

EUROPEAN INNOVATION PARTNERSHIP
ON
RAW MATERIALS

Annual Monitoring Report 2015

Presented to the EIP Sherpas on 13/06/2016

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Acronyms

EIP	European Innovation Partnership
EIT	European Institute of Innovation and Technology
EU	European Union
KIC	Knowledge and Innovation Community
RMC	Raw Material Commitment
SIP	Strategic Implementation Plan
SME	Small and medium-sized enterprise
WEEE	Waste electrical and electronic equipment

EXECUTIVE SUMMARY

This document, the Annual Monitoring Report for 2015, provides an overview on the **state-of-play of Raw Material Commitments (RMCs) of the European Innovation Partnership (EIP) on Raw Materials**. Commitments are joint undertakings by several partners, who commit themselves to carrying out activities that contribute to achieving actions and targets of the EIP.

KEY DATA ON THE COMMITMENTS ACTIVE IN 2016

The EIP currently counts 123 Commitments, 76 from the 2013 Call for Commitments, and 47 from the 2015 Call for Commitments. **The Commitments cover all Priority Areas of the EIP in a relatively balanced way**, even though the 2015 Call for Commitments attracted very little Commitments on framework conditions for waste management.

To date **the EIP counts almost 980 unique partners**, including 84 partners from non-EU countries. Overall, Spain remains the best represented country in EIP Commitments, followed by Italy, Germany and France, with more than 70 unique partner organisations each. The participation from organisations from Central and Eastern Europe did not increase significantly after the 2015 Call for Commitments.

Taken together the Commitments have a **total indicative budget of €1979 million**.

FUNDING

The 2013 Commitments are increasingly successful in securing their budgets (23% in 2015, compared to 15% in 2014). Two thirds of the funding secured in 2015 comes from the **EU (€127 million)**, mostly through Horizon 2020. Interestingly, **alternative EU funding sources** such as the European Investment Bank or Cohesion Policy Funds account for a **very small fraction** of funding to the Commitments. Since 2014 the RMCs have received **€60 million from 16 different countries**, while 14 Member States seemingly did not provide any funding at all. Finally, in 2015, 8 RMCs secured **private funding** worth €59 million. This brings the total number of Commitments having received private funding since 2014 to 48, totalling nearly **€90 million**.

More than half (53% compared to 40% in 2014) **of the RMCs seem to be on track in securing funding**: 21% of the Commitments have secured 10-50% of their indicative budget, while 32% of Commitments have secured more than half of their funding (an increase of 50% compared to 2014 figure). In addition **13 Commitments have received more funding than their initial indicative budget** and are able to expand their planned activities compared to their initial plans. The number of RMCs which secured **less than 1%** of their indicative budget **decreased from 40% to 20%** compared to 2014.

ACTIVITIES

Most Commitments reported to have undertaken activities towards their objectives since 2014. The most commonly reported activities are of **organisational nature** such as enlarging their partnership, securing funding, profiling. Some Commitments are also undertaking **research and dissemination** activities.

OUTPUTS

Many Commitments are delivering tangible outputs. Interestingly almost half of these outputs contribute to **Target 3** on framework conditions for primary raw materials, while very little outputs contribute to **Target 4** (framework conditions for materials efficiency

and waste management), **Target 5** (knowledge base) and **Target 7** (international co-operation). Examples of outputs delivered by the Commitments are **innovative actions or pilots** (technological processes, new business models, new products etc), **strategic documents** (research agendas, certification schemes, revision of a standard etc) and **knowledge sharing outputs** (publications, events, websites etc).

ADDITIONAL INSIGHTS FROM THE COMMITMENTS

The 2015 annual monitoring survey also revealed some interesting insights from the Commitments:

- Most RMCs were **not based on existing projects** when applying for the RMC label.
- Connecting with other partners with similar interests is found to be the strongest **added value of being a RMC**, next to getting involved more closely in the EIP and being better prepared when applying for funding. In contrast, **only one quarter** of the RMCs report that the RMC label is recognised at national and/or regional level.
- 57% of the respondents stated that they are aware of the **synergies between EU funding opportunities**, and 56% of them would appreciate the EIP to facilitate the identification of synergies between EU funding opportunities.
- The low success rate of EU funding grants is the most quoted **obstacle to public funding**. However, respondents also state that EU funding opportunities are well advertised and that the rules are sufficiently clear. For national and regional funding the biggest obstacle reported is that opportunities are not always well advertised.
- The biggest **obstacle to private funding** is that RMC activities may not be suitable for private funding. One third of the RMCs also deplore the absence of a matchmaking platform between RMCs and the private sector.

Table 1 provides an overview of the report's **key performance indicators**:

Key performance indicator	2013 Call for Commitments	2015 update on Commitments from 2013	Call for Commitments 2015	Total
Number of commitments	80	- 4	+ 47	123
Number of unique partners	699	+ 56	+ 223	978
Total indicative budget	€1744 million	- €58.4 million	+ €294 million	€1979 million
Budget secured	€268 million	+ €123 million	n.a.	€391 million
Share of indicative budget secured	15%	23%	n.a.	20%
Outputs	200	+ 343	n.a.	543

Table 1: Key performance indicators

1 INTRODUCTION

1.1 The European Innovation Partnership on Raw Materials

The European Innovation Partnership (EIP) on Raw Materials is a stakeholder platform that brings together representatives from industry, public services, academia and NGOs. Its mission is to provide high-level guidance to the European Commission, Member States and private actors on innovative approaches to the **challenges related to raw materials**.

The **Strategic Implementation Plan (SIP)**¹ of the EIP sets specific objectives and targets, to be achieved through a range of proposed actions including research and innovation coordination, technologies for raw materials production, substitution, framework conditions, knowledge and skills and international cooperation.

To implement these actions – which cannot be done by the European Union (EU) institutions alone – the European Commission launched two **Calls for Commitments**² to Member States, industry, academia and other relevant stakeholders in October 2013 and December 2015. The **‘Raw Material Commitments’** (RMCs) are joint undertakings by several partners, who commit themselves to carrying out activities that will contribute to achieving the actions and targets of the EIP within the period 2014-2020.

1.2 The EIP Annual Monitoring Report

The purpose of the Annual Monitoring Report is to provide an overview on the **state-of-play of the Commitments**, based on indicators that measure the RMCs inputs and outputs. The data used come from the information provided during the Calls for Commitments and from the **mandatory annual surveys**. The results of this monitoring exercise will feed into the SIP Implementation Document and the Strategic Evaluation Report³.

2 OVERVIEW OF THE COMMITMENTS

The EIP organised **two Calls for Commitments**, in **2013** and **2015**. From the 2013 Call for Commitments the EIP Sherpa Group accepted **80** Commitments, while the 2015 Call led to **47** Commitments.

¹ <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/strategic-implementation-plan-sip-0>

² <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/call-commitments>

³ See the EIP Monitoring and Evaluation scheme:

<https://ec.europa.eu/eip/raw-materials/en/content/eip-raw-materials-monitoring-and-evaluation-scheme>

Commitments that do not fill in the annual monitoring survey for two consecutive years lose their recognition as a Raw Materials Commitment. In 2015 this was the case for four Commitments⁴. This way the EIP currently counts **123 Commitments**.

This section presents an overview on the coverage of the SIP, the Commitments partners and their indicative budgets.

Further details on all of the endorsed Commitments can be found on the EIP website: <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/call-commitments>

2.1 Commitments and coverage of the SIP

>> The coverage of the different Priority Areas is relatively balanced

Table 2 displays the coverage of the SIP Priority Areas, attributing each RMC to one Priority Area.

It shows that **all Priority Areas are relatively well covered**, taking into account that some Priority Areas (e.g. I.C on substitution) are more specific than others. Interestingly the 2015 Call for Commitments attracted very little Commitments on framework conditions for waste management (Priority Area II.B), while there were quite a lot of new Commitments covering biotic materials.

Annex 1 further provides an overview of the coverage of the EIP's Action Areas, based on Commitments' selection of up to 5 relevant Action Areas.

⁴ FerroNi, MaCooP, SUBGraph and ZWA

Priority Area or theme	Relevant Raw Materials Commitments	Number of RMCs
Priority Area I.A. ‘Raw materials research and innovation coordination’	ERA-MIN, ETP-PRIME, RMInnovation	3
Priority Area I.B. ‘Technologies for primary and secondary raw materials production’	BioMOre, CHS250, CUMIHR, EUROASSET, ExECRoMe , ExplOre, I ² Mine-2, I ² Mine-pilot, NEXT , RUBICON , SecPRIME, SIMS , SmartExploration , SOcRATES , SOLSA	15
>> Land mining (exploration/mining)		
>> Deep sea mining (exploration/mining)	ALBATROSS, Blue Atlantis, Blue Nodules , ERDEM, SeaFlores	5
>> Processing	AREMON, BioAlMinore, BioIron , BRAVO, BRIO , CuBES , EHI, EUROPEM, INBREV, INCOMES, InPhosphoChlor , LiDEP, MetGrow, MetNet, Mud2Metal, NewEco , PolymetOre, REDEPO, REFLEX , SMALLMINE, SX-dev	21
>> Waste management	BULKY, C&D-WRAM, CTC, CYCLEFIBER , EARTH 2020, ENCRAM , EURELCO, HOPE-4-0 , HydroWEEE, ITERAMS , pHMine , Reclaim , ROSE , TailingsDamScavenger , WeCARE , ZeroWaste-NoI	16
Priority Area I.C. ‘Substitution of raw materials’	CARBOCYCLE, CRM-InnoNet, EQUATOR, EUNARS-G, NASSCO, RAW-NANOVALUE , RESET, SUBST-EXTREME	8
Priority Area II.A. ‘Improving Europe’s raw materials framework conditions’	BioDIMA , EESC IR , EMD, EMD 2017 , EMY2015, ENSQM , ENTRIE, Mineland , MIREU , NATREG , OPTIMIN 2020, PPS, Safe & Prod. Mining Waste, SAFEMIN , SMiS, Stand4Mines, SUMAN2000, SUSMINE, SustainableMiningStandard , WEMINEIT	20
Priority Area II.B. ‘Improving Europe’s waste management framework conditions and excellence’	Covenant2022, CRM Recovery , ELTSTANDARD, EPR-C Commitment, GtoG, IMPACT, PREVENTILEX, WEEE + BATT Excellence	8
Priority Area II.C. ‘Knowledge, skills and raw materials flows’	BRITE, CRAM , EUMINET, NATUREUROSTONES , ORAMA , REMIND, TAURUS, WEEE 2020	8
Priority Area III. ‘International cooperation’	AELPK, E3M, EWIT, IMAGINe, INTERMIN , InTrain4RM , Metallica, MINSPIRE , PLATINUM	9
Biotic materials	ECAMOB, Effiwood , EHIA, GENTLE, NOWMOB , PROFIBRE , RUBB-ENDURE , RUBBERTOMARKET , SWEETSTOCK, WRING	10

Table 2: Number of RMCs covering each Priority Area⁵

⁵ 2015 proposed RMCs are written in **bold** (e.g. **ExECRoMe**).

