Monitoring the FP7 contribution to the Europe 2020 "Resource-efficient Europe" flagship initiative

FP7-4-SD.eu policy brief No. 10 from December 2014

Summary

How does the FP7 contribute to the SD-related aspects of the Resource-efficient Europe?

How does the contribution differ across the ten SP 'Cooperation' themes?

How big is the financial contribution of FP7 to the SD-related aspects of the Resource-efficient Europe?

Which SD-related aspects of the Resource-efficient Europe are addressed most prominently by FP7 research?

How did the contribution to the Resource-efficient Europe's SD framework develop over time?

Where are the centres of excellence in FP7-funded research addressing the flagship initiative?

What is the structure of cross-border collaboration of FP7-funded research in the context of the Resource-efficient Europe's SD framework?

The Europe 2020 flagship initiative "A resource-efficient Europe" was set up in order to provide guidance on EU-level policies in a variety of fields, ultimately aiming at decoupling the use of natural resources and the associated environmental impacts from economic growth.

This policy brief provides an overview on the contribution of FP7-funded research in the Specific Programme (SP) "Cooperation" to the objectives set in the "A resource-efficient Europe" Flagship Initiative (FI). For the purpose of the analysis, the objectives set within the FI have been made operational by selecting corresponding objectives from the EU Sustainable Development Strategy (EU SDS) as reference framework.

Overall, 60 % of the research carried out under SP "Cooperation" targets SD-related aspects of the Resource-efficient Europe. In monetary terms, 61 % (€ 15.7 billion out of € 25.7 billion) of the co-financing provided to research projects by the European Commission (EC) is related to the flagship initiative's SD framework.

The biggest contribution in terms of topics comes from the FP7 themes TRANSPORT, Agriculture (KBBE) and ENERGY. In monetary terms, however, the biggest financial contribution comes from the themes ICT, Materials (NMP) and HEALTH. Most of the research addresses issues related to the improvement of public health, improving management and avoiding overexploitation of renewable natural resources, and improving the environmental performance for products and processes.

Over time, the share of topics with expected impacts on the Resource-efficient Europe's SD framework (as called for in the annual Work Programmes) increased from 58 % in 2007 to 63 % in 2009, but then fell again to 56 % in 2013.

Germany by far exceeds the other Member States in research addressing SD-related aspects of the Resource-efficient Europe, followed by the United Kingdom, Spain and Italy. With regards to European cross-border collaboration, Germany, Spain, Italy, the United Kingdom, the Netherlands, Belgium form the "core" of the European research network within the Resource-efficient Europe's SD framework.

This policy brief has been prepared by Andreas Endl, Markus Hametner, Francesca Montevecchi and André Martinuzzi from the Institute for Managing Sustainability at the Vienna University of Economics and Business.

Policy background – the Europe 2020 strategy and its "Resource-efficient Europe" flagship initiative

"A resource-efficient Europe" is one of seven flagship initiatives under the Europe 2020 strategy

"Europe 2020"[1] is Europe's strategy for recovery from the economic crisis and creating economic growth in the next decade. It focuses on progress in the areas of employment, innovation, education, social inclusion and climate and energy. Within the Europe 2020 strategy, the "Resource-Efficient Europe"[2] flagship initiative (FI) is one of seven flagship initiatives[3]. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact, by structural and technological change.

Decouple economic growth from resource use and its environmental impact is one of the main objectives of the "Resource-efficient Europe" flagship initiative

More specifically, the "Resource-efficient Europe" FI addresses the societal challenge of rising resource demand of key natural resources such as water, ecosystem services or minerals, driven by population growth and improving standards of living[4]. It proposes ways to increase resource productivity and decouple economic growth from resource use and its environmental impact, by structural and technological change in a variety of fields. These include energy, low carbon economy, transport, raw materials and commodities, sustainable consumption and production of goods and services, waste management, land and ecosystem use, agriculture, fisheries, biodiversity, and regional development.

Sectorial issues are dealt with in the corresponding policy areas by roadmaps and action plans, such as the Communication "Towards a circular economy: a zero waste programme for Europe"[5], the Green Action Plan for SMEs[6], the Innovation Partnership on Raw Materials[7], the Low-carbon economy 2050 roadmap[8], the European Energy Efficiency Plan 2020[9], and the Roadmap for a resource-efficient Europe[10]. All these initiatives aim to deliver on the "Resource-efficient Europe" FI.

[1] European Commission (2011). *Europe 2020 - A European strategy for smart, sustainable and inclusive growth*. COM(2010) 2020.
[2] European Commission (2011). *Europe 2020 Flagship Initiative A resource-efficient Europe*. COM(2011) 21.
[3] See http://ec.europa.eu/europe2020/tools/flagship-initiatives/index_en.htm for further details on all seven flagship initiatives of the Europe 2020 Strategy.
[4] International Resource Panel (2011). *Decoupling natural resource impacts from economic growth*.
[5] European Commission (2014). Communication *"Towards a circular economy: a zero waste programme for Europe". COM/2014/0398 final*
[6] European Commission (2014). *GREEN ACTION PLAN FOR SMEs Enabling SMEs to turn environmental challenges into business opportunities.* COM (2014) 440 .
[7] See http://ec.europa.eu/eip/raw-materials/en/content/european-innovation-partnership-eip-raw-materials for further details on the stakeholder platform "European Innovation Partnership on Raw Materials".
[8] European Commission (2011). *A Roadmap for moving to a competitive low carbon economy in 2050*. COM (2011) 112.
[9] European Commission (2011). *Energy Efficiency Plan 2011*. COM (2011) 109.
[10] European Commission (2011). *Roadmap to a Resource Efficient Europe*. COM (2011) 571.

The EU's Seventh Framework Programme for Research and Development (FP7) and how it has been influenced by Europe 2020

The Resource-efficient Europe has influenced FP7 since its launch in 2011

The Seventh Framework Programme for Research and Technological Development (FP7) was the EU's main programme for funding research across Europe from the EU's budget over the period 2007 to 2013. Starting three years before the adoption of the Europe 2020 strategy, FP7 was originally not "designed" to support the Resource-efficient Europe FI. From 2011 onwards, however, the focus of FP7 was adjusted according to the priorities and objectives of Europe 2020 and its flagship initiatives.

