

EUA MEMBER CONSULTATION

**A CONTRIBUTION TO
THE HORIZON 2020
MID-TERM REVIEW**

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EXECUTIVE SUMMARY

Policy context

The EUA's contribution to the mid-term review of Horizon 2020 brings together a set of core messages addressed to EU institutions, national policy makers and universities with a view to improve the competitiveness and efficiency of the EU's leading research funding programme and to inform the design of the next generation of the Framework Programme.

The messages are supported by the results of EUA's consultation of its membership on Horizon 2020 and EUA's broader work on university research and funding. They encapsulate the view of the university sector as a key stakeholder in the European research and innovation landscape.

The European university sector is a staunch supporter of Horizon 2020, which is a highly successful programme with ambitious objectives. EU-level funding for research and innovation based on grants and open competitive calls creates unparalleled added value and remains paramount to retain scientific talent and boost Europe's global competitiveness. The university sector also supports the European Commission's overarching goals of open science and open innovation, as well as the European Research Area's (ERA) aims to develop an open labour market for researchers and encourage gender equality in science.

By focusing on excellence, attractiveness and efficiency, the following messages and proposed actions seek to strengthen these goals and to reinforce the Framework Programme's capacity to deliver on the grand challenges Europe is facing today.

EUA core messages and recommendations for the mid-term review of Horizon 2020 and beyond

The core messages and recommendations developed by EUA following its member consultation on Horizon 2020 cover two broad areas: (i) Horizon 2020 leading principles and main ideas, and (ii) Horizon 2020 funding and modalities.

1. Horizon 2020 leading principles and main ideas

Prioritising excellence, multidisciplinary and collaborative research

Core message (1): Excellent fundamental and frontier research, whatever the magnitude or category, must remain at the centre of Horizon 2020 and its successor programme. This is demonstrated, for example, by the success of the European Research Council and its impact on science in Europe and, more generally, the overall impact of excellent fundamental research on Europe's society and economy.

Core message (2): Only excellent, multidisciplinary and collaborative university-based research can provide answers to the grand, interdependent challenges of today, for example, in the areas of energy or climate change. Moreover, collaborative research projects safeguard the European added value and further strengthen the European Research Area. Excellence, collaboration and multidisciplinary therefore need to remain at the heart of the EU Framework Programmes.

Action for EU institutions: Keep excellent, collaborative and multidisciplinary research projects at the core of the EU Framework Programme for Research & Innovation.

Broadening innovation and committing to long-term investments in research

Core message (3): The notion of Technology Readiness Levels (TRLs) is essentially based on a simplified linear model of innovation. TRLs do not thus capture the full complexity and bandwidth of innovation and, most importantly, exclude non-technological forms of innovation generated by fundamental and applied research, particularly in the Social Sciences and Humanities (SSH).

Action for EU institutions: Broaden and enrich the traditional notion of innovation in order to address all areas of innovation, spanning across the fields of science, technology and SSH.

Core message (4): Innovation is not a linear process. Innovation, particularly disruptive innovation based on fundamental and applied research, needs sustainable, long-term public funding while close-to-market innovation should be financed by the private sector.

Actions for EU institutions: Provide long-term public funding at national and European levels for incremental and disruptive innovation based on fundamental and applied research. Establish clear regulatory frameworks for incremental, close-to-market innovation and leave investments fully to the private sector, including venture capital.

Integrating SSH disciplines further and opening up research agenda setting

Core message (5): The SSH ensure and increase the societal understanding and acceptance of technology and science. SSH expertise is furthermore crucial for addressing great challenges such as migration and radicalisation. The strategic research agenda for societal challenges and the next EU Framework Programme hence need to be defined jointly by all relevant stakeholders, including SSH disciplines and civil society.

Action for EU and national authorities: Support the full inclusion and build on the existing strengths of SSH disciplines in all funding programmes at European and national levels.

Action for EU institutions: Open up strategic research agenda setting to all relevant stakeholders, including SSH researchers and civil society.

Widening participation

Core message (6): While scientific excellence and the intrinsic quality of project proposals must remain at the centre of proposal evaluation, instruments for widening participation need to be reinforced. Funding sources for capacity building need to be broadened, including, amongst others, structural funds at the European level and national funds at the level of member states, and their interaction strengthened in order to enhance the competitiveness of Europe and its research and innovation (R&I) landscape in a balanced and durable manner.

Action for EU institutions: Keep scientific excellence at the core of the EU Framework Programme for R&I and minimise discrepancies across the EU by broadening funding sources for capacity building and by reinforcing their interaction.

Clarifying the notion of impact

Core message (7): Using impact as an evaluation criterion in Horizon 2020 shows scientists the importance of considering the societal and economic effects of research and the value of intensifying collaboration with external partners. However, the concept of impact and how to assess it is currently vague and imprecise. Additionally, it is difficult to foresee the multiple impacts that can result from fundamental research in the long-term.

Action for EU institutions: Remain flexible in assessing the impact of fundamental research projects and decrease the relative weight of impact expressed in numerical form in the evaluation procedure.

Promoting open access to research publications and data

Core message (8): Open science and in particular, open access, are changing the way research is conducted, disseminated and assessed. In addition, outcomes from publicly funded research should be publicly available. Nowadays, research outcomes can be instantly shared making the long periods leading to traditional publications an obstacle for the development of research. Also, open access to data generated through research is needed to ensure efficient use of research funds.

Action for EU institutions: Further support open access to research publications in an affordable way for publicly funded organisations and increase the capacity for use and re-use of open research data.

2. Horizon 2020 funding & modalities

Securing ambitious funding based on grants

Core message (9): Sustainable and ambitious funding is necessary for Horizon 2020 to retain scientific talent and boost the global appeal of R&I landscapes in Europe.

Core message (10): Loan schemes and financial instruments, such as EFSI and InnovFin, are not suitable to fund university-based research as universities in most European countries are restricted in their capacity to borrow money.

Actions for EU and national authorities: Commit to an overall increase in the budget of the EU Framework Programme for R&I. Use grants instead of financial instruments and loan-based schemes to fund university-based research.

Enhancing programme efficiency & success rates

Core message (11): Eighty-six per cent or more of Horizon 2020 applications remain unfunded. Europe cannot afford the major waste and costs this generates at the institutional and national level. Success rates are at an all-time low and thus deteriorate the cost benefit ratio of the programme. The increase in top rated proposals is not being fulfilled by the available funding and this risks new scientific discoveries not being made.

Core message (12): Effective participation in Horizon 2020 requires institutions to develop targeted application strategies that promote strategic, sustainable and long-term institutional research programmes.

Actions for EU institutions: Increase the efficiency of the programme by bringing up the success rate and maintain a balance among calls and topics. Increase funding to fund at least all top-rated proposals.

Actions for national authorities: Integrate the costs of unfunded proposals in the evaluation of success in national participation in Horizon 2020.

Improve complementarity of national and European funding to universities by setting up additional dedicated funds for unfunded Horizon 2020 high quality proposals.

Action for universities: Prepare applications in strong areas of expertise and develop staff and other support.

Developing a strategic approach to efficiency and sustainability of research funding at all levels (institutional, national and European)

Core message (13): Strategic financial planning at national level must privilege a holistic approach taking full account of EU research funding. The return on investment must be considered accordingly. Declining national funding harms the universities' ability to compete successfully in Horizon 2020. Institutions from systems with lower or declining levels of funding tend to be less successful in their participation. This is likely to aggravate disparities in research, development and innovation capacity within the EU.

Actions for national authorities: Develop a holistic approach to national and EU funding for research. Foster universities' participation and competitiveness in Horizon 2020 through sufficient core funding and additional support mechanisms.

Improving cost coverage

Core message (14): The schemes that have been set up to increase cost coverage such as large research infrastructures and additional remuneration have not been working as intended for universities. Therefore, insufficient cost coverage of Horizon 2020 projects continues to discourage some universities from participating while it risks undermining the financial sustainability of others.

Action for EU institutions: Improve cost coverage for Horizon 2020 projects by retaining the current level of reimbursement of direct costs (100%) and increasing the funding rate for indirect costs to better cover infrastructure and other unfunded costs.

Enabling trust-based simplification

Core message (15): Despite the progress in simplification in some areas, Horizon 2020 is still associated with a high administrative burden at all stages of application, participation and project administration. Questions related to staff costs and accounting methodologies have yet to be solved. Universities have to adapt and set up special procedures to respond to the evolving legal and administrative requirements of the programme. The administrative burden reflects the lack of trust and transparency within the programme.

Actions for EU institutions: Ensure an adequate balance of flexibility, predictability and continuity of rules and provisions. Continue to simplify where it matters most.

Allow institutions to use nationally recognised costing methodologies, accept institutional management and accounting practices to reduce the administrative burden on beneficiaries. Guarantee sufficient transparency at all stages and build a trust-based funding system.

Fostering EU funding synergies

Core message (16): RIS3 is a promising area for synergies between ESIF and Horizon 2020 and, thus also for bolstering regional, national and European R&I ecosystems. However, their actual success will depend on more alignment, more coherence and more simplification of funding regulations, requirements and timelines that in turn will enable and encourage more cooperation among authorities and stakeholders from the public and private sector.

Action for EU institutions: Intensify alignment and coherence between European funds, particularly between ESIF and the EU Framework Programme for R&I.

INTRODUCTION

The year 2017 marks an important milestone for Horizon 2020, the key EU funding programme for research, which has changed the paradigm of the EU's research and innovation by placing a greater emphasis on societal challenges and innovation. The Framework Programme is now entering its first phase of revision based on a mid-term review of progress towards its ambitious goals, while also looking beyond 2020.

EUA, as the representative body of more than 800 individual universities and 33 national rectors' conferences, has continuously been involved in the discussions regarding the design and monitoring of the Horizon 2020 programme.



In early 2016, EUA launched a consultation of its membership to develop a comprehensive view of the university sector in time for European-level discussions on the future of Horizon 2020 and its post-2020 successor. Input from members was collected during the first trimester of 2016.

This report presents the results of the EUA member consultation on Horizon 2020. The analysis of the data also took other relevant sources of data collected and managed by EUA into account, in particular the [EUA Public Funding Observatory](#), which monitors trends in national public funding for universities, together with the outcomes of the survey in early 2016 on the European Innovation Council (EIC) which led to the respective [EUA position](#) (29 April 2016). All this evidence places EUA in a unique position to provide views from the university sector on the added value and potential improvements regarding Horizon 2020, as well as to explore synergies between national and European levels of funding to universities and initiate a dialogue between key stakeholders on the identified bottlenecks.

The report is centred upon three major issues related to i) Europe's competitiveness boosted through Horizon 2020, ii) sustainability and sufficiency of funding and iii) simplification of the programme itself. These core issues emerge from the analysis conducted as highly important to universities in the context of their participation in Horizon 2020 and are closely interlinked with each other.

The capacity of universities to stimulate and foster a culture of innovation through the creation of new knowledge sustains the entire spectrum of innovation activities and its benefits for society. In this respect, past and present EU Framework Programmes for Research and Innovation have made a major contribution to building critical mass, addressing discrepancies between different parts of Europe, e.g. through teaming and twinning in Horizon 2020, and boosting cutting-edge research and innovation across Europe.

However, at the same time, the divide amongst European countries in relation to their R&D-to-GDP targets is widening and thus more concerted efforts and investment at national and at EU levels are needed to increase Europe's overall competitiveness *vis-à-vis* the rest of the world. The

insufficient funding to the EU Framework Programme risks to undermine the sustainability of not only the programme and its long-term objectives, but also of universities, for which it is an important source of funding for collaborative research.

These issues lie at the heart of the EUA's strategic advocacy on behalf of universities to support the development of policies and mechanisms that best suit the European context and foster Europe's global competitiveness. Horizon 2020 is particularly successful in generating top research ideas that address Europe's current and future challenges. However, according to EUA data, the programme is endangered by critically low success rates due to a lack of sufficient funding. Increased, sustainable and efficient funding of research at the EU level in the form of grants benefits the entire continent, particularly if invested in fundamental research, so as to ensure societal progress and well-being in the long term.

Survey method and structure

The EUA membership consultation survey included a set of strategic and technical questions both closed and open-ended. It therefore required the coordination of responses within the institutions. The following issues were covered in the survey:

- Other EU funding programmes
- Programme structure and the participant portal
- Application procedure
- Evaluation procedure
- Success rate
- Time to grant
- Funding rules
- Funding model
- Cost accounting
- Time recording
- Personnel costs
- Large Research Infrastructures
- Reporting
- Financial instruments under Horizon 2020
- Relation to national research funding programmes
- Horizon 2020 in a global perspective
- Global competitiveness of the European research and innovation area
- Funding the research and innovation value chain
- Widening participation
- Multidisciplinarity
- Synergies between Horizon 2020 and the European Structural and Investment Funds (ESIF)
- Further issues: simplification, improvement, sustainability.

EUA received a wealth of quantitative information and in-depth qualitative feedback in response to a series of open-ended questions. The analysis was additionally supported by other sources of evidence collected by EUA (see Appendix).

In most cases, percentages were calculated on the basis of the number of responses submitted to a question (valid per cent) unless noted otherwise.

Sample size and characteristics

1. EUA membership participation

The analysis presented in this report is based on the sample of 153 valid responses submitted by institutions from 28 countries, including 22 EU member states, five EEA or countries associated with the Framework Programme, and one non-EU/EEA country (Figure 1).

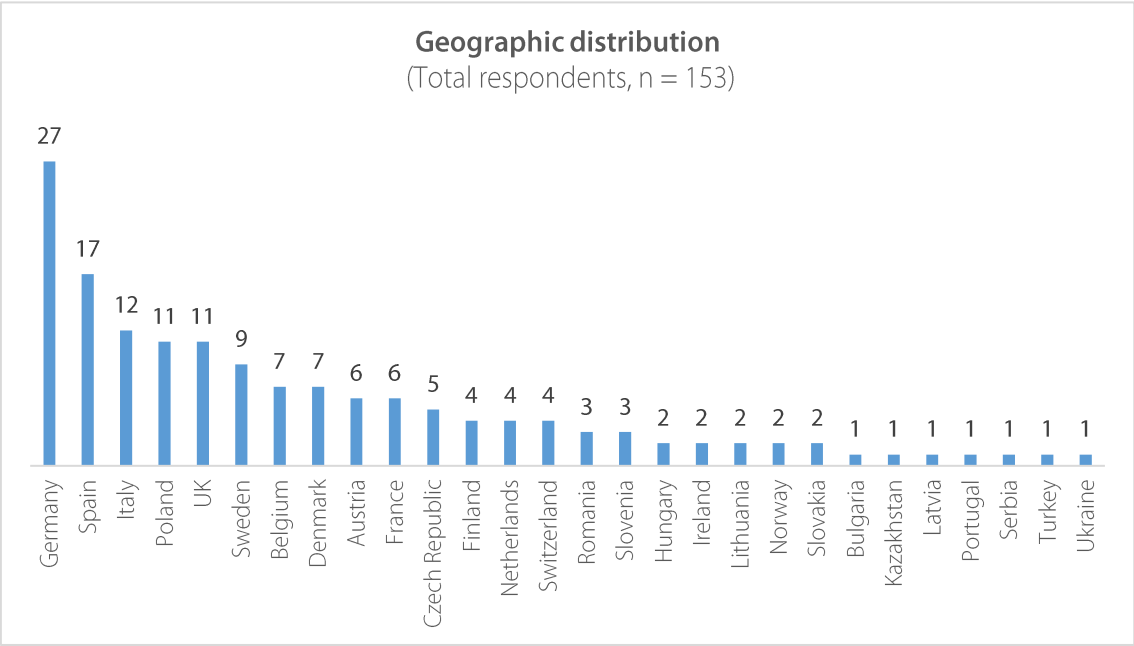


Figure 1: Please select the country in which your institution is located

2. Institutional type and size

All respondents¹ with one exception are higher education institutions. Nearly three-quarters are ‘comprehensive’ universities, followed by technical universities and specialised institutions (e.g. business schools and universities for life sciences). Universities of applied sciences represent 3% of the total number of respondents (Figure 2).

¹ For the purpose of this report, terms such as “respondents”, “surveyed institutions” and “participating universities”, etc. are used interchangeably to refer to the higher education institutions that participated in the survey.

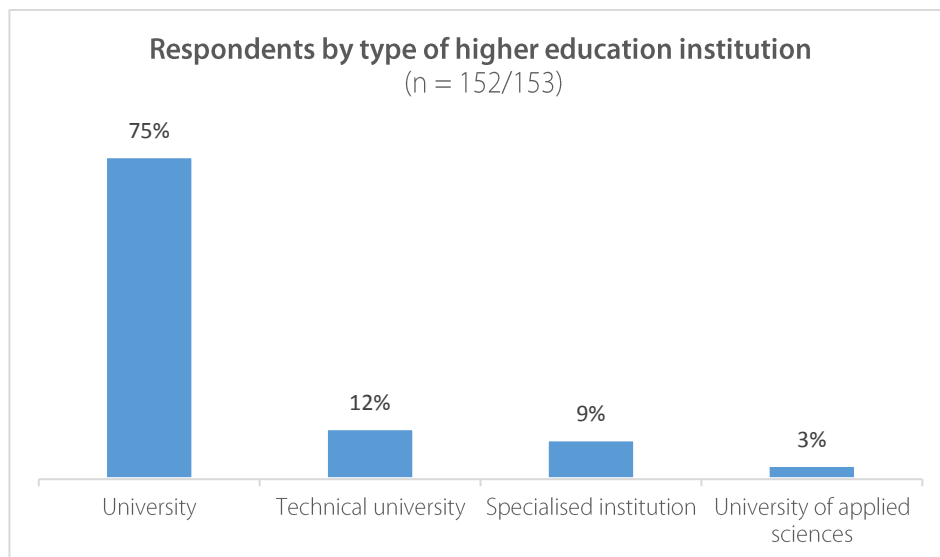


Figure 2: Type of participating institutions

The respondents vary in size: more than a half are medium-sized institutions with 7,500-25,000 students; 36% of the respondents are large institutions with more than 25,000 students, while small institutions represent more than one-tenth of the sample (Figure 3).

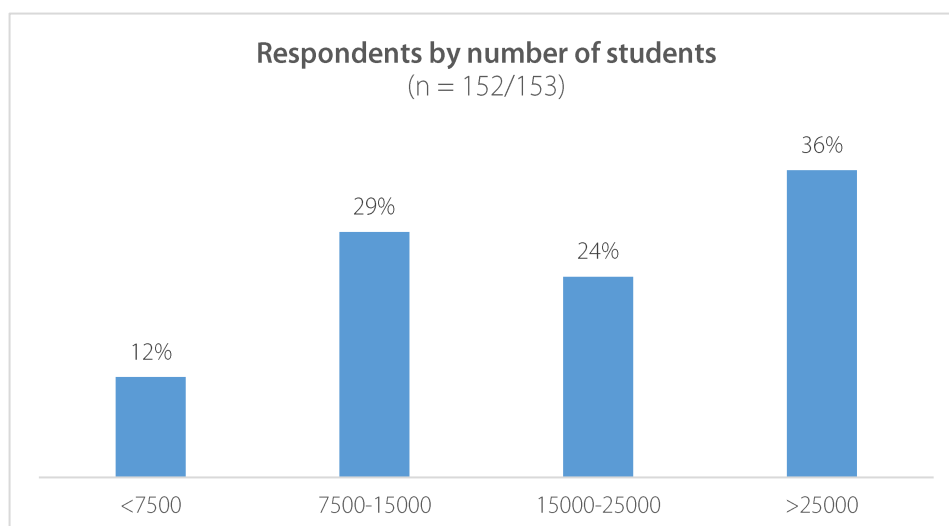


Figure 3: Size of the participating institutions by the number of students

3. Experience with FP7 and Horizon 2020

The grouping of the respondents by the number of projects implemented under the Seventh Framework for Research and Technological Development (FP7) and Horizon 2020 shows that the participation in both programmes significantly varies across the universities in Europe.

In total, 42% of the respondents ran between 21 and 100 FP7 projects. Nearly a quarter managed between 1 and 20 projects in their portfolio; almost one-third of the respondents were involved in more than 100 FP7 projects. The share of institutions with no FP7 projects was 5% (Figure 4).

