million or about 12 % of the theme’s budget.



**Figure 16.3:** Total EC contribution (€ million) to projects related to SDG 16

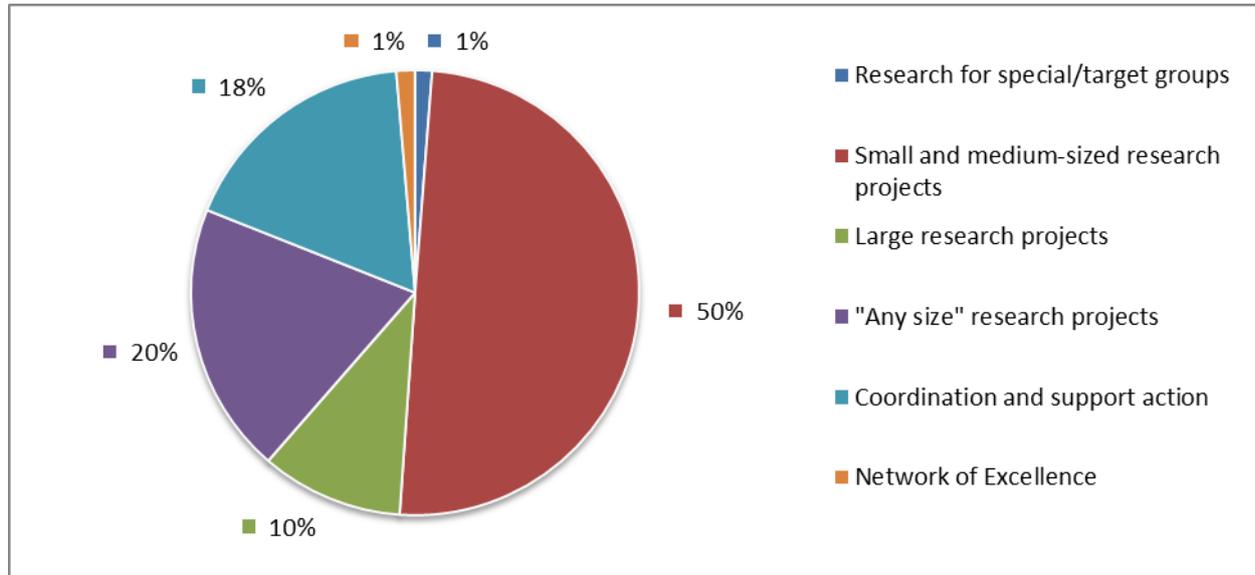
Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 16 was highest in 2011, with almost € 0.8 billion (about 14 % of the total budget of SP ‘Cooperation’ and SP ‘Capacity’ that year). However, in relative terms the highest budget allocation was recorded in 2012 – about 16 % of the overall budget that year. The EC research funding for project relevant to SDG 16 was lowest in 2008, with about € 0.1 billion (4 % of the budget for 2008). The highest number of relevant projects was also recorded in 2011 - about 200 projects (14 % of all projects in SP ‘Cooperation’ and SP ‘Capacity’ conducted that year). In relative terms, the highest share of relevant projects was recorded in 2012 – about 15 % of all projects carried out that year. Contrary to this, the highest number of topics with relevance to SDG 16 were called for in 2007 - about 110 topics (15 % of all topics called for in SP ‘Cooperation’ and SP ‘Capacity’ that year). However, in relative terms, the share of topics with relevance to SDG 14 was highest in 2012 and 2013 (about 18 % of topics called for in both years).

Figure 16.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. About 410 projects or nearly 50 % of all projects that are relevant for the objectives of SDG 16 were small and medium-sized research projects. Projects without a predefined size (categorised as ‘any size’ in the graph) constituted the second largest group – about 20 % of all projects, followed by coordination and support action projects – about 18 %. Small and medium-sized projects also received the biggest financial contribution from the EC – about € 1 billion or 36 % of the EC budget allocated to SDG 16 relevant projects. Projects without a predefined size received about € 0.9 billion or 30 % of the budget. Although large research projects were ranked only fourth in terms of number of relevant projects, they were allocated the third biggest share of the relevant budget – 25 % or € 0.7 billion. This discrepancy could be explained by the different nature and scale of the project types and therefore the different funding requirements.

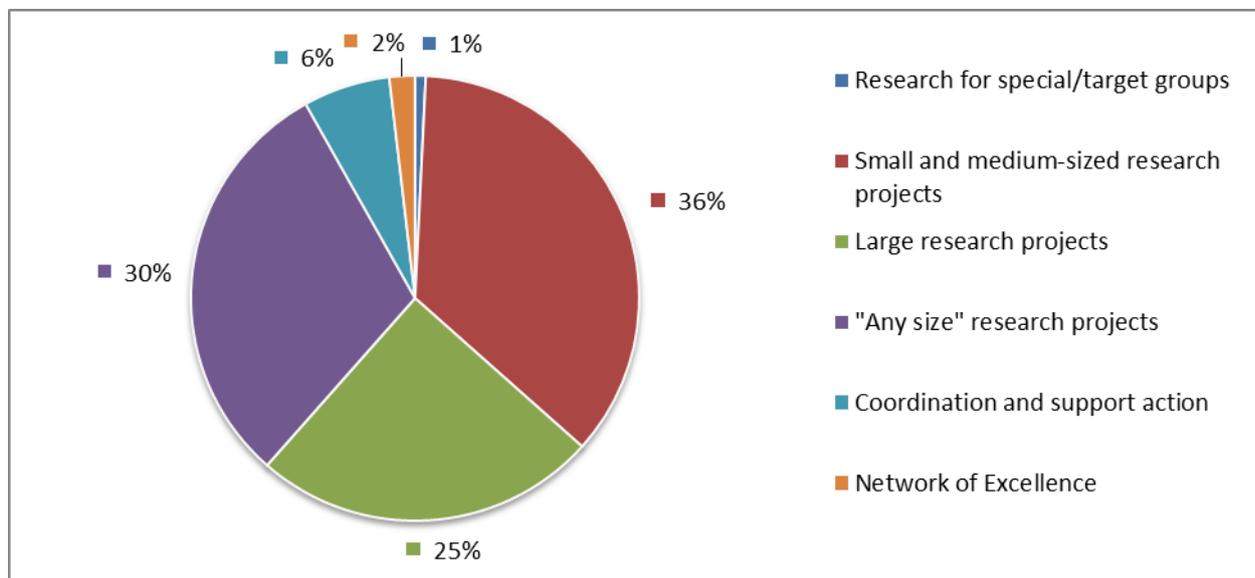
Based on the average EC project contribution, SDG 16 was addressed by average-sized projects. Looking at the total FP7\* distribution of projects types, ‘any size’ research projects were

overrepresented inSDG 16 relevant research. They also received a higher share of the EC budget compared with the average FP7\* contribution for ‘any size’ projects.