Since the Work programmes 2011, innovation has been better integrated in FP7 research

As stated in the FP7 Work Programme (WP) 2011, the Europe 2020 strategy was meant to have a fundamental influence on FP7 programme. Primary objectives set in the WP 2011 aimed at contributing to the development of an economy based on knowledge and innovation (smart growth), and at a deeper integration of the innovation dimension into the FP7 structure. One of the cornerstones of WP 2011 aimed at linking FP7 projects to the so-called "European Innovation Partnerships" (e.g. on raw materials)[11], launched under the Europe 2020 "Innovation Union" flagship initiative[12], to accelerate the market uptake of innovations.

A framework for analysing the contribution of FP7 research to the SD-related aspects of the "A Resource-efficient Europe" Flagship Initiative

Operationalising the SD-related aspects of the "A Resource-Efficient Europe" FI by selecting corresponding EU SDS objectives for the FI's SD framework

This policy brief analyses the contribution of the FP7 Specific Programme "Cooperation" to the SD-related issues raised in the Europe 2020 strategy's "Resource-efficient Europe" flagship initiative. For this purpose, experts from DG Research and Innovation together with experts from WU Vienna have extracted a set of operational objectives outlined in the renewed EU Sustainable Development Strategy (EU SDS)[13] to "represent" the flagship initiative. This selection has been based on the different components of the "Resource-efficient Europe" communication[14] and the commission staff working document "Analysis associated with the Roadmap to a Resource-efficient Europe"[15].

Out of the 78 operational objectives of the EU SDS, 36 have been selected for the Resource-efficient

The EU SDS includes 78 operational objectives, out of which 36 have been identified as important SD-relevant aspects of the Resource-efficient Europe

[11] See http://ec.europa.eu/eip/raw-materials/en/content/european-innovation-partnership-eip-raw-materials for further details on the stakeholder platform "European Innovation Partnership on Raw Materials".

[12] European Commission (2010). *Europe 2020 Flagship Initiative Innovation Union*. COM(2010) 546.

[13] The extract used for this policy brief is based on the referential framework of 78 operational objectives outlined in the EU SDS that is used for the FP7-4-SD.eu monitoring system; see https://www.fp7-4-sd.eu/index.php?request=public:page:default&page=about#sds .

[14] European Commission (2011). *Europe 2020 Flagship Initiative A resource-efficient Europe*. COM(2011) 21.

[15] European Commission (2011). *Analysis associated with the Roadmap to a Resource Efficient Europe Part 1- Accompanying document Roadmap to a Resource Efficient Europe*. SEC(2011) 1167 final.; European Commission (2011). *Analysis associated with the Roadmap to a Resource Efficient Europe Part 2- Accompanying document Roadmap to a Resource Efficient Europe*. SEC(2011) 1167 final.

Europe FI's SD framework

FI (see Annex). These objectives consequently act as the framework for analysing the research contributing to the SD-related aspects of the Resource-efficient Europe FI. It is important to note that this list of objectives is not exhaustive, since the Resource-efficient Europe FI may raise additional SD-related issues that are not covered in the EU SDS from 2006. The framework consequently only represents the SD-relevant aspects covered by both the Resource-efficient Europe FI and the EU SDS. The rationale for selecting the objectives is described in the Annex.

How does FP7 contribute to the SD-related aspects of the Resource-efficient Europe?

More than half of the FP7-funded research projects contribute to the Resource-efficient Europe's SD framework

Overall, about 60 % of the topics published in the SP "Cooperation" Work Programmes 2007 to 2013 impact on at least one of the 36 EU SDS objectives representing the SD-related aspects of the Resource-efficient Europe for the purpose of this policy brief. More than 3,800 projects have been funded under these topics, corresponding to a share of 55 % of all projects. The share is slightly higher when looking at the amount of funding provided by SP "Cooperation" (total EC contribution), accounting for 61 % (i.e. € 15.7 billion out of € 25.7 billion). The variation in the shares between topics, projects and budget is due to differences in the number and size of projects funded by the different SP "Cooperation" themes.

How does the contribution differ across the ten SP "Cooperation" themes?

The themes TRANSPORT and Agriculture (KBBE) comprise the largest number of topics with impacts on EU SDS objectives related to the Resource-efficient Europe

Among the ten SP "Cooperation" themes, TRANSPORT accounts for the largest number of topics with expected impacts (positive or undetermined) on EU SDS objectives supporting the Resource-efficient Europe (416 topics), followed by Agriculture (KBBE) with 309 topics, ENERGY (288 topics) and ENVIRONMENT (263 topics) (see Figure 1). Themes ranking on the lower end of the scale are SECURITY (66 topics), Social Sciences (SSH) (40 topics) and SPACE (29 topics).

In relative terms, the theme ENERGY stands out, with 95 % of its topics impacting the Resource-efficient Europe's SD framework. Other themes with high shares of topics with expected impacts are Materials (NMP) with 78 % and TRANSPORT with 70 %, while it is again the themes SECURITY, Social Sciences (SSH) and SPACE that show the lowest shares.