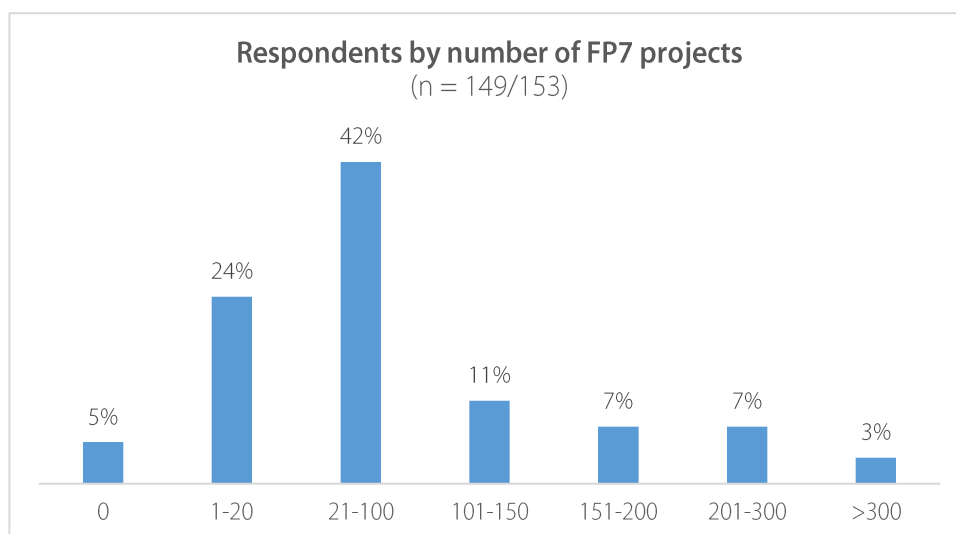


Figure 4: Please indicate the number of FP7 projects (running and finalised)

The distribution of projects under Horizon 2020 is similar to FP7, considering the fact that the respondents mostly referred to the results of the calls published in the first two years of the ongoing Framework Programme.

In total, 41% of the respondents were found to have between 6 and 30 Horizon 2020 projects in their portfolio (at the time of the EUA membership survey). The share of institutions with 1 to 5 projects was 21%; more than one-fifth of the respondents had more than 30 Horizon 2020 projects. The share of institutions without any Horizon 2020 project was 13% of all respondents (Figure 5).

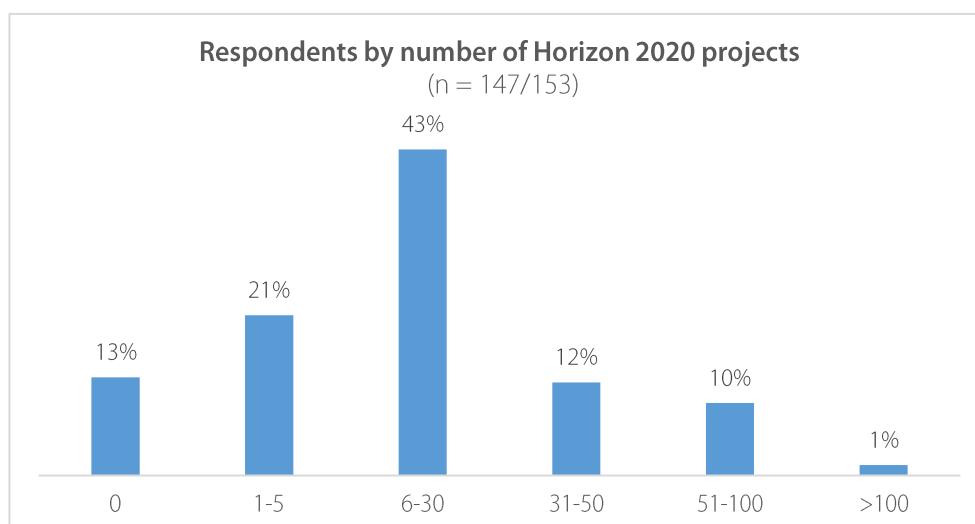


Figure 5: Please indicate the number of Horizon 2020 projects (running and finalised)

PART 1: BOOSTING EUROPE'S COMPETITIVENESS THROUGH HORIZON 2020: VIEWS FROM THE UNIVERSITY SECTOR

Horizon 2020 was designed as the financial instrument to implement the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Therefore, several questions were included in the survey in order to assess the interim progress towards this ambitious goal from the university's point of view. To what extent is Horizon 2020 boosting Europe's competitiveness *vis-à-vis* the rest of the world? How fit is its programme structure for purpose? What are universities in Europe thinking about innovation, impact and imbalances across the EU?

The following chapter provides insights from EUA's members on their positive and negative experiences with, as well as forward-looking recommendations for, amongst others: Horizon 2020 in a global perspective; investing in the research and innovation value chain; technology readiness levels; multidisciplinary and the integration of Social Sciences and Humanities; synergies with the European Structural and Investment Funds; and the geographical imbalances in research and innovation across Europe.

Horizon 2020 in a global perspective

Horizon 2020 is a highly successful programme with ambitious objectives. EU-level funding for research and innovation based on grants and open, competitive calls creates unparalleled added value. It is paramount to retain scientific talent and boost Europe's global competitiveness.

In a similar way to the previous Framework Programme (FP7), for the majority of the respondents Horizon 2020 remains the most important European programme, offering unique opportunities for collaborative research and innovation to universities. However, the EUA member survey exposed some warning trends with regard to the attractiveness of Horizon 2020 compared to other research and innovation funding programmes worldwide.

In particular, the institutions sampled in the current survey indicated that there seems to be a growing trend among researchers to seek funding beyond the national and European options. Indeed, many universities reported that they were actively encouraging and supporting their scientists to apply for non-European funding programmes. Most universities agreed, in general,

that low success rates² for Horizon 2020 applications had either already led to brain drain or will very likely lead to it if the situation does not change soon.

Relevant examples:

"Research is definitely under-financed both at national and EU levels, this results in severe brain drain and demotivation of large numbers of researchers (both at junior and senior level)."
(Institution from Italy)

"Particularly in the last years, due to the economic crisis that resulted in tight control of public spending including funding for research and innovation, we frequently see researchers leaving the country for better working or living conditions in other places around the world, mainly the USA. Such mobility causes the so-called brain-drain, not only at a national level, but also at an organisational level."
(Institution from Portugal)

"Competition is higher than ever. Many excellent proposals are not getting funding (e.g. FET OPEN programme). (...) More funds are needed in Europe if we want to face brain drain." **(Institution from Spain)**

This way of thinking may be due to a lower success rate under Horizon 2020, which currently lies at ca. 14%,³ compared to the previous Framework Programmes. This figure is also largely inferior to the success rate of research funding programmes in other parts of the world, for example, the National Science Foundation in the United States (23%) or the Australian Research Council (20.7%).⁴ This could mean that scientists would prefer to apply for different funding sources or eventually leave the EU to conduct their research in other parts of the world. In addition, several universities also pointed out that the low success rates for Horizon 2020 result in decreased attractiveness of the European research and innovation landscape for scientists from other parts of the world.

In order to counteract these negative effects of the low success rate of Horizon 2020, the responding universities suggested an increase of funding for research and innovation at both national and European levels. This measure could revert the loss of scientific talent and could

make the national and European research and innovation landscapes more attractive for scientists in Europe and worldwide (cf. also section below on efficiency and success rate).

The overall programme structure of Horizon 2020

Horizon 2020 is designed around three pillars: 1) Excellent Science, 2) Industrial Leadership, and 3) Societal Challenges. As shown in Figure 6, more than 80% of surveyed institutions considered this structure to be appropriate and efficient. Amongst the institutions with a more negative view on the three-pillar structure, the prevalent opinions were that there is a lack of focus on basic research

² Several key concepts of the survey, particularly "success rate" and "capacity of participation", are tackled from various perspectives in different parts of this report to reflect their complex multidimensional and cross-cutting nature.

³ The success rate for the whole of the EU's Seventh Framework Programme was ca. 20%. Cf. European Commission, Horizon 2020: First results, Luxembourg: Publications Office of the European Union 2015, p. 5. The document is also available online at

https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/horizon_2020_first_results.pdf.

⁴ Figures for the National Science Foundation in the United States are based on the fiscal year 2014. Cf. National Science Foundation, Report to the National Science Board on the National Science Foundation's Merit Review Process: Fiscal Year 2014, Arlington, VA: National Science Foundation, p.5. The document is also available online at <https://nsf.gov/nsb/publications/2015/nsb201514.pdf>. Figures for the Australian Research Council (ARC) in 2014 are based on data available on the ARC website at

http://www.arc.gov.au/sites/default/files/filedepot/Public/ARC/NCGP_dataset/ARC_NCGP_Trends_web_update_Feb2015.xlsx.

and the level of integration for SSH has not been adequately achieved. Many respondents also perceived a shortage of opportunities for collaborative research. Several institutions remarked they would welcome more consistency and interaction amongst the three pillars in Horizon 2020.

Several respondents pointed out that the overall programme structure can still be confusing to the participants given the number of externalised programmes and instruments (e.g. European Technology Platforms) that still exist or the dispersion of cross-cutting areas (e.g. Information and Communication Technology) across several pillars or work programmes.

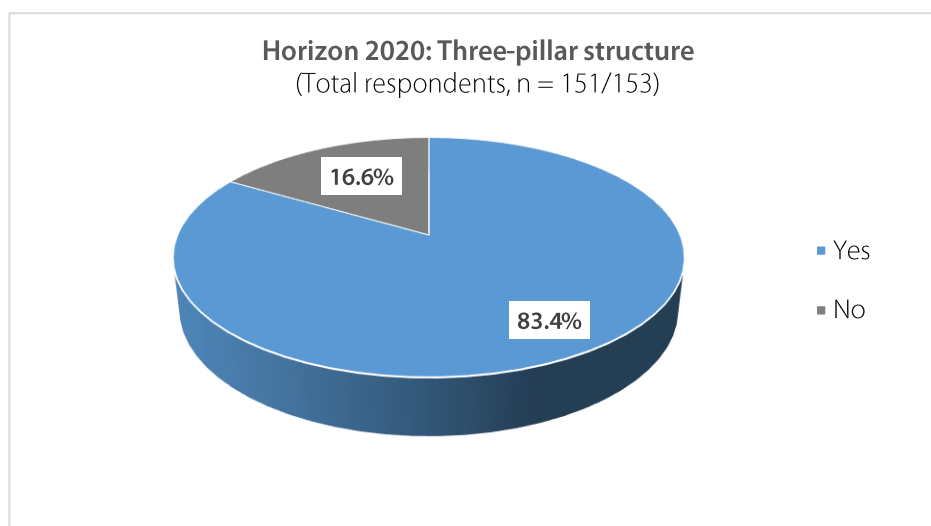


Figure 6: Do you think that the structure of three pillars of Horizon 2020 is appropriate and efficient?

Relevant examples:

"There is no sufficient room for basic research (fundamental research). We must not forget that this is the first step of the innovation chain. Pillar 1 should include more room for collaborative projects on fundamental research." **(Institution from Belgium)**

"There should be more funding opportunities for SSH other than SC6 and flagged topics. Flagged topics are not so easy to find and sometimes it is not clear how certain disciplines really can contribute to future projects. There are no opportunities for bottom-up joint research projects other than FET. What we need is more room for collaborative basic research in pillar one and three." **(Institution from Germany)**

"One of the problems with the current structure is that it is not consistent: there are still several programmes/schemes that have been placed outside the three pillars - very confusing." **(Institution from Sweden)**

"Structure may still be confusing to researchers. Especially where to find the calls: e.g. ICT is spread over several pillars/WPs, not only ICT. More guidance should be given of where particular issues can be placed, for example as done by the ICT document (guidance on 2016-2017 calls)." **(Institution from the Netherlands)**

The following messages and recommendations can be formulated on the basis of the findings presented above:

Prioritising excellence, multidisciplinary, and collaborative research

Core message: Excellent fundamental and frontier research, whatever the magnitude or category, must remain at the centre of Horizon 2020 and its successor programme. This is demonstrated by, for example, the success of the European Research Council and its impact on science in Europe and, more generally, the overall impact of excellent fundamental research on Europe's society and economy.

Core message: Only excellent, multidisciplinary, and collaborative university-based research can provide answers to the grand, interdependent challenges of today, for example, in the areas of energy or climate change. Collaborative research projects, moreover, safeguard the European added value and further strengthen the European Research Area. Excellence, collaboration and multidisciplinary therefore need to remain at the heart of the EU Framework Programmes.

Action for EU institutions: Keep excellent, collaborative and multidisciplinary research projects at the core of the EU Framework Programme for Research & Innovation.

Investing in the research and innovation value chain

Horizon 2020 aims at funding the entire value chain of research and innovation (R&I), i.e. from fundamental research through to market uptake. Most university respondents welcomed, in general, the strategy of funding the entire value chain as an opportunity to foster cooperation with industry, SMEs and start-ups. However, the majority of institutions also emphasised that the funding in Horizon 2020 is not evenly spread across all areas of the R&I value chain which is to the detriment of the university sector. Universities seem to perceive a clear tendency in Horizon 2020 towards funding for incremental, close-to-market innovation, while funding for disruptive innovation based on fundamental and applied research is considered to be scarce and limited to specific parts of Horizon 2020 (especially ERC, FET, and MCSA).

Of particular note is the idea that innovation is more complex and non-linear than the classical value chain model suggests. Thus, there is a need to strategically rethink and enrich traditional ideas of innovation. In the same vein, many universities stressed the need for long-term thinking when fostering innovation and growth and improving European competitiveness by public spending. High-risk, high-gain innovation based on fundamental and applied research needs public investment, while innovation that is close to market should be financed by the private sector.

Finally, some universities considered that additional elements could be added to Horizon 2020. The following suggestions were mentioned:

- Need for more funding for fundamental research;
- Need for more funding for intermediate TRLs (TRL 3-4), which are limited in Horizon 2020;
- Provision of opportunities for the continuity of funding even after the end of the project;
- Existence of calls specifically targeted at different stages in the innovation chain (e.g. fundamental research, applied research, prototyping).

Relevant examples:

"The perception is that the majority of funding is at the market end rather than spread evenly from fundamental research to exploitation." **(Institution from the United Kingdom)**

"We're jumping from basic research to commercialisation, and there are insufficient funding sources for the stage often called 'the valley [of] death'." **(Institution from Norway)**

"The importance of basic research is not adequately addressed. It is the first and most essential step of all elements in the value chain. If we too much neglect it, there will soon be nothing left to apply and visionary ideas that are important only in a more distant future for the market, will be lost because they are not adequately funded." **(Institution from Germany)**

"There should be a 'society readiness level' (SRL) to supplement the TRL. This would ensure that the end-user perspective (consumer or political) is included throughout the value chain and not only in the end. A given technological development could be so much in demand that the SRL is very high even when the TRL is still low – and vice versa. This would be beneficial not only to the appropriate inclusion of SSH in technological research but also ensure the relevance of the technological solutions that are developed." **(Institution from Denmark)**

Technology Readiness Levels: Benefits and challenges for universities

The shift in Horizon 2020 towards impact and implementation involves, *inter alia*, higher levels of technology readiness (TRL)⁵ and requires a more detailed explanation on the impact of the research outcomes.

Given the focus on higher TRLs in Horizon 2020 (TRL 7-9), the vast majority of respondents considered this a hindrance to the participation of universities in Horizon 2020 (Figure 7).

⁵ Technology Readiness Levels (TRLs) are indicators of the maturity level of particular technologies. They provide an overview of technology status. There are nine TRLs for Horizon 2020: TRL 1 being the lowest and TRL 9 the highest. Cf. e.g. European Commission, Horizon 2020 Work Programme 2016-2017: General Annexes, Luxembourg: Publications Office of the European Union 2016, p. 29. The document is available online at http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-ga_en.pdf.

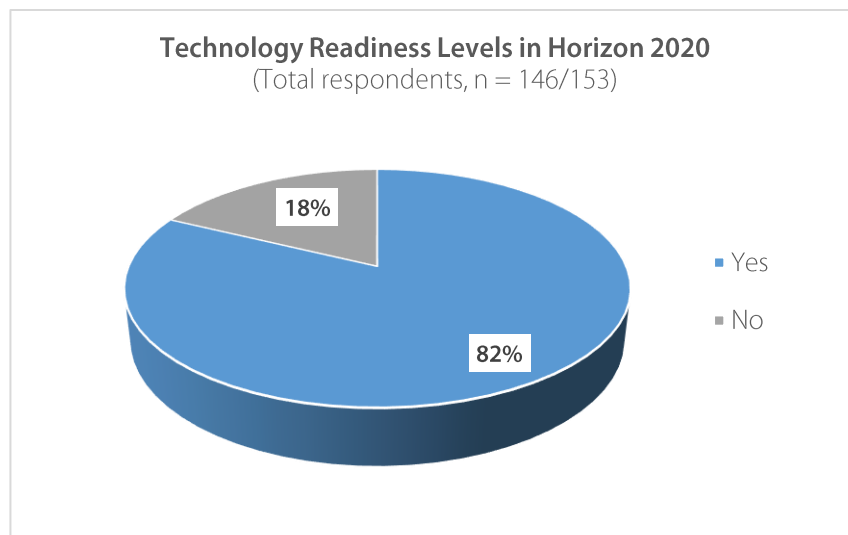


Figure 7: Do you think that the focus on higher technology readiness levels (TRL 7-9) hinders the participation of universities in Horizon 2020?

The reasons indicated for this fact mostly relate to the very mission of universities. Indeed, most universities (including universities of applied sciences) are performing research in TRLs 1-3, sometimes going up to 4 and 5. Higher TRLs (6-9) are essentially – and sometimes by law – not part of their mission. In line with this, most universities benchmark their activities based on international standards of research excellence, which are not geared towards high TRLs. Universities also indicated that the concept of TRLs is not a relevant component of research in the areas of SSH, thus excluding an important portion of their disciplinary portfolio.

Many institutions also pinpointed the difficulty in finding and defining their role in industry-led projects. Agreeing on a fair share of intellectual property rights is an issue of crucial importance for universities when they engage with industry and SMEs.

Relevant examples:

“Higher technology readiness requires projects to be near to the market - which is not, per definition, the main purpose of academic research.” (Institution from Austria)

“Universities are in principle not involved in high TRLs. Many public universities do not have strong experience with the transfer of knowledge to industry and are lacking staff resources in the field of technology transfer. Besides that many national legislations are very restrictive regarding the technology transfer activities of universities (spin-offs, ownership of intellectual property in relation to industry).” (Institution from Slovenia)

“Balance has gone in the wrong direction. This not only hinders participation by universities, but also threatens to dry up the feed of the innovation chain. More projects at TRL 3-5 are needed to make sure results from low TRL projects (ERC, MSCA) can be further developed. The current situation seems to stimulate a new valley of death between low and high TRLs.” (Institution from the Netherlands)

Universities agreed that their potential role in projects with high TRLs should be better described (e.g. through brochures with case studies, online manuals, training programmes for National Contact Points). Several institutions also highlighted that research focusing on high TRLs does not need support based on public funding but should rather be fully financed by the private sector.

The following messages and recommendations can be formulated on the basis of the findings presented above:

Broadening innovation and committing to long-term investments in research

Core message: The notion of TRLs is essentially based on a simplified linear model of innovation. TRLs do not thus capture the full complexity and bandwidth of innovation and, most importantly, exclude non-technological forms of innovation generated by fundamental and applied research, particularly in the SSH.

Action for EU institutions: Broaden and enrich the traditional notion of innovation in order to address all areas of innovation, spanning across the fields of science, technology and SSH.

Core message: Innovation is not a linear process. Innovation, particularly disruptive innovation, based on fundamental and applied research, needs sustainable, long-term public funding, while close-to-market innovation should be financed by the private sector.

Actions for EU institutions: Provide long-term public funding at national and European levels for incremental and disruptive innovation based on fundamental and applied research. Establish clear regulatory frameworks for incremental, close-to-market innovation and leave investments fully to the private sector, including venture capital.

Evaluation criteria: Is ‘impact’ helping universities?

In Horizon 2020 the evaluation criteria placed more emphasis on the impact and implementation measures of a proposal in comparison with FP7. Universities gave mixed views on the short-term effects of this change. However, they agreed on a number of benefits and challenges in the long run.

The following benefits were identified:

- Foster the increase of university-business collaboration;
- Support in raising the societal relevance and acceptance of research;
- Possibility to better bridge the ‘valley of death’;
- Possibility to lead to improved standards of living in the long run.

Relevant examples:

"Even if our university has a long-standing tradition and is experienced in cooperation with SME and large industrial partners as well as applied research, a stronger focus on innovation and close-to-market activities than in FP7 affects our institution in a negative way. Within these innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake, universities only play a minor role, act as a (research) service provider and are not on the same level playing field with the industry."

(Institution from Germany)

"Our university is specialised in social sciences. Quite often what is expected is technological impact and rather not or not only the societal impact. For us the main impact of our research is on the policy making and understanding of society. The impact criteria should show a better inclusion of the social sciences."

(Institution from France)

"It would be very helpful to introduce (both for proposers and evaluators) sets of clear criteria regarding how to measure and benchmark the impact measures described in the proposal."