2.2 Partners

>> *The EIP on Raw Materials counts almost 1000 unique partners*

The 80 Commitments accepted after the **2013 Call for Commitments** included about **700 unique partners**. One third of RMCs reported an evolution of their partnership through the 2015 Annual Monitoring Survey over the same period, most of them growing. Taking into account the loss of 27 partners due to the 4 disqualified RMCs, in 2015 **56 new unique partners were added to the EIP**. Moreover the **2015 Call for Commitments** attracted another **223** unique organisations, bringing **the overall EIP partnership to 980 unique partners**.

>> *Member State participation remains uneven, even after the 2015 Call for Commitments*

Figure 1 shows the distribution of the **unique partners per Member State**. Overall, **Spain** remains the best represented in the EIP Commitments (over 130 different partner organisations), followed by **Italy, Germany and France**, with more than 70 unique partner organisations each. Further, the EIP includes **84 partners from non-EU countries**⁶ and 54 partners representing pan-European organisations (EU industry associations, etc).

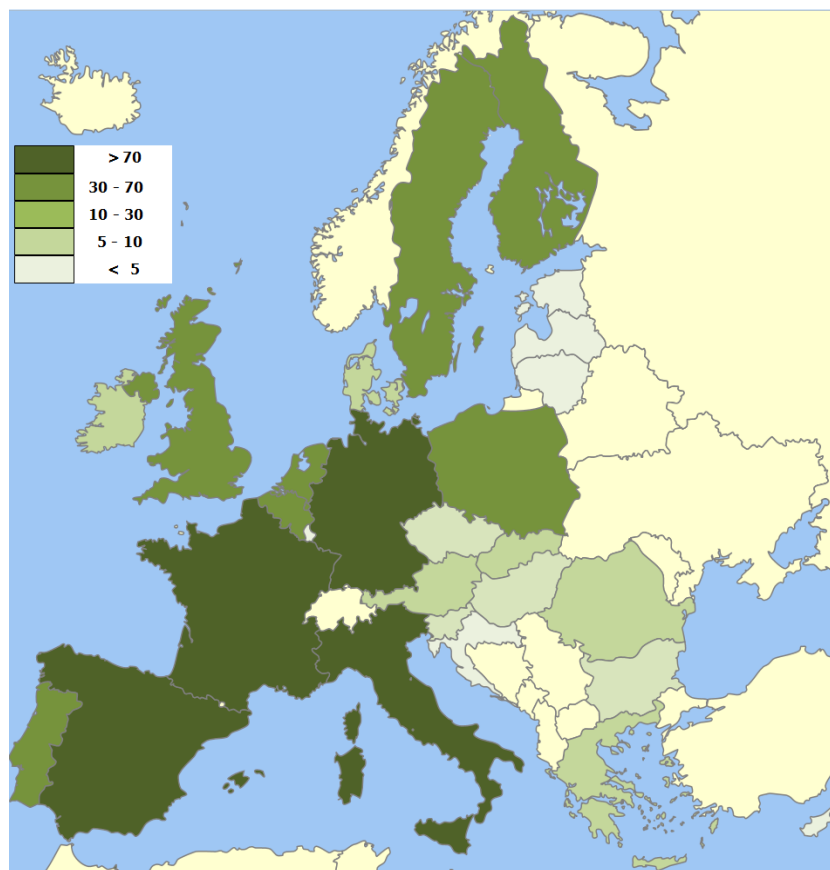


Figure 1: RMC partner coverage, total number by Member State

⁶ Including from Argentina, Brazil, Chile, the Republic of Macedonia, Mexico, Morocco, Peru, Uruguay, Philippines and the United Arab Emirates, as well as multinational organisations.

France (23), Spain (17), Finland (9), Italy (9) and Sweden (8) are also well represented in **RMC leadership**, with pan-European organisations (25) also leading a significant number of RMCs. Interestingly the 2015 Call for Commitments did not manage to attract more RMC leaders and RMC partners from **Central and Eastern European Member States**.

>> *There is a balanced participation from organisations from the public and the private sector, yet NGOs are relatively under-represented*

Figure 2 shows that in terms of RMC partners, **participation in the EIP is relatively evenly balanced between the public and private sector**. Almost half (46%) of the Commitment partners come from the private sector, both large companies and small and medium-sized enterprises (SMEs); the latter representing over one quarter (27%) of all Commitment partners. **NGOs** on the other hand are relatively **under-represented** (3%).

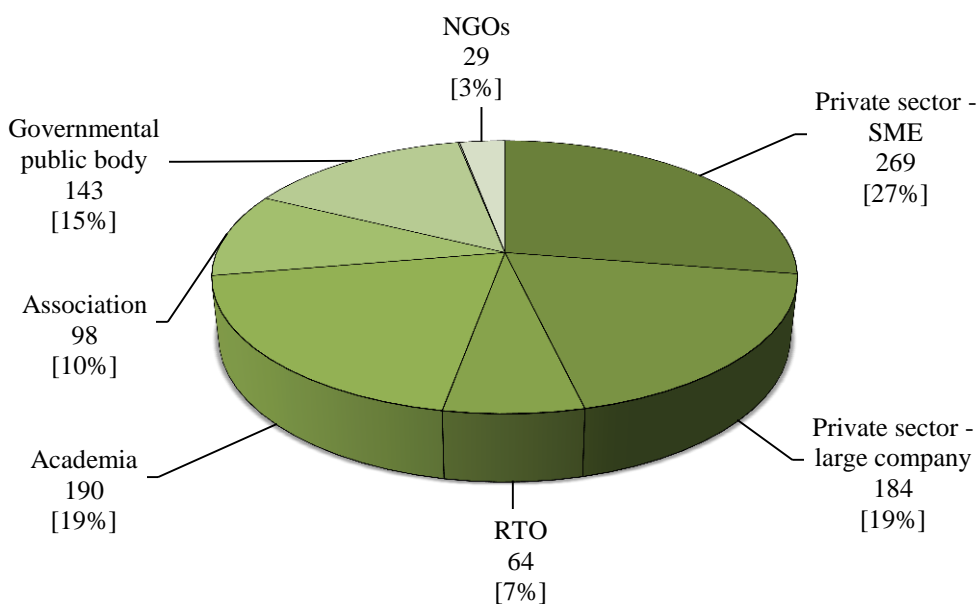


Figure 2: Type of RMC partners, in number of organisations and %⁷

Interestingly 93 RMCs active in 2016 have a member of the European Institute of Innovation and Technology (EIT)⁸ Knowledge and Innovation Community (KIC) on Raw Materials (EIT Raw Materials)⁹ in their partnership. Vice versa 76 (66%) of the EIT Raw Materials partners contribute to at least one RMC.

2.3 Funding

>> *Under the EIP on Raw Materials, public and private sectors could co-fund close to €2 billion of activities*

The participation of the Commitments to the EIP is a voluntary process, with **no direct EU funding awarded** to the endorsed RMCs. However, **the EIP plays an important**

⁷ RTO stands for Research Technology Organisation

⁸ <http://eitrawmaterials.eu/>

⁹ <http://eitrawmaterials.eu/>

role in bringing together stakeholders that may have easier access to financing together than taken alone when applying for EU Horizon 2020 funding, as well as other EU funding sources such as LIFE funding, Cohesion funding, European Investment Bank loans, etc.

Commitments provided an estimate of their **total indicative budgets** as part of their submission to the Call for Commitment. Indicative budgets for the 76 RMCs from **2013** amount to **€1685 million**. 2015 RMCs have however provided more conservative indicative budgets. Adding only **€294 million** from the **2015** Call for Commitments, **the new total indicative budget reaches €1979 million**.

As shown in **Figure 3**, the **technology-focused Commitments make up the largest proportion of the total indicative budgets**. With lower rates of projected capital outlay and overall cost, non-technology and international cooperation themed RMCs collectively account for only 9% of total indicative RMC budgets.