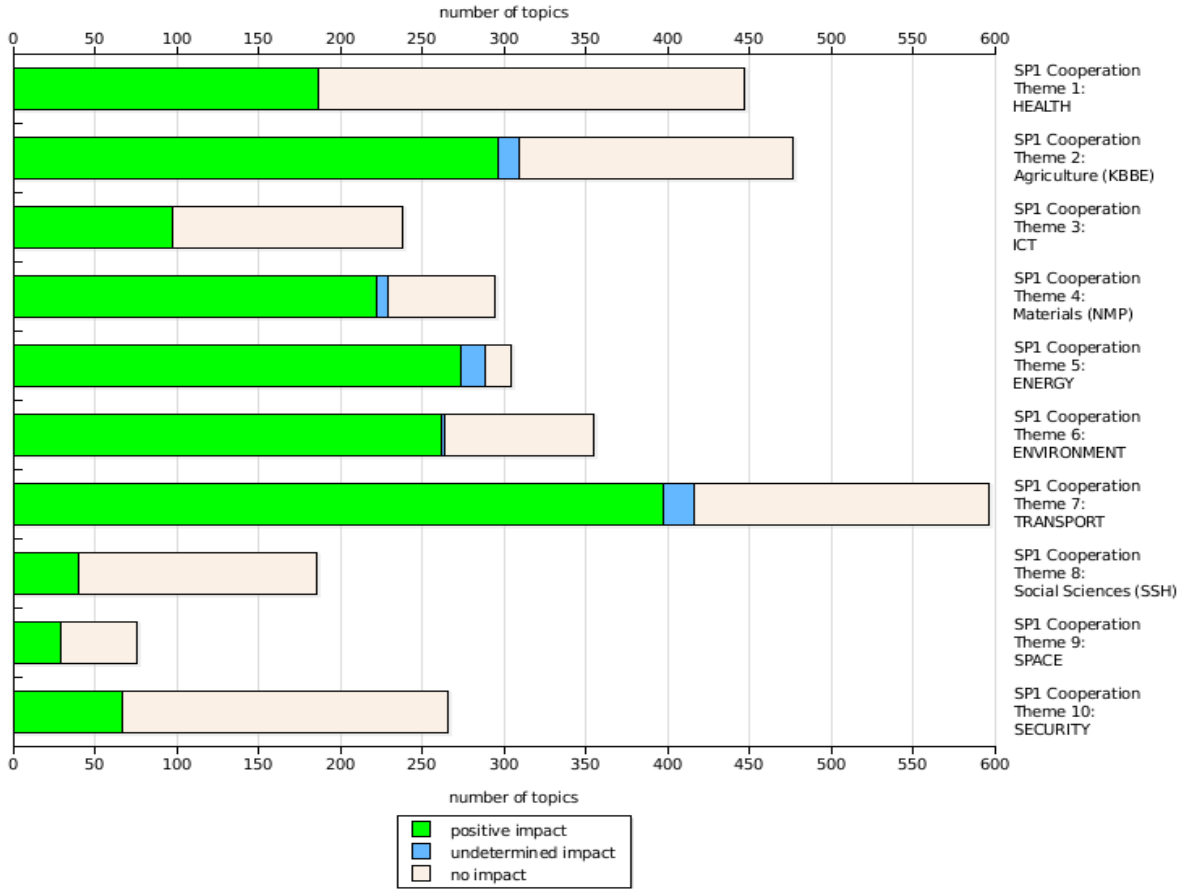

Figure 1: Number of topics with expected impacts on the Resource-efficient Europe's SD framework across the ten SP 'Cooperation' themes[16]

How big is the financial contribution of FP7 to the SD-related aspects of the Resource-efficient Europe?

The themes and ICT, HEALTH and MATERIAL provide the highest amount of EC contribution (€) to research projects addressing the Resource-efficient Europe's SD framework

The prominence of themes in terms of topics with expected impacts (see Figure 1) changes considerably when looking at the amount of co-financing (total EC contribution) provided by SP "Cooperation" (see Figure 2 below). In monetary terms, the theme ICT contributes most to the Resource-efficient Europe's SD framework, with the relevant projects funded under this theme receiving an EC contribution of € 3.7 billion. Although only 41 % of the topics in this theme are related with the Resource-efficient Europe, the huge number of projects funded under these topics puts ICT on first place in terms of budget allocation.

ICT is followed by the themes Materials (NMP), with an EC contribution of € 2.7 billion, and HEALTH, with € 2 billion. These three themes together account for more than half (54 %) of the total EC contribution to research projects impacting the Resource-efficient Europe (see Figure 3).

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

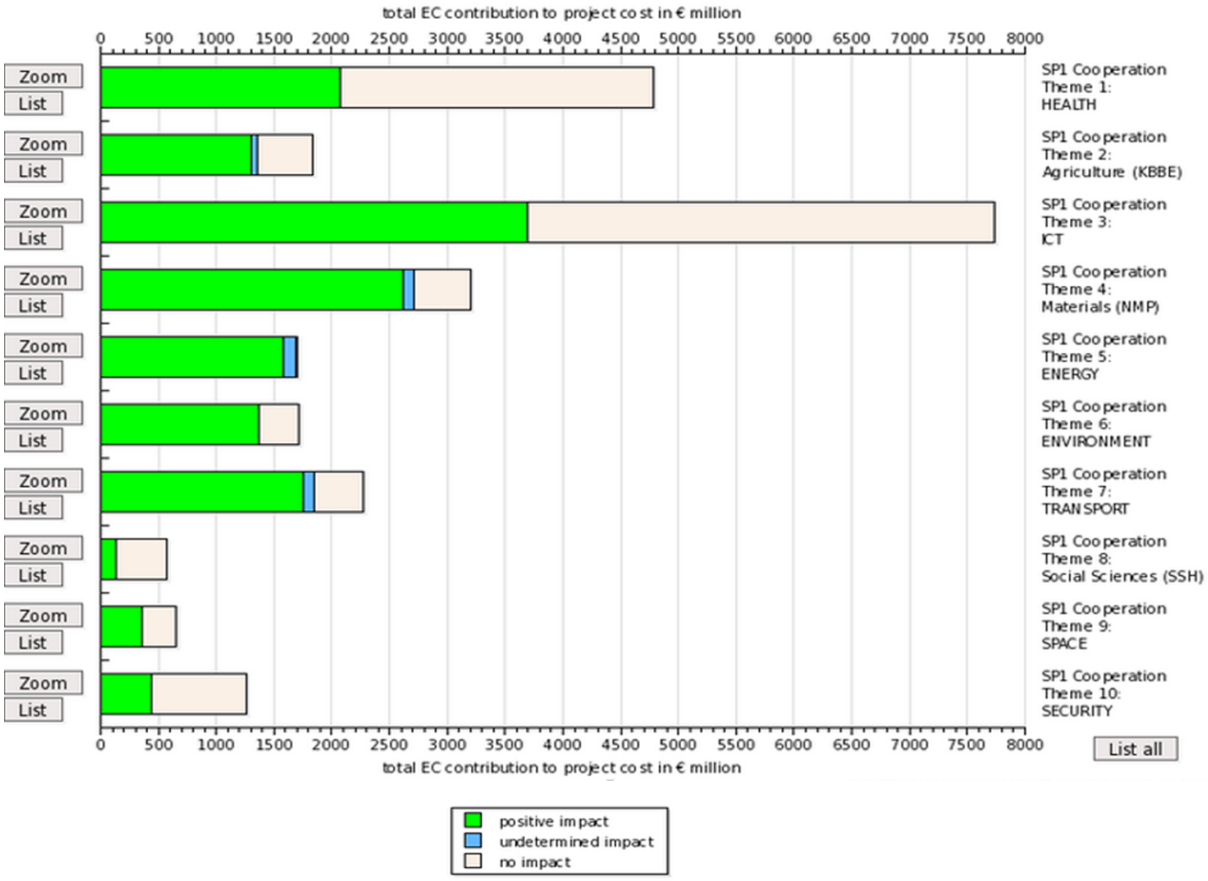

Figure 2: Total EC contribution to projects with expected impacts on the Resource-efficient Europe's SD framework across the ten SP "Cooperation" themes