(Institution from Spain)

On the other hand, the following aspects were indicated as challenges arising from the stronger emphasis on impact and implementation measures:

- Most universities agreed that 'impact' and 'market implementation' are neither well-defined by the European Commission nor well-entrenched among researchers in the university sector, especially for scientists performing fundamental research and for academics coming from SSH disciplines.

- Most universities also missed a long-term perspective on research and innovation. The 'impact' of basic research cannot be normally grasped in short time-spans, i.e. within the duration of a specific project or within the duration of an EU Framework Programme.

- Many universities found it difficult to attract partners from the industrial/SME sector and to cooperate with them on a level playing field.

In order to overcome the challenges identified above, several institutions proposed the development of clear criteria for measuring and benchmarking the impact actions described in proposals. In addition, institutions also highlighted that the impact requirements should reflect a full inclusion of SSH disciplines more adequately.

The following messages and recommendations can be formulated on the basis of the findings presented above:

Clarifying the notion of impact

Core message: Using impact as an evaluation criterion in Horizon 2020 shows scientists the importance of considering the societal and economic effects of research and the value of intensifying collaboration with external partners. However, the concept of impact and how to assess it is currently vague and imprecise. In addition, it is difficult to foresee the multiple impacts that can result from fundamental research in the long-term.

Action for EU institutions: Remain flexible in assessing the impact of fundamental research projects and decrease the relative weight of impact expressed in numerical form in the evaluation procedure.

Multidisciplinary and the integration of SSH disciplines

Horizon 2020 is supposed to fully integrate SSH research into its traditionally more scientific and engineering oriented priorities. Virtually all the surveyed universities welcomed the integration of SSH in their Horizon 2020 projects (91% vs. 9% of institutions indicated not welcoming the integration of SSH in their projects).

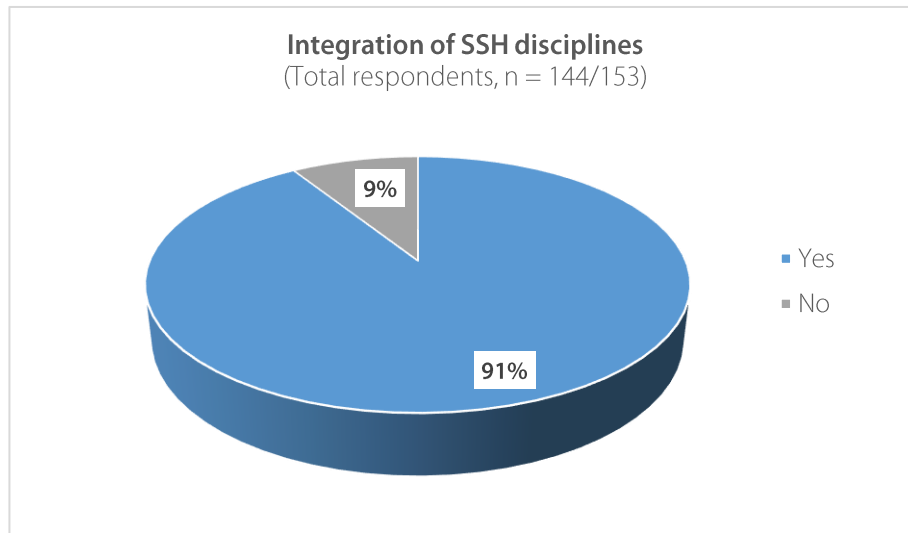


Figure 8: Are you welcoming the integration of SSH disciplines in your projects?

According to the respondents, integrating SSH with other scientific areas in the framework of Horizon 2020 projects is beneficial. However, they also agreed that it is a challenging task. The major advantages and challenges identified can be summarised as follows:

- Advantages of integrating SSH and other disciplines:
 - Promotes interdisciplinary cooperation;
 - Possibility of achieving higher impact of projects, namely for society at large;
 - More creative and innovative projects/results.
- Challenges:
 - Difficult to integrate SSH contribution and other scientific areas typically more involved in Horizon 2020 projects;
 - Integrating SSH may become difficult as measuring 'impact', in this case, is less easily quantifiable;
 - Difficult to identify the right partners for the SSH area and defining a "working model" among all the disciplines involved in the project;
 - Finding suitable tasks for the SSH partners in projects that are not specifically targeted for this scientific area;
 - SSH partners may feel they take only a supporting/auxiliary role in the project;
 - Researchers in more technical fields might not appreciate the value of involving SSH;
 - Communication between researchers from different disciplines may be difficult, as they "have to learn each other's language" to be able to cooperate.

Universities also noted that the aim of the Horizon 2020 call often related to technological challenges and SSH-related questions only had a secondary role. Research questions in the calls could therefore be more tailored to the SSH fields.

Relevant examples:

"We have good experiences. There are some advantages, like the possibility of involving SSH researchers in multidisciplinary projects and teams, and some disadvantages, like the difficulties of finding the right place for SSH researchers in most of the calls that are not specifically addressed to their fields of research." **(Institution from Spain)**

"SSH obviously should be integrated, but facts show that it is difficult (at least in Switzerland). As mentioned above, for SSH national funding might just be "easier". Also "engineers" do not just ask SSH to participate and might even not see the benefits of it." **(Institution from Switzerland)**

"Disadvantage: all disciplines in a multidisciplinary (Horizon 2020) collaborative projects have the feeling that they are only the "supporting" discipline to each other and not the leading discipline. We receive these kinds of comments about the supposed SSH involvement in the Societal Challenges 1 to 5 and 7." **(Institution from the Netherlands)**

"Our institution mainly conducts SSH research. When SSH is integrated into research projects that are technological at their core it is often difficult to identify substantial SSH research questions in the call text. SSH is often reduced to a practical matter of gaining public support or disseminating results. SSH aspects should be better integrated and given more room in the call text in order to identify relevant SSH research questions and to investigate SSH perspectives of the societal challenge - especially when technological solutions could be investigated in many ways. It shouldn't only be technological curiosity that works as a driving force. Relevant SSH perspectives should also be allowed to drive and define the fundamental research agenda of the societal challenges." **(Institution from Denmark)**

The following messages and recommendations can be formulated on the basis of the findings presented above:

Integrating SSH disciplines further and opening up research agenda setting

Core message: The SSH ensure and increase the societal understanding and acceptance of technology and science. SSH expertise is furthermore crucial for addressing great challenges such as migration and radicalisation. The strategic research agenda for societal challenges and the next EU Framework Programme hence need to be defined jointly by all relevant stakeholders, including SSH disciplines and civil society.

Action for EU and national authorities: Support the full inclusion and build on the existing strengths of SSH disciplines in all funding programmes at European and national levels.

Action for EU institutions: Open up the strategic research agenda setting to all relevant stakeholders, including SSH researchers and civil society.

Synergies with the European Structural and Investment Funds (ESIF)

The European Commission promotes the establishment of synergies between ESIF and Horizon 2020 in order to maximise impact and efficiency of public EU funding. One target area for a synergetic approach is the Research and Innovation Strategies for Smart Specialisation (RIS3). As shown in Figure 9, the vast majority of surveyed institutions are aware of the concept of Smart Specialisation.

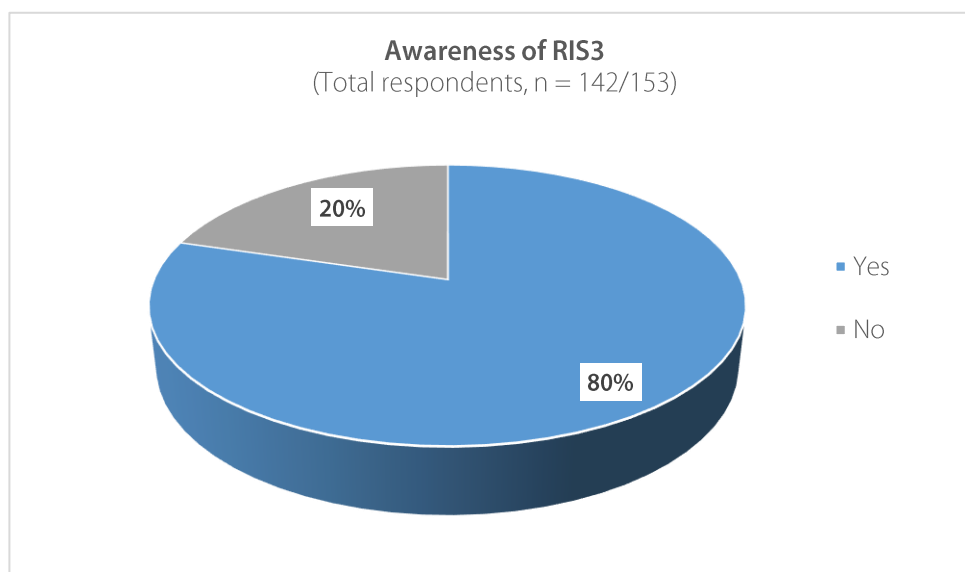


Figure 9: Are you aware of the concept of smart specialisation and RIS3?

Regarding universities' contribution to the definition of RIS3, the situation was quite diverse: some universities reported having a significant role in the definition of RIS3 through public consultations or through collaboration with local/regional agencies. However, other institutions indicated only a very superficial involvement or no involvement at all in the design of the region's RIS3. Moreover, only a few universities indicated being involved in the implementation stage of RIS3 (Figure 10).

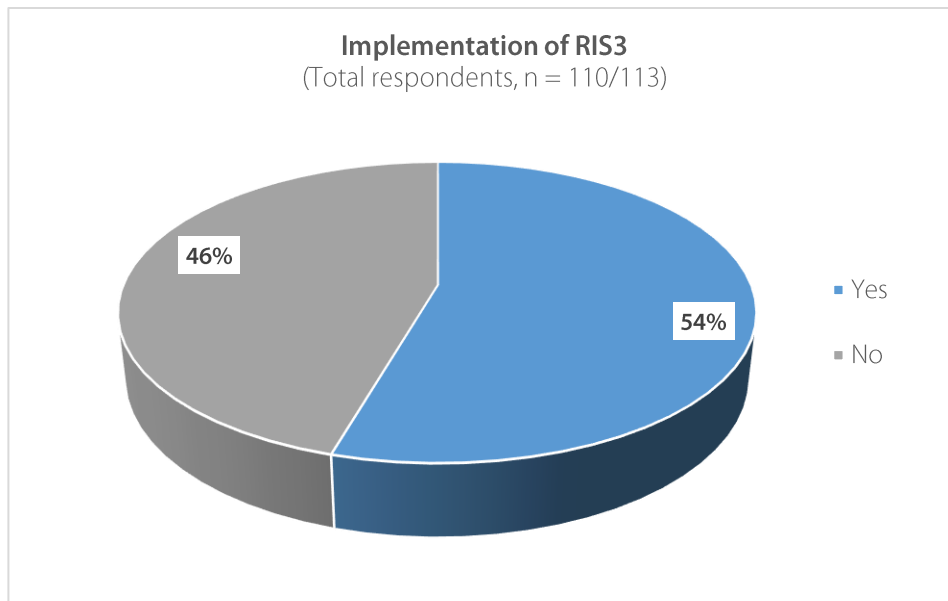


Figure 10: Has your institution been involved in the definition and/or implementation of RIS3?

Universities were also asked about the potential advantages and disadvantages of a synergetic approach to funding, i.e. the possibility to combine funding from Horizon 2020 and the structural funds (through RIS3). The main advantages of combining funds identified by institutions can be summarised as follows:

- Promotes synergetic use of different funding sources, an increased alignment with other national instruments and a permanent dialogue with other stakeholders and policy makers;
- Helps to prioritise projects and funding;
- Helps to develop critical mass in specific thematic areas;
- More funding sources are available for universities for research infrastructure;
- By building on the region's strengths and competitive advantages, RIS3 has the potential to generate sustainable economic growth at the regional/national level;
- The use of structural funds for infrastructure can be an important element to boost universities' chances of applying to Horizon 2020 projects.

Regarding the disadvantages of RIS3 and the synergetic approach to funding, the following aspects were identified:

- Due to the concentration on certain thematic areas, funds for other fields not defined in the RIS3 strategy and for interdisciplinary research may become more scarce;
- RIS3 is sometimes a very slow process (design and implementation).

The different requirements and deadlines for application to Horizon 2020 and structural funds create administrative burdens and complexities. In addition, this also makes it difficult for universities to plan for a synergetic use of different funding sources and their use in the institution.

The following messages and recommendations can be formulated on the basis of the findings presented above:

Fostering EU funding synergies

Core message: RIS3 is a promising area for synergies between ESIF and Horizon 2020 and, thus, for bolstering regional, national and European R&I ecosystems. However, their actual success will depend on more alignment, more coherence and more simplification of funding regulations, requirements and timelines that in turn will enable and encourage more cooperation among authorities and stakeholders from the public and private sector.

Action for EU institutions: Intensify alignment and coherence between European funds, particularly between ESIF and the EU Framework Programme for R&I.

Building a successful consortium

Careful planning and implementation of the collaboration between all members of a consortium are crucial pre-requisites for ensuring productive long-term partnerships. Most surveyed universities agreed that building up a consortium and defining the number of members as well as the types of institutions involved was highly dependent on specific calls, funding lines, types and research areas of projects.

Most universities reported building consortia based on past cooperation and existing networks. They also pointed out that consortia are usually built bottom-up, science- and excellence-driven, i.e. upon the initiative of top researchers at their institutions. Moreover, many universities stressed the need to match complementary skills and expertise among consortium members and the need to have a balanced representation of different disciplines, geographical areas and sectors.

Several universities noticed difficulties in establishing consortia with new and small partners from other sectors. They also observed that establishing trustful relationships, shared values and objectives, particularly among intersectoral partners, are both challenging and crucial for building successful consortia.

Relevant examples:

"Researchers use their networks to build consortia. Complementarity and feasibility are the main criteria." **(Institution from Norway)**

"A successful consortium has its roles clearly defined from the beginning. The number of members involved in a consortium should be dictated by the activities envisaged." **(Institution from Romania)**

"In our experience, consortia are always more productive and successful if they are longstanding 'partnerships' based on previous experience of working together, trust and shared goals. A consortium built through personal contacts – researcher to researcher – works best. The requirement for membership of the consortium should not be prescriptive (top-down) in terms of numbers, types and physical locations of researcher(s), organisations or entities but should be 'bottom-up' and based on the requirements of the research activity, contribution of partners and quality. We do not have a definitive/prescribed format for a consortium but would always seek to work with institutions and researchers which share our commitment to quality and excellent research." **(Institution from the United Kingdom)**

Finally, many universities from EU-13 countries highlighted their interest in working with relevant and experienced partners from EU-15 countries.⁶

Geographical imbalances across the EU

According to the European Commission, until now Horizon 2020 funding in signed grant agreements has been allocated in absolute terms mainly to larger countries and old member states in Western Europe (France, Germany, Italy, the Netherlands, Spain and the United Kingdom). The situation seems only to differ for the SME instrument where smaller countries and the new member states have been quite successful (e.g. Denmark, Estonia, Finland, Ireland, Malta, and Sweden).⁷

Surveyed institutions were asked whether this situation had an impact on their strategy towards Horizon 2020. The responses showed that, in general, smaller countries and new member states felt they were more affected by geographical imbalances. Larger countries and old member states mostly did not seem to perceive this as a problem. Many universities in smaller countries and in the EU-13 tried to redress the imbalances by teaming up with universities in EU-15 countries and by building solid consortia. Some universities in new member states also noted difficulties in getting access to established institutional networks among universities in old member states.

⁶ 'EU-15' refers to the number of member countries in the European Union prior to the accession of ten candidate countries in 2004. The EU-15 comprises the following 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. 'EU-13' refers to new member countries that became part of the European Union after 2004. The EU-13 countries are Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.

⁷ Cf. European Commission, Horizon 2020: First results, Luxembourg: Publications Office of the European Union 2015, p. 19, 29.

Institutions were also asked whether the imbalance between recipients of Horizon 2020 funding in old and new member states should be redressed. The opinions were divided on this issue, but substantial agreement was found among universities from different countries on the following aspects:

- Scientific excellence and the quality of project proposals should be the main evaluation criteria in Horizon 2020;
- Stronger participation of new member states in research funding instruments could be achieved by:
 - Dedicated calls for new EU member states and/or specific calls for collaborative research between old and new member states;
 - Using regional funds, Structural Funds and Erasmus+ to build research capacity in new member states;
 - Upscaling the Teaming and Twinning programmes, ERA-net;
 - More funding allocated to networking (e.g. travel grants, short-time secondments);
- Within Horizon 2020: calls could require the inclusion of new member states (e.g. eligibility specification: three partners from three different member states, one of which should be from a new member state).

Relevant examples:

"It is important for the legitimacy of the framework programme to redress imbalances. However, it is just as important, and for the same reason, to keep the excellence criterion. A long-term perspective needs to be taken. Rather than major adjustments in Horizon 2020, the structural funds should be used even more clearly as a stepping stone for subsequent applications to Horizon 2020, and as a way to strengthen research in countries that are lagging behind in Horizon 2020." **(Institution from Sweden)**

"Investing more regional development funds (e.g. ESIF) to support research and innovation could be emphasised in future framework programmes. Facilitating better exploitation of regional funds in order to close the gap – in this respect making it more attractive to take part, and to involve better performing countries." **(Institution from Spain)**

Working towards widening participation

Some of the Horizon 2020 instruments are specifically targeted at widening participation and bridging the research gap in the EU, e.g. by establishing ERA Chairs, teaming and twinning.

The vast majority of the surveyed institutions (61%) reported not using widening participation measures (Figure 11). Only 39% of institutions indicated already having used these measures.

Among these institutions, several noted they had applied for teaming, twinning and/or ERA chairs. Some of these applications had been successful, but it was noted that the large majority had been unsuccessful. In addition, the results of the survey also revealed that 84% of institutions had not developed a strategy to encourage teaming and twinning, while only 16% of universities had done so (Figure 12).

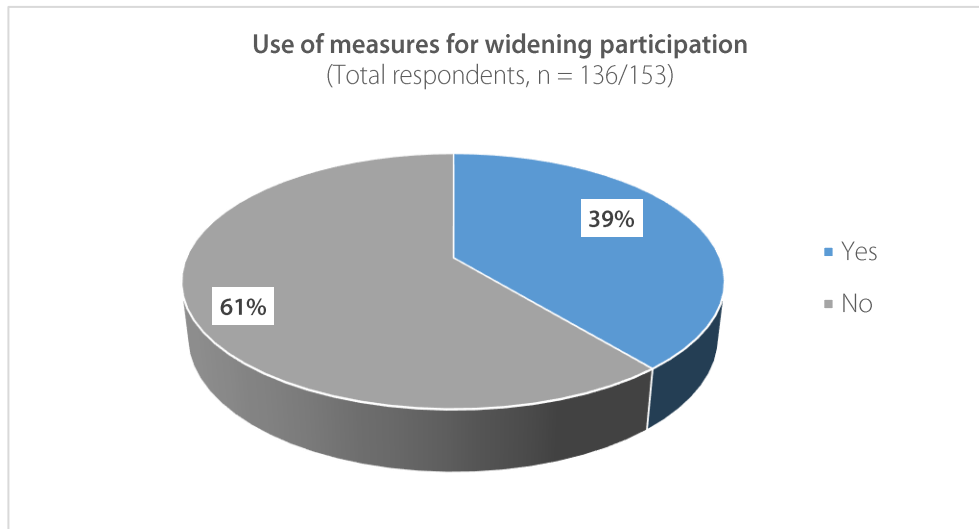


Figure 11: Are measures for widening participation used in your institution?

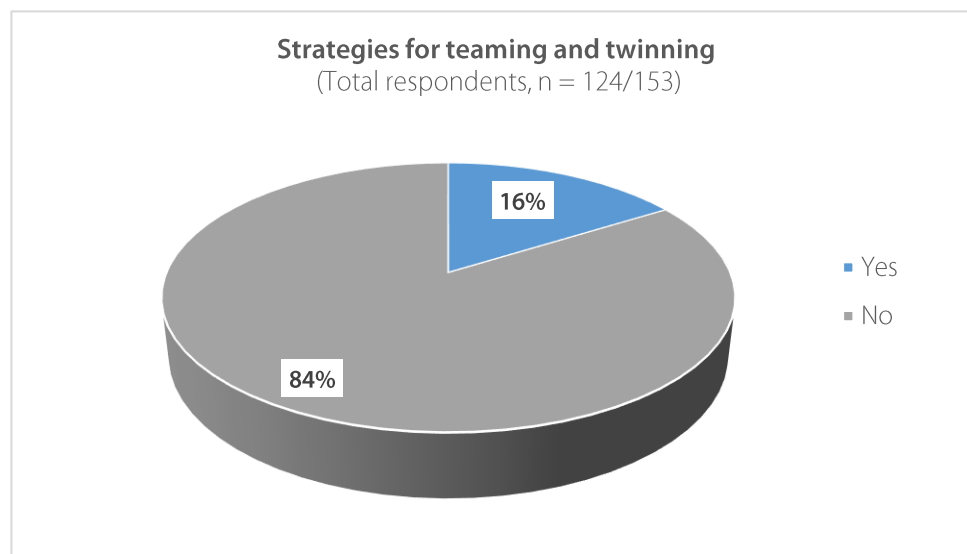


Figure 12: Has your institution developed a strategy to encourage teaming and twinning?

