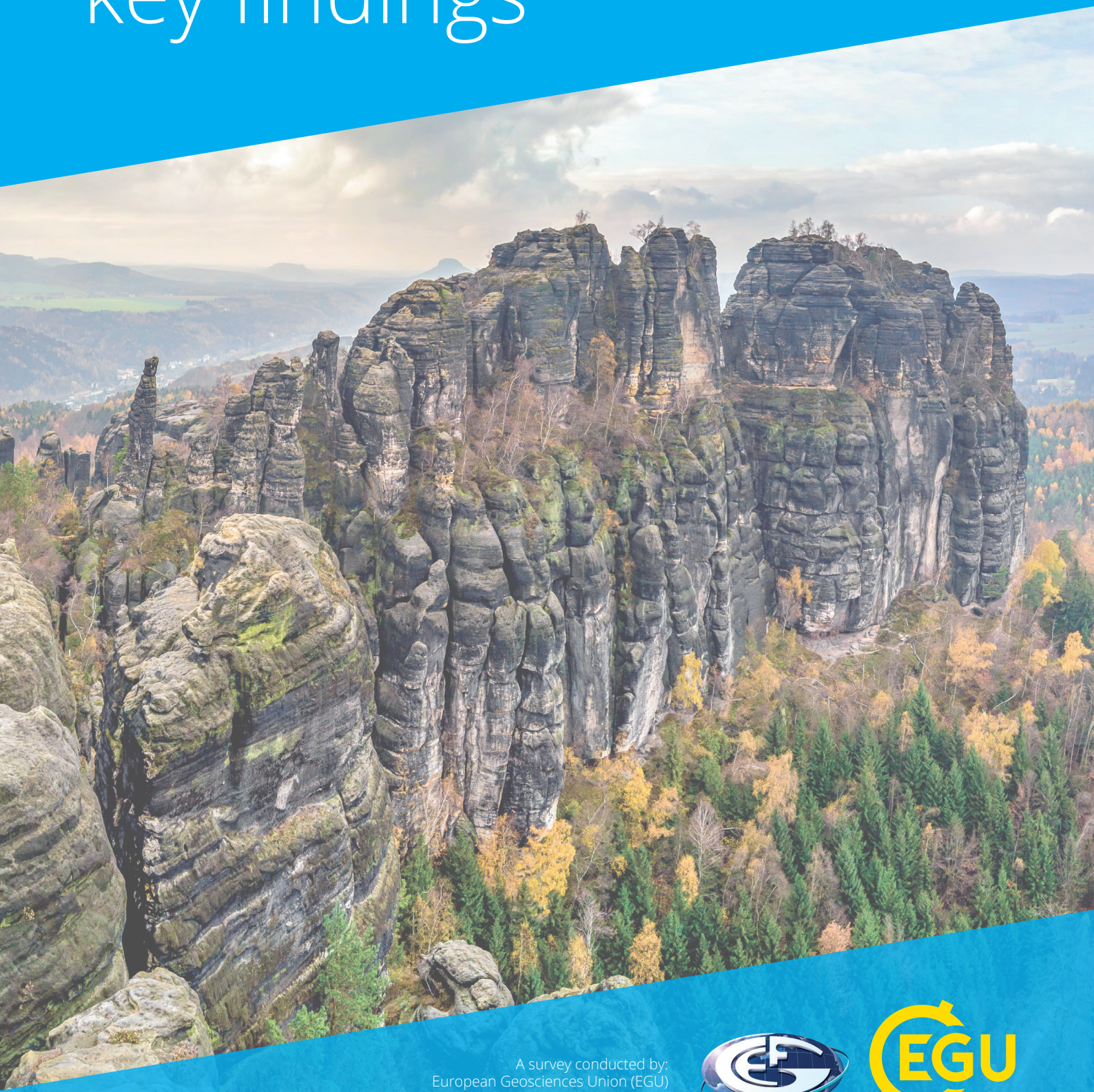
HORIZON 2020 GEOSCIENCE SURVEY

key findings



A survey conducted by:
European Geosciences Union (EGU)
& European Federation of Geologists (EFG)

About the European Geosciences Union

The European Geosciences Union (EGU) is Europe's premier geosciences union, dedicated to the pursuit of excellence in the Earth, planetary, and space sciences for the benefit of humanity, worldwide. It is an international union of scientists with about 15,000 members who span many key scientific areas that can enhance the policymaking process.

The EGU engages with science for policy activities on a European scale to encourage stronger science-policy partnerships, inform geoscientists about relevant policy opportunities, and highlight policy-relevant research to both the public and policymakers. The EGU also publishes a number of open-access journals and organises the largest and most prominent European geosciences event, an annual General Assembly with over 14,000 scientists.

www.egu.eu

About the European Federation of Geologists

The European Federation of Geologists (EFG) is a non-governmental organisation that was established in 1980 and today includes 26 national association members with over 45,000 individual members.