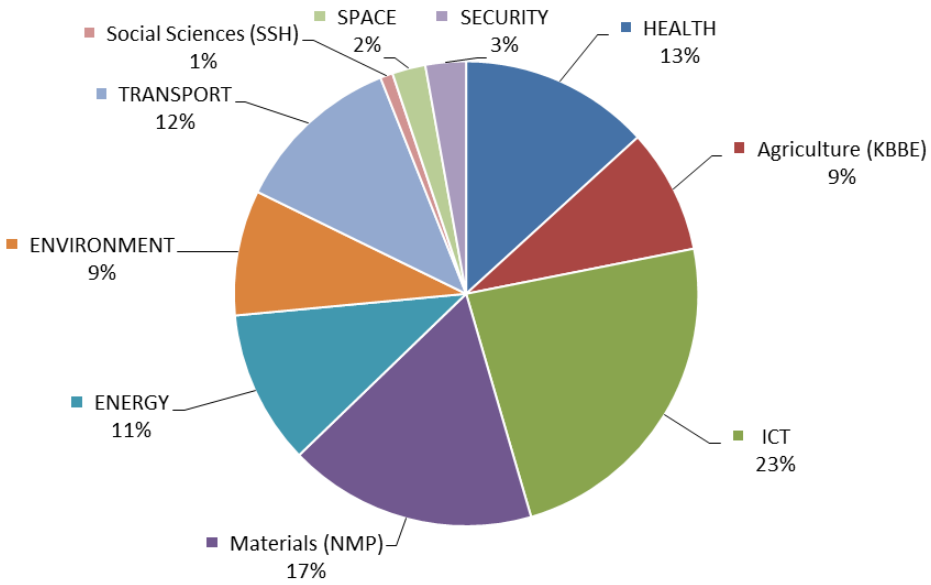

Figure 3: Share of total EC contribution to projects with expected impacts on the Resource-efficient Europe's SD framework across the ten SP "Cooperation" themes

Which SD-related aspects of the Resource-efficient Europe are addressed most prominently by FP7 research?

FP7-funded research relevant for the Resource-efficient Europe contributes considerably to "climate change and clean energy" and "conservation and management of natural resources"

Out of the SD-related aspects of the Resource-efficient Europe FI, objectives related to the EU SDS key challenge "climate change and clean energy" are by far addressed most prominently (772 topics), followed by objectives related to "conservation and management of natural resources" (702 topics) and "sustainable consumption and production" (545 topics). The picture is quite similar when looking at the total EC contribution, i.e. the co-funding provided by FP7. Objectives from the key challenge "climate change and clean energy" account for the highest EC contribution, receiving € 7.6 billion in total. Objectives related to "conservation and management of natural resources" and "sustainable consumption and production" are addressed by a project co-funding of € 5.2 billion and € 5.0 billion respectively.

Issues like "Other expected impacts on Public Health" and "Improving management and avoiding overexploitation of renewable natural resources" are most prominently addressed

At the level of the EU SD strategy's individual operational objectives, "Other expected impacts on Public Health" (372 topics), "Improving management and avoiding overexploitation of renewable natural resources" (280 topics), "Improving the environmental performance for products and processes" (262 topics) and "Reducing GHG emissions" (249 topics) are the objectives addressed most prominently by FP7-funded research contributing to the Resource-efficient Europe's SD framework (see Table 1).

A high number of topics does not necessarily correspond to a high amount of EC contribution (and vice versa), as shown in Table 1. For example, the operational objective of "Reducing energy consumption (Increasing energy efficiency or decreasing energy demand)" receives the second highest EC contribution (€ 4.1 billion), although it only ranks on fifth place with regard to the number of topics impacting it. This means that – compared with others – this objective is either addressed by a larger number of projects, or by projects with a higher EC contribution, or both.

Table 1: Number of topics and amount of EC contribution contributing to the ten EU SDS key challenges representing the Resource-efficient Europe

Operational Objective	EC contribution (Mio E)	Topic (number)
Other expected impacts on public health	4346,2	372,0
Improving management and avoiding overexploitation of renewable natural resources	1554,3	280,0
Improving the environmental performance for products and processes	2567,2	262,0
Reducing GHG emissions	2336,7	249,0
Reducing energy consumption (increasing energy efficiency and/or decreasing energy demand)	4100,7	208,0
Other expected impacts on Sustainable Transport	1341,1	196
Promotion of eco-efficient innovations	1644,8	187,0
Achieving sustainable levels of transport energy use	1595	186,0
Enhancing adaptation and mitigation of Climate Change	998,4	178
Raising the share of renewables	1411,8	177
Promoting environmental sustainability of energy	1372,4	168
Reducing transport greenhouse gas emissions	1280,6	168
Increasing the global market share of the EU in environmental technologies	1815,3	164,0
Promoting security of energy supply	1229,1	160
Improving resource efficiency	1600,9	153,0
Encouraging the uptake of environmentally/socially better performing products and processes by businesses and consumers	1242,2	153
Avoid generation of waste by applying the concept of life-cycle thinking	1462,2	146
Contributing to achieve the Millenium Development Goals	999,0	143
Achieving environment friendly transport modes	991,5	140
Other expected impacts on Climate Change and clean energy	983,8	136
Reduce the overall use of non renewable natural resources	1359,1	122
Avoid generation of waste by promoting reuse and recycling	1117,7	119
Promoting competitiveness of energy	932,8	116
Increasing the global market share of the EU in eco-innovations	936,4	99
Halting the loss of biodiversity	371,2	83
Raising the share of biofuels	477,9	79
Reduce environmental impacts of raw materials use	749,8	75
Encouraging better performance of public passenger transport	330,8	71
Ensure that chemicals, including pesticides, are produced, handled and used in ways that do not pose significant threats to human health and the environment	382,3	63
Encouraging better efficiency of public passenger transport	249,5	46
Decoupling economic growth from environmental degradation	338,0	41
Other expected impacts on Sustainable consumption and production	321,8	29
Addressing social and economic development within the carrying capacity of ecosystems	239,4	28
Reducing CO2 emissions from new car fleets	142,4	12
Raising the level of Green Public Procurement (GPP)	62,3	10

How did the contribution to the Resource-efficient Europe's SD framework develop over time?

