



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR RESEARCH & INNOVATION
Directorate B – Innovation Union and European Research Area
B.7 – Science with and for society
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Public consultation on the Science with and for Society

Work Programme 2016-2017

General Findings

1. Background

Horizon 2020¹ is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020). Delivering on the Europe 2020 objectives of smart, sustainable and inclusive growth depends on research and innovation as key drivers of social and economic prosperity and of environmental sustainability. Linking EU research and innovation closer to policy objectives it sets the framework and objectives to which Horizon 2020 research and innovation funding should contribute, such as the Europe 2020 Strategy, the Innovation Union and other flagship initiatives. The general objective of Horizon 2020 will be pursued through three priorities dedicated to generating excellent science, creating industrial leadership, and tackling societal challenges.

The Horizon 2020 Specific Programme² sets the scope and content for the implementation of the Framework Programme³. It defines the specific objectives of each part and the rules for implementation for the duration of the programme, while not defining the sequence of roll-out of the actions and their framing. On this basis, the Commission services prepare multiannual work programmes of which the first Horizon 2020 work programme for the period 2014-2015 was adopted on 10 December 2013.

The Horizon 2020 work programme covers the large majority of the funding available. This bulk of Horizon 2020 comprises 18 sections, which set out the funding opportunities under the different parts of the programme. Each part is self-contained, and describes the overall objectives, the respective calls, and the topics within each call.

Directorate B of DG RTD, Unit B7 launched a 3-month open public consultation in the summer of 2014 to obtain views and contributions from a broad constituency on the potential priorities for the 'Science with and for Society' work programme 2016-2017. The contributions obtained are meant to support the services of the European Commission in the drafting of the new work programme complementing the opinion provided by an External Advisory Group of high level experts⁴.

A short consultation paper⁵ provided the background and objectives of the consultation while a questionnaire⁶ was launched on 11 July 2014 with publication on the *Your Voice in Europe* website⁷.

The questionnaire was designed around a set of closed and open-ended questions. The closed questions aimed at gathering information about the respondents while the six open-ended questions dealt with the main subjects of the consultation, more specifically:

1. *What should be the main priorities needed to shape the next Horizon 2020 Work Programme 2016-2017 to build an effective cooperation between science and society?*
2. *Which are the main barriers preventing effective cooperation between science and society?*

¹ <http://ec.europa.eu/programmes/horizon2020/en>

² http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/sp/h2020-sp_en.pdf

³ http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/fp/h2020-eu-establact_en.pdf

⁴ article 12 of [Regulation \(EU\) No 1291/2013 establishing Horizon 2020](#)

⁵ <http://ec.europa.eu/research/consultations/swafs/background.pdf>

⁶ <http://ec.europa.eu/research/consultations/swafs/questionnaire.pdf>

⁷ http://ec.europa.eu/yourvoice/index_en.htm

3. *Which topics could be supported by the next Horizon 2020 Work Programme 2016-2017 with regard to Science with and for Society?*
4. *What would you like to see as outcomes resulting from the projects funded through the Science with and for Society calls for proposals 2016-2017?*
5. *How do you see international cooperation (beyond EU borders) being addressed in Science with and for Society?*
6. *In which priorities of Horizon 2020 and how should science and society issues be integrated (e.g. in Excellent Science, in Industrial Leadership, in Societal Challenges)?*

The targets of the consultation were individual citizens as well as organisations. Contributions were particularly sought from research institutions, civil society organisations, business, policy makers, higher education institutions, science museums, science shops, scientific centres of excellence, local public authorities, cities of scientific culture, innovators and entrepreneurs.

2. Limitations of the consultation and its findings

The findings of the consultation, which are the result of the work of DG RTD, are only indicative. This consultation should not be seen as a scientific study or broadly representative sample of the opinions and views expressed by the groups of respondents who took part in the consultation. All the contributions from the respondents are published on the consultation website in their entirety⁸ and are accessible to anyone interested in accessing the original answers.

The choice was made by Unit B7 to structure the main part of the questionnaire around open-ended questions. This particular choice had the shortcoming of yielding very diversely framed qualitative answers. Furthermore, any attempt of analysing the responses is inevitably biased by the knowledge and personal understanding of those who carry out the analysis. The findings offered by this document make no exception.

3. Information about respondents

A total of 170 entries were submitted, of which 165 unique contributions (see Annex I for statistics). Organisations represent 56 % of the total number of respondents while individuals represent 44%. Of the organisations, 22 are networks, representing a multitude of entities: thousands of researchers and over a thousand of research organisations, regions, science communication and non-profit organisations and companies.

Most of the respondents (108) agreed to have their contribution published under their name, or the name of the organisation of their affiliation while 51 respondents asked for their contribution to be published in an anonymous way⁹. The male-female ratio of individuals was fairly equal (see figure 1).

⁸ http://ec.europa.eu/research/consultations/swafs/swafs_results.pdf

⁹ Some respondents (11) asked for their contribution not to be published. Their responses are not taken into account in the analysis according to the Specific Privacy Statement set for the consultation. For more information on the specific privacy statement and data protection: http://ec.europa.eu/research/consultations/swafs/privacy_statement.pdf

165 contributions...



...including 72 individuals

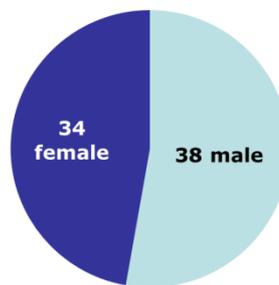


Figure 1 Respondent statistics: number of individuals and organisations that responded and gender ratio of individual respondents.

Organisation type

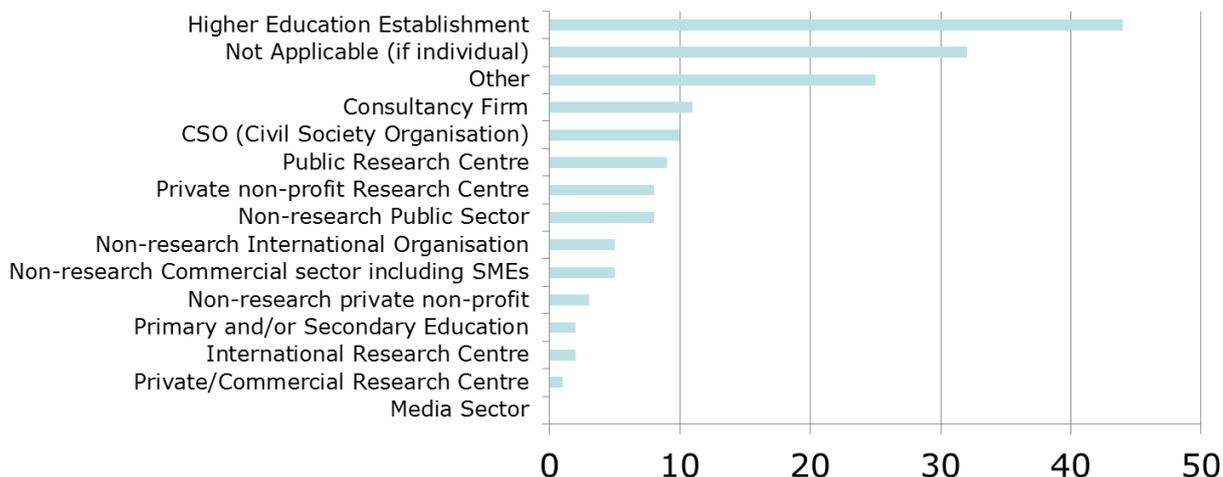


Figure 2 Type of organisation of respondents (answers of individuals and organisations combined)

Most respondents are resident of or part of an organisation based in one of 21 EU Member States, primarily from France, Germany, Romania and the UK (see figure 2); contributions were not received from Hungary, Latvia, Lithuania, Luxembourg, Malta, Slovakia and Slovenia. 14 entries came from respondents of other countries (Switzerland, Norway, India, Canada and Japan).