EFG is a professional organisation whose main aims are to contribute to a safer and more sustainable use of the natural environment, to protect and inform the public, and to promote a more responsible exploitation of natural resources.

EFG's members are national associations whose principal objectives are based on similar aims. The guidelines to achieve these aims are the promotion of excellence in the application of geology and the creation of public awareness of the importance of geoscience for society.

www.eurogeologists.eu

Cover photo:
(A)Rising Stone. Credit: Marcus Herrmann (distributed via imaggeo.egu.eu)

Research & innovation: Europe's future

The importance of research and innovation for Europe's future cannot be overstated. It drives economic development, increases Europe's global competitiveness, and is necessary for solving global societal challenges.

The EU's research framework programmes have evolved and expanded over the years and the Horizon 2020 Programme is no exception. Not only has Horizon 2020 boosted EU excellence and global competitiveness but it has also stimulated researcher mobility, interdisciplinary and cross-sectoral collaboration and subsequently strengthened scientific collaboration within the EU.

Due to its thematic diversity and its size, the geoscience community has a significant representation within Europe's research programmes. The European Geosciences Union (EGU) and the European Federation of Geologists (EFG) have conducted the Horizon 2020 Geoscience Survey to collect feedback on areas of Horizon 2020 which the geoscience community felt should be continued or extended and those which could be improved upon in the upcoming Horizon Europe.

This report will specifically focus on the geoscientific community to obtain insights from those who are applying for and participating in EU-funded projects. Because of its distinct target group, the Horizon 2020 Geoscience Survey was able to ask specific questions and obtain detailed feedback. This report summarises the survey's qualitative and quantitative outcomes.

We are confident that the gathered insights and presented findings in this report will be of interest to both the geoscience community and those working on the implementation of Horizon 2020 and design of the forthcoming Horizon Europe.

Contents

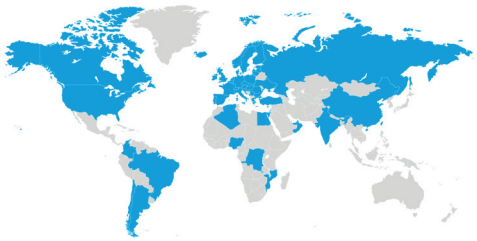
About the respondents

The Horizon 2020 Geoscience Survey was opened from April 2018 until mid-May 2018 and had a total of 271 responses from 46 countries. The majority of survey participants (78%) were from EU member states, 89% of participants responded as an individual rather than on the behalf of an organisation, and 40% of survey respondents were female.

45 days

271 answers

46 countries



78%

89% individuals

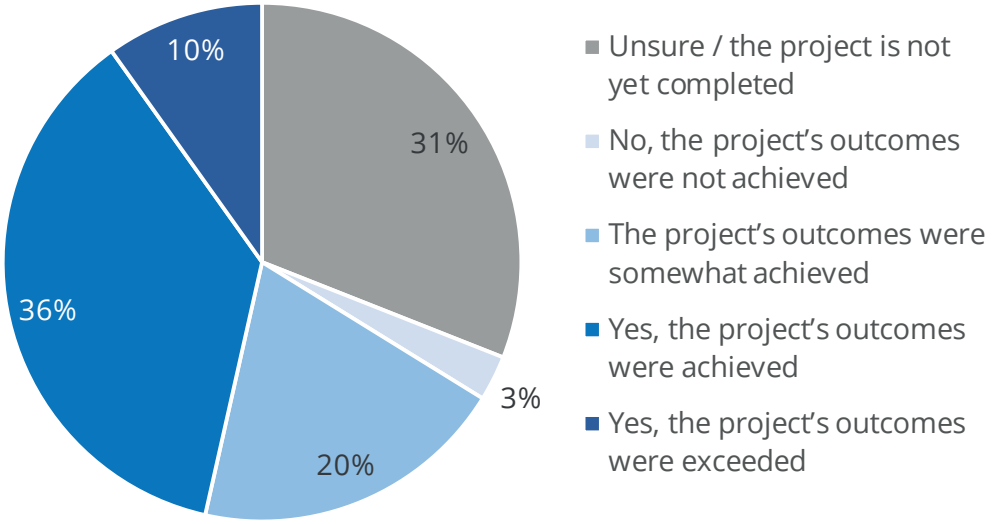
60%

40%

Horizon 2020 geoscience projects

The survey participants were involved in 102 different Horizon 2020 projects. The societal challenges addressed by these projects varied widely, from climate change to sustainable mining to flood and drought management. 46% of respondents stated that their projects' expected outcomes were either achieved or exceeded. Only 3% of respondents stated that the outcomes of their now completed project(s) were not achieved.

Did the project(s) that you were involved with achieve the expected outcome(s)?



For more information about Horizon 2020 projects undertaken by some members of the geoscience community and their outcomes please see https://eurogeologists.eu/efg-projects.

A couple of respondents expressed concern about how their projects were going to fare on the long term.