The share of topics contributing to the Resource-efficient Europe's SD framework decreased overall between 2007 to 2013

As illustrated in Figure 4 below, the share of SP "Cooperation" topics contributing to the Resource-efficient Europe's SD framework increased in the first three years of the programme, from 58 % in 2007 to 63 % in 2009. In the following annual Work Programmes, however, the share decreased continuously, reaching 56 % in 2013. This trend has mainly been driven by reductions in the share of topics with expected impacts in the themes TRANSPORT (from 72 % in 2011 to 55 % in 2013), Agriculture (KBBE) (from 69 % in 2009 to 60 % in 2012) and ENVIRONMENT (from 83 % in 2009 to 62 % in 2013).

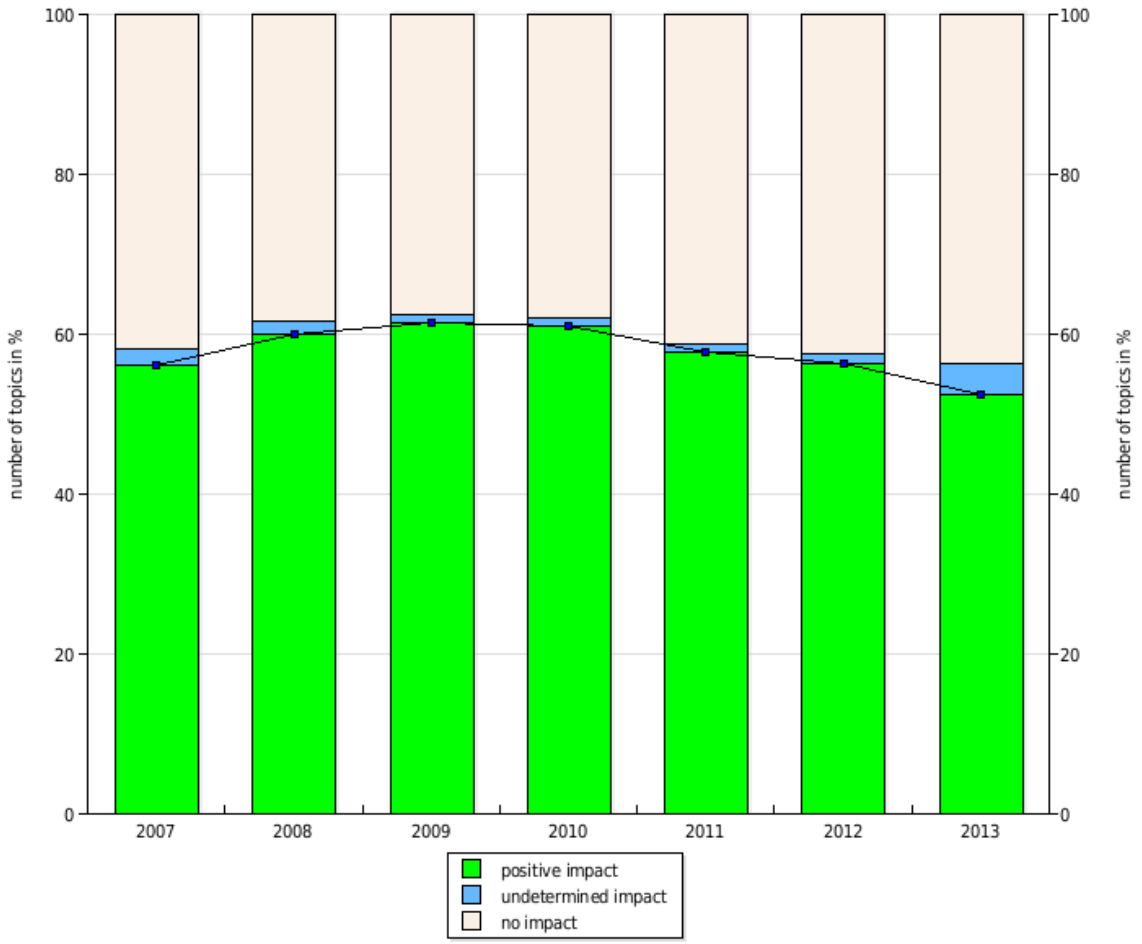

Figure 4: Share of topics with expected impacts on the EU SDS objectives representing the Resource-efficient Europe across the Work Programmes 2007 to 2013

The share of EC contribution to projects impacting the objectives of the Resource-efficient Europe's SD framework increased

A different pattern arises when switching the view to the amount of co-financing (total EC contribution) provided by SP "Cooperation" (see Figure 5 below). Starting from 46 % in 2007, the share of EC contribution to projects with expected impacts on the Resource-efficient Europe jumped to 65 % in 2008 and has remained well above 60 % since then. The overall stable share over the period 2008 to 2013 masks ups and downs in the different themes,

from 45 % in 2007 to 64 % in 2013

in particular ICT, Materials (NMP), HEALTH and TRANSPORT.

In absolute terms, the Work Programmes 2011 and 2013 allocated the by far highest amounts of EC contribution to projects with expected impacts on the Resource-efficient Europe's SD framework, with € 3.3 billion in WP 2011 and € 2.9 billion in WP 2013. In the remaining annual WPs the respective co-financing was below € 2 billion each.