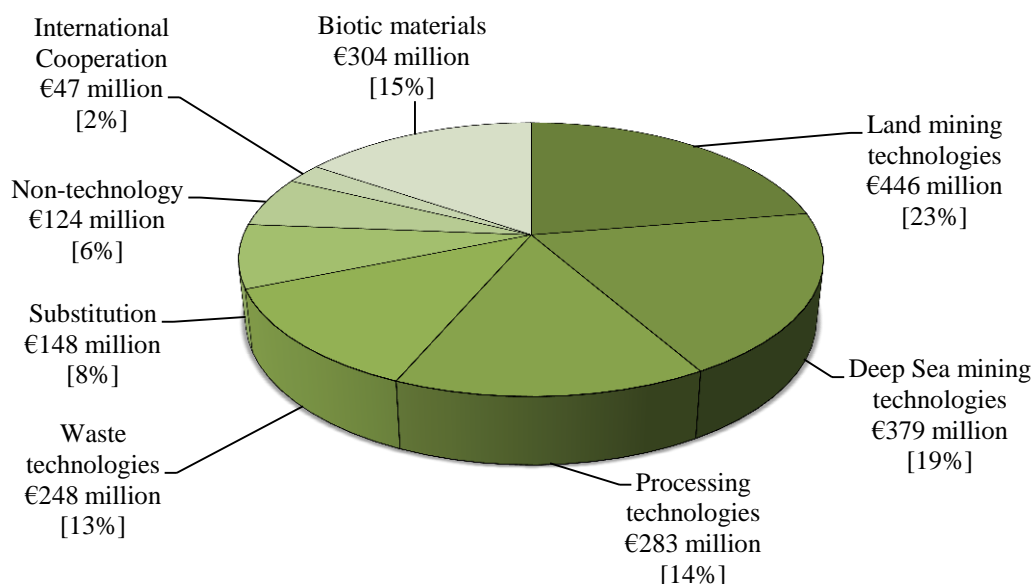


Figure 3: Total indicative budget of the RMCs by theme, in € million euros and %

3 MONITORING PROGRESS OF COMMITMENTS

This chapter presents **the progress made by the Commitments of the 2013 Call for Commitments**. Close to 80% of the Commitments responded to the 2015 annual monitoring survey.

Indicators for monitoring, measuring and mapping the state-of-play of the ongoing EIP Commitments are presented in three sections:

- (1) inputs (human resources, funding, etc.)
- (2) activities undertaken in the year
- (3) outputs (pilot actions, documents, meetings, etc.).

3.1 Inputs

The purpose of this section is to analyse the overall state-of-play of the adopted Commitments with respect to total funding secured, and to identify the proportion of projects that are on track versus those at risk, e.g. those lacking funds.

Overview

>> *On average the RMCs have now secured 23% of their total indicative budgets*

Prior to the 2015 annual monitoring survey, RMCs had secured €268 million. **In 2015 RMCs further secured €123 million.** This means that the EIP Commitments have secured approximately **€391 million** out of the total indicative budget of €1685 million, or approximately **23%** of their total indicative budgets (compared to 15 % in 2014).

The **split of funding sources** secured during 2015 and since 2014 is summarised in **Figure 4.**

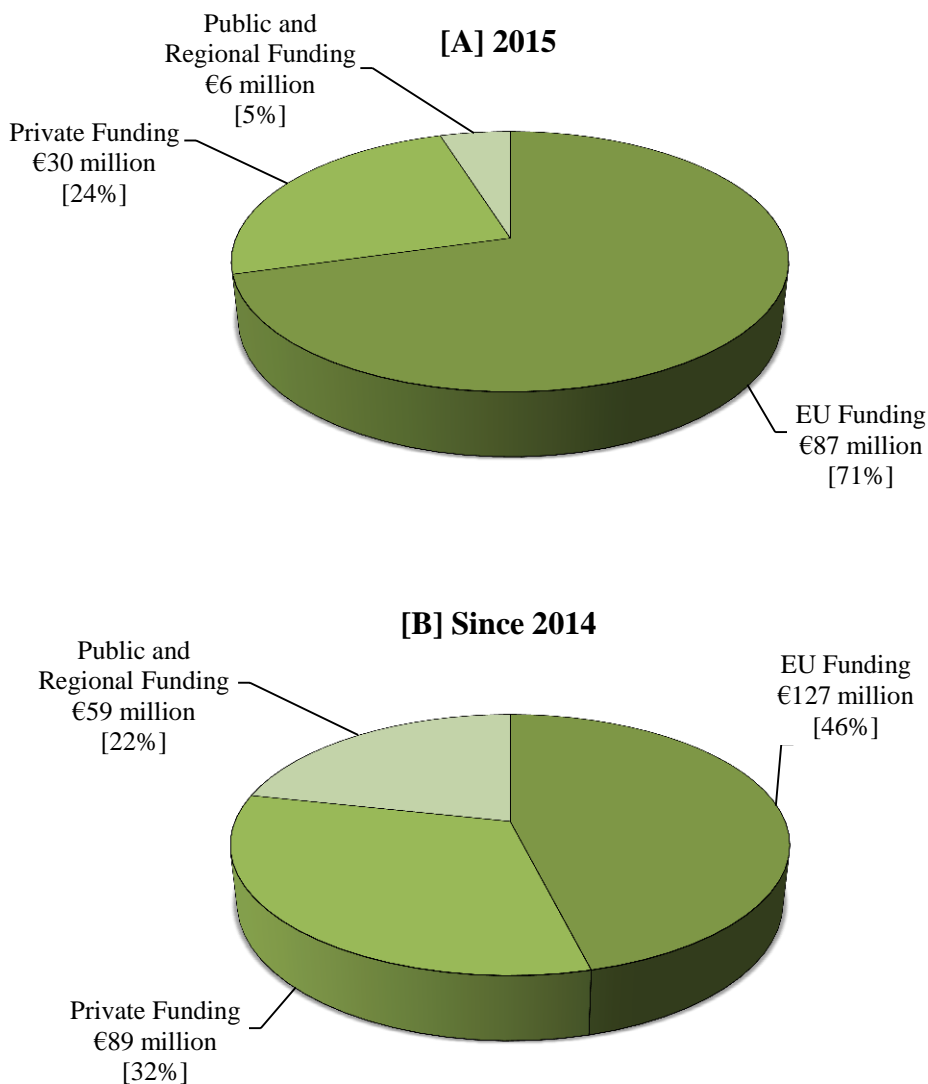


Figure 4: Sources of secured funding for EIP Commitments in 2015 [A] and since 2014 [B], in € million and %

Over two thirds (71%) of the funding secured in 2015 came from the EU, just less than one quarter (24%) from private organisations and 5% from national and regional authorities. **Since the launch of the RMCs, the largest proportion of funding (45%) comes from the EU**, equivalent to €127 million. Private funding of €89 million represents one third of the total funding secured. Funding from public national and regional authorities is close to €60 million over the same period.

EU Funding

>> The Horizon 2020 programme has now become the biggest source of EU funding for RMCs, worth €75 million

In 2015, 15 RMCs secured €87 million of EU funding, of which €75 million (85%) came from H2020 (**Figure 5 [A]**). This brings EU funding to €127 million since 2014, shared among 30 Commitments (+13 compared to 2014).

The **Horizon 2020** research and innovation funding programme has now become the **biggest source of EU funding** (63% of the total, compared to 12% in 2014) that Commitments received since 2014 (**Figure 5 [B]**). 17 RMCs are receiving funds through this programme. The **FP7** research and innovation funding programme is the next largest EU funding source for EIP Commitments, with just above 25% of the total, followed by **LIFE**, which accounts for 7% of the total.

>> Alternative EU funding sources such as the European Investment Bank or Cohesion Policy Funds account for a very small fraction of funding to the EIP Commitments

It is notable that no EU funding has been secured from the **European Investment Bank** or the **European Development Fund**; and that only limited funding has so far been received from **Cohesion Policy Funds**. As of 2015, the **EIT on Raw Materials** appears as a source of funds, contributing with €0.75 million in RMCs for the BioFlex, SolvoFlex and PilotMet Networks of Infrastructures.

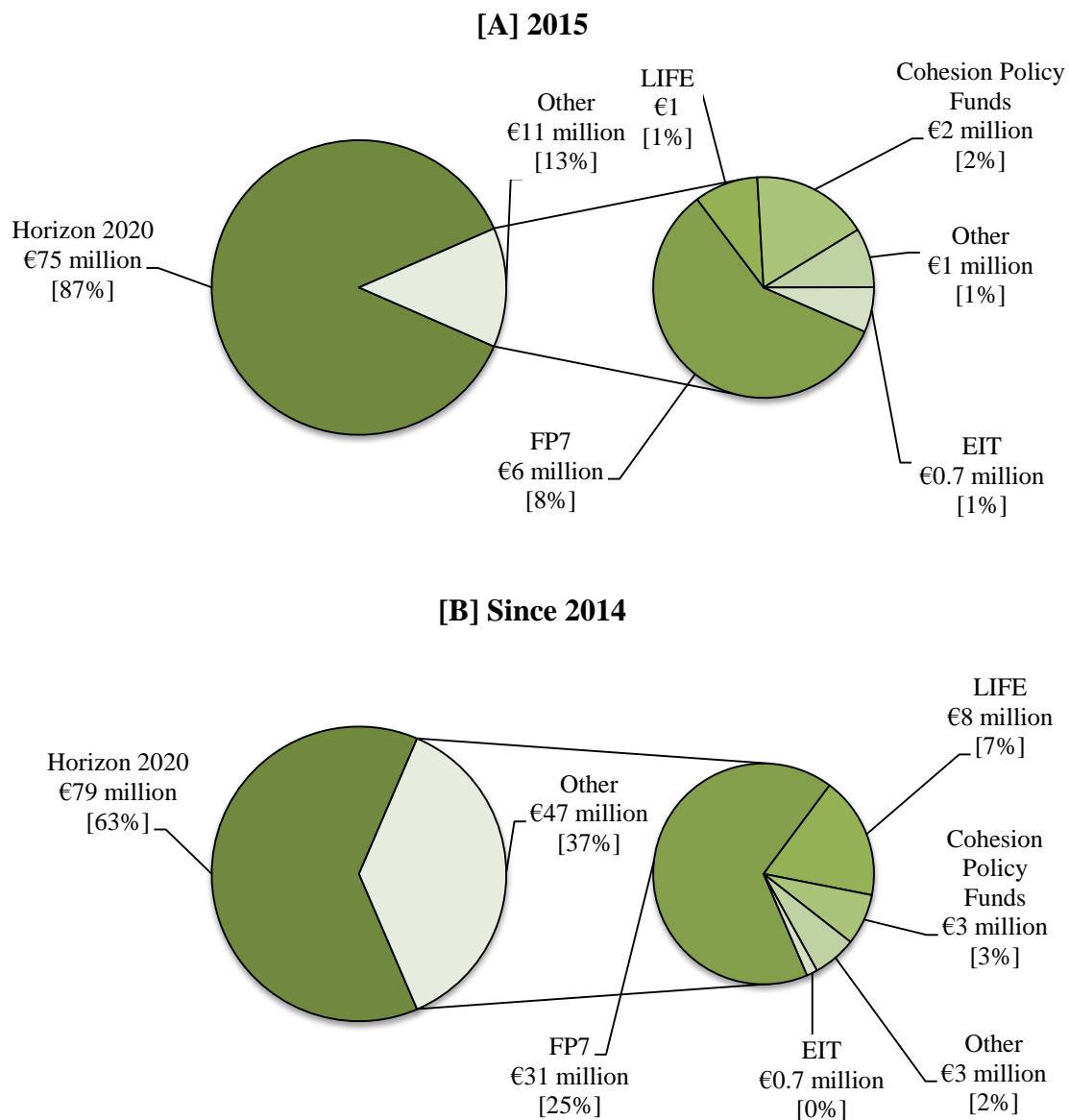


Figure 5: Type of EU funding received by EIP Commitments in 2015 [A] and since 2014 [B], in € million and %

Public/Regional Funding

>> *Since 2014 the RMCs have received €60 million from 16 different countries; 14 Member States seemingly did not provide any funding at all*

In 2015 national or regional funding accounted for almost €6 million from 11 countries. Finland provided almost half of the total, followed by Poland and France (about €0.85 million each).