Most responses (27%) came from higher education establishments and very few answers were given by primary and/or secondary education, media and international or private/commercial research centres¹⁰ (see figure 2).

Of the respondents, 59% have applied for funding under the current and/or previous EC Framework Programmes for research.

¹⁰ Some individuals filled in their type of organisation, while other individuals indicated 'Not applicable (If individual)'. These figures therefore include all organisations and some individuals.

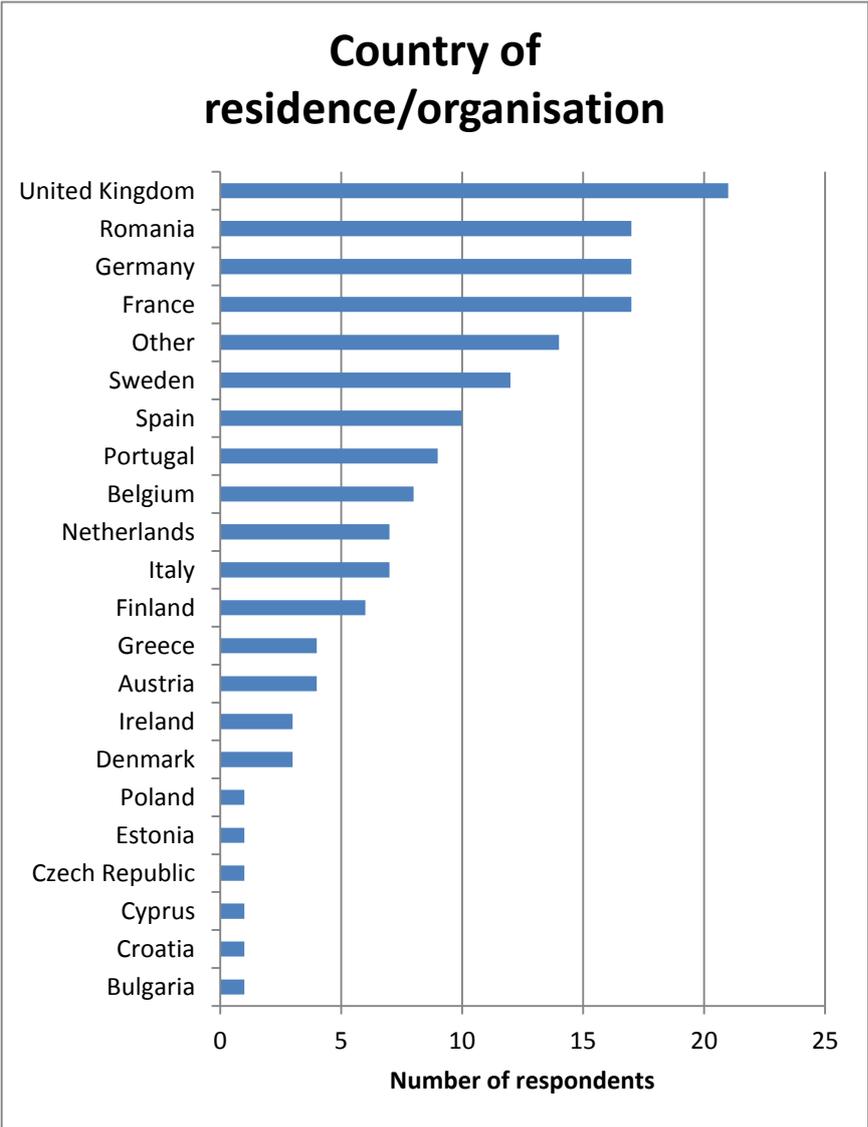


Figure 3 Number of respondents per country of residence or country of organisation

4. The findings of the consultation

The answers to the first four open-ended questions were grouped according to the priorities as set out by the Horizon 2020 Specific Programme, title V:

- *Make scientific and technological careers attractive to young students (careers)*
- *Foster sustainable interaction between schools, research institutions, industry and civil society organisations (institutional interactions)*
- *Integrate society in science and innovation issues, policies and activities by incorporating the needs and values of citizens, thereby increasing the quality, relevance, social acceptability and sustainability of research and innovation outcomes in various fields of activity, from social innovation to areas such as biotechnology and nanotechnology, etc. (Incorporating needs)*
- *Promote gender equality, in particular by supporting structural changes in research institutions and in the content and design of research activities (gender)*
- *Encourage citizens, including children and youth to engage in science (multi-actor and public engagement)*
- *Engage in science through formal and informal science education, and promote the diffusion of science-based activities, namely in science centres and through other appropriate channels (science education)*
- *Develop the accessibility and the (re-)use of the results of publicly-funded research (open science)*
- *Develop the governance for the advancement of responsible research and innovation by all stakeholders (researchers, public authorities, industry and civil society organisations), which is sensitive to the needs and demands of society (governance)*
- *Promote an ethics framework for research and innovation (ethics)*
- *Take due and proportional precautions in research and innovation activities by anticipating and assessing potential environmental, health and safety impacts (precautions)*
- *Improve knowledge on science communication in order to enhance the quality and effectiveness of interactions between scientists, general media and the public (science communication)*

For each of these, we describe, where relevant, the most often mentioned priorities, barriers, future topics and preferred outcomes of the themes of interest to SWAFS¹¹. In addition, we describe potential novel topics for the work programme in boxes below. After that, the answers to the questions on international cooperation and RRI relevance for pillars of H2020 are described.

¹¹ See Annex II and III for an indication of the results per question.

Careers

Priorities Respondents suggest that trainings could be further developed for teachers to improve the attractiveness of STEM careers through education. They suggest that attractive and realistic career opportunities could be increased at all stages of the scientific career.

Barriers Barriers that are experienced are a lack of interaction between disciplines and between SMEs/industry and academics.

Topics and outcomes Topics could include the sharing and broadly implementing of best practices for enhancing attractiveness of science careers.

Novel topics could include actions to increase career attractiveness in institutions, for instance to increase job security and examine potential career paths for researchers after their PhD. Research could also focus on cultural, geographical and socio-economic determinants that influence the choice for scientific careers. In addition, activities could be directed at further developing career orientation and mentoring of students at various times during their formal education.