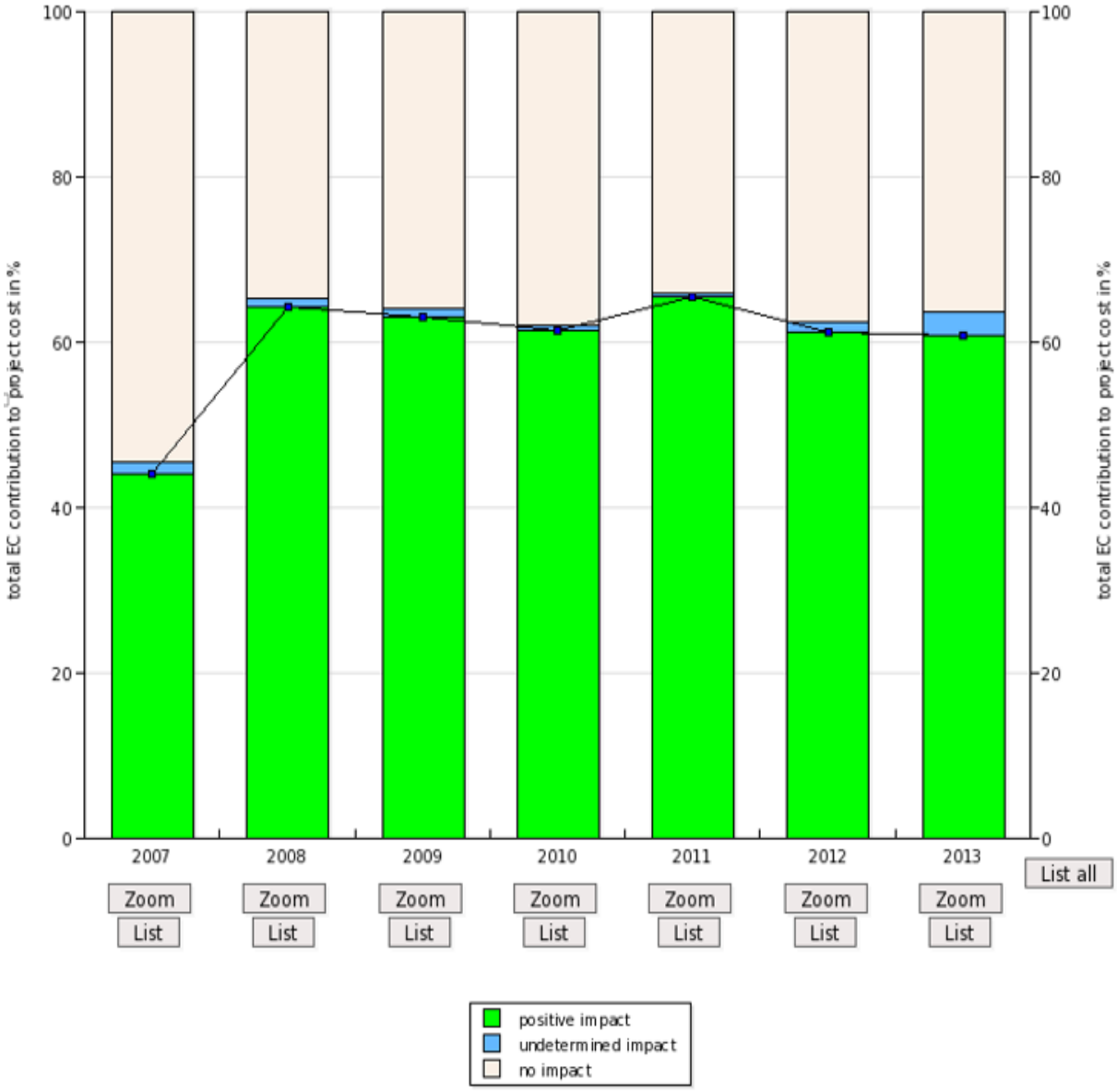

Figure 5: Total EC contribution to projects with expected impacts on the EU SDS objectives representing the Resource-efficient Europe across the Work Programmes 2007 to 2013

Where are the centres of excellence for FP7-funded research contributing to the Resource-efficient Europe's SD framework?

Germany, the UK, Spain, Italy and France are key players concerning FP7-funded research contributing to the SD-related aspects of the Resource-efficient Europe

Member States contributing most to the SD-related aspects of the Resource-efficient Europe through research under SP "Cooperation" are Germany, Spain, Italy, the United Kingdom, the Netherlands and Belgium (see Figure 6)[17]. Germany by far exceeds all other countries with a total of 660 coordinated projects, followed by the United Kingdom (497 projects), Spain (420 projects), Italy (402 projects) and France (380 projects). These figures are also reflected in the number of the individual organisations acting as project coordinators, which is highest in Germany (220 organisations), followed by Spain (173 organisations), the UK (161 organisations), Italy (156 organisations) and France (148 organisations).