Institutions were also asked for their opinion on the level of endowment of ERA Chairs to attract world-class scientists. Universities' responses were somewhat split, with 55% of institutions indicating that ERA Chairs were not sufficiently endowed, and 45% of institutions which considered that the available funds were adequate (Figure 13). In general, universities considered the presence of ERA Chairs to be a prestigious initiative. The main challenges identified with this measure were related to the available salaries, which were often considered very low to attract excellent researchers.

Other challenges included the difference in living standards between different European countries and the reputation of institutions ("world-class scientists will generally prefer to work in world-class

institutions", institution from the United Kingdom). It was also noted that the 5-year period of the ERA Chairs was too short to have a sustainable impact at regional level. Retaining professionals after the 5-year period of the ERA Chairs may be challenging due to lack of resources.

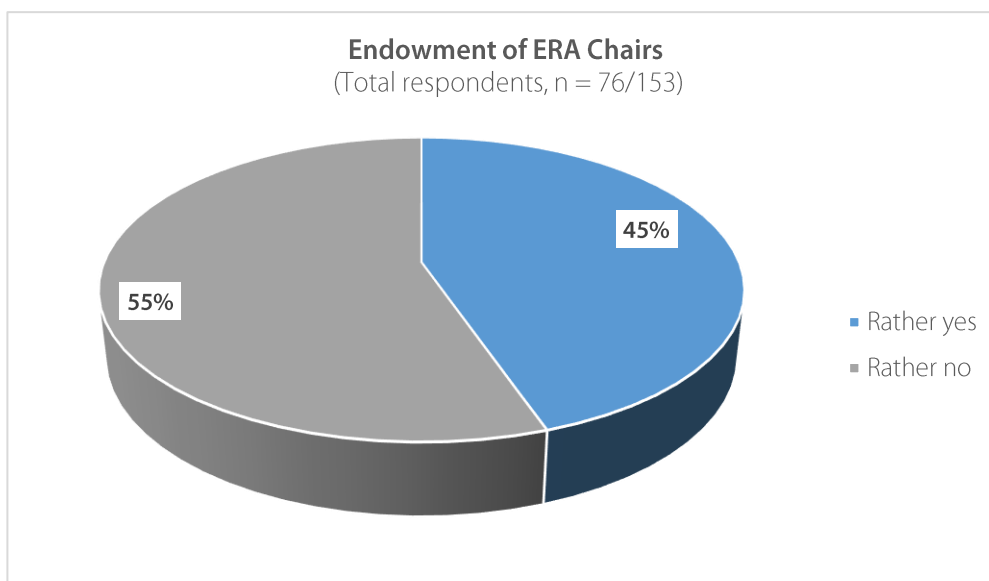


Figure 13: Are ERA Chairs sufficiently endowed to attract world-class scientists?

In general, there seemed to be a tendency for universities to consider that widening participation instruments should be reinforced in Horizon 2020, although some universities indicated that the issues addressed with these measures should be better tackled by other funding mechanisms. Some universities considered it would be important to promote more research collaborations within the framework of these instruments rather than just "soft measures", such as secondments. More funding allocation or being able to partially use funding from other sources (e.g. Marie Curie,

Relevant examples:

"These instruments are somehow not very clear because "soft" measures (such as secondments, events, etc.) are not very well perceived by researchers. Their cooperation also has to have "hard" - R&D related (consumables, etc.) - elements in order to be welcomed." **(Institution from Lithuania)**

"World-class scientists will generally prefer to work in world-class institutions. The resources available to an ERA Chair are unlikely to make working at a less-established university sufficiently attractive to change this choice." **(Institution from the United Kingdom)**

"It is quite difficult to attract a world-class scientist who would like to leave their institution and come to work in a new organisation. Another obstacle is the difficulty in offering attractive salaries." **(Institution from Ireland)**

"Investing more of the regional development funds (ESIF, RIS3, etc.) in supporting research and innovation should be emphasised in future framework programmes. Facilitating better exploitation of regional funds in order to close the gap – in this respect making it more attractive to take part and involving the better performing countries." **(Institution from Denmark)**

ERC grants, and regional funds) to fund the widening participation initiatives could help to increase the attractiveness of these actions.

The following messages and recommendations can be formulated on the basis of the findings presented above:

Widening participation

Core message: While scientific excellence and the intrinsic quality of project proposals must remain at the centre of proposal evaluation, instruments for widening participation need to be reinforced. Funding sources for capacity building need to be broadened, including, amongst others, structural funds at the European and national levels of member states, and strengthened in order to enhance the competitiveness of Europe and its R&I landscape in a balanced and durable manner.

Action for EU institutions: Keep scientific excellence at the core of the EU Framework Programme for R&I and minimise discrepancies across the EU by broadening funding sources for capacity building and by reinforcing their interaction.

Supporting Open Science policies

Open Science is critically changing the way scientific research is being conducted, accessed and utilised both by scientists and society at large. The rapid development of Open Science is generating new and alternative ways for scientists to perform, publish and disseminate their research. It is also having an impact on the progression of researchers' careers, publication quality assessment and the operation of scientific reputation systems. Indeed, Open Science looks set to change the whole research landscape and its implications are becoming tangible for researchers, university leaders and administrations, research funders, learned societies, scientific publishers and policy makers at national, European and global levels.

A wide and affordable access to research publications and the potential for a more effective and efficient use of research outcomes is particularly important for publicly-funded research. In this respect, EUA welcomed the European Commission policy that required all peer-reviewed publications resulting from research projects financed through Horizon 2020 be made Open Access. In addition, EUA welcomed the Open Research Data Pilot initiative, which aims to improve and maximise access to and reuse of research data generated by projects.⁸

In the last few years, EUA has intensified its work in the area of Open Science to develop initiatives and recommendations to strengthen the voice of the university sector in high-level policy dialogue and to support European universities in the transition towards Open Science. Of particular importance was the publication of the EUA Open Access Roadmap for Research Publications⁹ (February 2016), which outlined the main vision of EUA in the area of Open Science and identified several objectives and priority actions to be taken further and implemented in the coming years. The EUA Open Access Roadmap was intended as a contribution to facilitate universities' transition towards an innovative, fair and sustainable publishing system.

⁸ European Commission, Fact Sheet: Open Access in Horizon 2020, Luxembourg: Publications Office of the European Union 2013. The document is available online at

https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/FactSheet_Open_Access.pdf.

⁹ European University Association, EUA Roadmap on Open Access to Research Publications, Brussels: European University Association 2016. The document is available online at <http://eua.be/Libraries/publications-homepage-list/eua-roadmap-on-open-access-to-research-publications.pdf>.

EUA's work in the area of Open Science has shown, for example, the relevant progress that universities are making in the area of Open Access to research publications. According to the survey conducted amongst its members in 2014, 93% of the 106 respondent institutions indicated having an Open Access policy in place, being in the process of developing one or planning its development.¹⁰ The percentage increased to 96% in a sample of 172 universities.

The momentum in the Open Science movement, supported by political and institutional scientific stakeholders, illustrates the need to work towards a system that seeks to achieve a balance of realistic costs and benefits shared between all stakeholders, including commercial publishers and researchers, considering that scientists have simultaneously the critical roles of content providers and peer-reviewers of research publications.

The following messages and recommendations can be formulated on the basis of the information presented above:

Promoting Open Access to research publications and data

Core message: Open Science and, in particular Open Access, are changing the way research is conducted, disseminated and assessed. In addition, outcomes from publicly-funded research should be made publicly available. Nowadays, research outcomes can be instantly shared, making the long periods leading to traditional publications an obstacle for the development of research. Also, Open Access to data generated through research is needed to ensure efficient use of research funds.

Action for EU institutions: Further support open access to research publications in an affordable way for publicly-funded organisations and increase the capacity for use and reuse of open research data.

¹⁰ European University Association, EUA's Open Access Checklist for Universities: A Practical Guide on Implementation, Brussels: European University Association 2015, p. 20. The document is available online at http://www.eua.be/Libraries/research/open-access-report_v3.pdf.

PART 2: ENSURING SUFFICIENT AND SUSTAINABLE FUNDING FOR UNIVERSITY-BASED RESEARCH

This chapter presents the responses of the participating institutions to the questions of the success rate and attractiveness of Horizon 2020, explored through the prism of efficiency of public investment and the availability of funding for university-based research in Europe.

Universities depend on various sources of funding (national core funding, various competitive funding sources and additional sources) to pursue their research agendas and deliver excellent research and innovation in response to various challenges facing Europe. It is therefore important to look at European, national and institutional levels of funding as a whole in order to assess the relations between the conditions and levels of national and European funding programmes and their impact on the long-term sustainability of universities.

Efficiency and success rate

The average success rate for proposals¹¹ has decreased significantly over the last 15 years (Figure 14). As pointed out in sub-section 2.1, the European Commission's analysis of the first 100 calls of Horizon 2020 shows a drop in the success rate of universities to about 14% (in comparison to around 20 % under FP7).¹²

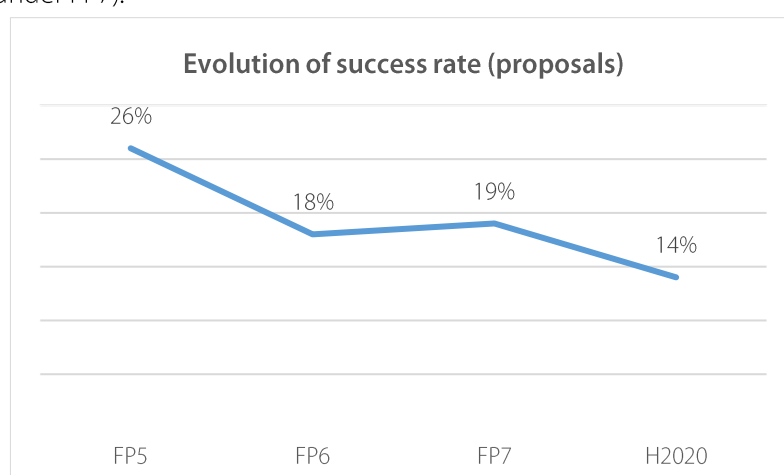


Figure 14: Evolution of the success rate for proposals since FP5

¹¹ Calculated as the ratio of retained proposals and eligible proposals.

¹² European Commission, Horizon 2020: First results, Luxembourg: Publications Office of the European Union 2015, p. 5.

The declining success rate was found to be of great concern to the responding institutions. In their comments to an open-ended question on the success rate for universities ("What is your experience so far? Does the overall success rate have an impact on your institution's strategy with regard to applications under Horizon 2020? Please explain here"), many respondents (representing institutions that are experienced and successful in the Framework Programme) reported to have a lower success rate in Horizon 2020 compared to FP7, regardless of their country of origin, size or type of institution. (In total, more than one-fifth of the responding institutions spontaneously noted this fact in their feedback to the respective open-ended question). The related comments can be grouped into several issues, which are explored below in more detail.

1. High costs of unsuccessful proposals lead to inefficiency of the programme

The respondents stressed that the low success rate for proposals (calculated as the ratio of retained proposals and all eligible proposals) magnified the overall cost of participation and reduced the cost-benefit ratio for projects submitted and implemented under Horizon 2020.

Based on the tentative cost of proposals reported by several EUA members (which are broadly in line with other estimations)¹³ combined with some basic figures published by the European Commission for the first 100 calls of Horizon 2020,¹⁴ the overall cost of unsuccessful Horizon 2020 proposals could be estimated as the equivalent to about 25%-50% of all grant money allocated (Box 1).

Box 1: Calculations for the first 100 calls of Horizon 2020

Total EU contribution: 5.5 billion euros
Total full eligible proposals: 31,115
Total retained proposals: 4315
Average success rate for proposals: 14%
Share of unfunded proposals: 86%
Total unfunded proposals: 26,800
Estimated cost per proposal: between 10,000 euros and 100,000 euros
Total cost of 26,800 unfunded proposals: between 268 million euros and 2.68 billion euros
Average total cost of 26,800 unfunded proposals: 1.34 billion euros

While the real costs for the development of proposals cannot be easily calculated and may also vary from one system to another, such basic calculations point to the low efficiency of European public investment and significant macroeconomic waste generated by the low success rate of Horizon 2020.

As most of the applications to the Framework Programme are submitted by publicly-funded organisations,¹⁵ the costs incurred through participating in

the European programme level have to be borne to a large extent through national budgets.

¹³ For example, estimations made by the respondents to the Horizon 2020 simplification survey. URL: http://ec.europa.eu/research/participants/data/ref/h2020/other/events/survey/h2020_simplification-survey_final-report_en.pdf.

¹⁴ Cf. European Commission, Horizon 2020: First results, Luxembourg: Publications Office of the European Union 2015. The document is available online at https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/horizon_2020_first_results.pdf.

¹⁵ In 2014, most of the applications were put forward by publicly funded organisations such as public bodies (3.5%), research organisations (19%) and secondary and higher education establishments (38.5%), compared with nearly 35% of applications submitted by private for profit companies and other entities (4%). Cf. European Commission, Horizon 2020: Monitoring Report 2014, Luxembourg: Publications Office of the European Union 2016, p. 13-16. The document is available online at http://ec.europa.eu/research/evaluations/pdf/archive/h2020_monitoring_reports/first_h2020_annual_monitoring_report.pdf.

2. Excellent research ideas are wasted through unfunded top proposals

Furthermore, several respondents stressed that their highly-ranked proposals (e.g. with a 14.5 score or higher) had not been retained for funding on several occasions.

The adjusted success rate for high quality proposals (scoring above the threshold)¹⁶ is estimated at the level of 25% for the first year of Horizon 2020.¹⁷ In comparison, the respective average figure for FP7 was equal to 37%.¹⁸ While more detailed statistical data for Horizon 2020 is expected to be published in the context of its mid-term review, it is clear that the chances for high quality proposals to obtain funding under the current Framework Programme are significantly reduced.

Coupling this outcome with the earlier EUA work on funding to universities, it can be concluded that not only top proposals are more 'expensive' in terms of preparation, they also have a higher lost opportunity value; hence, the low retention rate for top proposals leads to a waste of excellent research ideas and loss of new scientific discoveries.

3. Low success rates reduce motivation of researchers

In response to several open-ended questions of the survey, the responding institutions spontaneously reported that the motivation of their researchers was clearly affected by the low success rate and inefficiency translated in a mismatch between the required preparation effort and the chances of success. Overall, 40% of all the respondents reported some difficulties with encouraging scientists to participate in Horizon 2020, particularly in the highly over-subscribed schemes (e.g. FET Open).

4. Institutions have to enhance their capacity of participation

In view of the growing competition for the Framework Programme funds, several respondents reported to have developed various support structures (e.g. additional administrative support at the stage of proposal development, training courses for scientists, and talent scouting) and introduced incentives to stimulate the researchers to submit proposals to Horizon 2020. For example, some institutions tried to step up their efforts to improve the impact and implementation sections of their proposals, while others started to engage more actively in networking activities with industry and SMEs, locally and/or in Brussels. A number of universities also reported to strengthen their technology transfer offices or hire consultants to increase the likelihood of success in their Horizon 2020 proposals.

This finding may point to the fact that such additional efforts aimed at increasing the capacity to participate and, especially, to succeed in the Framework Programme generate some additional

¹⁶ According to the European Commission, adjusted success rate is calculated as the ratio between retained proposals and the proposals that scored above the threshold.

¹⁷ European Commission, Horizon 2020: Monitoring Report 2014, Luxembourg: Publications Office of the European Union 2016, p. 10. The document is available online at http://ec.europa.eu/research/evaluations/pdf/archive/h2020_monitoring_reports/first_h2020_annual_monitoring_report.pdf.

¹⁸ Louise O. Fresco et al., Commitment and Coherence: Essential Ingredients for Success in Science and Innovation – Ex-Post Evaluation of the 7th Framework Programme (2007-2013), Luxembourg: Publications Office of the European Union 2015, p. 24. The document is available online at https://ec.europa.eu/research/evaluations/pdf/fp7_final_evaluation_expert_group_report.pdf.

costs for the applicant institutions and further affect the cost-benefit ratio. In addition, universities have to develop unique selling points in order to make themselves more attractive to the networks, the importance of which is growing in collaborative research.

5. Possible solutions proposed by the respondents

Among the solutions proposed to address the issue of the low success rate, the majority of the responding institutions identified the need for more funding under Horizon 2020, particularly in view of the fact that limited call budgets create over-subscription and also diminish the chances of high-quality proposals being funded (Figure 15). This measure was considered by far the most significant for mitigating the low success rate for proposals submitted to Horizon 2020.

The second top measure selected by the respondents referred to a better articulation of the types of impact sought by Horizon 2020 proposals. This finding points to some possible gaps in how the expected value is communicated in call descriptions and interpreted by the beneficiaries.

Furthermore, almost half of the respondents selected the “other” option and provided some qualitative feedback in response to this question. In particular, “other solutions” included measures such as additional funding for basic science, particularly bottom-up research, a wider use of two-stage calls and better guidelines and support at the application stage. Some of the “other” solutions partly overlap with the two top measures which focused on more funding for the Framework Programme or more guidelines on the types of impact sought, which were included in the original question.

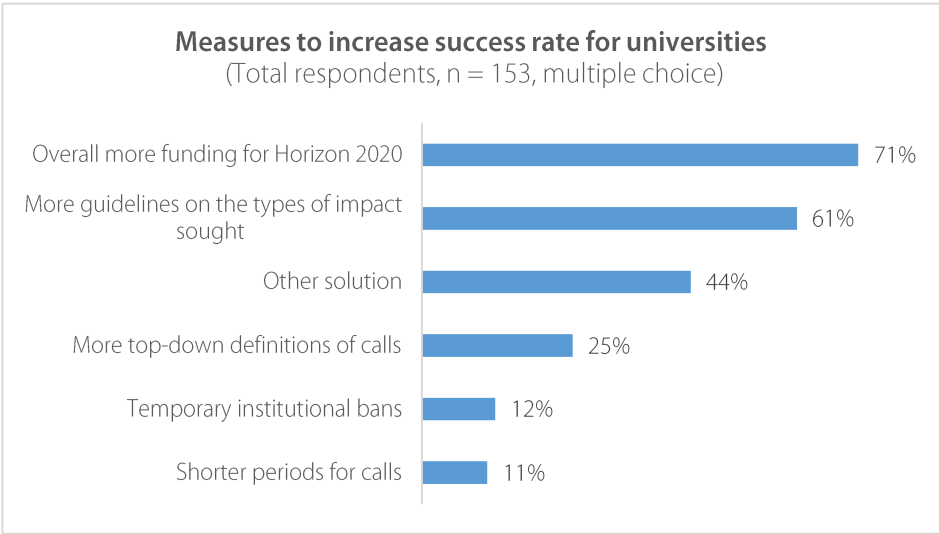


Figure 15: From your perspective, what are suitable measures to increase the success rate for universities? Please select as many options as you wish

Relevant examples:

"If the success rate is as low as under 10% (in case of FET open) or 20% for SC it is not motivating for the researchers to engage in a proposal that is randomly successful." **(Institution from Sweden)**

"One of our proposals has been favourably evaluated by the Agency (score 15/15) but has not been financed given the budgetary limits. This is absolutely unacceptable and affects the attractiveness of Horizon 2020 funding opportunities." **(Institution from Belgium)**

"The low success rate is problematic. In certain areas of the programme it is only by scoring top level, that there are sufficient funds available. A project with 14.5 points out of 15 is often not funded! This is demotivating [...]. It creates a negative impression of the programme, along with burdensome large partnerships. Low success rate = perceived as a lottery. Adding to this, the long process of setting up a proposal, makes it less attractive." **(Institution from Denmark)**

"We have found success rates higher in some areas for our institution and lower in others [...] than in FP7. This has led to us re-focusing our efforts and rather than training newcomers we are having to train 'old hands' as their experience has been negative so far." **(Institution from the UK)**

"Low success rates are a real threat to the success of H2020 and its anticipated impact. Researchers have taken the decision to opt out of engaging with H2020 funding programmes. The reason cited is that they feel the amount of time and effort required to develop a proposal (estimated at 100,000 euros per consortium application) and which ultimately has a low chance of success, is not a productive use of their time." **(Institution from Ireland)**

"[...] Considering the number of researchers involved in proposal preparation and the companies involved, the time spent and the effort spent for the many documents produced, this is slowing down European research. To the extent possible, institution research strategies start targeting funding opportunities different from Horizon 2020." **(Institution from Italy)**

"Our institution has developed an internal programme to help researchers to improve the quality of the submitted proposals. [...] Through these measures, we have obtained funding for 21 projects in the first two years of Horizon 2020." **(Institution from Spain)**

"The number of successful proposals in Horizon 2020 is lower at our university than it was in FP7. The university strategy includes the goal to increase the general number of international research projects and to this end the research support office was created in 2012." **(Institution from Poland)**

"The real difficulty is the ratio between the effort spent in preparing the proposals and the probability of success. Furthermore, given the extremely high number of proposals evaluated and the extremely low number of projects selected out of them, success is no more related to the quality of the proposals only but there is an important random component. Another aspect is that, since every tiny detail is important for being selected, including the formal, and not just substantial aspects, writing is often successfully subcontracted to professionals of proposal writing. This includes additional costs to the effort paid by the personnel of the applicants' institutions." **(Institution from Italy)**

"We are also experiencing a lower success rate. As a consequence, some departments withdraw from applying for EU Research funding. Part of the overall institution's strategy is to increase central capacities to support the proposal preparation." **(Institution from Germany)**

"Researchers get discouraged and tend to turn to national or structural funds with applications." **(Institution from Poland)**

The following messages and recommendations can be formulated on the basis of the findings presented above:

Enhancing programme efficiency & success rates

Core message: Eighty-six per cent or more of Horizon 2020 applications remain unfunded.¹⁹ Europe cannot afford the major waste and costs this generates at the institutional and national level. Success rates are at an all-time low and thus deteriorate the cost-benefit ratio of the programme. An increase in top-rated high-quality proposals is not met by sufficient funding and this risks new scientific discoveries being missed.