Looking at funding schemes, about 1 % of the projects with relevance to SDG 16 were carried out with the aim of strengthening international cooperation. These received about 0.7 % of the EC contribution relevant to SDG 16 (€ 21 million).This share is quite small, considering that about 3 % of projects in FP7\* as a whole required international cooperation and received about 3 % of the designated EC research budget.



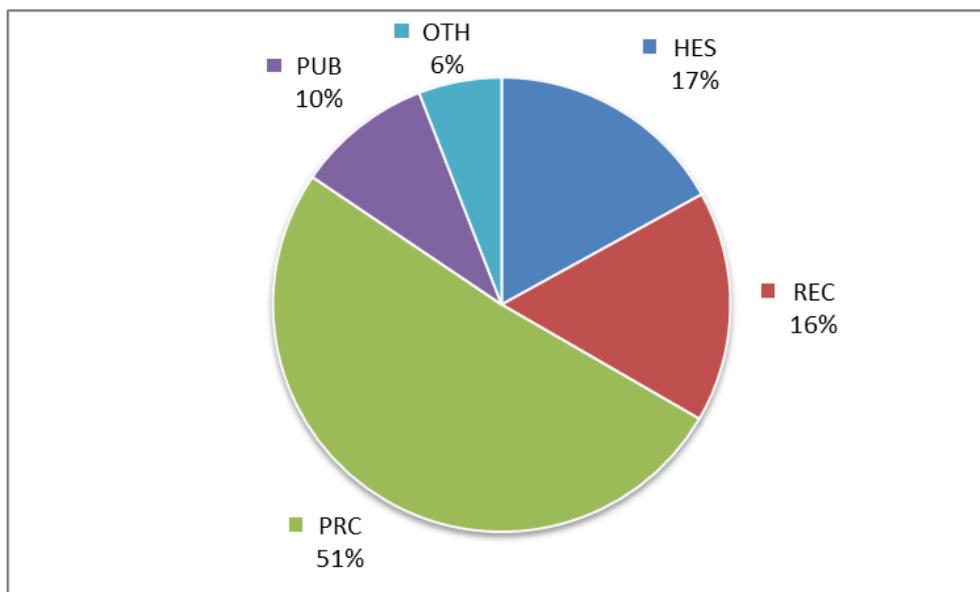
**Figure 16.4:** Projects related to SDG 16, by funding scheme



**Figure 16.5:** EC contribution to projects related to SDG 16, by funding scheme

For the entire period between 2007 and 2013, over 4,130 organisations participated in projects related to SDG 16. As shown in Figure 16.6, private for-profit organisations formed the majority, accounting for about 51 % of all organisations. Involvement of higher education institutions and research organisations was not that strong as they accounted for about 17 % of all participating organisations each. Public bodies and other organisations were also involved, but to a more limited

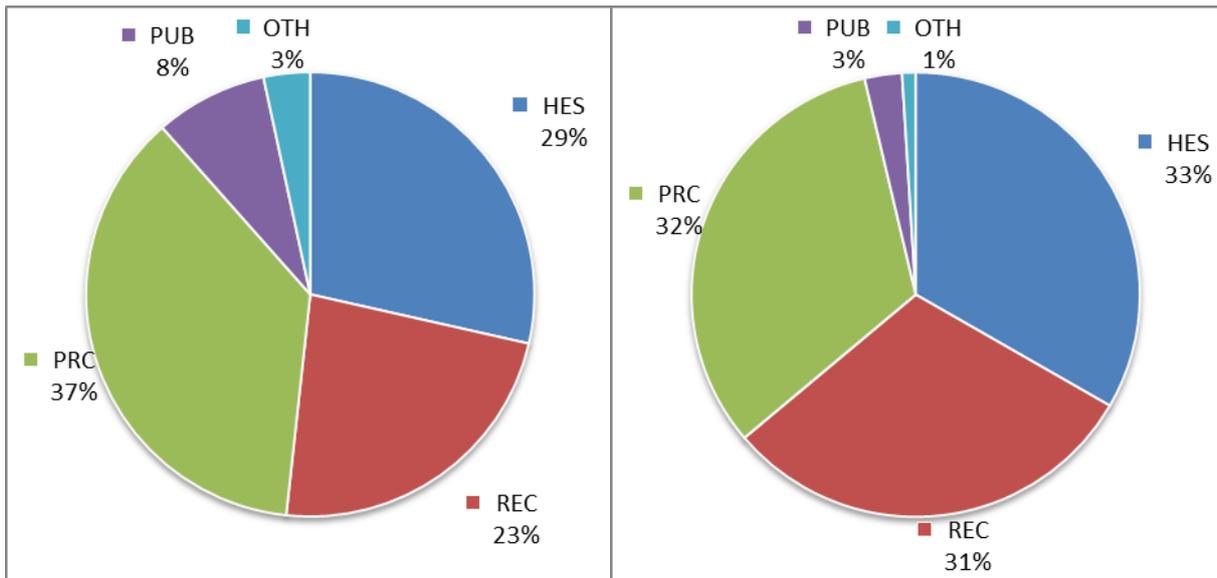
extent - with only 10 % and 6 % of all participating organisations falling in these categories respectively.