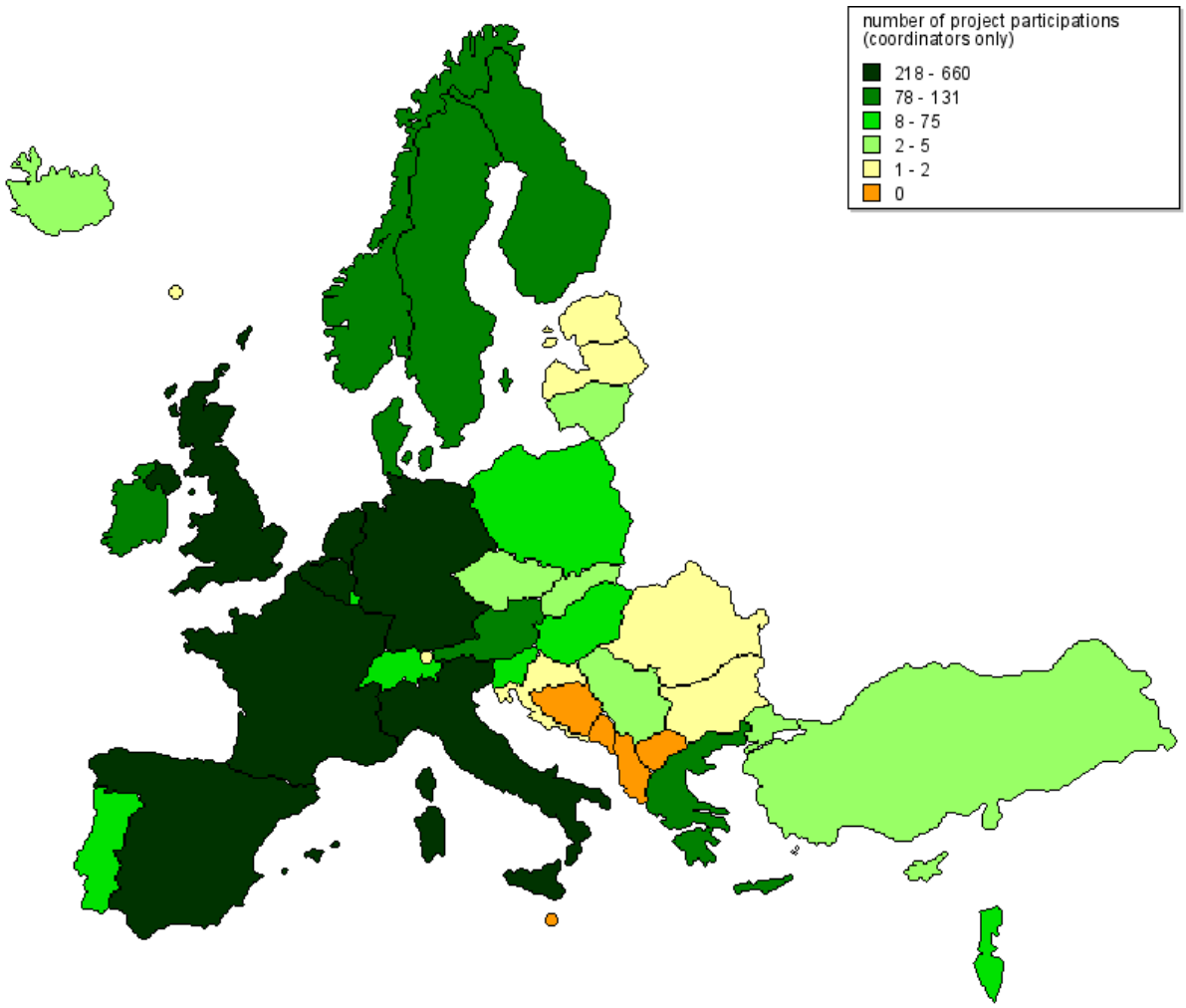

Figure 6: Geographical representation of coordinated of projects contributing to the Resource-efficient Europe's SD framework in EU Member States and Associated Countries

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

Smaller, northern European countries are participating disproportionally high in research addressing the Resource-efficient Europe

Putting participations in FP7 projects addressing the Resource-efficient Europe in relation with the size of the country (in terms of population) reveals that Belgium is participating disproportionally high in FP7 research on this issue, with more than 200 project participations per million inhabitants. Other countries scoring high in this regard are Denmark, Finland, the Netherlands and Sweden, all with about 185 project participations per million inhabitants. On the other end of the scale, the eastern European countries Bulgaria, Poland, Romania and Slovakia have less than 25 project participations per million inhabitants.

The ratio of EC contribution to national R&D expenditure in million € is highest in Cyprus, Greece, Malta

Putting the EC contribution to projects impacting the Resource-efficient Europe in relation to national R&D expenditures over the period 2007 to 2013 reveals yet another picture (see Figure 7). It shows Cyprus on the top, with an EC contribution of about € 370,000 per € million national R&D expenditure, followed by Greece (€ 275,000), Malta (€ 140,000) and Bulgaria (€ 100,000). The lowest values of EC contribution by SP "Cooperation" per € million national R&D expenditure can be found for Luxembourg (€ 34,000), France (€ 36,000) and Germany (€ 39,000).

The underlying reason for a high ratio of total EC contribution per € million national R&D expenditure is either a relatively low national R&D expenditure and/or a high number of projects contributing to the Resource-efficient Europe (and vice versa).

Eastern European countries are well integrated in FP7 funded research contributing to the Resource-efficient Europe's SD aspects

With regard to the participation of Eastern European countries in research contributing to the Resource-efficient Europe, looking at Figure 6 it may seem that they are not among the centres of excellence driving research and development. However, Figure 7 shows that these countries are more or less well integrated in European research within SP 'Cooperation', which is in line with the aim of the European Union to establish a European-wide research area.