Core message: Effective participation in Horizon 2020 requires institutions to develop targeted application strategies that promote strategic, sustainable and long-term institutional research programmes.

Actions for EU institutions: Increase the efficiency of the framework programme by bringing up the success rate and maintain a balance among calls and topics.

Increase funding to fund at least all top-rated proposals.

Actions for national authorities: Integrate the costs of unfunded proposals in the evaluation of success in national participation in Horizon 2020.

Improve complementarity of national and European funding to universities by setting up dedicated funds for unfunded Horizon 2020 high-quality proposals.

Action for universities: Prepare applications in strong areas of expertise and develop staff and other support.

Horizon 2020 and national funding

The participation in Horizon 2020 depends on a broad range of external and internal factors, one of which is the national funding situation, which may define the ability of universities to build up their capacity to design and implement excellent research projects at the European level.

Combined with the EUA [Public Funding Observatory \(PFO\)](#) data, which monitors changes in core public funding to universities across Europe, the results of the survey exposed some strong interlinkages between European and national levels of funding. In particular, the conditions and level of national public funding for universities (both competitive and institutional funding) were established to their interest and success of participation in the Framework Programme. Several dimensions of such interlinkages are explored below in more detail.

1. Competitive funding at the European and national level

In response to the question of how attractive Horizon 2020 is in relation to national competitive research funding programmes, the respondents divided into three almost equal groups: 33% of the surveyed institutions considered their national competitive funding programmes more attractive than the current Framework Programme, whereas 32% found the latter more attractive.

¹⁹ As shown in European Commission, Horizon 2020: First results, Luxembourg: Publications Office of the European Union 2015, p. 13.

A slightly larger proportion of the respondents (35%) reported to be equally interested in Horizon 2020 and the national funding opportunities (Figure 16).

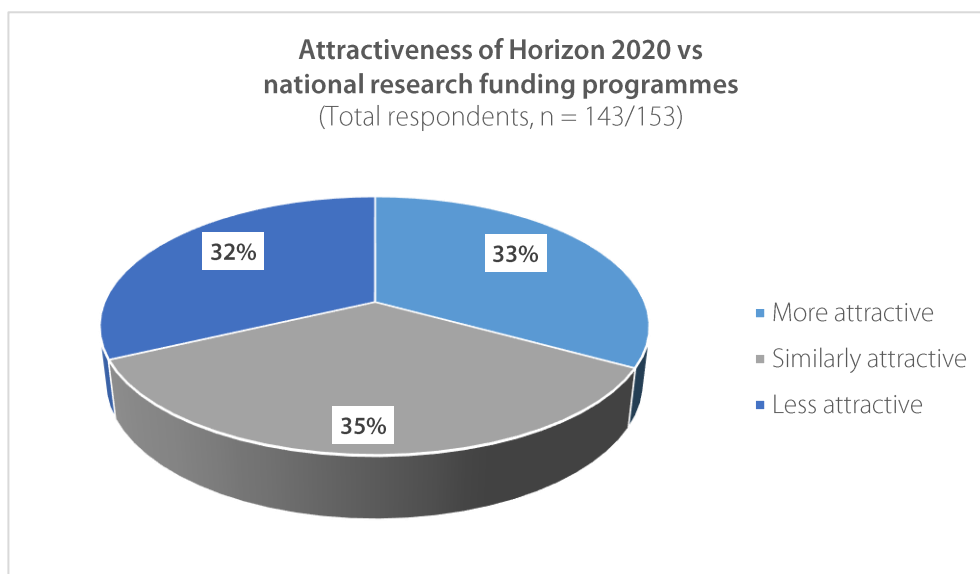


Figure 16: In comparison to national research funding programmes, how attractive is Horizon 2020 for your institution and why?

While the institutional size was found to have no significant impact on the institution's interest in Horizon 2020, some differences can be observed between different types of institutions. Technical universities, universities of applied sciences and specialised institutions tend to be less interested in Horizon 2020 compared to comprehensive universities in relative terms.

Further analysis of the qualitative feedback revealed that the availability of national competitive funding seemed to affect the institution's interest in participating in Horizon 2020. On the one hand, the scarcity of or growing competition for national funding for research in general stimulated institutions to participate in Horizon 2020 despite the lower success rate. On the other hand, sufficient availability of national competitive funding in combination with the lower success rate under Horizon 2020 made the national sources more attractive for the respondents due to the higher chances of success at the national level and more familiar application, implementation and reporting procedures.

2. Institutional funding at the national level vs competitive European funding

Combining the results of the EUA membership survey with the EUA Public Funding Observatory (PFO) data, it was established that similarly to the case of system-wide competitive funding, institutional (core) funding for universities at the national level also affects universities' interest in Horizon 2020.

Table 1 presents the results of the grouping of the respondents according to their interest in Horizon 2020 and national (core) university funding trends, captured for the period 2008-2014 to reflect the financial situation of universities by the start of Horizon 2020 in 2014.

Table 1 shows that overall the institutions from countries with rising levels of public funding for higher education institutions (HEIs) in relative terms (i.e. funding changes adjusted to inflation) tend to be less interested in Horizon 2020 (with the exception of France and the Netherlands). At

the same time, countries with declining levels of public funding for higher education institutions tend to be more attracted by the Framework Programme than by their national funding schemes, with the exception of Lithuania (whose university sector – as also known from the EUA PFO analysis – has strong involvement with EU structural funds) as well as Finland, which, despite the recent cuts captured by the EUA PFO,²⁰ still has one of the highest shares of R&D spending in GDP in Europe.²¹

Table 1: National funding trends and the attractiveness of Horizon 2020

National funding trends / Attractiveness of Horizon 2020	“Less attractive”	“Similarly attractive”	“More attractive”
Systems with growing funding (↑)	Austria, Germany, Norway, Sweden, Switzerland	Belgium, Denmark, Poland	France, the Netherlands
Systems with declining funding (↓)	Finland and Lithuania	Slovenia, the United Kingdom	Ireland, Italy, Romania, Slovakia, Spain, the Czech Republic

NB: Groups were formed based on the majority of responses selecting one of the three options to the question “In comparison to national research funding programmes, how attractive is Horizon 2020 for your institution and why?”: “Less attractive”, “Similarly attractive” or “More attractive”, calculated for a given country. Only countries with at least three institutional responses to this question were included in the analysis.

↑ - countries with rising levels of core public funding for HEIs in the period 2008-2014 (based on the EUA Public Funding Observatory methodology)

↓ - countries with declining levels of core public funding for HEIs in the period 2008-2014 (based on the EUA Public Funding Observatory methodology)

3. National core funding vs success rate in Horizon 2020

Adding the average success rate metric to the data presented in Table 1, a certain relation could be traced between the national funding situation and the potential success rate of applicants from the respective countries. Countries with rising levels of core public funding to universities in relative terms tend to have a higher than the overall EU success rate for applications²² in Horizon 2020 and vice versa (Table 2). (In this analysis, the national funding trends are explored in the period 2008-2014 in order to assess the financial situation of universities by the start of the new FP in 2014). Several countries, namely Estonia, Latvia, Denmark, Sweden and Poland, are exceptions to this trend. These special cases need to be revisited on the basis of the updated participation statistics for Horizon 2020.

²⁰ EUA Public Funding Observatory Report 2016. The document is available online at www.eua.be/activities-services/projects/eua-online-tools/public-funding-observatory-tool.aspx.

²¹ Eurostat data on Gross domestic expenditure on R&D (GERD) % of GDP in 2014. URL: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=t2020_20&plugin=1.

²² Success rate calculated as the percentage of eligible applications. Taking all applications from all member states together, the overall success rate is approximately 16%.

Table 2: National funding trends and country success rates in Horizon 2020

National funding trends	Success rate higher than 16%	Success rate lower than 16%
Systems with growing funding (↑)	Austria, Belgium, France, Germany, Luxembourg, the Netherlands	Denmark, Sweden, Poland
Systems with declining funding (↓)	Estonia, Latvia	Croatia, Czech Republic, Finland, Greece, Hungary, Ireland, Italy, Lithuania, Portugal, Slovakia, Slovenia, Spain, UK

↑ - countries with rising levels of core public funding for HEIs in the period 2008-2014 (based on the EUA Public Funding Observatory methodology)

↓ - countries with declining levels of core public funding for HEIs in the period 2008-2014 (based on the EUA Public Funding Observatory methodology)

Although the overall success rate in Horizon 2020 depends on a broad range of factors and is calculated for different types of beneficiaries, including universities and other R&D players, the national funding situation represents an important factor of success as it determines the capacity of universities to design and pursue excellent research projects at the European level.

This potential relation also shows that strategies where countries encourage their researchers to obtain funding from Horizon 2020 while cutting down national funding for research and higher education may not be effective in reaching their goals.

In respect of the linkages between the European and national levels of funding, some surveyed institutions stressed the importance of, on the one hand, a better coordination of national funding instruments and European programmes, and, on the other hand, between various European programmes, such as Horizon 2020 and EU Structural Funds.

Relevant examples:

"Unfortunately there are so few other funding sources, institutions have to engage [in Horizon 2020] no matter what the success rate." **(Institution from Ireland)**

"Low success rates results in less incentives to apply, but on the other hand an increased competition for national funding makes it more interesting to apply for European funding." **(Institution from Denmark)**

[The lower success rate has] "no impact on our strategy regarding Horizon 2020 proposals as there is no alternative for getting international consortia funded, when providing advice to scientists we always mention the slight success rates (and some scientists decide not to apply afterwards)." **(Institution from Germany)**

"It has become complicated to motivate researchers to involve in preparation of the proposals due to the low success rate. It is still one of my institution's priorities to apply and get more Horizon projects, especially because the base funding from the State budget is linked with the attracted Horizon funding." **(Institution from Latvia)**

"Researchers that had their proposal dismissed with a high evaluation result are often left discouraged and cannot be motivated to participate in Horizon 2020 again, especially if there are better funding opportunities in national programmes." **(Institution from Germany)**

"[...] The low success rate has already influenced the interest to apply to calls within H2020 - especially to the SC call. It is easier to apply for national funding, since the success rate is better." **(Institution from Sweden)**

"[...] The fact that indeed the overall Horizon 2020 success rate is low is not always encouraging our researchers to go at that level, since we also have many research schemes at the national level." **(Institution from France)**

"The low success rates are acting as a disincentive to applicants. European research proposals are typically more complicated to prepare and run than national funding schemes, and are not always as financially attractive." **(Institution from the United Kingdom)**

"National and local policies need to complement the opportunities offered by Horizon 2020. National funding calls should allow researchers to build capacity in Horizon 2020 research areas, thereby aligning the national funding with H2020." **(Institution from Italy)**

"Better coordination/synergies between structural funds and Horizon 2020 funds are sought." **(Institution from France)**

The following messages and recommendations can be formulated on the basis of the findings presented above:

Core message: Sustainable and ambitious funding is necessary for Horizon 2020 to retain scientific talent and boost the global appeal of R&I landscapes in Europe.

Core message: Strategic financial planning at the national level must privilege a holistic approach taking full account of EU research funding. The return on investment must be considered accordingly. Declining national funding harms the universities' ability to compete successfully in Horizon 2020. Institutions from systems with lower or declining levels of funding tend to be less successful in their participation. This is likely to aggravate disparities in RDI capacity within the EU.

Action for EU and national authorities: Commit to an overall increase of the budget of the EU Framework Programme for R&I.

Action for national authorities: Develop a holistic approach to national and EU funding for research. Foster universities' participation and competitiveness in Horizon 2020 through sufficient core funding and additional support mechanisms.

Financial instruments: Grants and loans

In addition to grant-based funding, Horizon 2020 also includes financial instruments based on loans, such as those offered within the InnovFin scheme. The latter is a joint initiative of the European Commission and the European Investment Bank (EIB) designed to facilitate access to risk finance for large research and innovation projects implemented by universities, enterprises and public research organisations under Horizon 2020. Given the growing prominence of the discourse about the use of loan-based funding for research and innovation instead of grants, the survey included a series of related questions in order to assess the degree of universities' involvement in projects supported by the existing financial instruments as opposed to grants.

The analysis established that nearly half of the respondents were not aware of the InnovFin scheme (47.5%). None of the surveyed institutions, with one exception, reported to have benefited in one way or another from this financial instrument. Furthermore, loan-based funding mechanisms were perceived by many respondents as inadequate to fund academic research or as endangering the financial sustainability of universities given that in many higher education systems universities cannot borrow money.

In this context, the latest EUA study on the use of other financial instruments promoted by the European Commission and the EIB, in particular as part of the European Fund for Strategic Investments (EFSI), showed that the initiatives supported by EFSI had so far failed to connect industry and universities within joint projects.

Relevant examples:

"We call to protect Horizon 2020 from further cuts, as happened with the European Fund for Strategic Investments (EFSI). Research should be funded through grants and not through debt/loan financing mechanisms, prices etc. An overload of the proposal and project stage with politically motivated questions should be avoided. Projects should focus on their contribution to the solution of challenges and open new windows for future innovations."

(Institution from Germany)

"Keep up the budget of Horizon 2020; and demand at least 100 billion euros for FP9; further improve the use of project results." **(Institution from Germany)**

The following messages and recommendations can be formulated on the basis of the findings presented above:

Securing ambitious funding based on grants

Core message: Loan schemes and financial instruments, such as EFSI and InnovFin, are not suitable to fund university-based research as universities in most European countries are restricted in their capacity to borrow money.

Action for EU and national authorities: Use grants instead of financial instruments and loan-based schemes to fund university-based research.

Sustainability and cost coverage of Horizon 2020 projects

Overall cost coverage

In an effort to promote further simplification, one single funding rate was introduced for universities and other publicly funded organisations under Horizon 2020 based on a 100% rate for direct costs and a 25% rate for indirect costs, applied irrespectively of the type of project funded. In order to assess the effects of this change, the survey included a set of questions on the cost coverage of Horizon 2020 projects.

While the majority of the respondents acknowledged the sufficiency of cost coverage under Horizon 2020, nearly one-quarter still argued that it was insufficient for institutions to cover their participation in the Framework Programme (Figure 17). In addition, more than one-tenth of the respondents could not provide a specific response to this question (9% of the respondents selected “I don’t know as it is not possible to assess the full costs of a specific project” and 3% of the respondents skipped this question).

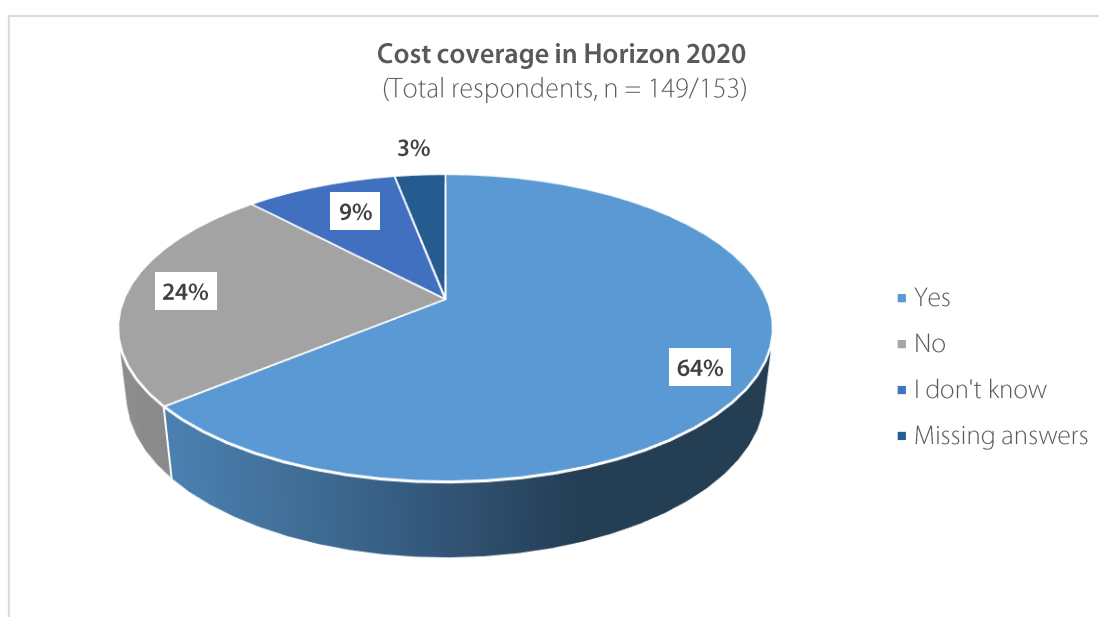


Figure 17: Do you consider this sufficient in terms of cost coverage for your institution?

This issue is strongly linked to so-called “cost awareness”, which is translated into the ability to estimate full costs of research and other activities. This awareness significantly varies across institutions in different parts of Europe, as shown in the previous work conducted by EUA.²³ In particular, universities in the north-western part of Europe have made considerable progress with regard to the development and implementation of full costing methodologies, whereas the

²³ See e.g. some results of the EUIMA project – Sharing Innovative Practices in University Modernisation: Thomas Estermann and Anna-Lena Claeys-Kulik, Financially Sustainable Universities. Full Costing: Progress and Practice, Brussels: European University Association 2013. The document is available online at http://eua.be/Libraries/publications-homepage-list/Full_Costing_Progress_and_Practice_web.pdf.

design of similar principles and practices is still at a different stage in many institutions in the southern and eastern parts of Europe.

Similar patterns can be observed in the results of the survey. The country distribution of the responses showed that the respondents who were unsatisfied with the current cost coverage modalities, as compared to the national practices, were primarily based in northern and western Europe.

Cost coverage and impact on sustainability and capacity of participation

The issue of cost coverage is strongly linked to the long-term sustainability of institutions. Participation in European funding schemes, which are co-funding schemes, requires the investment of sufficient resources to cover the parts of the project costs that are not funded through the programme (ineligible costs and the co-funding part).

Regarding the sources of funding to cover the costs linked to participation in Horizon 2020, 82% of the respondents reported that they had to use their core institutional budgets for this purpose (Figure 18). One-third of the survey institutions were found to make use of other sources of funding such as specific support programmes at local, regional and national levels. For example, more than one-third of the respondents from Austria, Slovenia, Spain, Belgium and Poland, and half of the respondents from Ireland, Norway and Slovakia reported to have used such specific support schemes to cover the remaining costs which were not funded through grant funding under Horizon 2020.

Nevertheless, only a limited number of universities can benefit from such additional sources of funding due to the lack of appropriate funds or incompatible funding procedures at various levels, and even fewer institutions could combine several sources (e.g. the institutional budget and specific support schemes) to cover the remaining costs of Horizon 2020 projects.