"The project achieved substantial outcomes: the main issue is how to maintain these achievements in the short intermediate term and how to consolidate these."

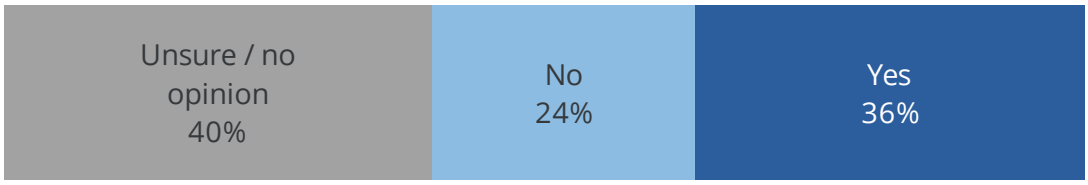
"[...] the main problem is that everything grinds to a halt after the last report/ deliverable."

Tapering funding to extend the life of EU-funded projects, Horizon Europe could enable the maintenance of platforms, increase the long-term impact of projects, and minimise future overlap.

The application process

Despite simplification being one of the major features of Horizon 2020 with efforts to improve website usability and making the framework easier to navigate, the complexity of the website and bureaucracy associated with the application process were still a key issue for many respondents.

Is the application process for Horizon 2020 funding straightforward?



Not only did 36% of respondents think that the application process was straightforward, the administrative and bureaucratic work needed to apply for funding was mentioned 23 separate times during the survey. Some participants indicated that the chance of being awarded funding was outweighed by the work required to apply:

"The amount of time and energy spent for project proposals, applications and reporting is often disproportionately large in comparison to time and funding available for actual research."

"The drive for simplification should continue: for the EU budget overall, for the EU R&I programme, as well as for programmes at national level. Call documents should become much simpler, easy to find, easy to read and easy to respond to."

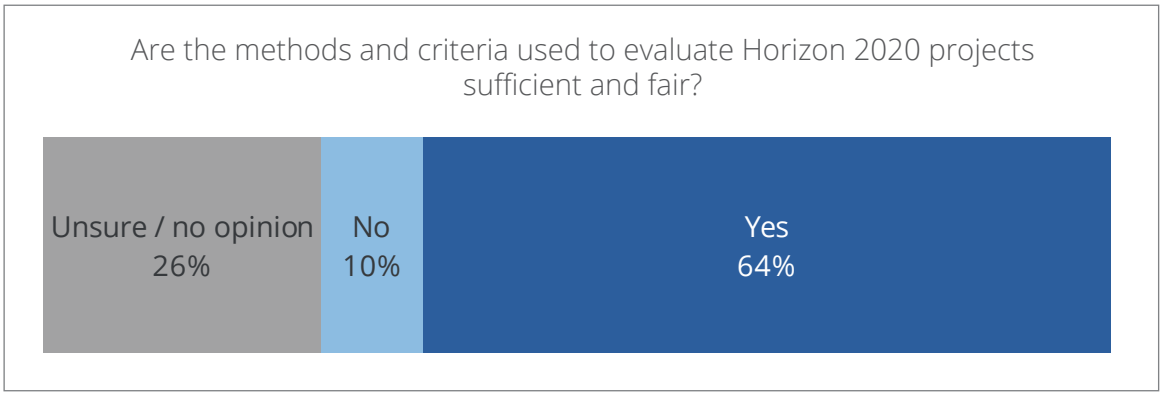
Other respondents simply stated that they found the EU's Participant Portal confusing or that it was *"Difficult to identify relevant calls."*

Simplifying the project funding calls in Horizon Europe and reducing bureaucracy during the application process is likely to increase the amount of time that scientists can allocate to research and is therefore also likely to produce more scientific results that benefit society. We therefore welcome the proposal by the Commission to *"reduce administrative burden for beneficiaries and programme administrators"* in Horizon Europe. We would also welcome a simplification of the funding application process.

Maintaining the number of larger EU-funded projects while also including a number of smaller grants that have a shorter application process, was suggested as a method of reducing this bureaucracy by several survey respondents. *"... I would appreciate the availability of additional calls for smaller projects requiring a less ambitious funding ..."*

The evaluation of applications

The majority of respondents (64%) who had received Horizon 2020 funding thought that the methods and criteria used to evaluate the Horizon 2020 projects were sufficient and fair.



Despite the positive results, some participants felt that the Horizon 2020 project evaluation panel should be larger or more thematically diverse, while other respondents thought that some evaluators lacked specific expert knowledge to evaluate their proposals.