**Figure 16.6:** Organisations participating in projects related to SDG 16

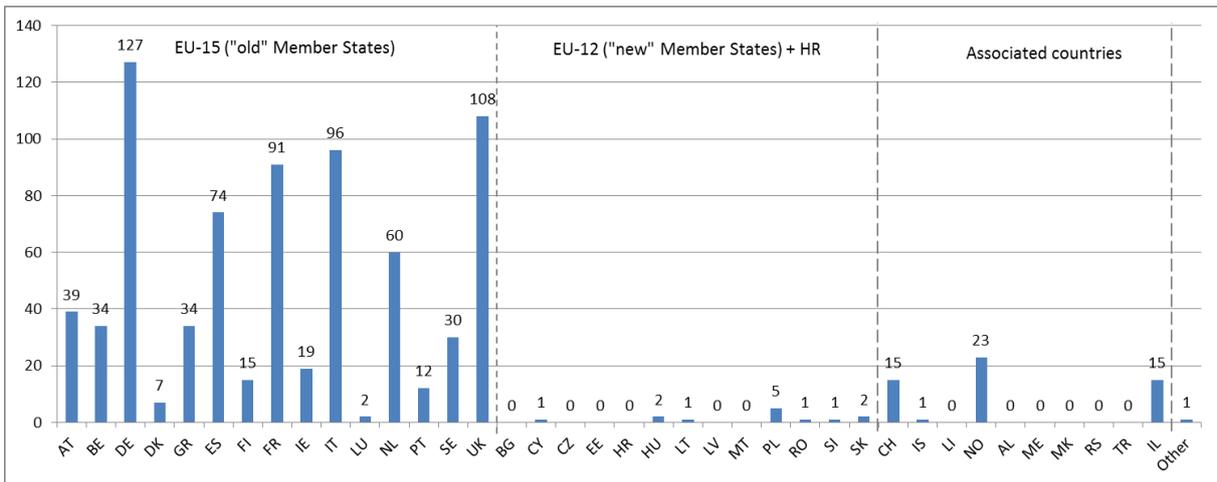
The distribution across organisation types is somewhat different when looking at the number of project participations<sup>41</sup> relevant for SDG 16. Private organisations still had the highest share of participations (37 %) but this was lower than expected given the large number of participating organisations from this type. Research organisations and higher education institutions were represented better than expected, with 23 % and 29 % of all participations respectively. This discrepancy between number of participating organisations and participation rate could be explained by the difference in average number of participation per organisation. Private for-profit organisations participated on average in one to two projects related to SDG 16, whereas research organisations participated in three and higher education institutions in about four projects on average. The distribution of project coordinators between the different organisation types was very similar between education institutions, private organisations and research institutes - about 30 % of coordinators came from each group. Public bodies and other organisations were involved as project coordinators to a very limited extent (Figure 16.7). Compared with the overall number of FP7\* project participations, private-for-profit organisations were considerably overrepresented as participants and especially coordinators for projects related to SDG 16, whereas higher education institutions were largely underrepresented.

<sup>41</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 16.7:** Participations in projects related to SDG 16, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, almost 92 % of the projects related to SDG 16 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 16.8), in particular Germany (16 %), UK (13 %) and Italy (12 %). In contrast, only 1.6 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), in particular Poland. Some 5 % of the projects coordinators came from other European (non-EU) countries, in particular Norway (3 %) and Switzerland (2 %). Compared with the overall FP7\* distribution of coordinators, Belgium and Germany were somewhat underrepresented as coordinators of projects related to SDG 16, whereas the Austria and Israel were overrepresented.



**Figure 16.8:** Geographical location of coordinators of projects related to SDG 16

### 3.16.3 Project cases

**Project title:** *Consistently Optimised Resilient Secure Global Supply-Chains (CORE)*

**Project coordinator:** EUROPEAN COUNCIL OF TRANSPORT USERS (EUROPEAN SHIPPERS COUNCIL) (BELGIUM)

**Duration:** 05/01/2014 to 04/30/2018

**Costs:** € 48.8 million; **EC contribution:** € 29.3 million

**Funding scheme:** Large-scale integrating project

**Project abstract:** CORE will consolidate, amplify, extend and demonstrate EU knowledge and capabilities and international co-operation for securing supply chains whilst maintaining or improving business performance, with specific reference to key Supply Chain Corridors. CORE will be driven by the requirements of: • the Customs, law enforcement authorities, and other agencies nationally and internationally to increase effectiveness of security & trade compliance, without increasing the transaction costs for business and to increase co-operative security risk management (supervision & control); • the business communities, specifically shippers, forwarders, terminal operators, carriers and financial stakeholders to integrate compliance and trade facilitation concepts like green lanes and pre-clearance with supply chain visibility and optimisation. CORE will consolidate solutions developed in Reference Projects in each supply chain sector (port, container, air, post). Implementation-driven R&D will be then undertaken designed to discover gaps and practical problems and to develop capabilities and solutions that could deliver sizable and sustainable progress in supply chain security across all EU Member States and on a global scale.

**Website:** <http://www.coreproject.eu/>

**Project title:** *Worldwide Observatory of Malicious Behaviors and Attack Threats (WOMBAT)*

**Project coordinator:** ORANGE SA (FRANCE)

**Duration:** 01/01/2008 to 04/30/2011

**Costs:** € 4.4 million; **EC contribution:** € 2.9 million

**Funding scheme:** Small or medium-scale focused research project

**Project abstract:** The WOMBAT project aims at providing new means to understand the existing and emerging threats that are targeting the Internet economy and the net citizens. To reach this goal, the proposal includes three key workpackages: (i) real time gathering of a diverse set of security related raw data, (ii) enrichment of this input by means of various analysis techniques, and (iii) root cause identification and understanding of the phenomena under scrutiny. The acquired datasets and knowledge will be shared with all interested security actors (ISPs, CERTs, security vendors, etc.), enabling them to make sound security investment decisions and to focus on the most dangerous activities first. Special care will also be devoted to impact the level of confidence of the European citizens in the net economy by leveraging computer security awareness in Europe thanks to the gained expertise.

**Website:** <http://www.wombat-project.eu/>

## 3.17 SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

### 3.17.1 Overview – main results

#### Main findings

- SDG 17-related research could be considered cross-cutting both in terms of topics and projects, .i.e. relevant topics and projects appear in almost all themes in FP7\*.
- SDG 17-related projects were slightly smaller in size compared to the FP7\* average. Higher education institutions and research organisations were slightly overrepresented as participants and coordinators compared to FP7\* as a whole, whereas private organisations were considerably underrepresented.
- Projects related to SDG 17 required extensive international cooperation.