Since 2014, **25 EIP Commitments** received direct funding or in-kind contributions from public and regional bodies across Europe and internationally. Funding from these organisations counted just over **€60 million from 16 different countries.**

Of the €60 million of public funding, almost **€24 million** went to **large networking EU projects** such as ERA-MIN¹⁰ and EURARE¹¹. These projects have thus been extremely successful in combining public funding from the EU and various Member States. These are **good examples of synergies** between various funding schemes.

The **largest share** of remaining public funding comes from **Sweden** (€10.5 million), **Finland** (€7.5 million), the **United Kingdom** (€3.8 million), **Italy** (€3.2 million) and **Belgium** (€2.3 million). The coverage of these funding sources across Europe is summarised in **Figure 6**.

The EIP monitoring survey also revealed that **14 EU Member States seemingly did not appear to provide any public or regional funding** to the EIP Commitments since 2014. **Outside the EU**, about **€3 million** of financial contributions to EIP Commitments were provided by **Gabon and Norway**.

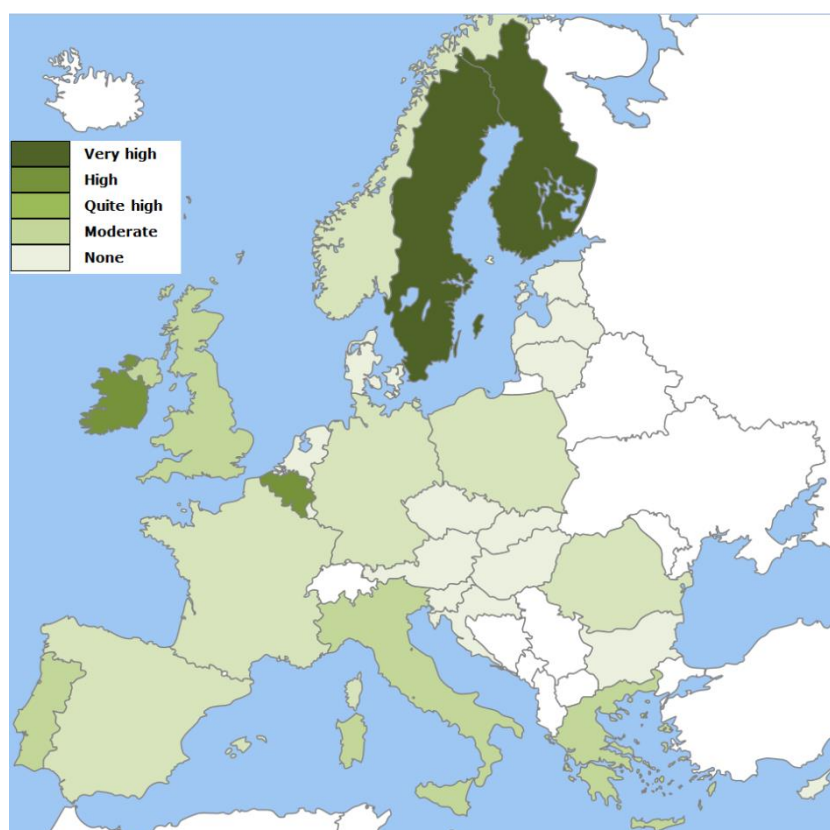


Figure 6: Sources of public/regional funding for EIP Commitments since 2014¹²

¹⁰ <http://www.era-min-eu.org/>

¹¹ <http://www.eurare.eu/>

¹² In the map, the colour-scheme for Member States has been scaled to show funding relative to population.

Private Funding

>> 48 RMCs received private funding, worth €90 million.

In 2015, 8 RMCs secured private funding worth €59 million. This brings the total number of Commitments having received private funding since 2014 to 48, totalling nearly €90 million. This category is **dominated by few large capital intensive RMCs**: 14 of the 48 RMCs secured over €1 million from private sources each. Together, these 14 RMCs add up to €82 million of private funding (or 90% of the total private funding).

Share of the budget secured

>> More than half of the RMCs are well on track in securing their funding

Figure 7 shows the proportion of the indicative budget that has been secured by the Commitments, which is grouped into bands to protect commercial sensitivity.

The 2015 monitoring survey shows that **more than half** (53% compared to 40% in 2014) **of the RMCs seem to be on track in securing funding**: 21% of the Commitments have secured 10-50% of their indicative budget, and would therefore appear to be well on track to being fully funded, while 32% of Commitments have secured more than half of their funding (an increase of 50% compared to 2014 figure). In addition **13 Commitments** (vs. 7 in 2014) **have received more funding than their initial indicative budget** and are able to expand their planned activities compared to their initial plans.

The number of RMCs which secured less than 1% of their indicative budget decreased from 40% to 20% compared to 2014. Around 27% of the Commitments have secured useful seed money – 1-10% of their indicative budgets – to get started, but are also without adequate funding.

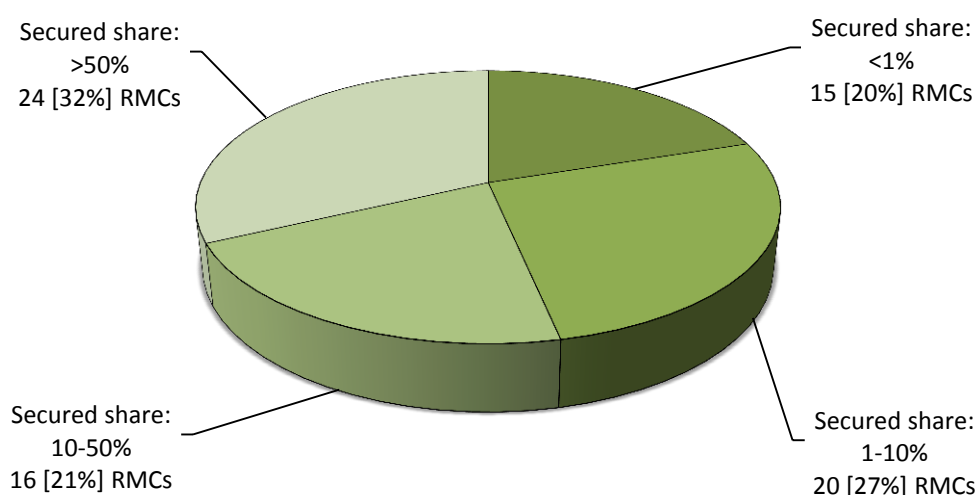


Figure 7: RMCs according to funding secured vs. indicative budget, in number of RMCs and %

>> **Technology Commitments have secured a lower share of their budgets, in spite of increased EU funding received in 2015**

Figure 8 presents the proportion of the budget secured per type of Commitment. It shows that in general **technology Commitments have secured a much lower share (19%) than non-technology Commitments (45%)**. This may be due to the much **larger indicative budgets** associated with many of the technology related Commitments (average budget of around €30 million for technology Commitments versus less than €10 million for non-technology and international Commitments), and the consequent need to secure a greater diversity of funding sources.

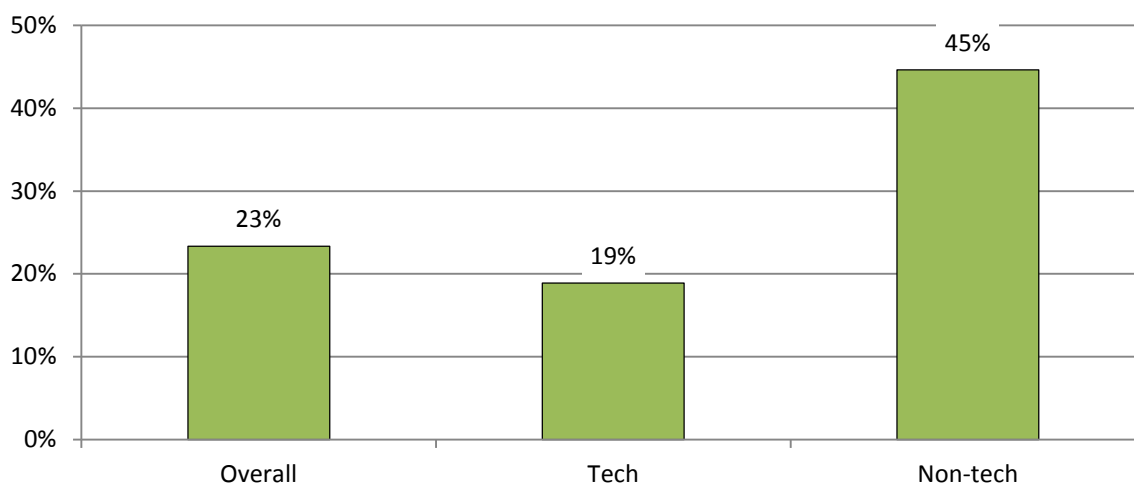


Figure 8: Proportion of funding secured by type of EIP Commitments, in %

Figure 9 shows that since 2014 **technology-related Commitments received 47% of their funding from EU sources**, 35% from the private sector and the smallest share (18%) from national and regional organisations. Due to the substantial EU funding received by technology Commitments in 2015, **the situation changed significantly since 2014¹³**, when EU funding represented only 9%, private funding 50% and national and regional funding 41%, respectively.