Institutional interactions

Priorities Respondents argue that interactions between schools, research institutions, industry and CSOs should be strengthened and increased. These institutions could increase their cooperation and, for instance, provide joint internships and PhDs.

Barriers However, as a barrier, respondents mention that there is a lack of mechanisms in research institutions to promote collaboration. There is a need for effective mechanisms and places that facilitate collaboration. In addition, there are concerns that in the interaction with industry, economic perspectives prevail over the societal perspective.

Topics and outcomes A topic for projects could be to create networks between parties, especially to increase the collaboration of research with societal actors and schools.

Gender

Gender as cross-cutting issue

Priorities A main priority of respondents is to strengthen gender in H2020, to be an integral part of proposals rather than an added-on aspect. Other priorities are to involve real gender experts within the planning of proposals, and include participatory research methods to ensure users and citizens perspectives are taken into consideration. In all Horizon 2020 calls and in evaluation processes, emphasis could be placed on recent scientific evidence for the positive effect of gender balance and diversity on scientific quality, team performance, innovation, and business performance. Gender criteria in H2020 could be supported by providing additional information explaining what is expected, for instance in the gender dimension in the work plan.

Barriers Main barriers are that topics are too narrowly defined; there is no place to go into the gender dimension. Topics are too technologically defined, which leaves no room for social innovation. Gender is not taken systematically into consideration across topics and there is a lack of communication.

Topics and outcomes In the future, emphasis could be placed on the gender dimension in research in all topics. SWAFS calls with a gender focus should be open, and policy related or linked to, for example, social innovation and/or societal challenges.

Specific gender issues in SWAFS

Priorities Main priorities mentioned are Science it’s a Girls Thing, education, structural change and understanding the lack of women in research (e.g. low nr. of patents).

Barriers Main barriers are the absence of role models, the lack of gender equality with the consequence that women have less chance in enterprises, universities and in science education.

Novel topics could encompass the development of a gender impact assessment tool and/or a self-assessment tool that would give the right to a label on effective gender policies and good working conditions.

Topics and outcomes Future topics could look into institutional change, research on gender itself and the creation of a Gender Researcher Network.

Incorporating needs

Priorities Respondents are in favour of defining citizen needs for research. Research could also be carried out in contact with citizens. Science can meet the needs of society, for example by relating their research to the quality of (daily) life and living conditions. Thereby, science should not only take economic interests into account. Respondents argue that natural and engineering sciences on the one hand and social sciences and humanities on the other should be better integrated. New platforms, meeting places and entry points could be created where different actors can connect. Practically applicable outcomes of research projects are preferred by some respondents.

Barriers A barrier to social innovation and incorporating needs and values of citizens is that science and society have different perceptions of the way in which knowledge production takes place. This involves an 'ivory tower mentality' of science and a lack of public understanding of science.

Novel topics could include actions that contribute to a better understanding of social innovations and their different forms and practical expressions. How is social innovation perceived in different contexts? What does the concept entail? Other future topics could aim at further developing creativity in research and innovation.

Furthermore, the economic and research perspective often prevails over the societal perspective.

Topics and outcomes Topics could address best practices in involving citizens defining or discussing priorities for scientific research. Respondents argue that outcomes of research would ideally be practical applications in society or concrete answers to societal issues.

Engagement

Priorities Priority for respondents is to enhance the knowledge base on engagement and to continue to build an evidence base. This could be done, for instance, by further deepening the understanding of democratically created knowledge and how science teams work, and by better understanding

barriers for engagement. Another priority is to further develop citizen science or crowd sourcing solutions for societal challenges.

"The public is not satisfied anymore with top-down explanations that try to "sell" science rather than discuss it. Virtual modes of engagement are necessary but not sufficient to engage the public."

- Ecsite, European Network Science Centres and Museums

Barriers Too little direct engagement of the public with research is mentioned as a barrier for successful science-society cooperation. Respondents mention this might be partly due to a lack of engagement skills, which is caused by a lack of training and lack of criteria for engagement skills in recruitment. They also mention that it might be due to a lack of recognition and resources, notably money and tools, for engagement.

Barrier: "Academic perceptions about higher education researchers holding a monopoly on knowledge production"

- UNESCO Chair in Community Based Research and Social Responsibility in Higher Education

One respondent also mentioned as a barrier the lack of appreciation of the value of societal engagement within and across Commission directorates.

Novel topics could include increasing the attention paid to marginal and excluded social populations in engagement, for instance persons with disabilities, people in areas of high social deprivation or young people. In addition, local communities could be included in defining project subjects to be funded. One respondent suggested that calls could explicitly target CSOs. Another suggested supplying forms of dissemination grants that allow EU funded science engagement projects with good results to deploy the dissemination of their results.

Topics and outcomes Future topics could include more emphasis on citizen science. For instance, expertise of national funding organisations that support citizen science could be shared at the European level. Furthermore, future topics could include further capacity building in engagement, by investing in additional training of researchers and relevant societal actors in effective engagement approaches in research, sharing tools and best practices, sustaining project results and supporting institutional change by increasing recognition for engagement in institutions and the European Commission.

As an outcome, projects could result in an identification of options and barriers for integrating public engagement in research institutions. In addition, tools and guidelines could be further developed.

"The guidelines and criteria for the role and selection of stakeholders could be supported by the development of a stakeholder analysis tool for the context of EU research, innovation and implementation. The tool should be able to identify stakeholders relevant for respective research and innovation programs in a comprehensive approach (e.g. the Quadruple Helix model for innovation) and

facilitate the evaluation of the quality of stakeholder involvement in program and project assessments."

- Societal Advisory Board (SOAB) of the Joint Programming Initiative "More Years Better Lives" (JPI-MYBL)

Education

Priorities For education, a priority for respondents is to focus on the content of science education, especially on its function to create awareness of how science works. This involves education on critical thinking, scientific risk assessment, strengths and weaknesses of portrayals of science, the construction of knowledge, creativity, and reasoning. In addition, respondents stress that science education should be available to all, from an early age onward.

Barriers One of the barriers experienced is a lack of truly innovative teaching of science; many respondents feel that science education could relate more to everyday life.

Topics and outcomes Topics to address would therefore be to develop more innovative and high quality methods, in which students are participating in science or science education stays close to their reality. This would involve both formal and informal education. Future research could support links between research and education on a structural level.

"Stimulate links between leading European researchers and children and teachers, e.g. development of massive open online courses for teachers."

- Leiden University Astronomy Department

In order to reach this better formal and informal education, respondents call for further knowledge sharing of best practices. This could be, for instance, via live presentations and regular demonstrations of scientific teaching methods to stakeholder groups.

Open science

Priorities Respondents argue that open access should be further developed together with stakeholders in order to promote practical applications and to exchange best practices. Regarding open science, a priority is to understand how science takes place in a digital age. For instance, how big and open data can be used in the attempts to tackle global societal challenges.

Novel topics A novel subject might be how open science is part of reward systems or incentives for RRI activities. At the moment, the scientific system values accomplishments within the scientific community, and do not take interaction with society into account. For instance, considerations on how to transform results from scientific work into concrete policy actions could be addressed.