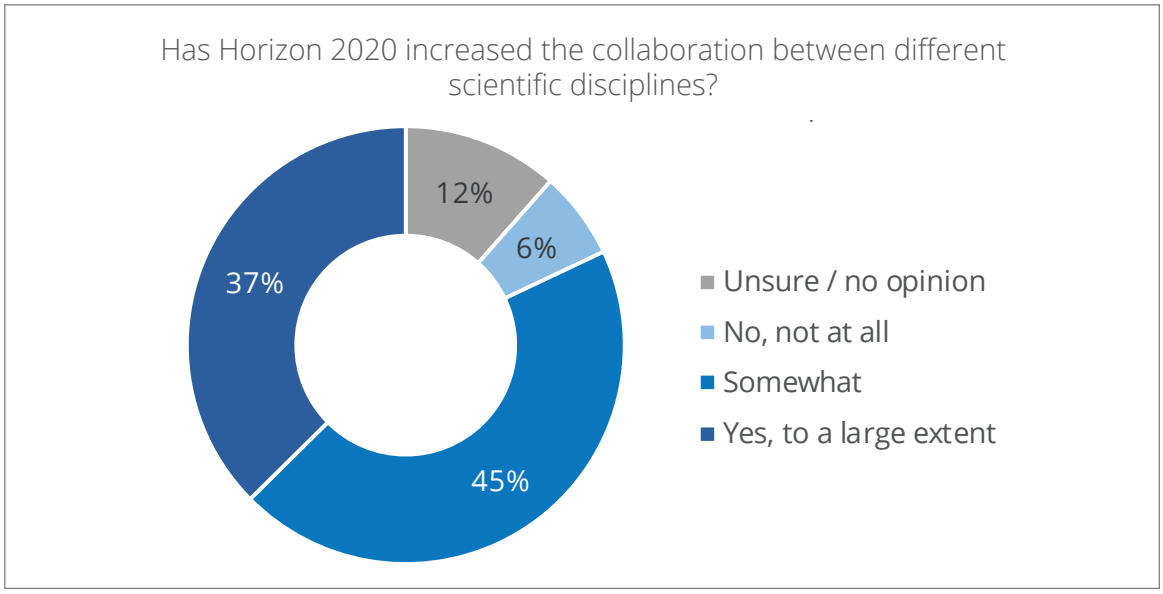
Expanding both the size and the experience of the panel could increase the quality of the feedback provided to the applicants, subsequently improving the future submissions and project success.

Opportunities for collaboration

Increased collaboration is an important goal of Horizon 2020 and was focused on in a number of different questions throughout the Horizon 2020 Geoscience Survey. The results were generally very positive, both in terms of the perceived improvements in collaboration as a result of Horizon 2020 and the desire for continued collaboration in future projects.

Collaboration between different scientific disciplines

The vast majority of respondents felt that Horizon 2020 had increased collaboration between different disciplines with 82% stating it had increased collaboration either somewhat or to a large extent. All written responses were either neutral or positive regarding the increased collaboration.

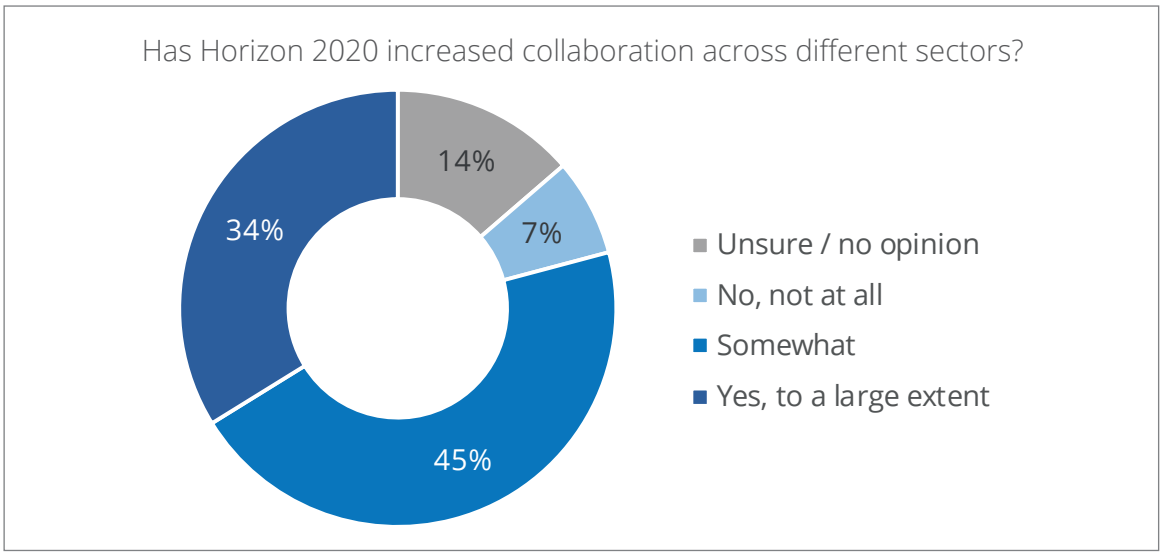


Some suggestions from the geoscience community to further encourage collaboration between different scientific disciplines in the upcoming Horizon Europe Programme, included:

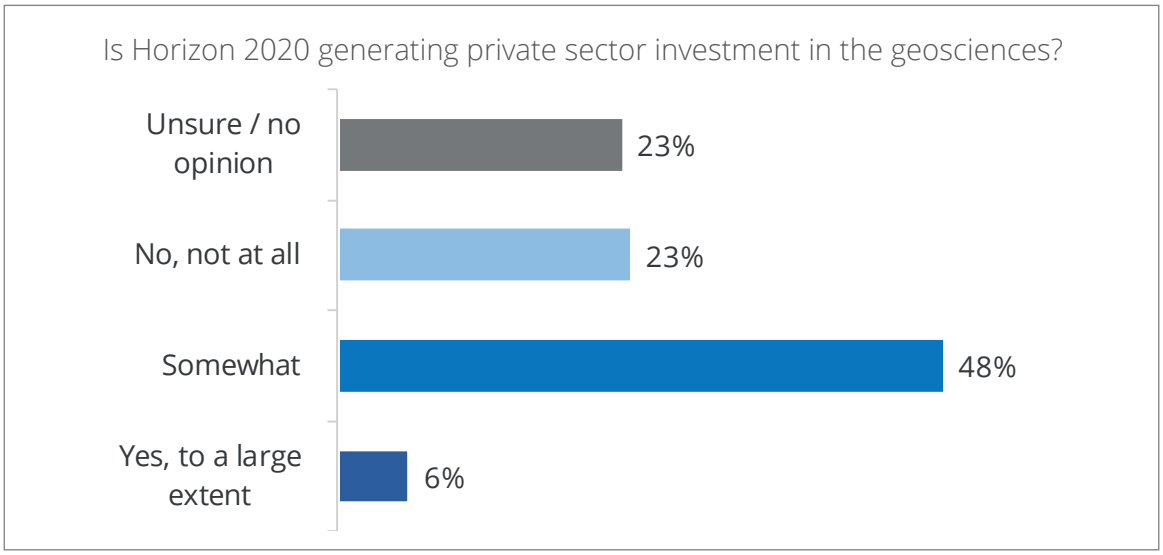
- Increase the number of geoscience-relevant *"cross-disciplinary calls"*
- *"Fund small interdisciplinary teams, not large inefficient ones"*
- Increase access to open data, allowing scientists to use a wider variety of data in their modelling
- Encourage *"universities and research institutes ... to embrace and support [collaboration]"*
- *"Rather than encouraged (pushed) it needs to be recognised and rewarded (pulled)"*

Intersectoral collaboration

Survey respondents from the geoscience community also thought that Horizon 2020 had increased collaboration across multiple sectors, e.g. academia, industry, and government. 79% of survey respondents felt that Horizon 2020 had increased collaboration between sectors either somewhat or to a large extent.



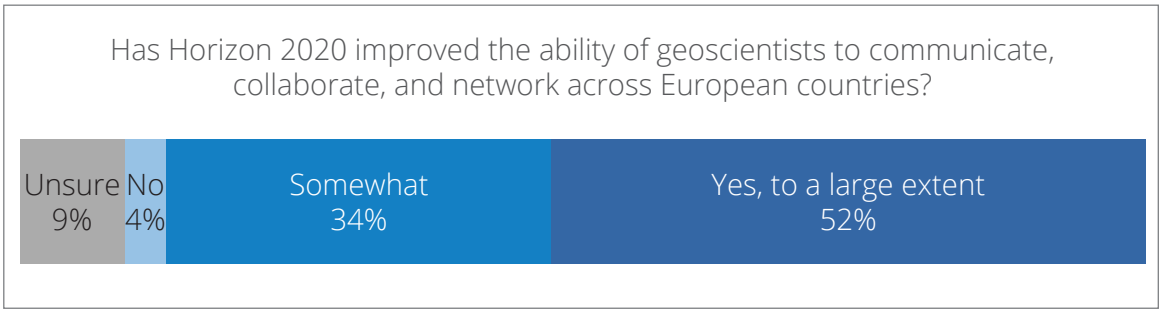
Despite many areas within the geosciences (such as hydrology, geothermal energy, and solid Earth sciences) being used by the private sector, survey respondents generally felt that Horizon 2020 had only been moderately successful at generating private sector investment within the geosciences. 48% of respondents believed that it was somewhat generating private sector investment and only 6% thought it was generating it to a large extent.