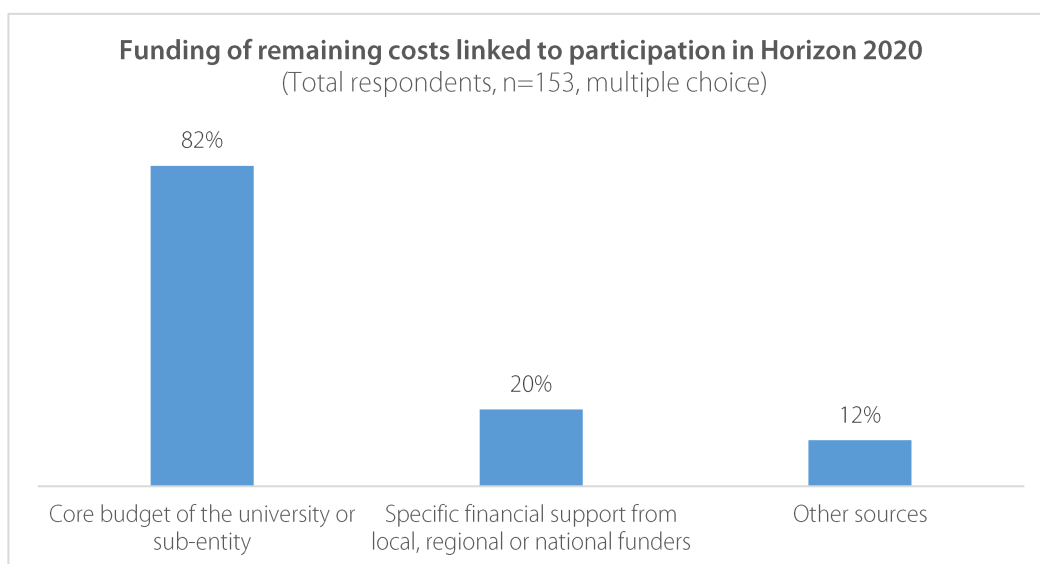


Figure 18: How does your institution cover the remaining costs linked to participation in Horizon 2020 (e.g. higher indirect costs that are not covered by the flat rate; costs linked to the preparation of a project application, other ineligible but incurred costs)?

The principle of co-funding, which does not foresee a full coverage of costs incurred by participation in Horizon 2020 projects, has an impact on the long-term participation capacity of universities. In higher education systems, where national core public funding to universities has been declining, the insufficient coverage of full costs under Horizon 2020 becomes a significant burden. In particular, it amplifies the risks to the financial and organisational sustainability of universities, which opt voluntarily (strategically) or involuntarily (without a proper degree of cost awareness) to accumulate deficit associated with their participation in Horizon 2020.

In view of such risks, some institutions reported to have been discouraged to participate in Horizon 2020 given the real costs of participation, including the application and actual implementation stages.

In this context, it can be concluded that, in the long run, disparities between the institutions that can afford participating in the Framework Programme and those that cannot may undermine the principles of a coherent European research landscape.

Relevant examples:

"The University's 2014/15 Transparent Approach to Costing (TRAC) return showed that the University received 60.3% of the Full Economic Costs of research funding by the European Union. Whilst this figure is partially low due to project costs running higher than planned, it is comparatively low when viewed alongside other sponsor types, including UK Research Councils (66.3%), other UK government departments (85.7%) and industrial-funded research (69.6%). [...] A contribution to indirect costs which is closer to Full Economic Costing would be ideal, though it is acknowledged that applying local funding rates to specific countries, or institutions would complicate matters for the Commission, and could potentially have an impact on the comparative affordability of projects." **(Institution from the United Kingdom)**

"The 100% coverage of the project costs makes the proposals approval at the institutional level and their implementation much simpler. We would welcome to increase indirect costs up to 35%." **(Institution from Slovakia)**

"The core budget of our institution is under significant and continual pressure. Not all research activity is currently financially sustainable in the long term and certain research areas may require subsidising from income from other activities as appropriate. Under-recovery of both overhead and some direct costs on EU projects is adding to this financial pressure." **(Institution from the United Kingdom)**

"Since many of the Spanish regional or national funds are no longer available, the institution becomes, in most of the cases, the only co-funding source for those remaining costs. This situation added to the fact that the institution has to provide, many times, the necessary cash flow for the project implementation has a very strong impact on our accounting general budget." **(Institution from Spain)**

"Because we fund the remaining costs from our core budget, the number of applications we can submit is limited." **(Institution from The Netherlands)**

"As for most universities our indirect costs are way higher than the amount granted by the EC. As there are no other funding sources available the gap in indirect costs makes third party funded projects in general (not just Horizon 2020) "expensive" to a certain extent." **(Institution from Germany)**

"There are different solutions, but some use basic, in-house funding to cover the remaining costs. This is increasingly being identified as a major problem, due to the increased dependence of external funding and funders. Some use other grants to cover the lacking Horizon 2020 funds, but not all funders accept this." **(Institution from Sweden)**

Additional coverage of research infrastructure and personnel costs

In view of the debate on the sufficiency of cost coverage under Horizon 2020, several measures were originally foreseen to compensate for the lower coverage of certain costs. Among these are the Large Research Infrastructures scheme, introduced to offer a higher coverage of indirect costs associated with the use of scientific infrastructure, which could in some cases be significantly higher than 25% of indirect costs. In addition, the possibility of additional remuneration of up to 8,000 euros in eligible staff costs was set up primarily to compensate for low staff costs in certain systems. Against this backdrop, the EUA membership survey included a series of questions in order to assess the extent to which universities benefited from such schemes to obtain a better cost-coverage for their Horizon 2020 project-related costs.

About half of the respondents reported to be aware of the Large Research Infrastructures scheme, of which only one-third considered it as useful for universities, whereas all the others had either no opinion about this scheme or questioned its value for universities (Figure 19).

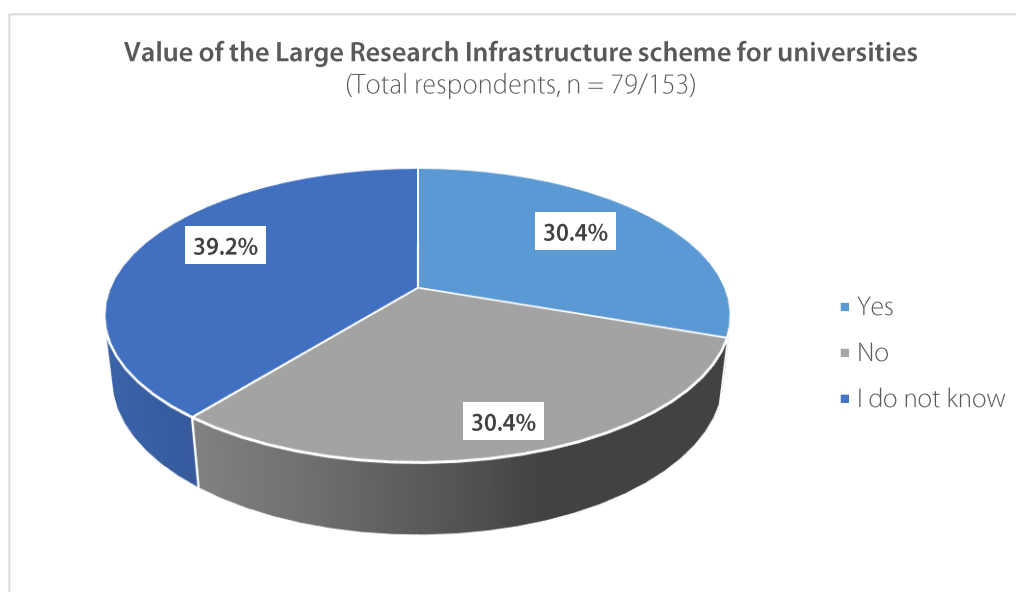


Figure 19: Do you think the Large Research Infrastructures scheme is useful for universities?

More than 70% of the respondents who considered this scheme not useful pointed to some implementation issues, as the scheme was found to be too “complicated” or highly restrictive in terms of eligibility criteria that can hardly be satisfied by universities, or unclear in terms of requirements, procedures and benefits for universities.

When it comes to the additional coverage of personnel costs under the additional remuneration scheme, which was designed to address salary gaps between EU-15 and EU-13, only 8.5% of the respondents based in various parts of Europe (Austria, Belgium, the Czech Republic, France, Lithuania, Slovakia, Slovenia and the United Kingdom) reported to have used the additional remuneration scheme, compared with 83% that had no experience with this measure.

The majority of institutions reported that they were unable to apply this scheme because of not complying with the national labour legislation, or institutional accounting practices, as well as because of strict eligibility criteria.

Overall, the feedback received from the respondents on the use of both schemes shows that they do not fit the university's profiles and could not compensate for the insufficient coverage of indirect costs linked to Horizon 2020 projects.

Relevant examples:

“We do not use this. We do not have large enough facilities, but if we did we would prefer this to be based on an agreed fee per use which is then claimed as a direct cost via internal invoicing.”
(Institution from Ireland)

“Yes, we are aware of this possibility, and we did apply for the certification, but the EC considered that we did not fulfil the requirements. The status would have been useful especially in ERC Grants where it is possible to apply for additional funding for the costs of using LRI.”
(Institution from Finland)

“The definition of large scale infrastructure is that it has a total value of at least 20 million euros and that the value of the large research infrastructure represents at least 75% of the beneficiary's total fixed assets, at historical value. At most universities these requirements cannot be met.”
(Institution from Germany)

“We appreciate the additional remuneration, but please without any additional criteria.”
(Institution from the Czech Republic)

“We still feel the difference of staff cost eligibility between old and new member states. [...] The introduction of the 8000 euros/year benefit level did not solve this issue.”
(Institution from Slovakia)

“EC made the conditions for additional remuneration complicated to that extent that most of the organisations in the public sector will not be able to use this option (not because they would not be interested, but more because of lack of proper national legislations and internal regulation). Our government reconciled the proper legal base with EC and our university is now in the process of establishing internal regulations. But I am afraid that we will not know until the first EC audits whether our system will be accepted as eligible.”
(Institution from Slovenia)

"It is complicated and not in all cases possible to pay additional remunerations to project leaders (depending on their status in the university – full professor, junior professor, postdoctoral researcher). As not all entities can use this option it would lead to inequalities within a consortium. In addition, money payed as additional remuneration to project leaders cannot be used for other costs." **(Institution from Germany)**

"In Poland the obligation to use the additional remuneration on the same basis of 8000 euros in all externally funded projects makes it impossible to use it as public universities do not have funds to cover the additional remuneration in case of other than Horizon 2020 projects." **(Institution from Poland)**

"This model is included purely for the benefit of newer member states and is, in any event, difficult to apply by any organisation. It is an unnecessary derogation from the principle of actual cost accounting and an inappropriate use of research funding. Other schemes are available to help minimise disparities between member states." **(Institution from the United Kingdom)**

The following message and recommendation can be formulated on the basis of the findings presented above:

Improving cost coverage

Core message: The schemes that have been set up to increase cost coverage, such as large research infrastructures and additional remuneration, have not been working for universities as intended. Therefore, the insufficient cost coverage of Horizon 2020 projects continues to discourage some universities from participating while it risks undermining the financial sustainability of the others.

Action for EU institutions: Improve cost coverage for Horizon 2020 projects by retaining the current level of reimbursement of direct costs (100%) and increasing the funding rate for indirect costs to better cover infrastructure and other unfunded costs.

PART 3: FOSTERING SIMPLIFICATION AND EFFICIENCY IN APPLICATION AND PARTICIPATION IN HORIZON 2020

The following chapter analyses different aspects of participation in Horizon 2020 in view of how efficient and simple are the related procedures and what are the areas that could be further improved based on the experience gained in the first years of the current Framework Programme.

Preparing for participation: application stage

1. Participant portal

The participant portal of Horizon 2020 was designed as a 'one-stop shop' bringing a single set of rules together to facilitate access to and management of documentation.

The respondents broadly appreciated the progress made in respect of the participant portal as a single access point that streamlines and makes the application, management and reporting more transparent and easier compared with FP7. The respondents' experience with FP7 or Horizon 2020 has no visible impact on their assessment of various functionalities of the participant portal. Several institutions suggested that the participant portal could also be used for other EU-funded programmes.

One of the reported bottlenecks of the participant portal is related to the search for information about new calls: almost half of the responding institutions acknowledged some partial progress in this respect, whereas nearly 15% reported that the situation had either not changed or become more complex compared to FP7 (Figure 20).

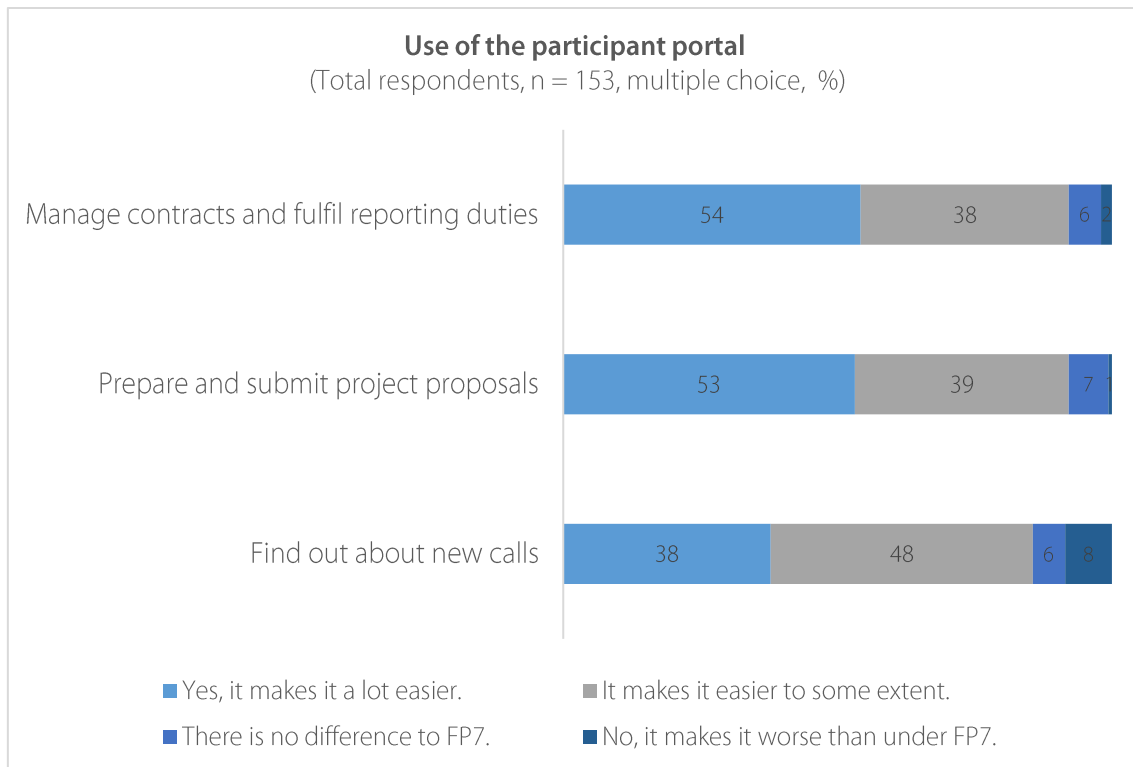


Figure 20: In comparison to FP7, do you think the participant portal makes it easier for participants? Please rate the following aspects.

The most frequently reported areas for improvement specified in response to an open-ended question were quantified (Figure 21). In particular, the respondents noted the lack of explicit links between the call reference and the work programme, as well as some limitations of the search engine (search by keyword, topic, and theme) and the filters enabled by the participant portal. The respondents also suggested to ensure a better structure of the topics and documents available on the portal.

Another reported issue was related to the portal features designed for Legal Entity Appointed Representatives (LEARs). Specifically, the respondents suggested further ways to facilitate the work of LEARs, including a possibility to consult full-text proposals, access project management pages, obtain participation statistics, etc. The existence of multiple PIC codes registered for one organisation was also quoted as one specific area which required further improvement. Finally, several respondents pointed out that support provided via Helpdesk, by the validation team and in the form of online guidelines could be further optimised and be made faster, more specific, and better structured.

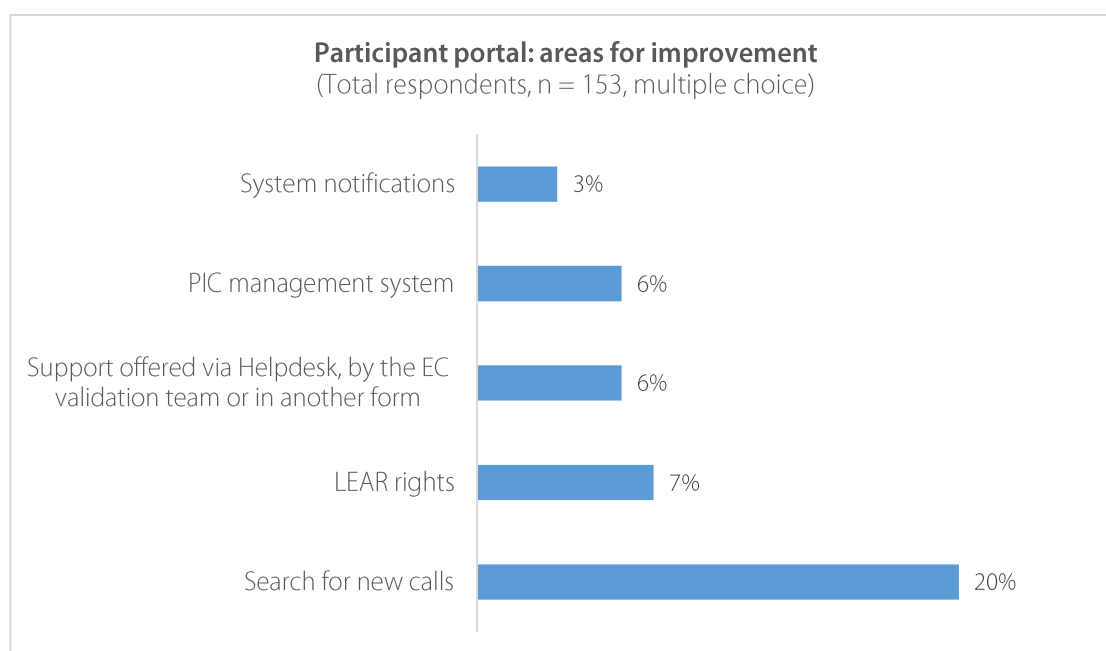


Figure 21: In comparison to FP7, do you think the participant portal makes it easier for participants? Please explain your choice, add further comments and suggestions for improvement.

Relevant examples:

"In general, the participant portal allows a better proposal and project management. In the case of the calls, the last changes are not in the line of improvement and simplification, and make it more difficult to access the information." **(Institution from Latvia)**

"Call references cannot easily be linked to work programmes (WP). Starting with the code like SC1- instead of PHC-- could be helpful, as well as avoiding the division of the single WP in many different calls. The accessibility of call documents should be more visible." **(Institution from Germany)**

"University LEARs should also have full access to all projects and proposals. In addition, applicants should not be able to apply for a PIC code when the University already has one..." **(Institution from Austria)**

"In our opinion Participant portal could provide more important information to LEARS, for example [...] the system also could calculate the success rate of the organisation." **(Institution from Slovenia)**

"Helpdesk services should be improved as they provide only answers for beginners and only copy-paste from relevant documents." **(Institution from Latvia)**

"Provide a dummies' guide to the Participant Portal (with screenshots, arrows, etc.); wherever possible on the Portal, [...] clearly indicate new, updated or forthcoming sections of the Online Manual and if possible, consider e.g. a newsletter type of communication; and provide clearer notifications about projects". (Institution from Belgium)

"Asking questions about a non-technical matter has become very difficult. [...] There is a need for the proposal coordinators to be able to talk to Commission representatives during the application process to ensure that the topic is addressed adequately." (Institution from Denmark)

2. Application procedure

In view of the ongoing discussions on how to reduce the effort at the application stage, the survey included one question about the use of one-step and two-step procedures for application to Horizon 2020.

The majority of the respondents (66%) expressed their preference to have more two-step procedures for Horizon 2020 calls, whereas nearly one-fifth (19%) considered the additional use of two-step application procedures unnecessary (Figure 22).