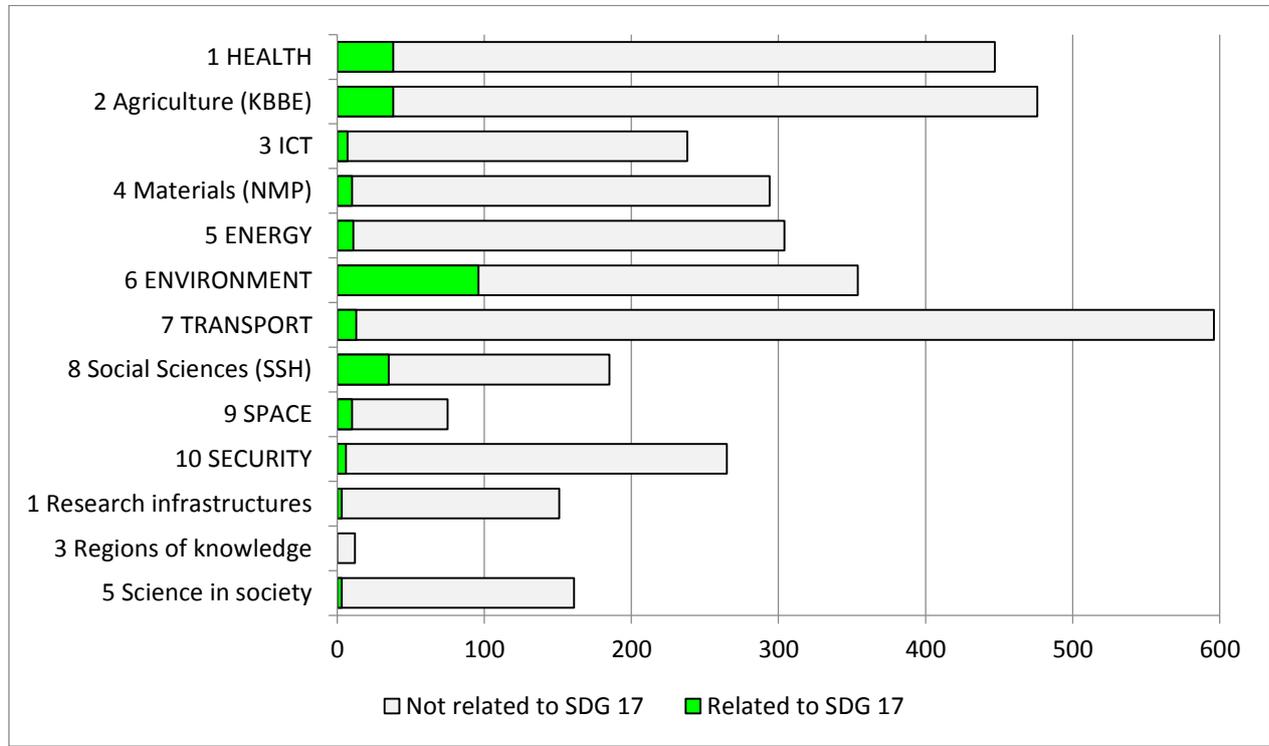
#### Summary of results

- 270 topics or 8 % of all topics called for in FP7\* were relevant to the objectives of SDG 17
- Under these, some 440 projects were carried out with a financial contribution of € 1.5 billion or 6 % of the designated EC research budget
- The theme ENVIRONMENT in SP ‘Cooperation’ contained the highest number of relevant topics and the themes ENVIRONMENT, HEALTH and ICT the highest number of relevant projects
- In terms of budget, the average size of projects relevant to SDG 17 was slightly smaller than the average size of projects in FP7\* as a whole
- One third of SDG 17 relevant projects were funded under the scheme of ‘small and medium-sized’ and one third under ‘any size’ projects, with the latter being overrepresented and the former somewhat underrepresented compared with FP7\* as a whole
- Majority of relevant projects were carried out and coordinated by higher education institutions and research organisations, which were slightly overrepresented compared with FP7\* as a whole. Private organisations were considerably underrepresented both as participants and coordinators
- About 42 % of the relevant projects required international cooperation, which is significantly higher than FP7\* as a whole
- The largest number of coordinators were from the UK, Germany, and France, with Germany and Italy being slightly underrepresented and the UK, Belgium and the Netherlands slightly overrepresented

### 3.17.2 Detailed analysis

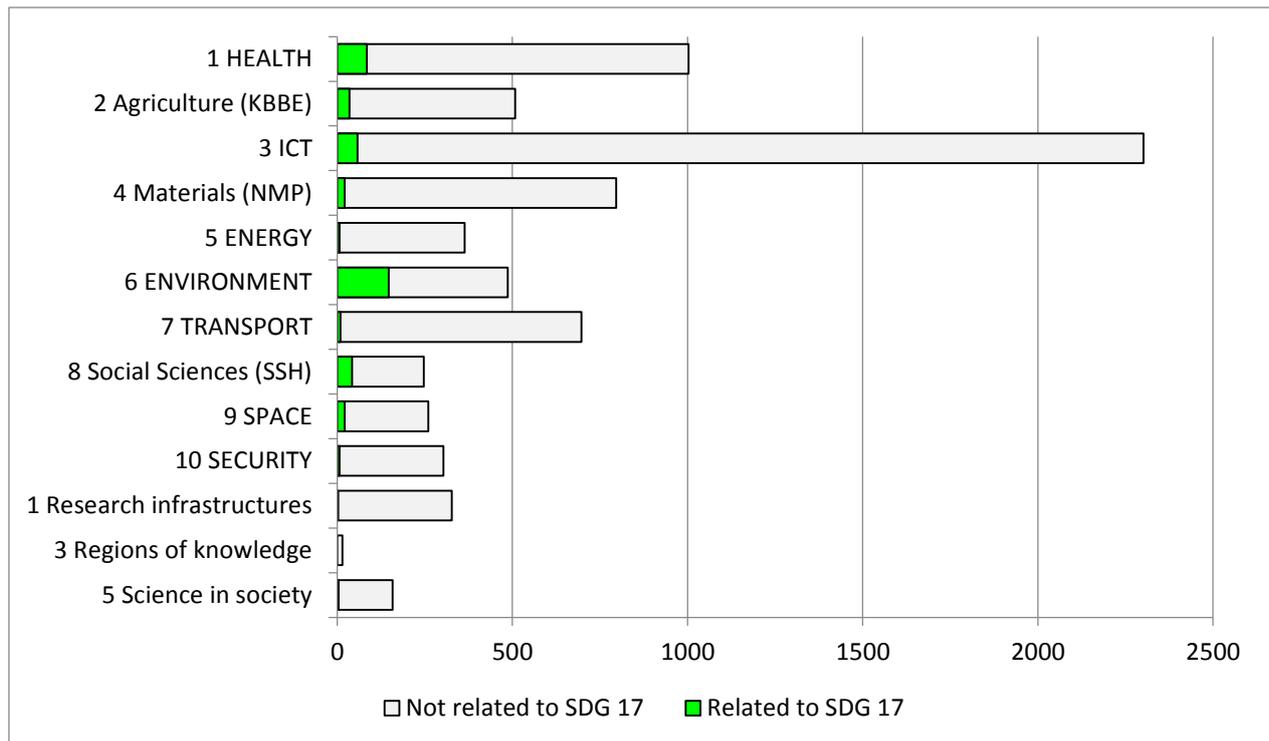
About 8 % of all topics called for in SP ‘Cooperation’ and SP ‘Capacities’\* were relevant for the objectives of SDG 17. This is equivalent to some 270 topics called for in the Work Programmes 2007-2013. The theme ENVIRONMENT in SP ‘Cooperation’ contained the largest number of topics related to the objective of SDG 17 – some 96 topics or about 27 % of all topics called for in this theme. The themes HEALTH and Agriculture (KBBE) came second in terms of number of topics with relevance to SDG 17, with about 40 topics each or 8 % of all topics under each of these themes. They were closely followed by the theme Social Sciences (SSH), which contained some 35 topics related to SDG 17 or

almost 20 % of all its topics in this theme. In fact, all themes in SP ‘Cooperation’ contained at least a couple of topics relevant to SDG 17 (See Figure 17.1). In contrast, SP ‘Capacities’\* contained only a limited number of related topics – about 2 % of all topics in the specific programme, all of them from the themes ‘Research infrastructures’ and ‘Science in society’.