Some respondents suggested that providing more opportunities for early career scientists to work within the private sector could help boost private sector investment, *"Better conditions for supporting the contracting of young scientists by companies."*

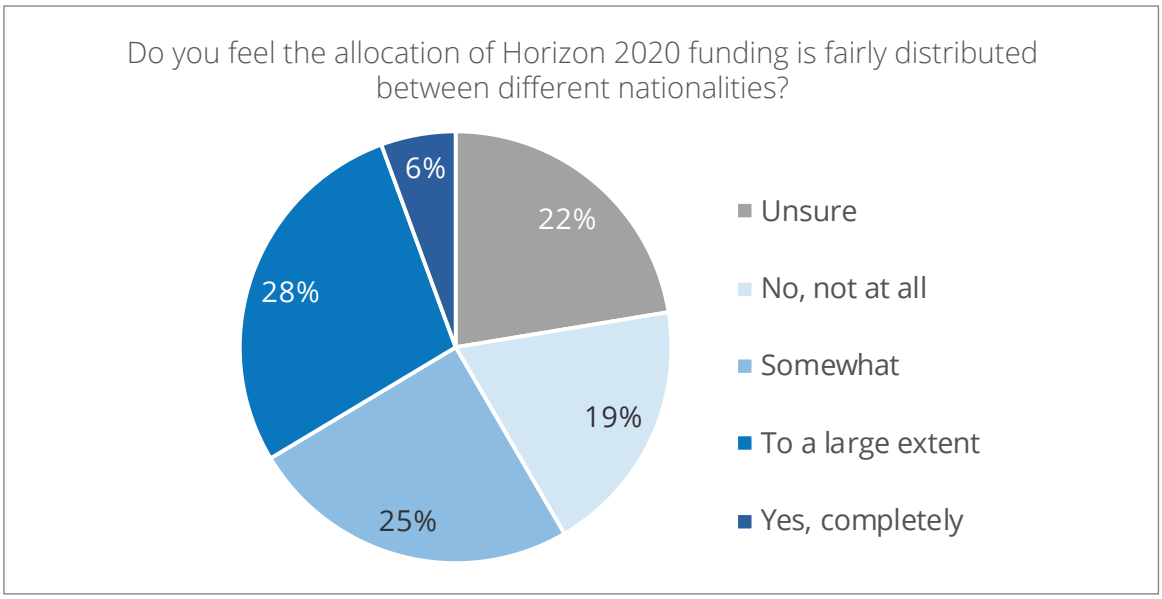
International collaboration

Survey respondents felt that international collaboration was arguably one of the areas that the Horizon 2020 had the biggest impact on. 52% of respondents thought that Horizon 2020 had increased communication, collaboration, and networking across European countries to a large extent and 34% of respondents believed that it had somewhat.



National representation

Despite the majority of respondents stating that Horizon 2020 had improved the ability of geoscientists to collaborate across European countries, 19% of respondents thought that the allocation of Horizon 2020 funding was not fairly distributed between different nationalities and 25% thought it was only somewhat fairly distributed.

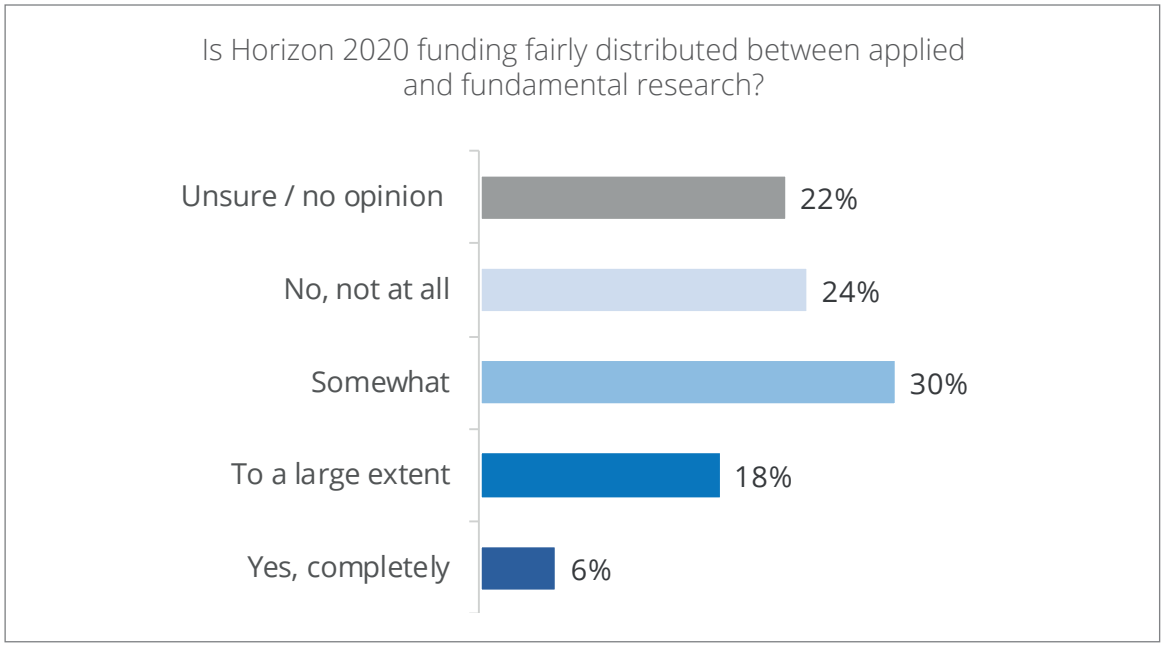


The need for greater international collaboration with partners outside of the EU was mentioned several times throughout the survey, both generally and in regard to specific sectors.