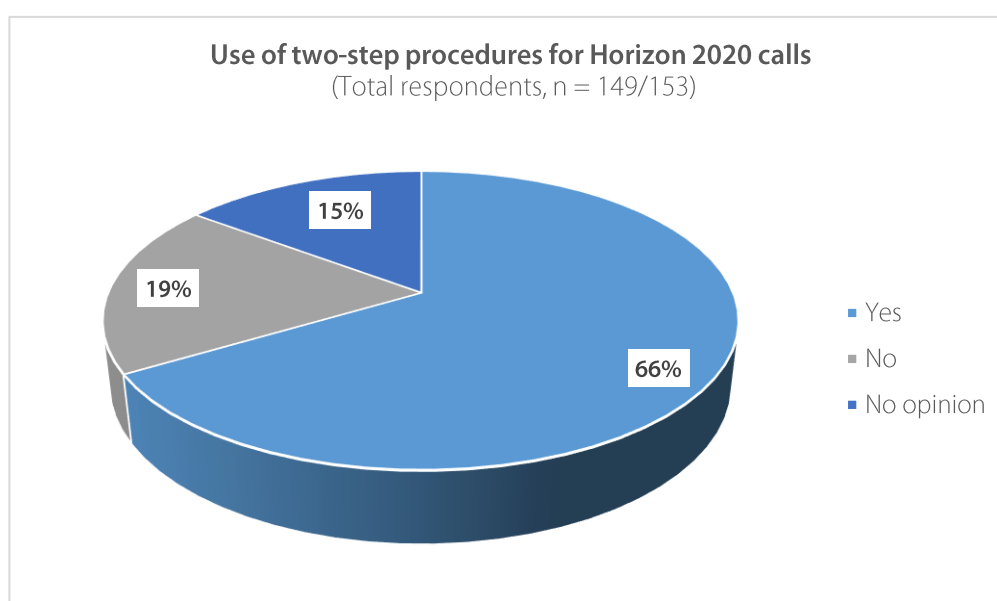


Figure 22: Would you like to have more two-step procedures?

The respondents recognised that both one-step and two-step procedures have their advantages and disadvantages. In their feedback to an open-ended question, the surveyed institutions noted several pros and cons of the two approaches to the call structure, which are summarised in Table 3.

Table 3: What are from your perspective the advantages and disadvantages of one-step and two-step procedures? Please add your comments here.

Pros and cons of one-step procedures	Pros and cons of two-step procedures
+ A shorter project acquisition cycle or time to grant - Bigger effort to prepare a proposal as every aspect must be verified and coordinated within the consortium by the time of application - Full disclosure of project ideas with a low guarantee of success given the low success rate for project applications under Horizon 2020	+ Less time-consuming, as they allow distributing the workload between two stages - Higher workload for the proposals rejected in the second stage - Possible oversubscription because of “just try” proposals, “distressing” evaluation

The respondents broadly agreed that the use of one-step versus two-step procedures had to be adapted to the subject and specific nature of calls and projects. In particular, the one-step approach was considered as better suited for clearly defined topics which require a “top-down prescriptive call topic approach” as well as individual grants. At the same time, two-step procedures were regarded as better tailored for broad topics tackled by large consortia, for example, under FET Open or similar schemes.

The respondents that expressed a preference to having more two-step application procedures in the future formulated the following conditions under which this could happen:

- Ensure that the work required at each stage for proposal development is adequate and that the potential success rate is enhanced;
- Allow sufficient time between first stage results and the deadline for submission of the full proposal to avoid the necessity to prepare the full proposal already at the beginning;
- Optimise the acceptance rates between two steps, e.g. avoid high acceptance in the first step and a low acceptance rate in the second step;
- Ensure a success rate of minimum 30% or higher at the second stage;
- Ensure consistent evaluation between step 1 and step 2 (e.g. evaluation by the same set of reviewers);
- Provide structured and detailed feedback after step 1 that can be used for the application in the second step.

Relevant examples:

“Considering the average success rates, the one-step procedure implies a lot of wasted work and a disclosure of project ideas that should not be disclosed unless a first selection step is passed.”
(Institution from Italy)

“The two-step procedure allows to submit first the overall idea and see if it is considered ‘fundable’ by the EC and then work on the extended proposal if the evaluation report is satisfactory.” **(Institution from France)**

"Evaluation Summary Report (ESR) for short proposal are not well structured and give very little information concerning the weak aspects of the proposal especially." **(Institution from Finland)**

"The work at each stage required for proposal development is proportionate to the stage and the two-stage process minimises work and also enhances the potential success rate..." **(Institution from the United Kingdom)**

"[...] the very short time between the two steps makes it more or less mandatory to prepare the full application right from the beginning, thus negating the intentions of the two-step approach." **(Institution from Denmark)**

Evaluation procedure

1. Feedback, no-negotiation

One of the aims of the European Commission is to improve the standards of evaluation feedback to applicants in Horizon 2020 calls. Amongst the surveyed institutions, most reported not having received enhanced feedback regarding their Horizon 2020 proposals. Moreover, most universities did not note major differences in the feedback received compared to FP7.

In addition, many institutions reported not linking the quality of feedback to the no-negotiation approach. Several universities complained about inconsistent feedback and non-transparent rejection despite high overall scores for their proposals. It is also worth noting that many universities perceived different standards of quality in feedback across different parts of Horizon 2020.

In an attempt to overcome these challenges, the responding universities suggested that they would welcome adequate, detailed and constructive feedback for their proposals at all stages of the application procedure. Some universities also suggested that redress procedures should go beyond administrative concerns. Applicants should have the opportunity to address scientific critiques of their proposals.

Relevant examples:

"The feedback of our scientists is that the evaluation reports in Horizon 2020 are often not satisfying. We do not detect a clear difference between FP7 and Horizon 2020 here. The dissatisfaction might at least in part be due to the generally unpopular nature of negative feedback." **(Institution from Germany)**

"The quality of the feedback differs between different parts of the programme. ERC generally provides very extensive feedback, mainly from individual reviewers but also a panel summary. MSCA ESRs are also a good example. In other parts of the programme, for instance in step 1 of two-stage proposals, improvements are needed. The feedback should be as precise, detailed and constructive as possible. Many proposals are recycled, often for Horizon 2020 purposes, which means that both the researchers and the EU benefit from improved feedback." **(Institution from Sweden)**

"The quality of the feedback went down compared to FP7: feedback is shorter and less detailed. We understood that this is caused by (a) Project Officers being briefed to be politically correct, and (b) by the no-negotiation approach. (...) Applicants need constructive feedback on all evaluation criteria, in relation to the length of proposals." **(Institution from Belgium)**

2. Proposal idea check

Furthermore, universities were asked if they would welcome a 'proposal idea check' or 'pre-submission feedback' for proposals in Horizon 2020, a feature that was previously available in FP7. The results showed that 90% of institutions would welcome such measures. In particular, 54% of universities considered that the Directorate-General for Research and Innovation of the European Commission (DG RTD) should be responsible for this activity, while 19% of institutions considered that National Contact Points (NCP) would be more suitable. Nineteen percent of universities indicated the option "other". Further comments revealed that some institutions would welcome a combination of DG RTD and NCP, expert advice provided to DG RTD or the specific Directorate-General responsible for the thematic focus of the call.

Contract management and project administration

1. Time to grant

The 'time to grant' is defined by the European Commission as the time elapsed between the close of a call and the signing of the grant agreement, which normally marks the official start of the project. For many calls under Horizon 2020 the 'time to grant' is legally fixed to eight months (the target reached in 95% of the cases). This development was largely welcomed by the respondents, with 84% qualifying it as a "rather positive" development (Figure 23). Only 6% of the respondents perceived this development as negative, having specified in their comments that 'time to grant' could be further reduced as time is an important factor in research and innovation.

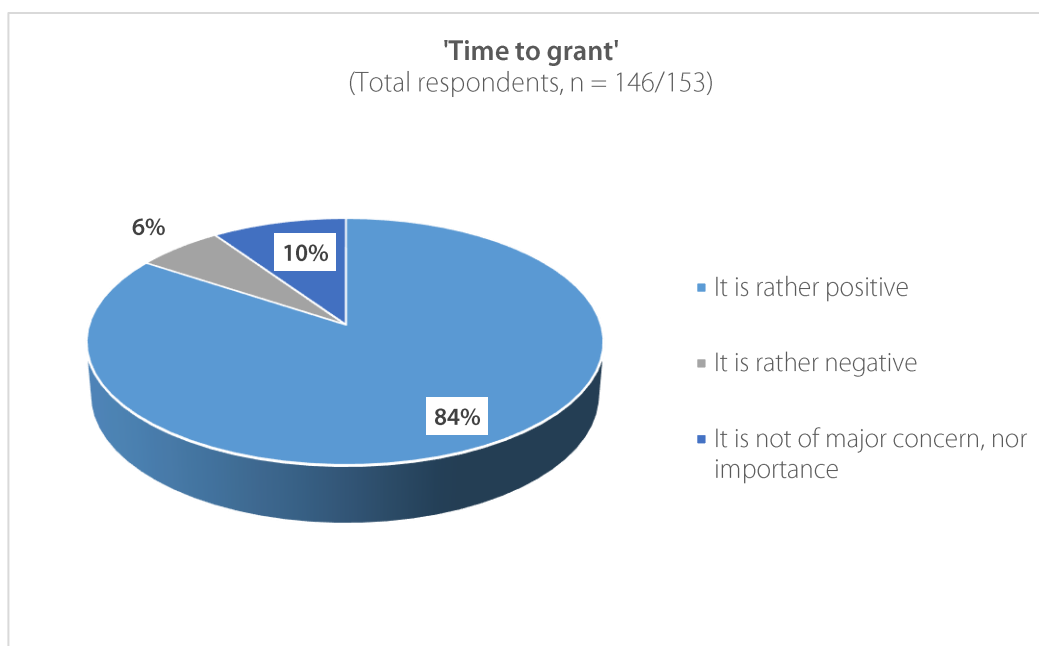


Figure 23: For many calls under Horizon 2020 the time to grant is legally fixed to 8 months and according to the statistics of the European Commission so far this target has been met in 95% of the cases. How do you assess this development? Please select one option.

Several respondents indicated that the time planned for evaluation and grant preparation could be distributed with more flexibility to allow more time for grant preparation within the eight months in case of large, multinational consortia. In this context, validation of the new beneficiaries and preparation of the Consortium Agreement were reported as two major bottlenecks that put pressure on the participants to complete the grant preparation stage on time.

The respondents pointed out that further improvements could be made with regard to the communication with the European Commission on the grant agreement preparation timeline and noted the importance of consistent guidelines across various projects and different Project Officers involved. They also suggested the possibility of introducing minor modifications at the grant agreement preparation stage in order to avoid subsequent amendments.

Relevant examples:

"It is important to reduce the time as much as possible in order to allow the projects to have a clear impact and reduce the obsolescence of the ideas and challenges of the project." **(Institution from Spain)**

For bigger consortia "[...] the negotiation and signature of the Consortium Agreement takes more time and this is not a sign of a problematic consortium, but only a matter of size." **(Institution from Belgium)**

"Of concern to some researchers is the time between notification of success and the start date. If this is too tight, it can cause extreme difficulty in attracting good postgraduate students and postdoctoral researchers. The measured variable can often be of less concern to successful applicants. Projects where positions remained unfilled after several rounds of interviews mean many wasted months." **(Institution from Ireland)**

"Although it is positive, with shorter "time to grant" we feel that EC have transferred more of their work on the applicants (the beneficiaries involved), compared to FP7. Also when it comes to simplification - it is simpler for the EC, but not always for the involved beneficiaries." **(Institution from Sweden)**

"The shortening of the time to grant is a positive development [...]. However, there are quite often delays in the grant preparation phase and they seem to be mainly due to the EC, not the consortia. Especially the validation process has caused severe delays, but often the next steps of the grant preparation are postponed by the EC beyond the original deadlines without any explanation." **(Institution from Finland)**

2. Cost accounting

To estimate the workload required for the administration of Horizon 2020-funded projects, institutions were asked about the extent to which they could apply their usual institutional accounting practices accepted by national funders.

More than 60% of the respondents reported that they could not fully apply their institutional accounting practices as they either experienced some restrictions (53%) or they had to set up a different process for Horizon 2020 (12%). Only about one-third of the surveyed institutions could apply their related practices without any further adaptations (35%) (Figure 24).

Several respondents highlighted in their comments that in addition to their institutional accounting practices they had to handle two different systems in order to manage FP7 and Horizon 2020 projects.

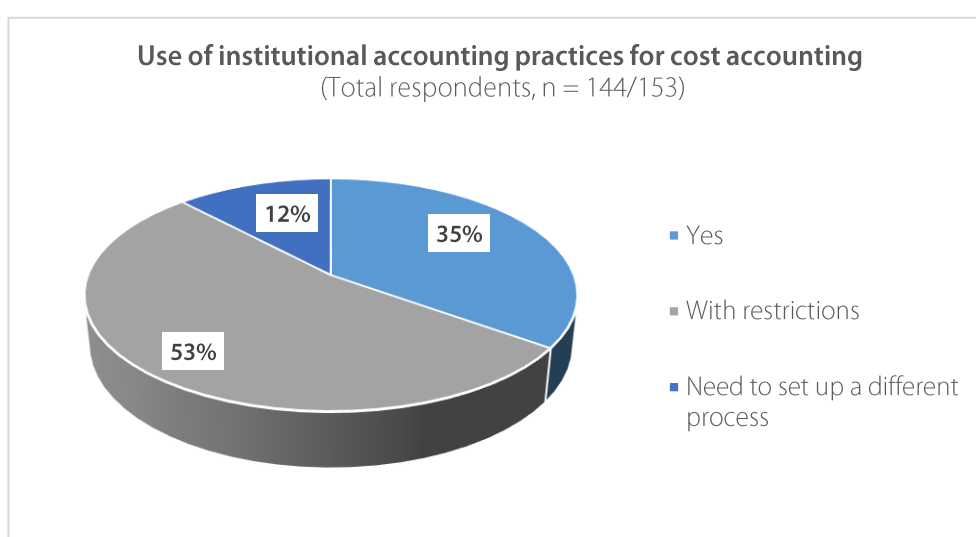


Figure 24: Can you apply your usual institutional accounting practices accepted by national funders?

The most frequently reported restrictions referred to the provisions for calculation of personnel costs. Thus, 41% of the respondents that reported on the related restrictions highlighted the

challenges and financial losses caused by the calculation of personnel costs based on the last financial year, rather than on the basis of actual personnel costs. In the period following EUA member consultation, some adaptations were made to address this issue with the revision of the model grant agreement in summer 2016, which has allowed the participants to choose between two specific methods of calculation. It still needs to be seen how effective this measure is with regard to simplifying the reporting of personnel costs.

Furthermore, some national rules regulating the hiring of temporary staff (e.g. in Italy) were also found to be inconsistent with the accounting practices of Horizon 2020 (Figure 25). Another problem was reported with regard to internal invoicing and strict accounting rules for the use of internal facilities for project needs. In particular, 14% of the respondents that spoke of the restrictions to the use of their institutional accounting practices reported that the changes in the related FP7 provisions to the current Horizon 2020 rules were different from the national funding practices in their respective countries. Finally, other mentioned restrictions or differences from the nationally accepted institutional practices include the rules for depreciation, time recording and tax (e.g. VAT) refund.

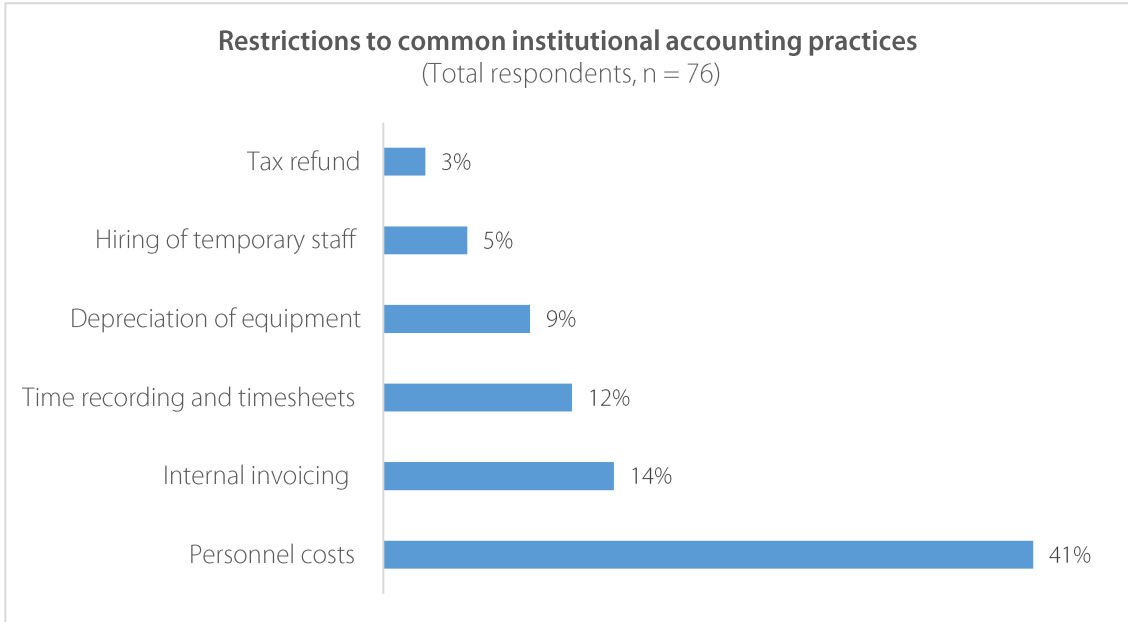


Figure 25: Can you apply your usual institutional practices accepted by national funders? What are the challenges linked to this (if any)? What could be improved in Horizon 2020 in this respect? Please add your comments here.

Relevant examples:

"If usual institutional accounting practices accepted by national funders apply also for Horizon 2020 that will be a big simplification and make cost accounting easier and less cost intensive. Everywhere a special process has to be implemented to comply with cost accounting rules of a funding organisation, this causes additional organisational costs." **(Institution from Germany)**

"The operation of a dual system – one for FP7 and another for H2020 is proving problematic and confusing especially where you have staff funded from both a FP7 and Horizon 2020 grant. [...]" **(Institution from Ireland)**

"The methodology for charging salary costs using the salary rate as at the end of the previous financial year means that we are always subsidising the salary element on a project, as pay awards and salary rises are effective from the start of the financial year, apply throughout the year and we are only able to claim salary costs at the previous years' rates. We should be able to claim actual salary costs/rates in for the project years in which they were incurred." **(Institution from the United Kingdom)**

"Using average personnel costs should be accepted more easily." **(Institution from Spain)**

"Costs for laboratories and special infrastructures should be eligible and decided upon by national agencies." **(Institution from Norway)**

"Internal invoices are still a problem and our challenge is to claim real costs for doing tests and analysis - especially costs for personnel doing these tests." **(Institution from Sweden)**

3. Use of unit costs for personnel

In the spirit of simplification, the rules for participation in Horizon 2020 included the possibility of using unit costs to charge personnel costs to Horizon 2020 projects, which has to be separately certified. In this context, institutions were asked about the extent to which they were familiar with this methodology and how fit it was for its purpose. In total, only eight institutions (6% of the sample) reported to have some experience with unit costs (Figure 26). Of these, three institutions had some negative experiences, two institutions estimated their experience as positive, and three respondents remained neutral.

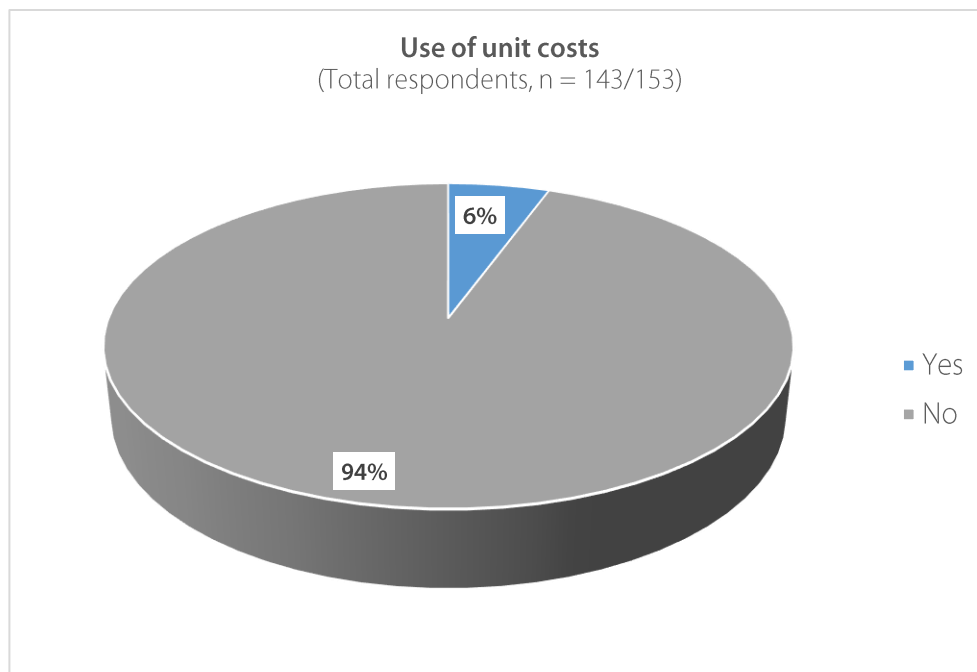


Figure 26: Do you have any experience with this option (unit costs)?