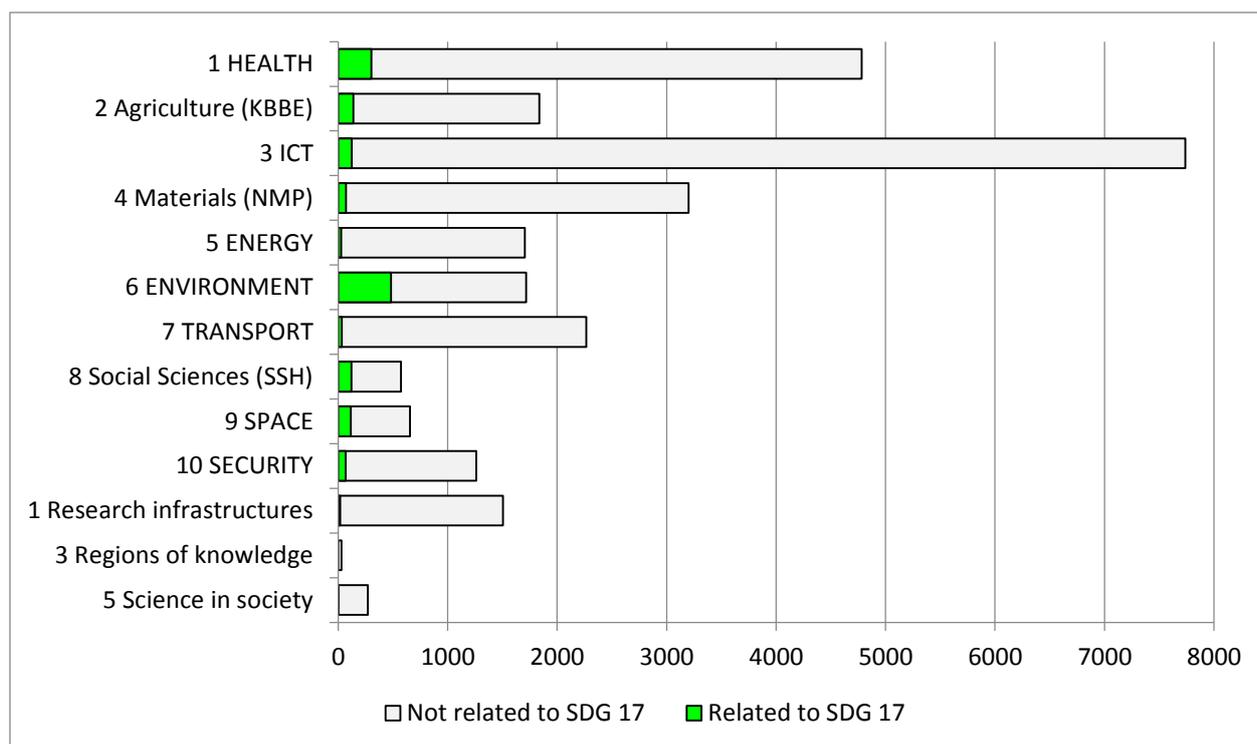
**Figure 17.1:** Number of topics related to SDG 17 in SP ‘Cooperation’ and SP ‘Capacities’\*

Overall, some 440 projects related to SDG 17 were carried out in SP ‘Cooperation’ and SP ‘Capacities’\*, which is equivalent to 6 % of all projects in both specific programmes. The theme ENVIRONMENT still stands out with the largest number of projects related to SDG 17 – about 150 projects or 30 % of all projects carried out under this theme. This is again followed by the theme HEALTH, with some 85 projects related to the objectives of SDG 17. The theme ICT comes third in terms of number of relevant projects, with about 60 projects or 2.5 % of all projects in this theme. This seems surprising at first sight as the ICT theme contained only a limited number of topics related to SDG 17, however, the result could be explained by the very large overall size of the ICT theme compared with others. The themes Social Sciences (SSH) and Agriculture (KBBE) contained also a number of projects relevant to SDG 17 – 40 and 35 projects respectively. About 1.4 % of the projects in SP ‘Capacities’\* were related to the objectives of SDG 17, all of them carried out under the themes ‘Research infrastructures’ and ‘Science in society’.



**Figure 17.2:** Number of projects related to SDG 17 in SP ‘Cooperation’ and SP ‘Capacities’\*

In terms of financial contribution provided by FP7\*, some € 1.5 billion or almost 6 % of the research budget for SP ‘Cooperation’ and SP ‘Capacities’\* was allocated to projects relevant for SDG 17. Most of this financial contribution came from SP ‘Cooperation’ and about € 23 million from SP ‘Capacities’\*. The ENVIRONMENT theme constituted the largest source of funding in this respect, with nearly € 0.5 billion or almost 30 % of its budget being distributed to projects with relevance to SDG 17. The HEALTH theme provided the second largest financial contribution – about € 0.3 billion or 6 % of its entire budget, followed by the themes Agriculture (KBBE), ICT, Social Sciences (SSH) and SPACE with around € 0.1 billion. However, in relative terms the Social Sciences (SSH) and SPACE themes dedicated the second and third largest shares of their budgets to projects relevant for SDG 17 (after the theme ENVIRONMENT) – about 21 % and 18 % respectively. The highest financial contribution from SP ‘Cooperation’ (€ 17.5 million) came from the theme ‘Research infrastructures’ and a small amount (about € 5 million) from the theme ‘Science in society’.