Barriers Pay walls are experienced as a barrier to science-society collaboration. Respondents therefore argue that policies and business models creating change in the publication system must continue.

"Discoverability remains a major barrier which needs to be addressed via various technical projects promoting discovery and reuse of resources."

- Dr Stephen Pinfield, University of Sheffield, UK

Topics and outcomes Topics to address would be creating knowledge on concepts of open data and shared data.

Governance

Priorities Priority for respondents is that RRI is integrated into Work Programmes of H2020, in establishing projects and in exploiting results of projects, for instance using Mutual Learning Action Plans (MMLs) or projects such as VOICES.

"The EU-Programme H2020 is a holistic EU-activity in which the [...] SWAFS and RRI projects should be seen as interacting elements. [...] It [SWAFS] should embed itself in wider European policies that are relevant for SWAFS such as future urban policy and regional strategies."

- ERRIN European Regions Research and Innovation Network

Many respondents are positive about the effects of science-society work programmes in the past years, and argue for sustained an even increased funding of these activities.

"If the Commission intends to have more impact, it is quite important that there should be more funding allocated. In case there is not enough funding available, then it is quite important that the calls should not necessarily be completely open and that more priorities should be given in order to limit the type of calls, otherwise there is a danger of dispersion which will have a counter-effect regarding the objectives defined."

- European Schoolnet - EUN Partnership

Some respondents argue to increasingly open up calls to society and to promote responsible innovation in collaboration with industry and in effective technology transfer. They argue that the development of responsible innovation could be enhanced by creating support tools and networks for industry and SMEs. This could include, for instance, decision making support tools, responsible innovation business cases and arguments for responsible innovation.

Some respondents argue that calls could be more flexible and open to civil society participation, especially in defining concrete issues for research and innovation projects. Currently, they remark, there is a lack of time to establish collaborations and insufficient funding for small, bottom-up projects. There is a need for places to establish collaborations.

Barriers A main barrier for science-society cooperation mentioned is the reward system that does not (fully) recognise engagement or communication activities and, thereby, the lack of incentives for RRI activities. Current rewards also disfavour long term comprehensive work. To address these barriers, societal results of science should be evaluated and monitored and recognition of creativity in research should be increased.

Other barriers mentioned include excessive bureaucracy of government and EC, including remarks on politics, a large administrative burden due to laborious application systems, EC operating in silos and poor communication between research/business and the EU.

Institutional barriers include a lack of institutional mechanisms for true change towards RRI, which, as some respondents suggest, might be caused by the institutional cultural background and independence.

Barrier: "Independence of most European R&D institutions, who prefer to make their own decisions how and if to engage with society, which is never a priority since it does not contribute to excellence or getting research funding"

- Portia Ltd

A last barrier mentioned is a lack of continuity of results; the lack of sustaining good science-society cooperation.

"SWAFS would benefit from an annual meeting of SWAFS stakeholders to disseminate key findings and messages and build a stronger Community of Purpose."

Novel topics are aimed to overcome institutional barriers. Outcomes of new projects could include debates and a stronger knowledge base on the role of science and institutions and how institutional change can be achieved. Mobility of high skilled professionals, managerial staff and researchers could be increased across national borders, across disciplines and between academia and business/society.

Furthermore, topics could focus on public engagement in science and SWAFS policy making and find more evidence or best practices for RRI functioning. The knowledge base on the science-society relationship could be increased and the RRI concept could be further developed. RRI could thereby also address social inequality.

Novel topics could also focus on capacity building of societal organisations to define, organise and prioritise research needs. Topics can support SMEs or industry to focus on the involvement of users/clients in the conception phase of goods and services. And government and EU institutions could further develop upstream public consultations on science policy.

- ERRIN European Regions Research and Innovation Network

Topics and outcomes Respondents suggest that within higher education institutions, organizational structures could be differently organised to better support community-university research partnerships. This involves a culture change; not only in higher education, but also in governments and EU institutions.

"Aligning developments & sharing learning across different national 'systems' will be critical if the kind of long term structural change envied in Horizon 2020 is to be realised."

- National Coordinating Centre for Public Engagement (NCCPE)

Some respondents point out that too strict governance could act as an inhibitor of societal actions. This is the case when

governance conditions prevent or deter opportunities for bottom-up actions emerging and flourishing. It can also be counterproductive when global, regional and local perspectives are not sufficiently taken into account.

Surprisingly, future topics that are mentioned do mostly not focus on the main barrier of the reward system. Future topics mentioned address the mainstreaming of RRI in H2020 and reducing silos in the EC.

"Activities that support the development and implementation of RRI as a cross-cutting principle in other parts of Horizon 2020. This is very much needed."

- University of Bergen

Respondents argue that RRI should be implemented in all three pillars of H2020. For instance, for Industrial Leadership, additional social requirements such as a 'Sociological Readiness Level' could be used. With regards to policy, respondents suggest that researchers could collaborate more with policy makers to establish evidence-based policy; and policy-makers could make better use of results of research to inform policy.

Last, respondents suggest that topics should keep room for novelties.

"One thing which is lacking in H2020 is what might be termed a "wild card"-area; where truly innovative, ground-breaking but non-directed research proposals of any kind, related to interdisciplinary and intersectoral approaches could be made."

- Swedish Association of Local Authorities and Regions

Ethics

Priorities Priority for respondents is the ethical consideration of new research developments and technologies, for instance how new developments in synthetic biology or stem cell research are changing the meaning and boundaries of forms of life.

Barriers Respondents feel that ethical barriers to science-society cooperation lie in ethical scandals, corruption and excessive bureaucracy of governments and politics which leads to mistrust. Some argue that there is too little transparency on research with and for industry and a lack of trust in how decisions are made about tax payer's money spent on research and innovation.

Topics and outcomes Topics of SWAFS could address these ethical aspects of new research developments and technologies, resulting in societal debates and analyses.

Topics might address specifically how developments in the life sciences, new 'bio-

Novel topics could be research into ethical problems of new technologies such as control of automated systems, self-conception, and risk responsibility.

In addition, a novel element is the focus on ethical scandals, for instance on research with connections to industrial interests. As a barrier to effective science-society cooperation, the lack of impartiality and conflicts with ethical, religious, industrial and political entities are mentioned.

objects' in transgenics, stem cell research, synthetic biology require new forms of governance. For instance, respondents mentioned the development of analytical tools that allow tracking the social life cycles of these new technologies, from creation to diverse uses and re-creations in multiple contexts by a diversity of societal actors.

Precautions

Novel topics As a novel topic, it was suggested to develop an early warning system to counteract science scepticism and loss of confidence in science.

"Introducing Societal Impact Assessment (beyond tools like cost-benefit analysis or technology assessment) as a systematic task into programs and projects would also support the identification of relevant stakeholders and their integration into the research, innovation and implementation process."