For the **non-technology Commitments**, EU funding is also dominating (44%) but by less compared to the technology Commitments. This is due to a higher share of national and regional funding of 28%, matching private sector funding. No significant evolution took place from 2014, when shares amounted to 40%, 30% and 30%, respectively.

¹³ see Figure 10 of the 2014 Annual Monitoring Report, <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/system/files/ged/M%20and%20E%20scheme%20-%20final%20as%20approved%20by%20Sherpas%202603.pdf>

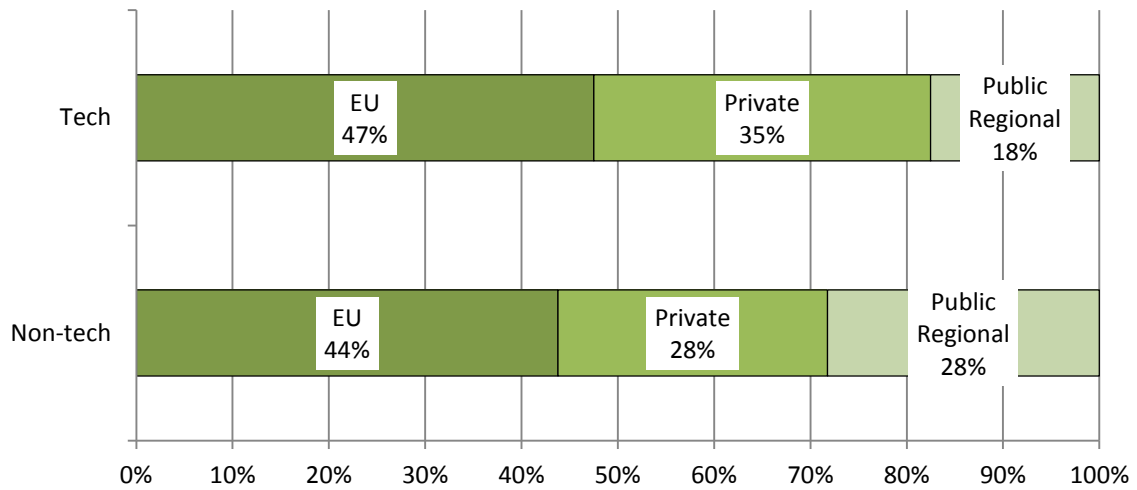


Figure 9: Funding share for technology vs. non-technology EIP Commitments since 2014, in %

Expenses

>> *Most of the RMCs secured funding goes to human resources*

Up to 2015 included, **RMCs reported spending over €140 million**. 60% went to Human Resources and a quarter (26%) to infrastructure, equipment and supplies (see **Figure 10**). The rest (14%) has been spent on meetings, events, workshops, exhibitions, travelling (external, consortium), dissemination, overheads and indirect costs, but also on patenting, subcontracting (web toolkit, consultant for H2020 proposal) and exploration drillings.

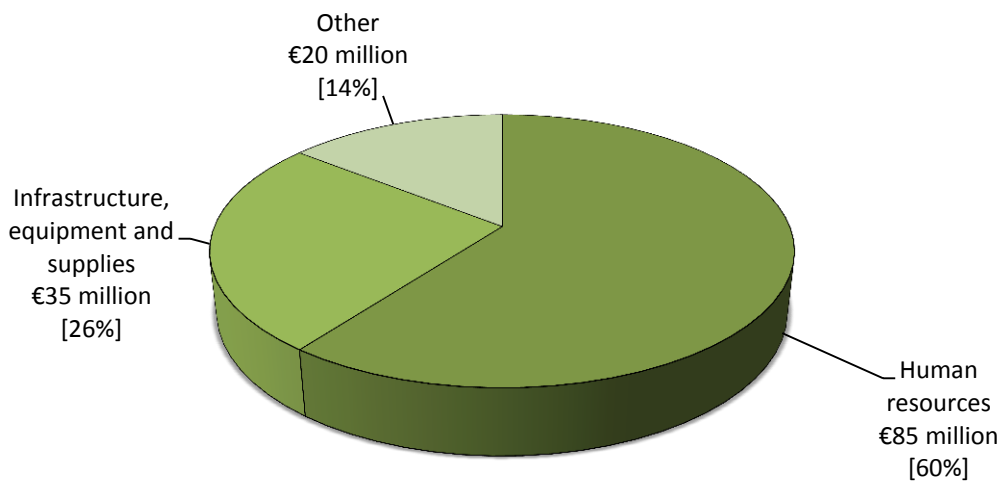


Figure 10: Expenditure of RMCs since 2014, in € million and %

3.2 Research, dissemination and coordination activities

Most of the Commitments covered in this report (over 85%) reported progress towards the planned activities as set out in the Commitment goals. The most commonly mentioned activities are of **organisational nature** (enlarging partnership, securing funding, re-structuring themselves), although **research and dissemination activities** are reported by an increased number of RMCs.

Very few Commitments reported that they have not undertaken any significant activities towards their Commitment goals.

The following sub-sections highlight some of the research, dissemination and coordination activities undertaken by specific Commitments since the 2014 annual monitoring survey.

Research activities

Among the Commitments that deal with **primary resources**, progress is being made by RMC GENTLE on Just-in-Time forestry, succeeding to demonstrate its technology in a natural environment.

RMC ROSE carried out research activities for the development of new materials and technologies based on the **recycling** of waste aggregates. RMC ELTSTANDARD – active in the standardisation of end-of-life tyres – organised a Round Robin Test for the approval of test methods drafted in the European Committee for Standardization Technical Specification 14243.

With respect to **substitutes**, RMCs RESET and EQUATOR had more applied approaches: investigating phosphors for substitution in lighting and submitting patent applications on one hand, or producing samples of plastic materials including a substitute to Antimony on the other hand.

RMC EUROASSET has been progressing as planned in the **harmonisation and modelling of raw material underground deposits**. On the same topic, RMC REDEPO performed preparatory work for laboratory networks or education programs.

Dissemination activities

RMC EWIT, which started as an H2020 project in 2014, held numerous dissemination and consultation activities with relevant stakeholders and released the beta version of its online web-based e-Waste Toolkit, which aims at supporting strategies aiming at recycling and recovering secondary raw material in metropolitan areas in Africa. Many RMCs also reported on dissemination activities outside Europe (RMCs Blue Atlantis, BRAVO, ERDEM, Mud2Metal, Optimin_2020, PLATINUM, RESET).

In the **waste area**, RMC EURELCO has actively disseminated its outputs in the field of enhanced landfill mining while RMC BULKY promoted its initiative on urban waste recovery and recycling.

In the field of **knowledge, skills and raw materials flows**, RMC REMIND recalled that Knowledge Data Platforms – outputs of the Minerals4EU, PROSUM and EURARE FP7 projects – aimed at the diffusion of information to the public. RMC TAURUS, although struggling to secure funding, has been actively promoting the use of exergy analysis as a resource efficiency indicator and performed many dissemination activities in and outside Europe.

Furthermore, Commitments carried out **events** such as conferences, workshops and meetings during 2015. Examples of these are:

- RMCs COVENANT 2022, C&D WRAM and PREVENTILEX concerning the Circular Economy;
- the various Commitments of the European Technology Platforms (RMCs ETP-PRIME and RMInnovation);
- RMC EMD who organised the 2015 European Minerals Day;
- RMC EUMINET for the European Minerals Information Network; RMC ERA-MIN in relation with the Network for Industrial Handling of Raw Materials for European Industries;
- RMC IMAGINE to network the innovation activities of the global industrial minerals associations;
- RMC ENTRIE on better industrial policies, including raw materials; RMC IMPACT on separate paper collection;
- RMC MetNet on pilot plants for extractive metallurgy and mineral processing.

With respect to **substitutes**, the CRM-InnoNet FP7 project came to an end in June 2015, therefore putting emphasis on dissemination of results and continuation of activities through an Innovation Network.

Coordination activities and proposals

The activities of RMC ERA-MIN are supporting **coordination** in the field of Raw Materials: The Commitment managed two new trans-national joint calls in 2014 and 2015 funding 13 new projects through national funding agencies.

RMC BioAlMinore initiated two direct bilateral collaborations with Argentina. Moreover, RMC EUROPEM created the international non-profit association PROMETIA as a mean to implement its objectives.

With respect to enhanced landfill mining, RMC CTC (Closing the Circle Plasma Demonstration Plant) secured funding from Belgium authorities and finalised the conceptual engineering of its demonstration plant.

Many of the Commitments reported that they **improved their operational structures** (governance meetings of potential consortium partners, workshops, website development, and work package definition and proposal writing) in order **to secure funding**. Examples of this kind of activity were undertaken by RMCs BRAVO, BRITE, Covenant 2020,

EUROPEM, EXPLORE, I²Mine-2, IMPACT, MetNet, Mud2Metal, OPTIMIN_2020, PLATINUM, PolymetOre, SecPrime, SMALLMINE, SWEETSTOCK and TAURUS.

Interestingly a number of Commitments – RMCs BULKY, CTC and EURELCO on one hand, and RMCs ETP-PRIME and RMInnovation on the other – **coordinated among each other** and put forward **joint proposals for funding**.