**Figure 17.3:** Total EC contribution (€ million) to projects related to SDG 17

Over the period 2007 to 2013, the financial contribution from the EC relevant for SDG 17 was highest in 2013, with some € 0.3 billion (about 7 % of the total budget of SP ‘Cooperation’ and SP ‘Capacity’ that year). However, in relative terms the largest budget allocated to projects relevant for SDG 17 was recorded in 2009 – about 8 % of the overall budget that year. The lowest budget was recorded in 2012, with about € 0.1 billion going to projects relevant for SDG 17 (3 % from the budget for 2012). The highest number of relevant projects both in real and relative terms was also recorded in 2008 - about 90 projects (10 % of all projects in SP ‘Cooperation’ and SP ‘Capacity’ conducted that year). Contrary to this, the highest number of topics with relevance to SDG 17 were called for in 2010 - about 54 topics (10 % of all topics called for in SP ‘Cooperation’ and SP ‘Capacity’ that year). However, the share of topics with relevance to SDG 17 was highest in 2009 - about 12 % of all topics called for that year.

Figure 17.4 below illustrates the distribution of projects according to the different funding schemes in FP7, which define the type and the size of projects carried out. About 180 projects or nearly 42 % of all projects that are relevant for the objectives of SDG 17 were small and medium-sized research projects. Projects without a predefined size (categorised as ‘any size’ in the graph) constituted the second largest type – about 26 % of all projects, followed by coordination and support action projects – about 20 %. Although they ranked second in terms of number of projects, ‘any size’ projects received the largest financial contribution relevant for SDG 17 – slightly above € 0.5 billion or approximately 35 % of the designated EC budget. Small and medium-sized projects received about € 0.5 billion or 33 % of the budget. Large-scale research projects, which were ranked only fourth in terms of number of projects, were allocated the third biggest share of the budget going for SDG 17 relevant projects – 22 % or € 0.3 billion . This discrepancy could be explained by the different nature and scale of the project types and therefore the different funding requirements.

Based on the average EC project contribution, projects relevant for SDG 17 were slightly smaller in size compared with the FP7\* average. Looking at the total FP7\* distribution of projects types, ‘any size’ research projects were overrepresented in SDG 17 relevant research. They also received a higher share of the EC budget compared with the average FP7\* contribution for ‘any size’ projects.

Looking at funding schemes, about 42 % of the projects with relevance to SDG 17 were carried out with the aim of strengthening international cooperation. These received about 41 % of the EC contribution relevant to SDG 17 (€ 0.6 billion). This is a significant share, considering that only about 3 % of projects in FP7\* as a whole required international cooperation and received about 3 % of the designated EC research budget.