"Need more international collaboration. Especially in the raw materials sector Europe has a lot to learn from countries like Canada and Australia. They are well ahead with their raw materials programmes."

The distribution of fundamental and applied research

The distribution of Horizon 2020 funding between applied and fundamental research was arguably the issue survey participants were most concerned with. 24% of survey respondents felt that the distribution between applied and fundamental science was not distributed fairly at all.



Furthermore, the need for more projects focusing on fundamental research was commented on 20 separate times throughout the survey. Many respondents simply stated that *"Fundamental research is underrepresented,"* while others went into more detail highlighting the role that fundamental science plays in long-term innovation and subsequent societal benefit,

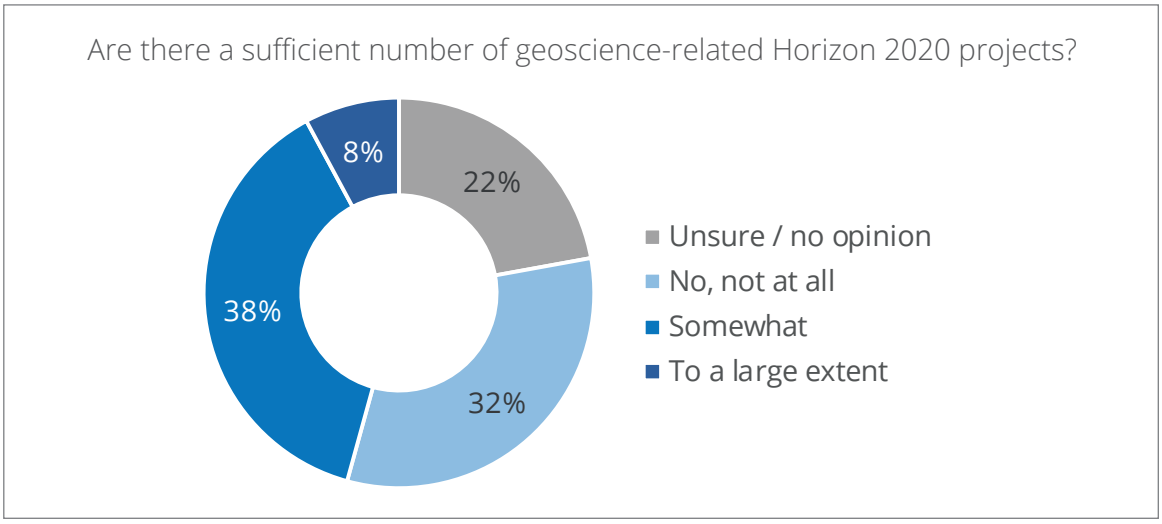
"... it seems as though the focus [of Horizon 2020] was more on applied research, the results of which can have immediate application and impact. It seems as though the more fundamental or 'pure' research topics received less attention, if not lesser amounts of funding. However, these two types of research work in tandem to provide longer-term measurable solutions."

A number of survey respondents also highlighted the importance of the European Research Council (ERC) in promoting bottom-up research directives, opportunities for fundamental research.

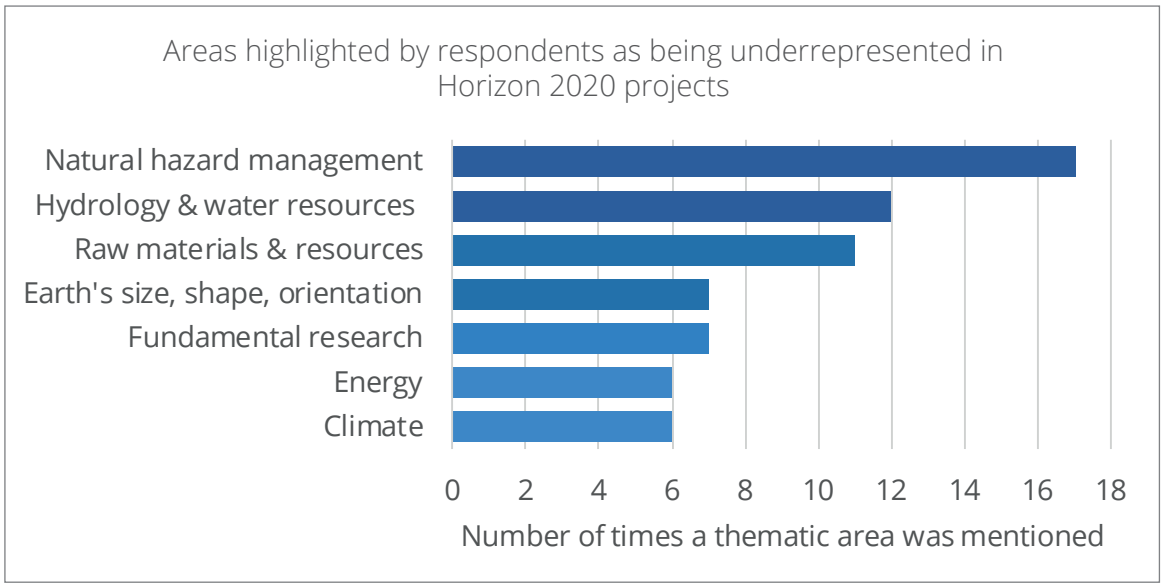
Despite the presence of some fundamental-research projects, survey respondents still feel that more are needed. It is therefore hoped that the first pillar of Horizon Europe, *Open Science*, will have a strong focus on excellent science and a bottom-up, investigative approach.