- Societal Advisory Board (SOAB) of the Joint Programming Initiative "More Years Better Lives" (JPI-MYBL)

Priorities This category was mentioned only a few times, which might be due to the fact that many respondents focused more on addressing societal needs or ethics of novel developments rather than on risk and precaution. When addressing impact assessment, mainly, respondents referred to the impact of climate change on the environment and health, and of ICT on human health.

Topics and outcomes As a topic, respondents suggested that an impact measurement toolbox might be created to facilitate impact assessment in the process of funding science projects.

Communication

Priorities Many respondents argue that it is important to further develop scientific literacy of all citizens of all ages. Therefore, a priority for them is to continue to improve knowledge on science communication and further train and

mentor scientists in communication skills. To help this, a network of communicators can be improved, that can share best practices.

Individual respondents suggested other priorities, for instance that every scientist and engineer should be convinced of the necessity of obtaining support of their co-citizens and that researchers should be further engaged in creating communication platforms and be able to use these freely to communicate directly with the general public.

Barriers A main barrier mentioned is a lack of two-way communication or dialogue between science and society. Some respondents suggest this is in part due to a lack of public understanding of science. Therefore, they argue, training and communication programmes for the public could be established, in which the implications that scientific progress has for our societies are translated. Others suggest it is also due to a lack of (training of) communication skills of scientists.

Respondents argue that communication is a barrier because of the difficult science-society relationship: some respondents indicate that there are prejudices that the scientific community and society have towards each other and that there is a lack of respect for each other (both ways). They argue that too little direct contact between scientists and society takes place and no common language exists for science and society, which becomes more difficult as the scientific language is

mainly English. This contrasts with results of the Eurobarometer on RRI, Science and Technology¹², which indicate that European citizens see science as having a positive impact on society (77%) and see university or government scientists as the most likely actors to try to behave responsibly towards society (82%).

A novel barrier mentioned is that the science-society dialogue has been too limited to specific target groups. They could be more focused on adults and upstream debates organised by neutral partners.

Topics and outcomes Topics that could be addressed are to develop innovative methods for communication, such as storytelling, games, etc. Snowball initiatives could be supported that mobilise scientists in many countries to engage in outreach activities. Scientists could also cooperate more with media to enhance communication. Furthermore, future topics could give more reflection on the science-society interface and difficulties involved. As outcomes of projects, the public should have a better understanding of the approach and mode of operation of science, which enables them to have a different and more realistic image. Scientists could be better equipped for communication and less 'magical'.

Outcome: "Easily approached scientists."

- Anonymous

Novel topics could offer reflection and debate on science and technology and their interfaces with society to raise new skills and include everyday knowledge, increase scientific literacy and kindle enthusiasm for engineering careers. In particular, subjects could be addressed such as complexity, uncertainty, culture, SSH, digital creativity, media and social networks, and interdisciplinarity.

Novel projects could also address new populations, such as migrant communities and harder to reach populations.

"Specific calls are needed to involve actors/citizens that rarely come across science-related activities [...] and increase their appetite for science-based knowledge."

- Public & Science, VA

Emphasis could be put on contemporary research and science in the making, involving discussions of expectations, needs and outcomes of research. The internet offers platforms for communication between scientific and societal stakeholders.

"Science is a very specialized enterprise and, as such, largely inaccessible to laypeople. What is needed to bridge the gap is a joint effort between scientists, social researchers, philosophers and the public at large. We need to translate the implications that scientific progress has for our societies and make them understandable. And we also need to translate them into categories - ethical, social and economic - that are relevant for the individuals involved"

- Anonymous

¹² Special Eurobarometer 401. (2013) Responsible Research and Innovation (RRI), Science and Technology.

In addition, respondents suggest that more research and attention could be dedicated to the conceptual, practical and ethical aspects of “bottom-up” communication between science and society.

As outcomes, projects could produce tools for communication with the public and ways in which to present results in a user-friendly way. The cultural sector could be given a greater role in this.

"Demystify the research world and its importance, raise awareness that research, notably SSH, helps the everyday lives of citizens. A show such as Eurovision, during prime-time, in which researchers talk about their projects. A less confidential European researcher's film festival. The aim is to communicate the results in a less traditional way and not focus on economic, social or industrial outcomes."

- Anonymous

International cooperation

In answer to question 5 (*How do you see international cooperation (beyond EU borders) being addressed in Science with and for Society?*), the majority (84%) of respondents mentioned that international cooperation should be increased. Curiously some respondents (17% of 138 who responded to this question) considered reinforcing the connections and collaborations within the EU countries as a priority, for example within the SWAFS programme.

Only 24% (40 replies) of respondents indicated on which countries or geographical areas the international coordination should concentrate. Latin-America, Africa and Asia were indicated as zones of interest and the most cited countries were USA, Japan and China. In addition, some organisations were cited, such as the WHO. Numerous respondents consider the SWAFS programme as an important subject and tool within the context of international cooperation.

Sufficient and structured funding is mentioned as an important factor for international cooperation, for example via Joint Programming. Other important instruments for international cooperation most cited by respondents are networks, partnerships, communities, twinning, knowledge exchange and best practice sharing. Public Engagement and social innovation are considered as important issues which should be taken into account. Mutual learning is mentioned by several respondents as a means of international collaboration. Several replies consider education, science education and careers very important issues to be dealt with in an international context.

Cultural expressions, creativity, arts and design are considered important instruments for international cooperation. In addition, values related to democracy and peace are mentioned by a few respondents as important to the research environment at the international level. Several respondents mention researchers and research communities as important actors alongside regions, local entities and other organisations. Several respondents consider gender issues important in the international cooperation context.

The underlying message of respondents is that more awareness, understanding, and more support to Science and Society and RRI issues globally are the keys to success.

RRI relevance for pillars of H2020

In answer to question 6 (*In which priorities of Horizon 2020 and how should science and society issues be integrated (e.g. in Excellent Science, in Industrial Leadership, in Societal Challenges)?*), most respondents stated that science and society issues should be included into all three pillars. For integration into H2020, respondent mentioned most often the societal challenges *Health, demographic change and wellbeing; Climate action, environment, resource efficiency and raw materials; and Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy*.

Suggestions for topics (in answer to question 3) were directed at these challenges as well. In addition, topics were mentioned related to *Enabling and Industrial Technologies*, such as ICT and nanotechnology. Furthermore, topics related to the challenge *Europe in a changing world - inclusive, innovative and reflective societies* were mentioned, such as cultural differences and inequality.

The cross-cutting nature of Science and Society and RRI issues makes it an integral part of H2020 and implies that suitable indicators would be needed for tangible social impacts and implications. However, to which degree Science and Society, SWAFS themes and methodologies and RRI should be integrated can vary depending on the programme, call, project, scope, funding instrument, evaluation or impact.

Regarding the different SWAFS priorities, the replies are very rich in references and/or examples to the importance of science education, careers and to some degree to youth; however, few novel ideas appeared as such. Gender aspects are referred to by concrete examples on its better inclusion into H2020. The role of industry is called for as a research & innovation leader or as important partner. Science communication is considered an important instrument in promoting Science and Society issues. Creativity, arts and design are also mentioned as subjects of interest to Science and Society/RRI. A novel idea mentioned is the Societal Resistance Test, similar to the Technological Resistance Test.