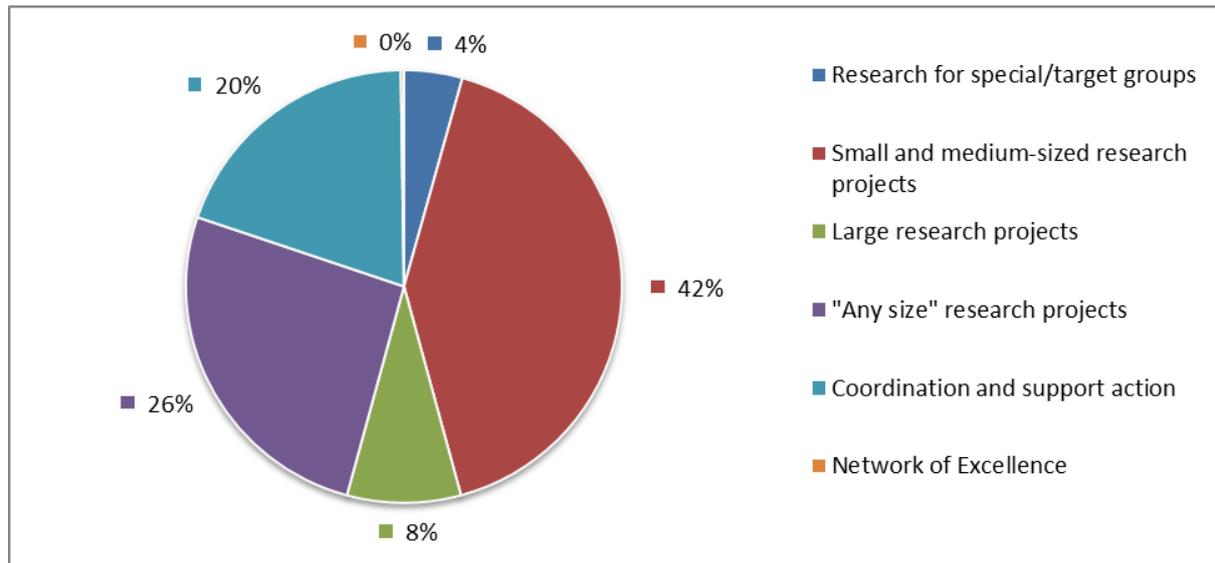


Figure 17.4: Projects related to SDG 17, by funding scheme

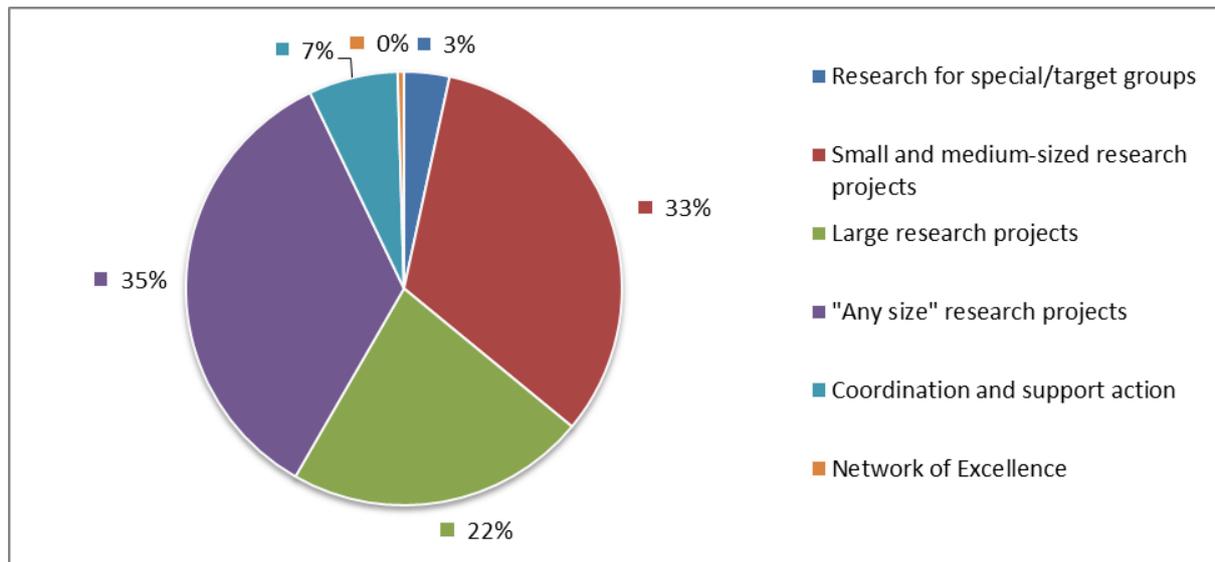
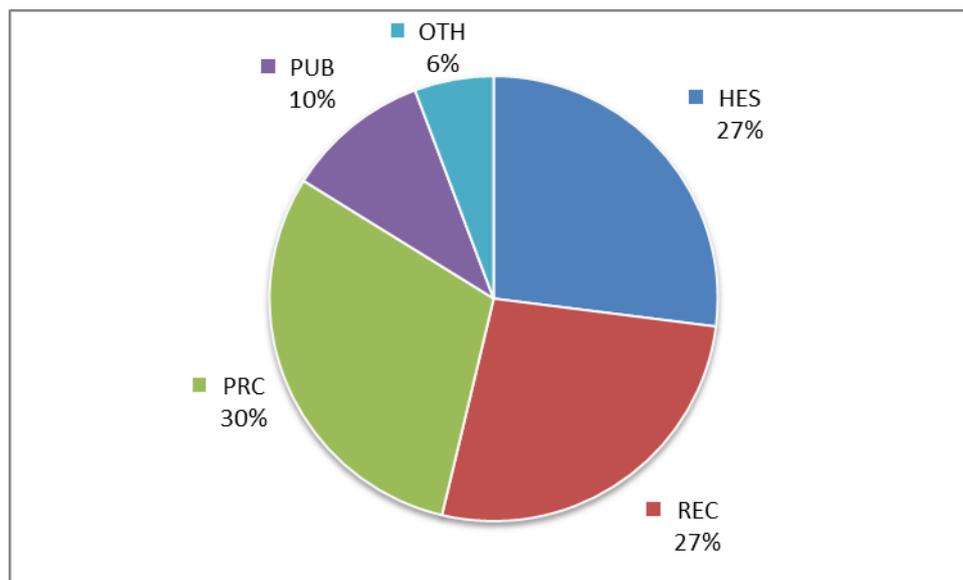


Figure 17.5: EC contribution to projects related to SDG 17, by funding scheme

For the entire period between 2007 and 2013, some 2980 organisations participated in projects related to SDG 17. As shown in Figure 17.6, the shares of private for-profit organisations, higher education institutions and research organisations were almost equal – about 30 % each. Public

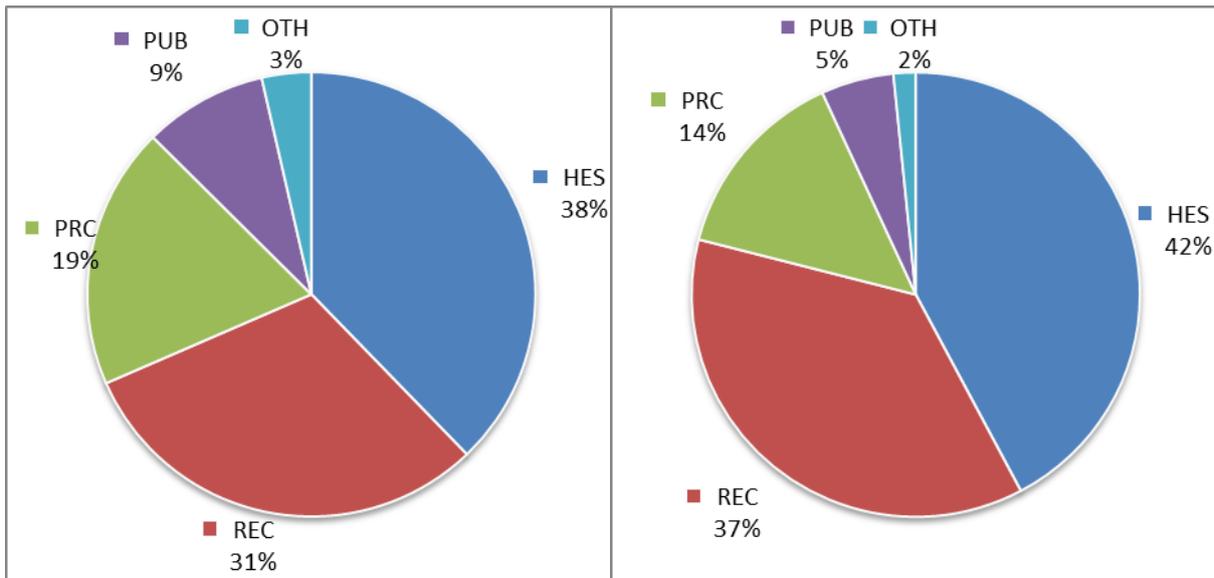
bodies and other organisations were also involved, but to a more limited extent - with only 9 % and 4 % of all participating organisations falling in these categories respectively.



**Figure 17.6:** Organisations participating in projects related to SDG 17

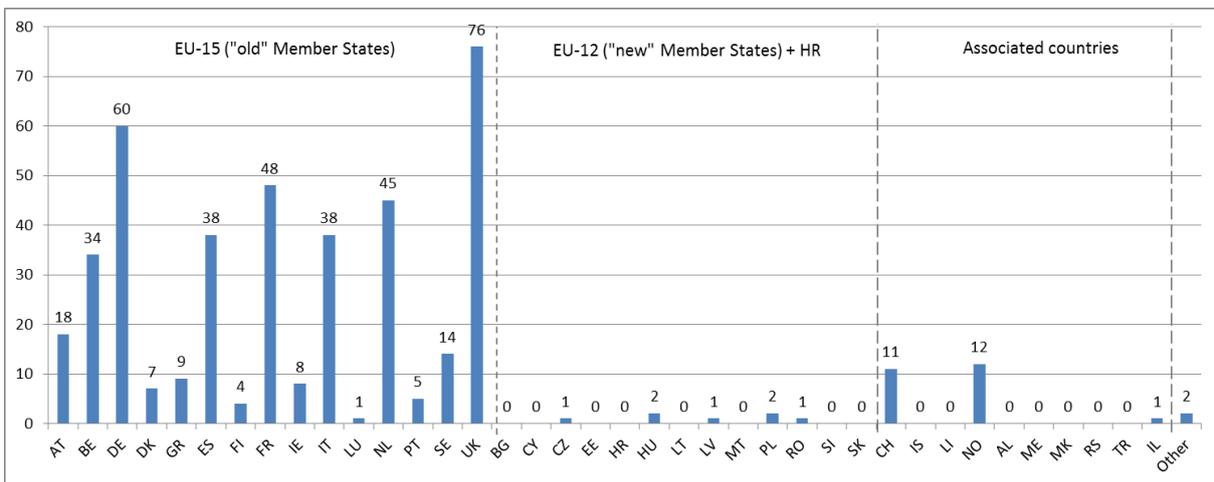
The distribution across organisation types is somewhat different when looking at the number of project participations<sup>42</sup> relevant for SDG 17. Higher education institutions had the highest share of participations (about 38 %), followed by research organisations (about 31 %). The participation of private organisations was lower than expected (19 %), given the large number of participating organisations from this type. This discrepancy between number of participating organisations and participation rate could be explained by the difference in average number of participation per organisation. Whereas private for-profit organisations participated on average in one project related to SDG 17, research organisations participated in two and higher education institutions in two to three projects on average. Higher education institutions and research organisations were also much better represented as coordinators, with 42 % and 37 % of project coordinators falling in these categories respectively. In comparison, only 14 % of the coordinators were private for-profit organisations. Public and other organisations were involved as project coordinators to a very limited extent (Figure 17.7). Compared with the overall number of FP7\* project participations, private-for-profit organisations were considerably underrepresented as participants and coordinators for projects related to SDG 17.