Geoscience representation in Horizon 2020 projects

Apart from comments on the division between fundamental and applied science projects, more information was given about the representation of geoscience-related projects. Only 8% of respondents felt that there were a sufficient number of geoscience-related Horizon 2020 projects.



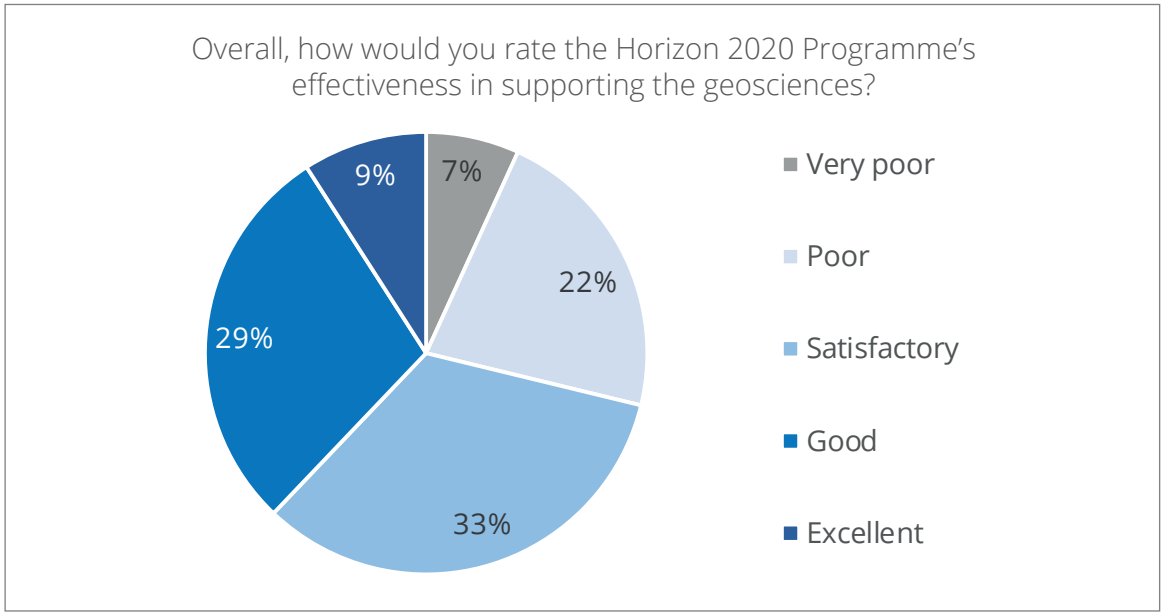
Survey respondents were also asked about which thematic areas they felt were underrepresented in Horizon 2020 projects. Areas that were mentioned by six or more participants are outlined in the graph below.



A few areas were highlighted as being underrepresented in Horizon 2020 by a large number of survey participants. It is recommended that underrepresented areas such as natural hazard management, water resources and raw materials are given a larger focus in Horizon Europe.

Overall effectiveness

The overall feedback regarding the Horizon 2020 from the geoscience community is more positive than negative but still divided. 38% of survey participants rated the Horizon 2020 Programme's support for the geosciences as either excellent or good while 29% rated the Horizon 2020's effectiveness as either poor or very poor. Early findings showed that some areas within the geosciences are less represented in the Horizon 2020 projects than others. The deviating responses to this question could be a further indication of this.



Conclusion

Survey participants generally thought that Horizon 2020 is successful in promoting interdisciplinary, international, and intersectoral collaboration. The majority of those who had completed Horizon 2020 projects stated that their projects had either met or exceeded expectations.

In regards to the future, many survey respondents would like to see a simplification of the project funding calls and less bureaucracy during the application process. Most thought that the geosciences were underrepresented in Horizon 2020 with natural hazard management, hydrology & water resource, and raw materials & resources being the top three underrepresented areas cited.

We are confident that this report has provided you with insight from the geoscience community and their view on the strengths of Horizon 2020 and areas that could be improved upon in the upcoming Horizon Europe.

For more information about this report or the Horizon 2020 Geoscience Survey, please email EGU at *policy@egu.eu* or EFG at *info.efg@eurogeologists.eu*.

Full survey results can be viewed at:
https://www.egu.eu/0H2020

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