Some Commitments also reported **contributing to the EIT Raw Materials**: Partners of RMC REDEPO were engaged in the preparation of strategic projects; RMC SECPrime contributed to its agenda on primary resources and RMC SUBST-EXTREME supported its ramp-up. Furthermore RMCs BRAVO, EARTH 2020, METGROW, MetNet and PolymetOre have been active in the development of EIT Raw Materials Networks of Infrastructure.

A number of Commitments had to **re-assess their objectives** because they were unable to secure funding. This was the case for RMC WEEE + BATT Excellence on the certification of recycling facilities for Waste electrical and electronic equipment (WEEE) and spent batteries; RMC SUSMAN 2000 for sustainable non-energy mineral extraction activities in Natura 2000 protected sites; RMCs I²Mine-2, I²Mine-pilot for deep mining; RMCs ALBATROS and SeaFlores on research and pilot phases for seabed mining technology.

3.3 Outputs

>> Many Commitments are delivering tangible outputs, of which almost half contribute to Target 3 on framework conditions for primary raw materials

This section focuses on outputs delivered by Commitments since 2014. **47 EIP Commitments** (out of the 63 respondents of the 2015 annual survey) **reported achieving at least one output since the launch of the RMCs¹⁴**.

Figure 11 presents an overview of **how these outputs relate to the EIP targets¹⁵**. Remarkably **almost half** (46%) of these outputs contribute to **Target 3** on framework conditions for primary raw materials, while **very few outputs** contribute to **Target 4** (framework conditions for materials efficiency and waste management), **Target 5** (knowledge base) and **Target 7** (international co-operation).

¹⁴ A number of Commitments had foreseen a delayed start of work in their application: RMCs SeaFlores, CTC, REMIND, I²Mine, I²Mine-pilot reported a period of implementation starting at the earliest during the second half of 2015. Therefore, no output should be expected from these RMCs by now.

¹⁵ As defined in the EIP Strategic Implementation Plan

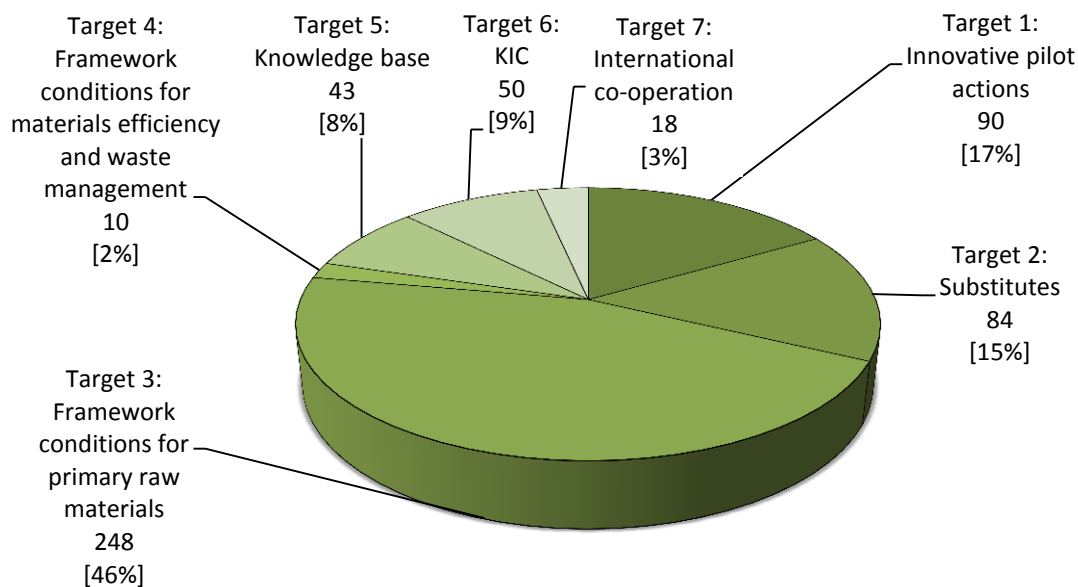


Figure 11: Contribution to the EIP targets by the outputs delivered by EIP Commitments since 2014

>> *Most Commitments have now been funded as projects and are thus delivering tangible outputs such as innovative actions or pilots (Figure 12)*

Several Commitments have developed **new technological processes** including:

- RMC BioAlMinore – biofilters for arsenic or uranium removal.
- RMC PolymetOre – hydrometallurgical technology to leach polymetallic concentrates at atmospheric pressure and using silver catalysing effect (under development).
- RMC EARTH 2020 – process of materials substitution for galvanic industries; technology to recover valuable materials from WEEE; prototype for automated sorting and recycling of waste lamps; process for Reclamation of Gallium, Indium and REE from Photovoltaics, Solid-State Lighting and Electronics Waste; recovery process to produce Rare Earth-Magnesium Alloys; methods for recovery of metals from electronic scrap; method of separation of metal from alloys derived from electronic waste.
- RMC HydroWEE – processes for the recovery of precious and critical metals developed for 6 input waste streams (fluorescent lamps, printed circuit boards, cathode ray tubes, liquid crystal displays, Li-Ion batteries, FCC catalysts).
- RMC INCOMES – pilot plant to transform CRM-based waste in products.
- RMC PLATINUM – development of the passive seismic method as a mineral exploration tool and of plasma-source drilling and analysis-during-drilling techniques.
- RMC REDEPO – recovery of raw materials from anthropogenic deposits.

New business models include that of RMC EHI which created the Extractive company to assume the role of business developer of the EHI platform and its industrial operator.

Under **Joint R&D**, RMC GENTLE reports an ongoing cooperation between Komatsu and BAE Hägglunds in construction and delivery of a test rig; RMC HydroWEEE reports

on joint development of stationary and mobile plants to recover precious and critical metals from WEEE.

An example of a new **product** is given by RMC BULKY with the development of a composite with waste material. The progress of RMC EU-NARS-G, whose activities aim at developing a **substitute** for natural rubber, is evidenced by a **patent** application.

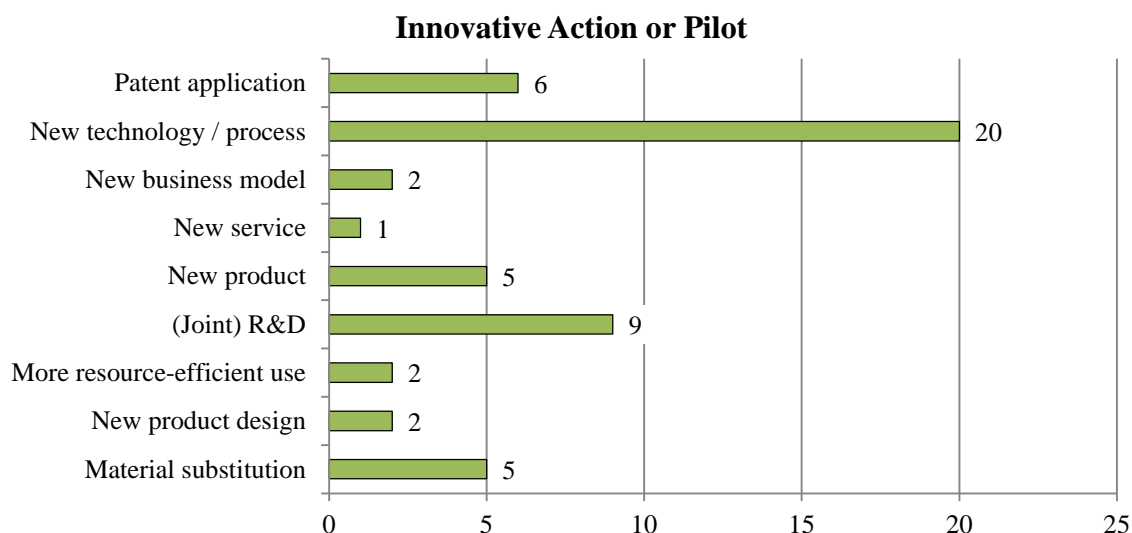


Figure 12: Specific innovation outputs since 2014 (number reported)

>> *A number of Commitments published strategic documents (Figure 13), for instance:*

- RMC CRM-InnoNet published **research and innovation roadmaps** of CRM substitution strategies in the prioritised applications of batteries and accumulators; electric motors and drives; alloys; electronic components; and photonics and optics.
- RMC REMIND produced a **research agenda** for gender diversity and work conditions in mining as well as new tools and guidelines to support sustainable water management in mines and to improve corporate social responsibility actions of companies.
- RMC EARTH 2020 developed **certification schemes** for products coming from EoL tyres valorisation and for market products made starting from EoL tyres.
- RMC PolymetOre reports a **strategy report** to exploit primary massive sulphides in Las Cruces Mine.
- RMC STAND4MINES supported the revision of the Spanish **Standards** on Sustainable Mining Management System, published in November 2015.