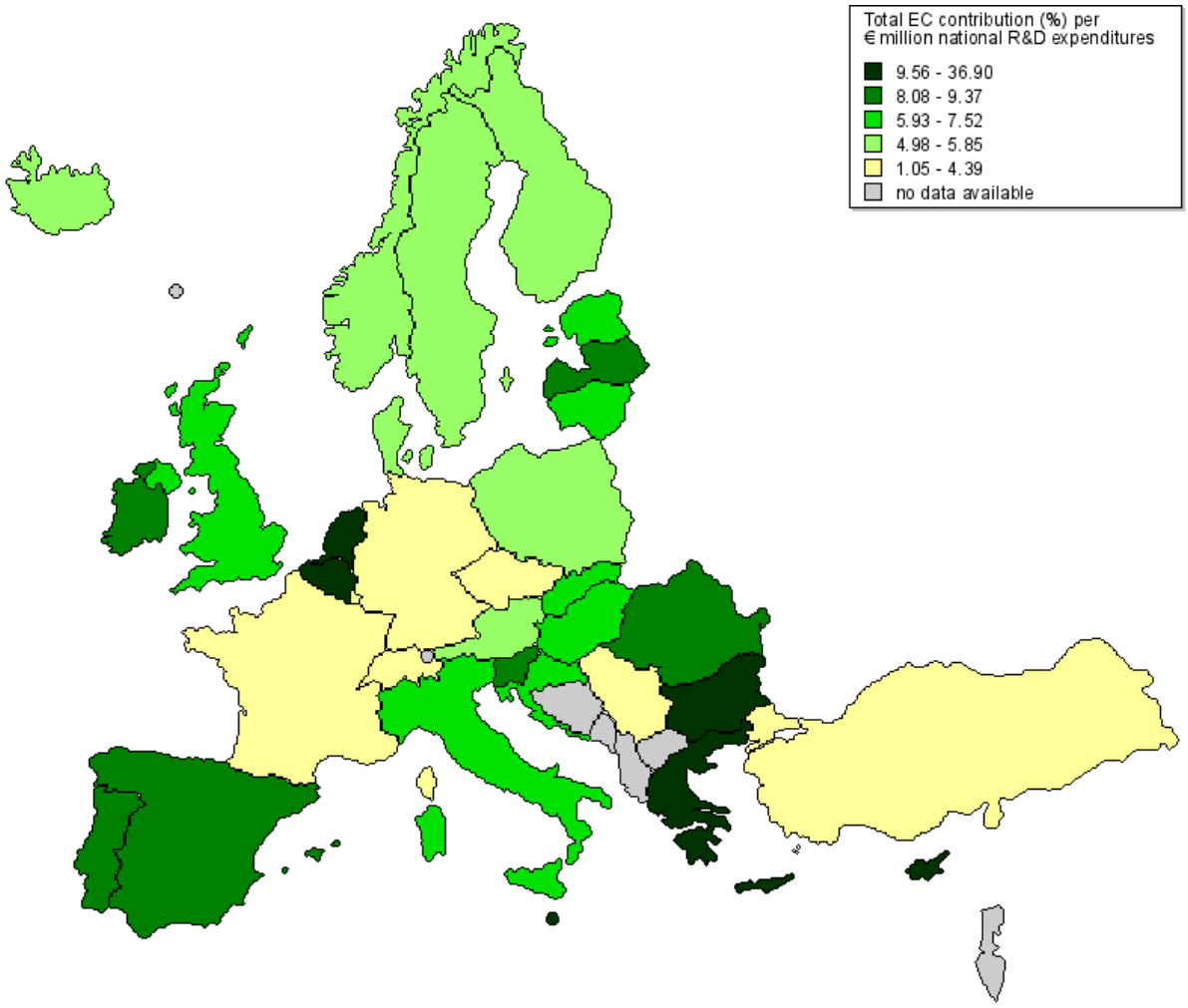

Figure 7: Geographical representation of total EC contribution (%) per € million national R&D expenditures of Member States and associated countries contributing to Resource-efficient Europe (2007 to 2013)

Annex: Rationale for selecting EU SDS objectives for the "Resource-efficient Europe" FI's SD framework

The EU Sustainable Development Strategy objective, and their operationalization in the FP7-4-SD.eu monitoring system.

The Europe 2020 flagship initiative "Resource-efficient Europe", dealing with the issue of sustainable use of natural resources (focused on the efficiency aspect), applies a sectoral approach but also covers a range of cross-cutting measures. On the one hand it addresses sectors such as transport and energy, and on the other hand also embraces a more cross-cutting approach by introducing support for R&D or Green Public Procurement.

- Under its long term framework, the Resource-efficient Europe FI supports the implementation of **sectoral roadmaps** of **transport** and **energy**, which are fostering the low-carbon, resource-efficient, secure and competitive transport and energy system. This sectoral approach covers a wide range of operational objectives within the **SD key challenges "climate change and clean energy"** and **"sustainable transport"**.

- The **SD key challenge "conservation and management of natural resources"** is dealt by some other main deliverables of the Resource-efficient Europe FI, which are: the EU **biodiversity strategy** (restore biodiversity and ecosystem services); **strategy** making the EU a **"circular economy"** (recycling society with the aim of reducing waste generation and using waste as a resource) and the **roadmap for a resource-efficient Europe.**

- Cross-cutting issues such as "**improving the design of products** to decrease the demand for energy and raw materials" and "stimulating **innovation and deployment of green technologies**" as wells as "fostering via **green public procurement**" are covering operational objectives stemming from the **SD key challenge "sustainable consumption and production"**.

- The availability of resources and their sustainable use if of global concern since Europe's production and consumption patterns are causing global environmental impacts (in the form of land use change, deforestation, climate change etc.). Therefore, the issue of resource efficiency is addressed internationally by cooperating closely with key partners, including with developing countries. Triggering **sustainable and more efficient use of natural resources** in resource-reliant developing countries and its consequent high potential for **poverty reduction** are two goals within **Millenium Development Goals** of the SD key challenge "Global poverty & sustainable development challenges".

- Support for green **technologies reducing emissions and bringing benefits in terms of air quality, noise and public health** in general

are addressing operational objectives within the **SD key challenge "public health"**

Operationalising the SD-related aspects of the "A Resource-Efficient Europe" FI by selecting corresponding EU SDS objectives for the FI's SD framework

The selected EU SDS objectives mainly stem from the key challenges "Climate change and clean energy", "sustainable transport, "sustainable consumption and production" and "conservation and management of natural resources"

Table 2: List of EU SDS operational objectives selected for the "Resource-efficient Europe" flagship initiative's SD framework

EU SDS key challenge "Climate change and clean energy"
• Reducing GHG emissions
• Promoting security of energy supply
• Promoting competitiveness of energy
• Promoting environmental sustainability of energy
• Enhancing adaptation and mitigation of Climate Change
• Raising the share of renewables
• Raising the share of biofuels
• Reducing energy consumption (increasing energy efficiency and/or decreasing energy demand)
• Other expected impacts on the key challenge

EU SDS key challenge "Sustainable Transport"
• Achieving sustainable levels of transport energy use
• Reducing transport greenhouse gas emissions
• Achieving environment friendly transport modes
• Modernising the EU framework for public passenger transport*
• Encouraging better efficiency of public passenger transport
• Encouraging better performance of public passenger transport
• Reducing CO2 emissions from new car fleets
• Other expected impacts on the key challenge

EU SDS key challenge "Sustainable consumption and production"
• Addressing social and economic development within the carrying capacity of ecosystems
• Decoupling economic growth from environmental degradation
• Improving the environmental performance for products and processes
• Encouraging the uptake of environmentally/socially better performing products and processes by businesses and consumers
• Raising the level of Green Public Procurement (GPP)
• Increasing the global market share of the EU in environmental technologies
• Increasing the global market share of the EU in eco-innovations
• Other expected impacts on the key challenge

EU SDS key challenge "Conservation and management of natural

resources"
• Reduce the overall use of non-renewable natural resources
• Reduce environmental impacts of raw materials use
• Improving resource efficiency
• Promotion of eco-efficient innovations
• Improving management and avoiding overexploitation of renewable natural resources
• Halting the loss of biodiversity
• Avoid generation of waste by applying the concept of life-cycle thinking
• Avoid generation of waste by promoting reuse and recycling

EU SDS key challenge "Public Health"
• Ensure that chemicals, including pesticides, are produced, handled and used in ways that do not pose significant threats to human health and the environment
• Other expected impacts on the key challenge

EU SDS key challenge "Global poverty & sustainable development challenges"
• Contributing to achieve the Millenium Development Goals