5. Conclusion and recommendations

General conclusions with main messages for the new work programme

After analysis of the findings, Unit B7 extracted the main messages for the new work programme. These findings are taken into account and discussed in the expert advisory group for 'Science with and for society' and in the drafting of the next work programme.

The following trends and messages for the next work programme were observed.

The work programme could focus on strengthening the knowledge base and sharing best practices on: engagement, incorporating needs and values of citizens, social innovation, novel education methods, why there are less female researchers, science-society communication. For each concept, the knowledge base can be strengthened to find best practices and barriers. For example, to build an evidence base for engagement, understanding can be deepened of democratically created knowledge, how science teams work, and barriers for engagement. In addition, the knowledge base on the science-society relationship could be increased and the RRI concept could be further developed.

Reduce silos, mainstream RRI in H2020 and beyond, especially for topics relating to people's everyday lives (e.g. health, housing, environment). Science and society issues should be included into the three pillars. It is especially relevant for the challenges Health, demographic change and wellbeing; Climate action, environment, resource efficiency and raw materials; and Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy. Stimulate international cooperation beyond EU borders, which is seen as imperative for Science with and for Society as present challenges are seen as global and necessitating a global approach to solutions.

To foster institutional change, address the lack of institutional mechanisms for true change towards RRI and the research culture within research performing organisations. Address the reward system and incentives for RRI in research performing and research funding organisations. Increase attractive and realistic career opportunities in all stages of the scientific career.

Improve interactions between industry and universities: develop effective mechanisms and places that facilitate collaboration. Find arguments, business cases and address potential barriers. Address the lack of mechanisms in research institutions to stimulate collaboration and address concerns in the interaction with industry, such as intellectual property and impartiality issues, and the concern that economic and/or research perspectives prevail over the societal perspective.

Address ethical issues of new technologies, for instance about new forms of life. Pay more attention to marginal and excluded social populations in education, communication and engagement.

Stimulate structural change relating to gender. In H2020 for instance by strengthening gender to not be an added-on aspect to the proposals. And beyond, for instance through the development of a gender impact assessment tool and/or a self-assessment tool that would give the right to a label on effective gender policies and good working conditions.

In communication and education, place more focus on reflection and debate on science and technology, how they work and what kind of influence they have on society. The debate could focus in particular on subjects such as complexity and uncertainty in research. Train teachers and communicators to relate their education to the lives of students and the broader public.

Organise calls that explicitly target CSOs, industry and/or SMEs. At the same time, keep room for novelties and creativity.

Recommendations of respondents for potential topics

A selection of most pressing or innovative topics for the work programme was made by Unit B7. Novelties include the focus on:

- SMEs
 - Improve responsible innovation business cases and arguments
- Increase collaboration with industry
 - Address lack of mechanisms for supporting this collaboration and address IP and impartiality concerns
- Make room for creativity
 - Including art and design
- Social innovation
 - Support more bottom-up initiatives, CSOs as part of or leading projects
- Societal Readiness Level
 - To assess the science-society relationship, similar to a Technological Readiness Level

For each priority, potential novel topics are mentioned below.

- Careers
 - Actions to increase career attractiveness in institutions, for instance to increase job security and examine potential career paths for researchers after their PhD.
 - Research on cultural, geographical and socio-economic determinants that influence the choice for scientific careers.
- Institutional interactions
 - Further promote the creation of networks between parties, to make research collaborate with societal actors, such as industry and schools. Support links between research and education on a structural level.
 - Create responsible innovation business cases, decision making support tools and arguments for responsible innovation that SMEs can use.

- Gender
 - Actions for institutional change and research on gender itself.
 - The creation of a Gender Researcher Network.
 - A gender impact assessment tool and/or a self-assessment tool that would give the right to a label on effective gender policies and good working conditions.
- Incorporating needs
 - Strengthening research and actions on how to get citizens defining or discussing priorities for scientific research and innovation.
 - Understanding social innovation: what does it mean, how is it perceived?
 - Develop creativity in research processes.
- Engagement
 - Train both researchers and relevant societal actors to facilitate effective engagement in research.
 - Increase public engagement activities for involving stakeholders in science and SWAFS policy making.
 - Organise further reflection and debate on science and technology, and their interfaces with society. Address subjects such as: complexity, uncertainty, culture, digital creativity, media and social networks, and interdisciplinarity.
- Education
 - Develop innovative and high quality education methods, in which students are participating in science, get understanding of how science works (critical thinking) and stays close to their own reality.
 - Develop new massive open on-line courses for teachers to train them in science teaching methods.
- Open science
 - Develop knowledge on the concepts of open data and shared data.
 - Research on how open science is part of reward systems or incentives for RRI activities.
- Governance
 - Support more actions to overcome institutional barriers (including changes in scientific culture) and increase the mobility of high skilled professionals.
 - Further research to increase the evidence and best practices for RRI functioning.
 - Increasingly address social inequality.
- Ethics

- Continuously address ethical aspects of new research developments and technologies (for instance in life sciences).
- Communication
 - Develop more innovative and creative methods for communication, such as storytelling, games, more cooperation with media.

Annex I Statistics of respondents

1. Are you responding to this questionnaire on behalf of/as:

	Answers	Ratio
Individual	72	44%
Organisation	98	56%

Individuals represent 44 % of the total number of responses while organisations are 56 %. Of the organisations, 22 are networks, representing a multitude of entities: thousands of researchers and over a thousand of research organisations, regions, science communication and non-profit organisations and companies. Furthermore, networks include members of over 100 regions and hundreds of municipalities.

4. Please indicate the type of your organisation

	Answers	Ratio
Not Applicable (if individual)	32	19%
Higher Education Establishment	44	27%
Primary and/or Secondary Education	2	1%
International Research Centre	2	1%
Public Research Centre	9	5%
Private/Commercial Research Centre	1	1%
Private non-profit Research Centre	8	5%
Non-research Public Sector	8	5%
Non-research private non-profit	3	2%
CSO (Civil Society Organisation)	10	6%
Non-research International Organisation	5	3%
Non-research Commercial sector including SMEs	5	3%
Consultancy Firm	11	7%
Media Sector	0	0%
Other	25	15%

5. Have you or your organisation applied for funding under the current and/or any previous EC Framework Programmes for Research (e.g. H2020, FP7, FP6)?