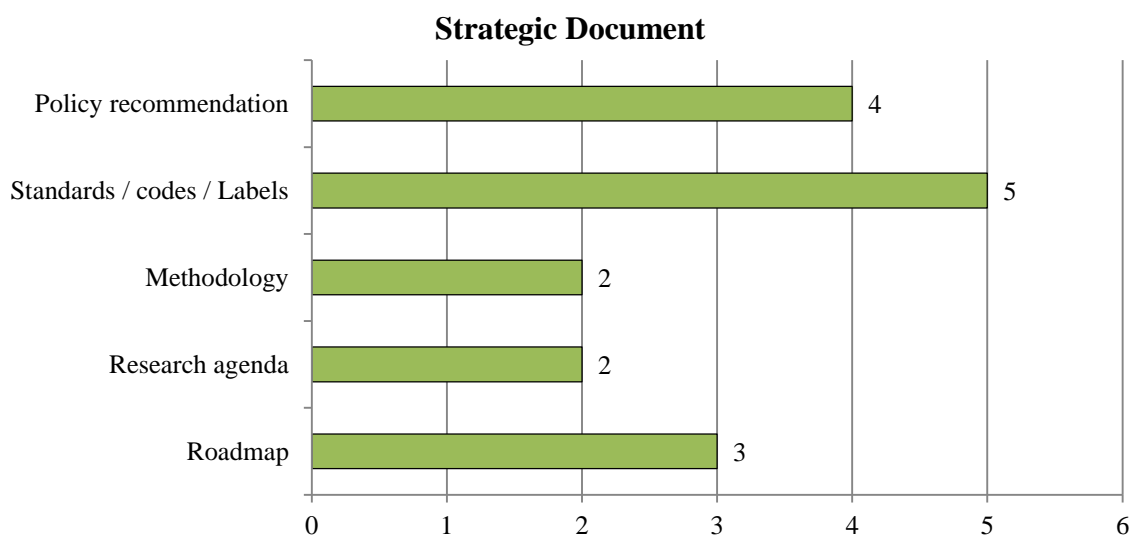


Figure 13: Specific strategic document outputs since 2014 (number reported)

>> The largest number of the outputs achieved by the Commitments relates to knowledge sharing

Many of these outputs correspond to events, workshops conferences or scientific papers (**Figure 14**) and have been mostly produced by 2 RMCs. RMC EMD organised 200 events at 130 sites as part of the 2015 September pan-European open days. The bulk of scientific publications are reported by RMC RESET with more than 100 publications focused on the substitution of Critical Raw Materials in different technologies published since the launch of the Commitment.

Further outputs relevant to the **event / workshop / conference** sub-category have been produced among others by:

- RMC CRM-INNONET – 7 events along the project activities, totalling 602 registrations representing 320 unique organisations primarily from the EU countries.
- RMC EWIT – 4 Twin Cities Workshops in Nairobi and Kisii (Kenya), Johannesburg (South Africa), Choma (Zambia), Abidjan (Ivory Coast).
- RMC EURELCO – 1st Enhanced Landfill Mining event in the EP, with 100 participants.

Examples of **scientific publications** can be attributed to:

- RMC ERDEM – 10 presentations given at various EU and international events.
- RMC REMIND – A scientific paper on life cycle assessment of FeNi production in Greece.
- RMC ROSE – A paper published in the Proceedings of the XVI ECSMGE 2015.

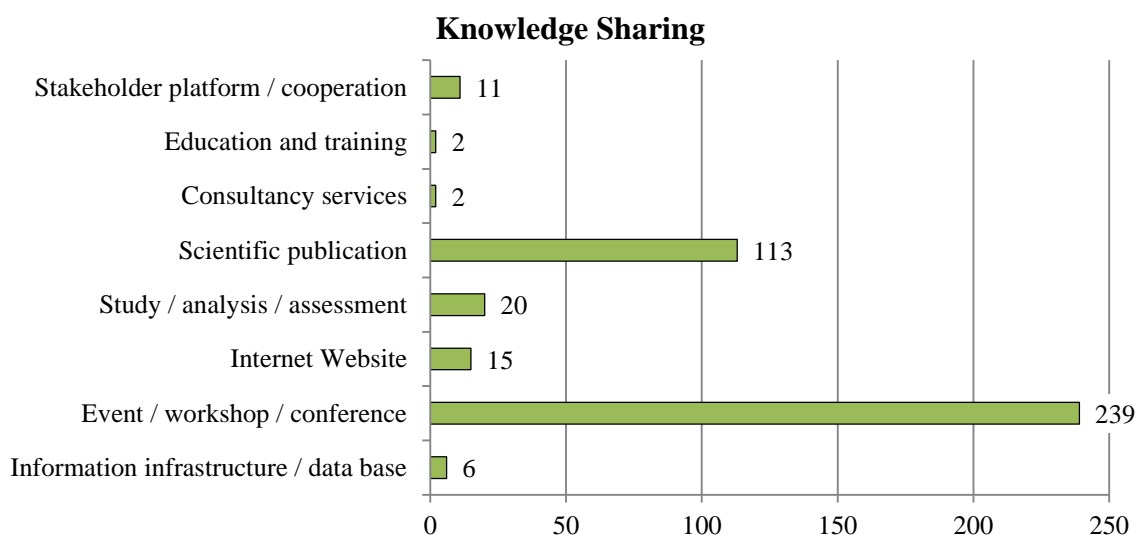


Figure 14: Specific knowledge outputs since 2014 (number reported)

In terms of **international outputs**, some RMCs supported and participated in EU – third countries diplomacy events organized by the European Commission (RMCs EUMINET, IMAGINE). Other Commitments also reported dedicated collaborations with organisations located outside the EU, for instance RMC BioalMinore with Argentinean organisations or RMC EMD involving sites all over the world in the mineral day events.

3.4 Future Plans

Many of the Commitments are striving to **secure funding** to sustain their activities. The following RMCs intend to complete and submit funding applications in 2016:

- at EU level: BRAVO, EARTH 2020, ERA-MIN, EU-NARS-G, EUROPEM, ExplOre, GENTLE, I²Mine-2, I²Mine-pilot, IMAGINE, Mud2Metal, OPTIMIN_2020, REMIND, ROSE, SMALLMINE, Stand4Mines, SUBST-EXTREME, SWEETSTOCK, TAURUS, WEEE 2020;
- at national or regional level: RMCs CTC, EHI, PolymetOre.

Commitments that **obtained funding** through successful applications in 2015 will **begin working in 2016**. Among others, this includes Commitments involved in the implementation of the EIT Raw Materials as reported in chapter 3.2.

Commitments that did not receive Horizon 2020 funding are generally progressing either through alternative smaller national or international funding (SeaFlores), re-submitting a bid (BRITE, EU-NARS-G, I²Mine-pilot, PREVENTILEX, SMALLMINE, STRAND4MINES), or re-assessing their future activities (RMCs ALBATROS, EMY2015, LiDEP, PLATINUM, SAFE & PRODUCTIVE MINING WASTE FACILITIES, SUSMAN 2000 or WEEE + BATT Excellence).

Almost all of the **network and co-ordination Commitments** plan to continue a range of activities through 2016, for example RMCs CRM-InnoNet, ENTRIE, European Minerals Day, IMAGINE, IMPACT and RM Innovation. Further, COVENANT 2022 is planning a seminar in France to bring together French partners of the RMC, the EIP and EIT Raw Materials. Other RMCs (e.g. Blue Atlantis, ECAMOB, EUMINET and PREVENTILEX) will rely on networking and increased partnership to eventually re-structure themselves and deliver according to their objectives.

Last but not least, Commitments that were internally funded and are **already operating** are planned to progress further. This includes the C&D WRAM, CRM-InnoNet, ELTSTANDARD, EQUATOR, ERA-MIN, EWIT, REMIND, SOLSA and TAURUS RMCs. Sometimes this is in conjunction with seeking more funding, in order to expand activities (RMCs BioAlMinore and EURELCO through ERDF).

4 ADDITIONAL INSIGHTS FROM THE COMMITMENTS

To better understand the dynamics of the Commitments, the 2015 annual monitoring survey also included a number of questions on issues such as the projects history, the added value of being recognised as an RMC, obstacles and synergies to funding, etc.

Existing project with sufficient funding

>> Most RMCs are newly created projects

13 RMCs reported to be based on an **existing project** with sufficient funding at the time of applying for the RMC label. In addition **6 other RMCs had already received some EU funding** before being granted the RMC label.

Added value of being recognised as a Raw Materials Commitment

>> Connecting with other partners with similar interests is found to be strongest added value of being a RMC

In general, the **Commitments are rather positive regarding the added value of being recognised as an RMC**. About 60% of the Commitments agree (i) that it can help as a quality label (57%), (ii) that partners are better prepared when applying for funding (59%) and (iii) that being an RMC helps to get closer involved in the EIP (60%). **The opportunity to enlarge their network** is by far the most praised added value, with 73% of the Commitments reporting that the RMC has helped them to connect with partners with similar interests (**Figure 15**). Interestingly **only one quarter (25%)** of the RMCs also reported through the 2015 annual monitoring survey that the RMC label is **recognised at national and/or regional level**.

Q: What has been the added value of the RMC?