<sup>42</sup> Project participations refer to the number of organisations times their participation in projects.



**Figure 17.7:** Participations in projects related to SDG 17, by organisation type - all project partners (left), project coordinators (right)

In terms of the geographical distribution of coordinators, about 93 % of the projects related to SDG 17 were coordinated by organisations from the “old” (EU-15) Member States (see Figure 17.8), in particular UK (17 %), Germany (14 %) and France (11 %). In contrast, only 1.6 % of the projects were coordinated by organisations from the “new” Member States (EU-12 plus Croatia), in particular Poland and Hungary. Some 5 % of the projects coordinators came from other European (non-EU) countries, in particular Norway and Switzerland. compared with the overall FP7\* distribution of coordinators, Germany and Italy were underrepresented as coordinators of projects related to SDG 17, whereas the UK, Belgium and the Netherlands were overrepresented.



**Figure 17.8:** Geographical location of coordinators of projects related to SDG 17

### 3.17.3 Project cases

**Project title:** *Development and pre-operational validation of upgraded GMES Marine Core Services and capabilities (MYOCEAN)*

**Project coordinator:** MERCATOR OCEAN (France)

**Duration:** 01/01/2009 to 03/31/2012

**Costs:** € 55 million; **EC contribution:** € 33.8 million

**Funding scheme:** Collaborative project

**Project abstract:** MyOcean is THE PROJECT to set up infrastructures, services and resources to prepare the operational deployment of first Marine Core Services. My Ocean answers to the topic SPA.2007.1.1.01 - development of upgraded capabilities for existing GMES fast-track services and related (pre)operational services. MyOcean is proposed by a consortium of 67 partners spread in maritime countries: - federated around a core team of MCS operators - connected to Key R&D players with independent experts - rich of key intermediate users ready to commit to the service validation and promotion and play the role of beta-testers. My Ocean is not "the MCS" but shall provide the major building blocks and umbrella to allow the operational deployment of a full MCS in cooperation with external providers (National Met services, EMSA, ...). MyOcean proposes to set an incremental logic and a governance to remain sustainable after the project and able to welcome new science and new services. The project includes the following tasks: - The definition of a first set of operational Marine Core Services, first package of an enlarged MCS portfolio - The operational development of European upgraded capacities acting as a common denominator for Member States, EU needs for reference marine information - The pre-operational validation of these MCS infrastructures and services and their formal commissioning - The marketing and promotion of Marine Core Services for use widening - The elaboration of a committed organisation to support at long term MCS operations, evolution and research. My Ocean inherits, benefits and pursues a European operational oceanography strategy started within EUROGOOS networks, and progressively implemented through subsequent projects: MERSEA Strand1, MERSEA, BOSS4. BOSS4 will provide a Version 0 of Marine Core Services fast tracks. MyOcean work plan shall cover the development, validation and pre-operations of the following versions of MCS V1 and V2.

**Website:** <http://marine.copernicus.eu/>

***Project title:** Building Sustainable Research capacity for Health and its Social Determinants in Low- and Middle-Income Countries (SDH-NET)*

**Project coordinator:** DEUTSCHE GESELLSCHAFT FÜR INTERNATIONALE ZUSAMMENARBEIT (GIZ) GMBH (Germany)

**Duration:** 10/01/2011 to 09/30/2015

**Costs:** € 2.4 million; **EC contribution:** € 2 million

**Funding scheme:** Coordination (or networking) actions

**Project abstract:** SDH-Net's aim is to build, strengthen and link research capacities for health and its social determinants (SDH) in African and Latin American low- and middle income countries (LMIC) in close collaboration with European partners. The focus on SDH will allow for an in-depth and broad capacity-building approach, including managerial and technical excellence, ethical issues, and research strategies. Lessons learnt will be checked against best practices and success factors in other Latin American, African and global settings, leading to lessons learnt on how to build SDH-related research capacity with strong relevance to the respective context. A sound mapping exercise of (i) social determinants of health (SDH) and research activity in the field; (ii) national and global stakeholders in the research environment, and (iii) existing research capacities in the participating

countries will be carried out building the basis for developing and piloting innovative research capacity building tools with a particular focus on research management, ethics and methodology relevant to comprehensively address social determinants of health. Finally, links between research and policy will be forged and lessons will be drawn to support the development of sustainable and attractive research structures and expertise. SDH-Net will be carried out by a strong consortium, based on clusters of existing networks of best in its kind public health institutions from Mexico, Colombia, Brazil and South Africa, Tanzania, and Kenya. The team is complemented by three distinguished European institutions: London School of Hygiene and Tropical Medicine; COHRED, and University of Geneva. SDH-Net is coordinated by GIZ with long term experience in health research and capacity building in LMIC, and IESE Business School, excellent in management capacity building. SDH-Net will have an important impact by developing a concept for research capacity building on individual, institutional and system level, contributing to research system strengthening and to the creation of research landscapes that enable and stimulate locally relevant, interdisciplinary research. It will lead to enhanced capacities for conducting and managing research on SDH and links between research, policy and practice will be forged by developing tools and mechanisms facilitating sustained collaboration. Furthermore, SDH-Net will lay foundations and provide tools for further research capacity building and research system strengthening in the future.

**Website:** <http://www.sdh-net.eu>