	Answers	Ratio
Yes	98	59%
No	67	41%

6. Please enter your country of residence or where your organisation is based.

	Answers	Ratio
Austria	4	2%
Belgium	8	5%
Bulgaria	1	1%
Croatia	1	1%
Cyprus	1	1%
Czech Republic	1	1%
Denmark	3	2%
Estonia	1	1%
Finland	6	4%
France	17	10%
Germany	17	10%
Greece	4	2%
Hungary	0	0%
Ireland	3	2%
Italy	7	4%

Latvia	0	0%
Lithuania	0	0%
Luxembourg	0	0%
Malta	0	0%
Netherlands	7	4%
Poland	1	1%
Portugal	9	5%
Romania	17	10%
Slovakia	0	0%
Slovenia	0	0%
Spain	10	6%
Sweden	12	7%
United Kingdom	21	13%
Other	14	8%

7. Language of your contribution

	Answers	Ratio
Bulgarian	1	1%
Croatian	0	0%
Czech	0	0%
Danish	0	0%
Dutch	0	0%
English	128	78%
Estonian	0	0%
Finnish	2	1%
French	8	5%
German	8	5%

Greek	0	0%
Hungarian	0	0%
Irish	0	0%
Italian	0	0%
Latvian	0	0%
Lithuanian	0	0%
Maltese	0	0%
Polish	1	1%
Potuguese	2	1%
Romanian	8	5%
Slovak	0	0%
Slovene	0	0%
Spanish	6	4%
Swedish	1	1%

All contributions were translated into English prior to the analysis.

8. Do you agree to your contribution being published under your name or the name of your organisation?

	Answers	Ratio
My contribution can be published under the name indicated	103	62%
My contribution can be published but in an anonymous way	50	30%
I do not agree that my contribution is published	12	8%

The entries of respondents who answered 'I do not agree that my contribution is published' were not taken into account in the analysis.

9. Gender (this data will not be made public but used for statistical purposes only)

	Answers	Ratio
Female	76	46%
Male	89	54%

Annex II Number of referrals to SWAFS priorities

Question 1 What should be the main priorities needed to shape the next "Horizon 2020" Work Programme 2016-2017 to build an effective cooperation between science and society?

How many times was each SWAFS line mentioned?

<u>Category</u>	<u>Subcategory</u>	<u>Times mentioned</u>
A Careers & institutional interactions		31
	<i>Careers</i>	11
	<i>Institutional interactions</i>	20
B Gender		11
C Incorporating needs and values of citizens		35
D Engagement & education		44
	<i>Engagement</i>	28
	<i>Education</i>	16
E Open science		12
F Governance & ethics		46
	<i>Capacity building</i>	2
	<i>EC processes</i>	16
	<i>Ethics</i>	8
	<i>Governance</i>	21
G Impact assessment		5
H Communication		21

Question 2 Which are the main barriers preventing effective cooperation between science and society?

How many times was each SWAFS line mentioned?

<u>Category</u>	<u>Subcategory</u>	<u>Times mentioned</u>
A Careers & institutional interactions		18
	<i>Low interest in science careers</i>	4
	<i>Lack of collaboration</i>	14
B Gender	<i>Gender barriers</i>	5
C Incorporating needs and values of citizens		29
	<i>Different perceptions of knowledge production</i>	15
	<i>Unaddressed societal needs</i>	14
D Engagement & education		31
	<i>Lack of engagement</i>	18
	<i>Poor education</i>	13
E Open science	<i>Lack of access</i>	2
F Governance & ethics		84
	<i>Bureaucracy</i>	8
	<i>EC processes</i>	6
	<i>Ethical barriers</i>	4
	<i>Financial barriers</i>	4
	<i>Financial barriers for small, bottom-up projects</i>	2
	<i>Governance barriers</i>	12
	<i>Institutional barriers</i>	10
	<i>Lack of incentives/rewards</i>	28
	<i>Lack of sustaining good science-society cooperation</i>	2
	<i>Mistrust</i>	5

	<i>Politics</i>	3
G Impact assessment		0
H Communication		60
	<i>Communication & cultural barriers</i>	42
	<i>Language barriers</i>	12

Question 3 Which topics could be supported by the next "Horizon 2020" Work Programme 2016-2017 with regard to "Science with and for Society"?

How many times was each SWAFS line mentioned?

<u>Category</u>	<u>Subcategory</u>	<u>Times mentioned</u>
A Careers & institutional interactions		13
	<i>Careers</i>	6
	<i>Institutional interactions</i>	7
B Gender		12
C Incorporating needs and values of citizens		15
D Engagement & education		50
	<i>Engagement</i>	29
	<i>Education</i>	21
E Open science		5
F Governance & ethics		39
	<i>Ethics</i>	7
	<i>Governance</i>	32
G Impact assessment		0
H Communication		22

Question 4 What would you like to see as outcomes from the projects funded through the "Science with and for Society" calls for proposals 2016-2017?

How many times was each SWAFS line mentioned?

<u>Category</u>	<u>Subcategory</u>	<u>Times mentioned</u>
A Careers & institutional interactions		21
	<i>Careers</i>	13
	<i>Institutional interactions</i>	8
B Gender		11
C Incorporating needs and values of citizens		35
D Engagement & education		45
	<i>Engagement</i>	31
	<i>Education</i>	14
E Open science		9
F Governance & ethics		46
	<i>Ethics</i>	4
	<i>Governance</i>	42
G Impact assessment		2
H Communication		36

Annex III Results – qualitative, per question

To analyse the most often mentioned SWAFS priorities, a qualitative overview was made per question.

Question 1. Priorities

What should be the main priorities needed to shape the next "Horizon 2020" Work Programme 2016-2017 to build an effective cooperation between science and society?

Most often mentioned were *governance* priorities, including suggestions for *processes of the European Commission*, which includes suggestions for calls and EC policy (mentioned by 22% of respondents). These processes include for instance integrating RRI into Work Programmes of H2020 and open calls to society. Governance priorities include the promotion of RRI in industry and measures for increasing research institute-industry collaboration.

"SMEs are a driving force of innovation, and their participation to EU research and innovation programmes is expected to grow significantly with Horizon 2020. Cooperation between science and society should build on this participation, and develop an ambitious responsible innovation approach that uses SME business development as a driver and springboard towards sustainability"

- Paris Region Entreprises

21% of respondents mentioned *incorporating needs and values of citizens*. Mostly, respondents stressed that science must meet the needs of society. More specifically, it must contribute to quality of life and living conditions of people.

16% of respondents mentioned *engagement*. Respondents argued to enhance the knowledge base on engagement, to identify and share best practices, barriers and performance indicators for engagement.

13% of respondents mentioned *communication*. Most agree that scientific literacy must be developed in all citizens of all ages. Therefore, we need to enhance our knowledge base on science communication. Several suggestions were made for tools and places for communication, such as digital tools and science centres.

12% of respondents mentioned *sustainable interaction between schools, research institutions, industry and civil society organisations*. This interaction can be for instance through cooperation between universities & SMEs (by organising joint internships and joint PhDs).

"Make Open Calls with limited budget in all Grand Challenges with the only condition that they are civil society/CSO driven"

- Living Knowledge Network

Question 2. Barriers

Which are the main barriers preventing effective cooperation between science and society?

Most often mentioned were *governance barriers*, which were mentioned by 45% of respondents. By far the most often mentioned governance barrier was 'lack of incentives or rewards for science-society/RRI activities' (mentioned by 17%). Next to that, lack of mechanisms in research institutions for collaboration and change of practice were mentioned. This relates to the institutional barrier created by the cultural background of independent institutions, "who prefer to make their own decisions how and if to engage with society" (Portia Ltd).