About one-fifth of respondents (23%) believed that this scheme could be rather useful for universities (Figure 27). Yet although the respondents broadly appreciated the original idea to simplify the related procedures for universities, this methodology was still considered too complex and rigid by most of the respondents.

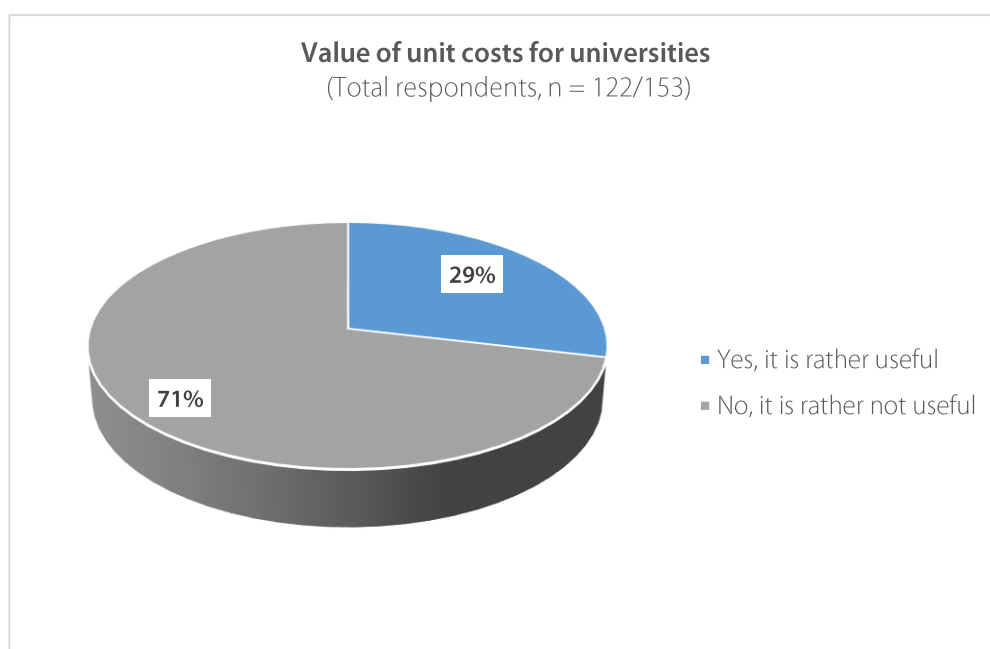


Figure 27: Do you think it can be useful for universities to have this option?

In particular, the three most frequently mentioned deficiencies that demotivated universities from using unit costs referred to: i) the complexity and burdensome nature of the certification procedures, ii) the problems with the average calculations for different categories of staff, and iii) the insufficient coverage of personnel costs.

Relevant examples:

"[The use of unit costs] ... does not respond to the accounting and reward system in the Czech Republic." **(Institution from the Czech Republic)**

"The certification of the methodology is only worthwhile for universities with a high number of EU projects. Especially because the certification is only needed for H2020 projects." **(Institution from Germany)**

"The individual costs could be quite different for the same category (full professor, for example), and the unit cost approximation is not realistic enough." **(Institution from Spain)**

"In Spain, the overall salary of professors and researchers is composed of a basic salary and several complements, which are received in both periodic and aperiodic manners. The current Horizon 2020 accountancy scheme does not permit to include these complements in the accounting, only the basic salary. This fact creates a big loss in the personnel costs received by Spanish universities, in comparison to other countries where all the complements are included in the basic salary." **(Institution from Spain)**

"The beneficiary should be able to act flexibly and to price the cost of labour and, when justified, pay the market rates for the project activities. The current situation, in which institutions are obliged to use basic pay rates, is not conducive to attract the most outstanding scientists to the projects." **(Institution from Poland)**

"Clearer information from the EC on this topic [of unit costs] would be appreciated. Maybe a factsheet could explain easily and enlighten on the steps universities should follow to benefit from such scheme. [...] Another suggestion would be to develop a kind of simplification toolkit [...]." **(Institution from Portugal)**

4. Time recording

Under Horizon 2020, time recording is required for staff not working full-time on a Horizon 2020 project. The method of time recording is fixed in the grant agreement. Institutions were asked in the survey which of the possible methods they apply for administration of Horizon 2020 projects, whether it be a fixed number of annual productive hours or the institutional accounting practice to determine actual productive hours per year.

Overall, 42% of the respondents reported to use actual productive hours per year, determined according to their own institutional accounting practice, whereas 52% report on using a fixed number of actual productive hours (Figure 28).

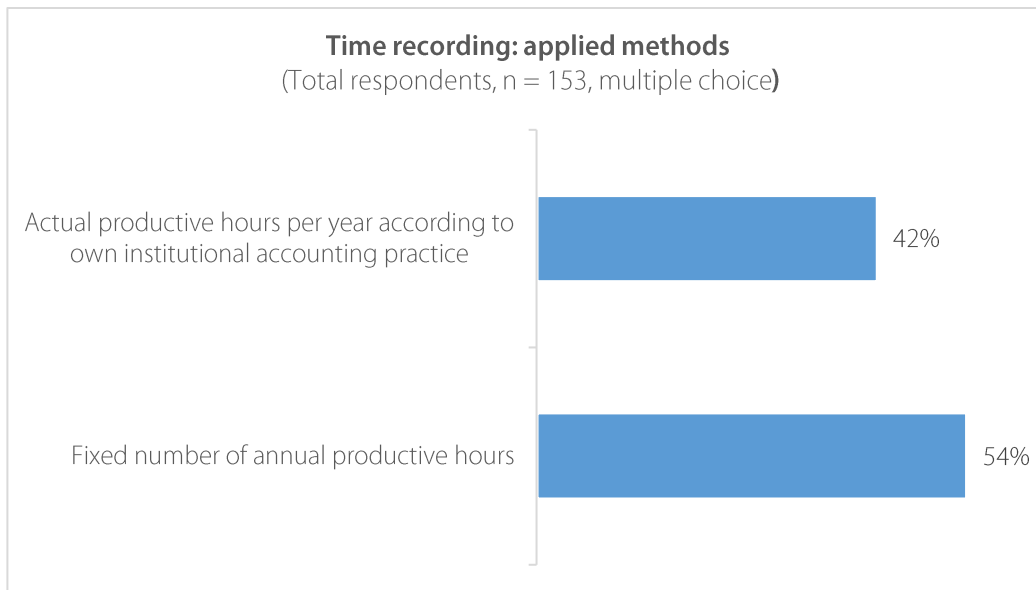


Figure 28: Which method are you applying?

In total, 35% of the respondents reported facing some difficulties with the applied method (regardless of their experience with the FP, or country of origin), whereas 45% experienced no problems while using either the actual or fixed number of productive hours (Figure 29).

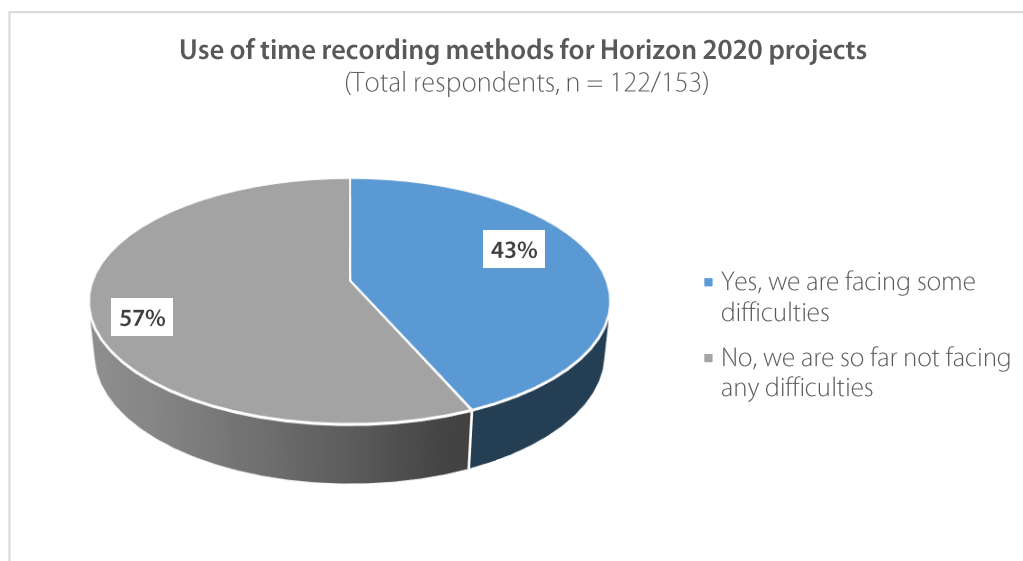


Figure 29: Do you face any difficulties with either method in relation to Horizon 2020 projects?

The analysis of the comments to the open-ended question ("What could be improved in relation to time recording in Horizon 2020?") showed that some of the respondents had to combine both methods, for example, by applying the fixed number of hours for staff working exclusively on a Horizon 2020 grant and using actual productive hours for staff working on several projects or with HR contracts specifying the number of working hours.

The surveyed institutions highlighted that the method based on actual productive hours per year defined in line with the institutional practice did not account for sick leave or overtime. In addition, in some countries, the standard yearly working hours used by the institution could be lower or higher than the standard EU hours (1,720 hours). Given that national funding agencies tend to

perform audits on the basis of actual worked hours, there could be discrepancies in the case of researchers employed on multiple projects funded by the EU and national funders.

Relevant examples:

"We believe that the possibility with a fixed number of annual productive hours is financially unfavourable (not all the real costs are reimbursed), that is why we will use the number of actual productive hours. We use the fixed number of productive hours only for employees working 100% on the Horizon 2020 project." **(Institution from Slovenia)**

"Neither of the two methods reflects the hours really worked at the University, and using a method based on hours actually worked per employee would be very costly. The reality of the situation is that whichever of the two methods is used, it results in our University justifying a cost per hour that is below the true cost it needs to cover." **(Institution from Spain)**

"The definition of productive hours could be the institution's normal one. The model of actual time recording combined with the entire institution's own Full-costing model employee indirect costs (healthcare, pension, etc.) could be allowed." **(Institution from Finland)**

"Time recording should be abolished and replaced by a closer scrutiny of what is delivered. If the quality of the project outputs (ranging from publications to dissemination and impact) is satisfactory you might assume that sufficient time has been applied to the project activities. This would be more in line with how researchers in Denmark understand their business as researchers. And more in line with how the Danish Research Council and major private foundations evaluate the outcome of research funding granted to researchers at Danish universities." **(Institution from Denmark)**

"It would be expedient if the EC would copy/approve the way in which 'time recording' is done on NIH grants: time recording does not exist. Instead, if an employee certifies going to work/having worked a certain percentage on the NIH grant, e.g. 25%, then 25% of the employee's salary is paid from the NIH grant." **(Institution from Denmark)**

5. Financial reporting and audit

Interim and final reporting is an important stage of the project management cycle. By the time of the survey, more than one-third of the respondents had already reported on a Horizon 2020 project (33%). The vast majority of those who had already been subject to reporting (83%) were found to be quite satisfied with the reporting procedure, whereas 6% were very satisfied and 10% not satisfied (Figure 30).

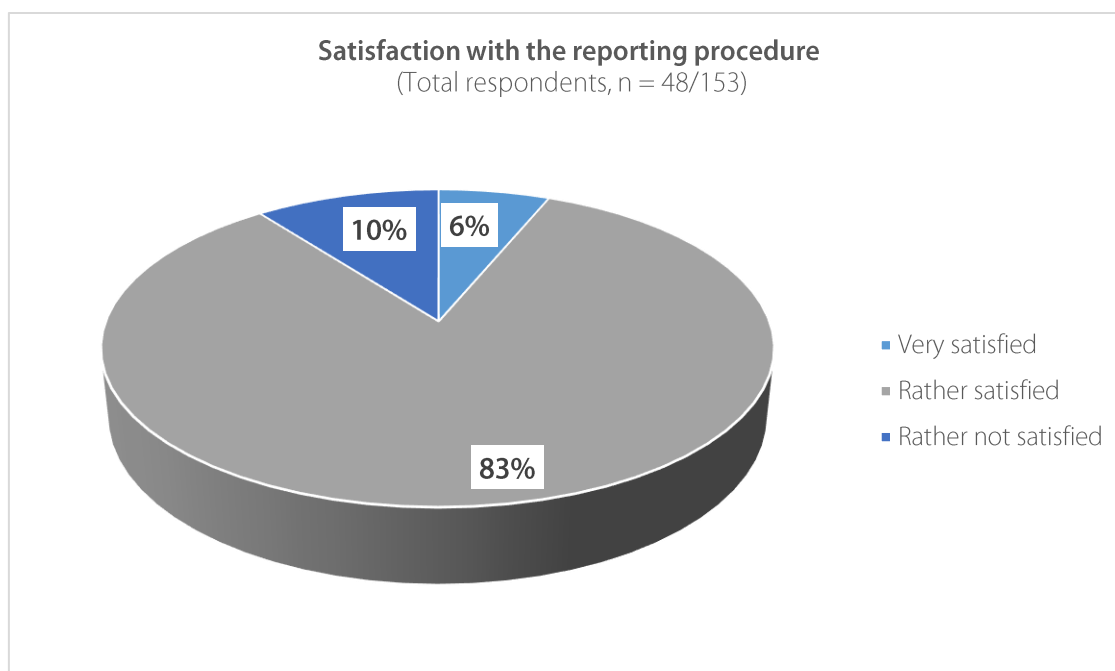


Figure 30: Did you already have to report for a Horizon 2020 project?

The respondents that were found to be rather unsatisfied with their reporting and auditing experience mentioned particularly the time-consuming side of reporting, as well as various

Relevant examples:

"We had too many technical problems when reporting our first Horizon 2020 Projects - and also it was unclear when the report was submitted or not. Our problems occurred even if we had appointed all our "project roles" and all documents were correct. We needed a lot of unnecessary support from the "Technical support" and it was very time consuming." **(Institution from Sweden)**

"Initially, Horizon 2020 reporting requirements seemed to be more relaxed and convenient than in FP7 (especially thanks to the fact that a single reimbursement rate has been established in H2020 for all project activities within the same institution), but unfortunately the Portal fails to convey this new spirit of simplification" **(Institution from Spain).**

"As it seems, simplification is rather on the EC's side. Administrative burden is moved to the beneficiaries. The financial rules seem to be streamlined in good intention, but it is completely unknown if these simplifications hold on to second Level Audits. From our experience, Auditors tend to be more and more granular, requiring even more justifications and proofs the simpler the underlying procedures are. We are very concerned about the increase of rejected costs in some European programmes (so far mostly TEMPUS/Erasmus+), due to overinterpretation and overzealous interpretation of the respective rules for participation." **(Institution from Germany)**

"The guidelines tend to be general and very broad, often with circular references, implying that you get information overload and spend much time looking for the right instructions. We rather need very specific guidelines that are short, to the point and give concrete guidelines on how to fill out forms, and where to find them." **(Institution from Denmark)**

technical and IT issues, which had not been previously experienced in FP7, as well as certain issues with the interpretation of the rules of participation by the external auditors.

The following messages and recommendations can be formulated on the basis of the findings presented above:

Enabling trust-based simplification

Core message: Despite the progress in simplification in some areas, Horizon 2020 is still associated with a high administrative burden at all stages of application, participation and project administration. Questions related to staff costs and accounting methodologies have yet to be solved. Universities have to adapt and set up special procedures to respond to the evolving legal and administrative requirements of the programme. The administrative burden reflects the lack of trust and transparency within the programme.

Action for EU institutions: Ensure an adequate balance of flexibility, predictability and continuity of rules and provisions. Continue to simplify where it matters most. Allow institutions to use nationally recognised costing methodologies, accept institutional management and accounting practices to reduce the administrative burden on beneficiaries. Guarantee sufficient transparency at all stages and build a trust-based funding system.

Appendix

Additional resources and related EUA work supporting the interim evaluation of Horizon 2020

A.1 Additional resources

- Australian Research Council, Dataset on funding trends. Available online at http://www.arc.gov.au/sites/default/files/filedepot/Public/ARC/NCGP_dataset/ARC_NCGP_Trends_web_update_Feb2015.xlsx
- Thomas Estermann and Anna-Lena Claeys-Kulik, Financially Sustainable Universities. Full Costing: Progress and Practice, Brussels: European University Association 2013. Available online at http://eua.be/Libraries/publications-homepage-list/Full_Costing_Progress_and_Practice_web.pdf
- European Commission, Fact Sheet: Open Access in Horizon 2020, Luxembourg: Publications Office of the European Union 2013. Available online at https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/FactSheet_Open_Access.pdf
- European Commission, Horizon 2020: First results, Luxembourg: Publications Office of the European Union 2015. Available online at https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/horizon_2020_first_results.pdf
- European Commission, Horizon 2020: Monitoring Report 2014, Luxembourg: Publications Office of the European Union 2016. Available online at http://ec.europa.eu/research/evaluations/pdf/archive/h2020_monitoring_reports/first_h2020_annual_monitoring_report.pdf
- European Commission, Horizon 2020 Work Programme 2016-2017: General Annexes, Luxembourg: Publications Office of the European Union 2016. Available online at http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-ga_en.pdf
- European Commission, Horizon 2020 simplification survey. Available online at http://ec.europa.eu/research/participants/data/ref/h2020/other/events/survey/h2020_simplification-survey_final-report_en.pdf
- Eurostat. Gross Domestic Expenditure on R&D (GERD), % of GDP, 2008-2015. Available online at http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=t2020_20&plugin=1
- Louise O. Fresco et al., Commitment and Coherence: Essential Ingredients for Success in Science and Innovation – Ex-Post Evaluation of the 7th Framework Programme (2007-2013), Luxembourg: Publications Office of the European Union 2015 Available online at https://ec.europa.eu/research/evaluations/pdf/fp7_final_evaluation_expert_group_report.pdf
- National Science Foundation, Report to the National Science Board on the National Science Foundation's Merit Review Process: Fiscal Year 2014, Arlington, VA: National Science Foundation. Available online at <https://nsf.gov/nsb/publications/2015/nsb201514.pdf>

A.2 Related EUA work

- [EUA's Open Access Checklist for Universities: A Practical Guide on Implementation](#) (2015)
- [EUA member consultation on Horizon 2020](#) (January-March 2016)
Developing a comprehensive view of the university sector for European-level discussions on the future of current EU funding programmes and their post-2020 successors
- [EUA Roadmap on Open Access to Research Publications](#) (February 2016)
Adopted by the EUA Council in January 2016, drafted in consultation with the EUA Expert Group on Science2.0/Open Science and taking into consideration the outcomes of the 2015 EUA Institutional Survey on Open Access.
- [EUA's response to the European Commission Call for Ideas on Designing a European Innovation Council](#) (April 2016)
Based on the member consultation and position paper on a future European Innovation Council generating a broad perspective of the university sector's views on the outlines of a future European Innovation Council.
- [EUA's input to the public consultation on the revision of the EU's Financial Regulation](#) (May 2016)
- [EUA's review of the European Fund for Strategic Investments \(EFSI\)](#) (June 2016)
- [EUA vision for the next EU Framework Programme for Research and Innovation](#) (FP9; November 2016)
EUA's vision for the design of FP9 and a contribution to the future development of EU investments in education, research and innovation post 2020
- [EUA funding campaign on sustainable, sufficient and simple funding](#)
Promoting sustainable, sufficient and simple funding for universities at the European level
- [EUA Public Funding Observatory](#)
Monitoring trends in public funding to higher education institutions across Europe
- [EUA University Autonomy Scorecard](#)
Monitoring national and institutional trends in university autonomy and governance; release of updated data in spring 2017
- [EUA Funding Forum](#)
A biennial event providing an inclusive platform for discussion of key issues related to research and innovation open to all stakeholders
- [EUIMA project – Sharing Innovative Practices in University Modernisation](#)
- [USTREAM project - Universities for Strategic, Efficient and Autonomous Management](#)
- [DEFINE project – Designing Strategies for Efficient Funding of Higher Education in Europe](#)

The European University Association (EUA) is the representative organisation of universities and national rectors' conferences in 47 European countries. EUA plays a crucial role in the Bologna Process and in influencing EU policies on higher education, research and innovation. Thanks to its interaction with a range of other European and international organisations EUA ensures that the independent voice of European universities is heard wherever decisions are being taken that will impact on their activities.

The Association provides a unique expertise in higher education and research as well as a forum for exchange of ideas and good practice among universities. The results of EUA's work are made available to members and stakeholders through conferences, seminars, website and publications.