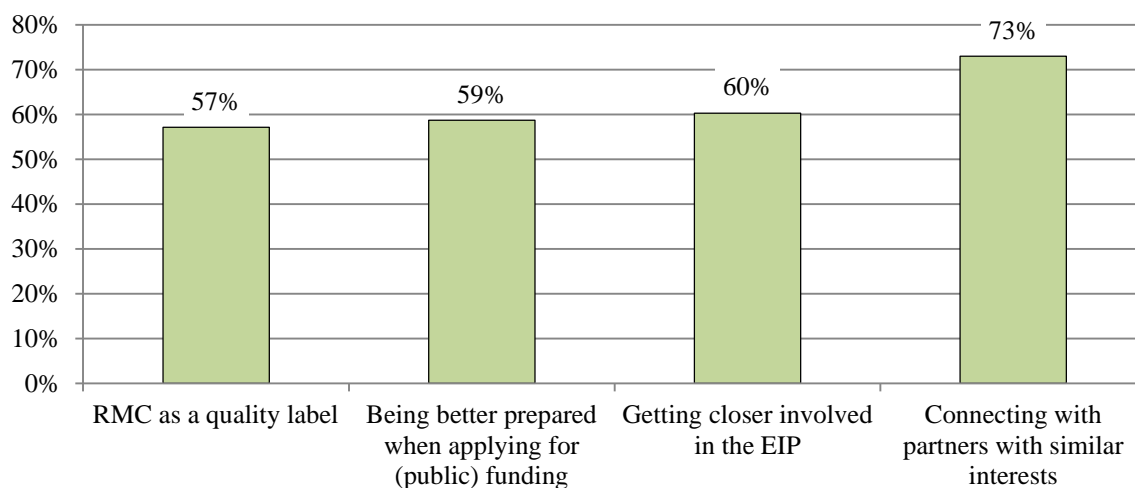


Figure 15: Proportion of RMCs agreeing to statements on added value, in %

Synergies between EU funding instruments

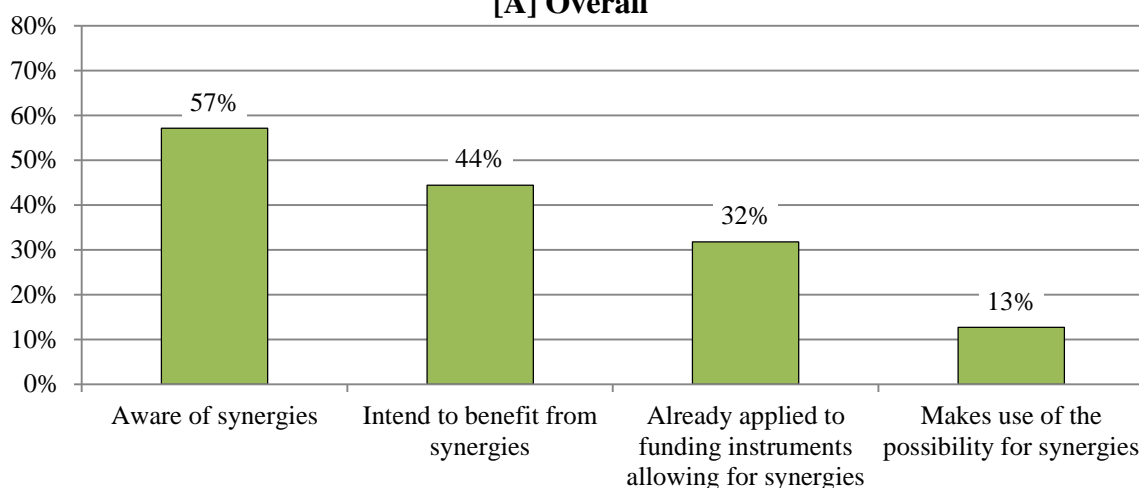
>> *The majority of the Commitments would welcome the EIP to facilitate the identification of synergies between EU funding opportunities*

With regards to possible synergies between EU funding instruments, the survey revealed that **57% of the respondents are aware of their existence (Figure 16)**. Yet, there is a **significant discrepancy** between the number of respondents who are aware and those who actually make use of these synergies (only 13%).

In this regard, it is also interesting to see that **24% of the respondents agree that the EIP facilitates the identification of synergies** between EU funding instruments, while **56% would welcome actions by the EIP to further facilitate them**.

Q: Which of the following statements on synergies between different EU funding instruments are correct?

[A] Overall



[B] In relation to EIP activities

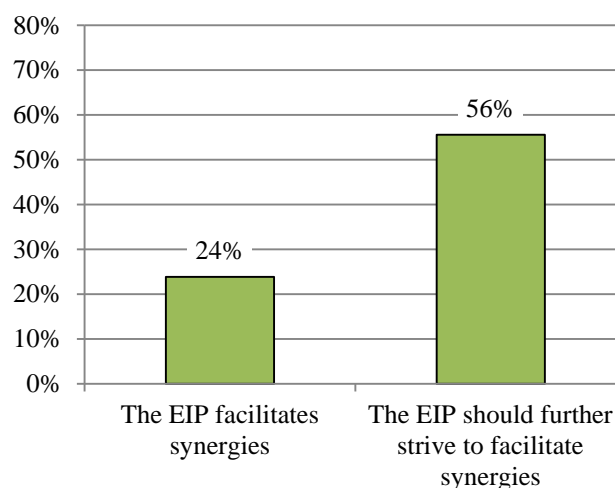


Figure 16: Proportion of RMCs agreeing to statements on synergies between different EU funding instruments [A] and in relation to EIP activities [B], in %

Obstacles to funding

>> The low success rate to EU calls is the most quoted obstacle to public funding

Concerning **public funding** the survey reveals that **EU funding** opportunities are **well advertised** and that **the rules are sufficiently clear**. According to the respondents the biggest obstacle with regards to EU funding is the **low success rate**, which can probably be attributed to the large number of applicants. The success rate for **national and regional funding** is perceived less as an obstacle to finance, although a larger number of respondents indicate that these opportunities are not always advertised enough (**Figure 17**).

Q: Which of the following statements on obstacles to secure funding are relevant for EU, national or regional funding?

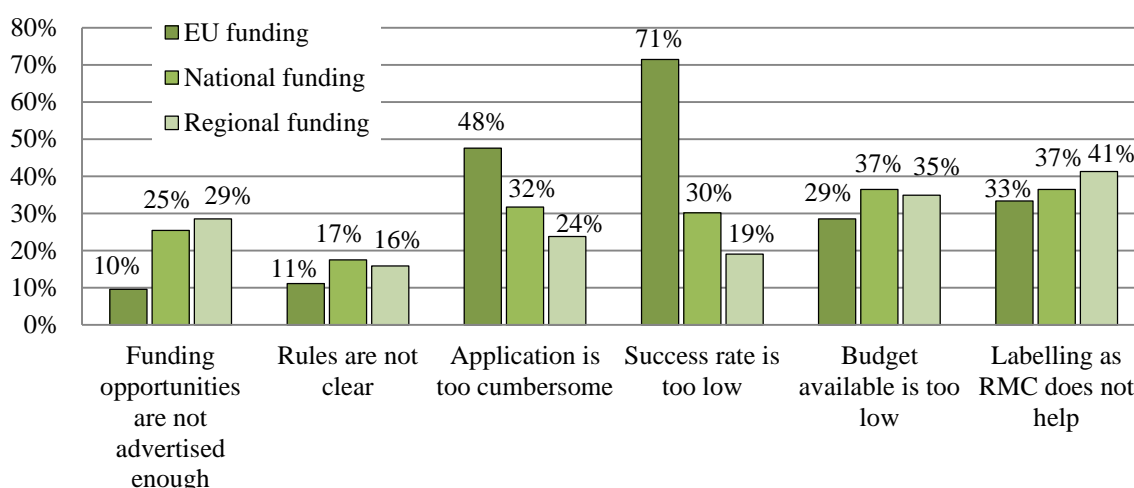


Figure 17: Proportion of RMCs agreeing to statements on obstacles to public funding, in %

>> RMC activities may not be perfectly suitable for private funding

Figure 18 finally displays the RMCs opinions regarding obstacles to **private funding**. 16% of the RMCs consider that their activities are **not suitable** for private funding. Likewise 38% experienced a **lack of interest** from the private sector.

One third (33%) of the RMCs deplores **the absence of a matchmaking platform** between RMCs and the private sector. Close to 20% of the RMCs report **not coming to an agreement** with the private sector on funding conditions.

Q: Which of the following statements on obstacles to secure funding are relevant for private funding?

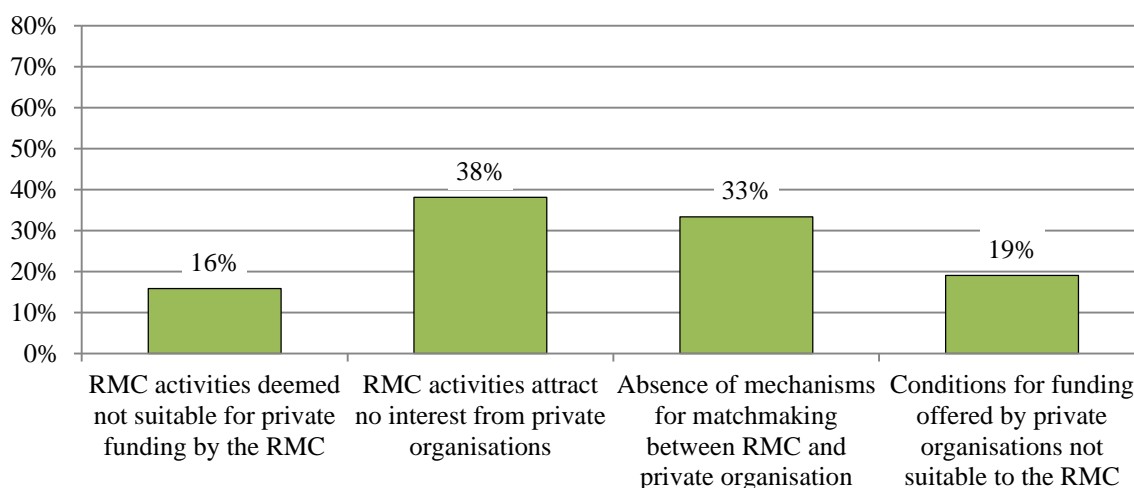


Figure 18: Proportion of RMCs agreeing to statements on obstacles to private funding, in %

ANNEX 1: NUMBER OF RMCS CONTRIBUTING TO EACH ACTION AREA¹⁶

Pillar	SIP Action Area	Coverage
Technology	I.1 Improving R&D&I coordination in the EU	22
	I.2: Exploration	15
	I.3: Innovative extraction of raw materials	35
	I.4: Processing and refining of raw materials	35
	I.5: Recycling raw materials from products, buildings	27
	I.6: Materials for green technologies	7
	I.7: Materials for electronic devices	2
	I.8: Materials under extreme conditions	5
	I.9: Applications using materials in large quantities	1
Non-Technology	II.1: Minerals Policy Framework	31
	II.2: Access to Mineral Potential in the EU	16
	II.3: Public Awareness, Acceptance and Trust	18
	II.4: Product design/optimised use/increased recycling	9
	II.5: Optimised waste flows for increased recycling	16
	II.6: Prevention of illegal shipments of waste	3
	II.7: Optimised material recovery	13
	II.8: EU Raw Materials Knowledge Base	16
	II.9: Possible EIT Knowledge & Innovation Community	1
	II.10: Optimised materials flows along value chains	13
International Cooperation	III.1: Technology	16
	III.2: Global Raw Materials Governance / Dialogues	6
	III.3: Health, Safety and Environment	11
	III.4: Skills, Education and Knowledge	10
	III.5: Investment activities	5

¹⁶ The colour coding relates to the coverage of the Action Areas divided into 3 tiers, from high coverage (dark green) to low (light green).