"Insufficient incentives to exchan[g]e, to dialogue, to cooperate."

- Dirk Jarré, President of EURAG, The European Federation of Older Persons

Second, 36% of respondents mentioned *communication barriers*. Primarily, lack of two-way communication or a dialogue between science and society is seen as problematic. On the side of the public, there is a lack of public understanding of science. On the side of researchers, there is a lack of communication skills and too little training of these skills.

"The balance between communicating "science", as in science centres and museums visualizing basic topics and laws of nature, and "research", as in knowledge production and exploitation, needs to be considered."

- European Science Events Association – Eusea

A *lack of social innovation*, or *unaddressed societal needs*, was mentioned by 18%. Respondents explained this by the fact that science and society have different perceptions of how knowledge production takes place. An ivory tower mentality of science was mentioned, as well as concerns that economic and/or research perspectives prevail over the societal perspective.

Lack of engagement was mentioned by 11% of respondents. In particular, respondents said there is too little direct engagement of the public with research projects and that initiatives that exist are too disjointed. Respondents said this has to do with a lack of engagement skills, a lack of recognition for engagement and a lack of resources (money and tools) for engagement.

Question 3. Topics

Which topics could be supported by the next "Horizon 2020" Work Programme 2016-2017 with regard to "Science with and for Society"?

Most often mentioned were *governance* topics (19%). Respondents were in favour of mainstreaming RRI in science calls and to reduce the separation (silos) between departments. In addition, respondents suggested to overcome institutional barriers and to increase mobility of researchers. They also suggested organising public engagement on science policy and science-society policy topics.

"Mobilization of all scientific and technical culture organizations (museums, science centers , universities, research centers...) to create debates around the challenges in the context of Science with and for Society"

- Musee des Arts et Métiers

Engagement was mentioned by 18% of respondents. Most often mentioned was citizen science; citizens or civil society actors directly involved in science. Another topic mentioned was capacity building in engagement to train researchers and societal actors.

"All topics for which researchers and civil society actors can be regrouped together. For example, topics dealing with the management of biodiversity could involve, by nature, a great variety of actors and activities up to early education of young children."

- Anonymous

13% of respondents mentioned *communication*. Respondents suggested to develop innovative methods for science communication and to enhance researcher's communication skills.

13% of respondents mentioned *education*. Respondents asked for innovative education methods of good quality and close to the student's reality, for instance education letting students participate in science.

9% of respondents mentioned *incorporating needs and values of citizens*. This involves citizens defining needs and research working on currently recognised needs and finding practical solutions for these problems.

Question 4. Outcomes

What would you like to see as outcomes from the projects funded through the "Science with and for Society" calls for proposals 2016-2017?

25% of respondents mentioned *governance* outcomes. They were in favour of mainstreaming RRI through for instance stronger awareness, a stronger evidence base and tools such as a framework for RRI. Outcomes could also be a debate or enhanced knowledge base on the role of science and the changing role of institutions, such as higher education establishments and government. Next to this, results of research should inform policy, to enhance evidence-based policy. And EU policy should be aligned with global, national and local levels. Support should be given for tools for SMEs and industry to improve responsible innovation. Evaluation of research should be changed to also include social aspects and, for instance, creativity.

22% of respondents mentioned *communication* outcomes. An outcome would be increased public understanding of how research works and, thereby, an increased confidence in research. Outcomes would also be tools for communication, including ways to present research results in a user-friendly manner. Therefore, researchers have to be trained in communication skills.

21% of respondents mentioned *incorporating needs and values of citizens* outcomes. They would like to see room for responsible innovation/business, funding of small businesses and spin-offs and promotion of collaboration between SMEs and research. Practical applications in society should be the result of research: concrete, creative innovations that (better) solve societal needs, offer concrete solutions or prototypes that are tested and implemented in society and solutions with long-term impacts that create the future society.

19% of respondents mentioned *engagement* outcomes. Respondents would like to see an increased level of engagement of relevant stakeholders, for instance in projects funded in H2020 or around specific topics. For this, education on engagement, sharing of best practices and tools are needed.

Question 5. International cooperation

How do you see international cooperation (beyond EU borders) being addressed in "Science with and for Society"?

Respondents viewed international cooperation as indispensable; however, views of respondents were split between ideas of enlarging and/or strengthening international cooperation, and cooperation only within Europe.

Scientific culture, culture in general and values of different societies were considered as important factors in international cooperation and with regards to SWAFS. For example, to which degree scientific discoveries and innovation influence society and vice versa and how they view public engagement.

Proposed forms and tools of cooperation were numerous – ranging from cooperation between institutions, organisations, CSOs, individuals and researchers, by using ICT and media, and joint funding actions.

Science education was mentioned often for different groups, such as youth and researchers. Education of youth and young researchers also needs to be adapted to local/regional needs.

Question 6. Integration

In which priorities of "Horizon 2020" and how should science and society issues be integrated e.g. in Excellent Science, in Industrial Leadership, in Societal Challenges?

Science and society issues should be included into the three pillars according to the respondents. Most often mentioned were the societal challenges *Health, demographic change and wellbeing; Climate action, environment, resource efficiency and raw materials; and Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy.*

The underlying message of the replies was to create more awareness, more understanding and more support for Science and Society, SWAFS and RRI issues globally. The key to success in active citizenship and societal involvement in defining priorities, is choosing adequate policy strategies and

instruments, and thus providing citizen-friendly, sustainable and economically viable solutions (leading to jobs and growth) for existing and emerging grand challenges.

The respondents' general expectation is that the further integration of Science and Society, SWAFS and RRI into all pillars of H2020 will facilitate and will eventually result in research results and innovations that correspond truly, closely and concretely to the needs of the citizen, when European society will be facing grand challenges in the next decades.

Respondents contend that Science and Society, relevant SWAFS inputs and RRI issues would need to be integrated into those work programmes and/or themes in work programmes that are closest to the citizens' everyday life and concerns, e.g. health, housing, environment. Most of the replies support the tangible integration of Science and Society and RRI issues into work programmes, across the entire H2020. In this context, public engagement is seen as a key instrument to provide solutions to grand challenges. Respondents argue that the role of citizens in this global process needs to be enhanced and results should be communicated in concrete ways to all European citizens, and other countries.

The cross-cutting nature of Science and Society and RRI issues makes it an integral part of H2020 and implies that suitable indicators would be needed for tangible social impacts and implications. However, to which degree Science and Society, SWAFS themes and methodologies and RRI should be integrated can vary depending on the programme, call, project, scope, funding instrument, evaluation or impact.

Regarding the different SWAFS priorities, the replies are very rich in references and/or examples to the importance of science education, careers and to some degree to youth; however, few novel ideas appeared as such. Gender aspects are referred to by concrete examples on its better inclusion into H2020. The role of industry is called for as a research & innovation leader or as important partner. Science communication is considered an important instrument in promoting Science and Society issues. Creativity, arts and design are also mentioned as subjects of interest to Science and Society/RRI. A novel idea mentioned is the Societal Resistance Test, similar to the Technological Resistance Test.