

**Consultation on Horizon 2020 Science with and for Society
 Work Programme 2016-2017**

**Contribution from Ecsite,
 the European network of science centres and museums**

In July 2014 the European Commission launched a consultation to inform the 2016-2017 “Science with and for Society” Programme (part of the Horizon 2020 funding framework).

Ecsite called for contributions from science engagement organizations, synthesized answers and submitted the resulting statements before the consultation’s end in October 2014.

With special thanks to Rosalia Vargas (Ciência Viva, Lisbon, Portugal), Brigitte Coutant (universcience, Paris, France) and Maya Halevy (Bloomfield Science Museum Jerusalem, Israel) who helped synthesize contributions.

Note that maximum word count was strictly defined – hence the sometimes telegraphic style.

Contents

General questions.....	2
Identifying priorities.....	2
Integration of science and society issues with Horizon 2020 priorities.....	2
International cooperation beyond EU borders	3
Specific answers on set of identified priorities	4
Priority 1 – Accessibility of research outcomes	4
Priority 2 – Integration of citizens in the innovation process	6
Priority 3 – Engagement of young people in STEM.....	8
Priority 4 – Stimulation of science engagement for adults allowing to shape research agenda	10
Priority 5 – Capacity building in European and local institution and networks	11

General questions

Identifying 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?

We identified five priorities:

1. Accessibility of outcomes from publicly funded research (including science engagement projects) in formats adapted to the public
2. Integration of citizens and society in the innovation process to encourage scientific/technological solutions with a good uptake from society and foster entrepreneurial culture
3. Engagement of young people in STEM learning and careers in informal settings, recognizing the importance of motivation and enjoyment to reach this audience
4. Stimulation of innovative science engagement for adults, allowing their involvement in defining the research and innovation agenda in line with social needs and priorities
5. Capacity building in European and local institutions and their networks.

Integration of science and society issues with Horizon 2020 priorities

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)?

In all three.

Excellent Science:

- science that relates to society is truly excellent.
- research on science engagement should be part of and funded as part of Excellent Science.

Industrial Leadership:

- science engagement is essential to innovation : it constitutes a powerful mechanism to align research and societal needs and to increase the uptake by society of solutions emerging from the industry and from public-funded research.
- entrepreneurship relating to science and technology needs to be encouraged in Europe; organisations whose mission is to connect science with people, art, business and other stakeholders are well positioned to create the environment that will foster entrepreneurship.

Societal Challenges:

- Societal challenges address collective problems that need collective solutions. Society as a whole has to be part of the processes that lead to these solutions, in order for the latter (solutions) to be adopted by the former (society).

International cooperation beyond EU borders

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

- SfwS programme should encourage International cooperation with neighbouring countries around the Mediterranean and on the eastern side of geographical Europe. Specific Calls should encourage regular exchanges on best practices and cultural realities between organisations from EU member states and countries around the Mediterranean basin and the countries to the east of Europe. Women should be a specific target group of these actions.
- Joint calls with EC and other national funding agencies such as NSF on topics where a rich mutual learning could be expected. Example: on the tinkering movement.
- Networks should be encouraged to cooperate with their international counterparts.

Specific answers on set of identified priorities

Priority 1 – Accessibility of research outcomes

Full description of priority: Accessibility of outcomes from public-funded research in formats adapted to the public; and of best practices, learnings etc. from science engagement funded projects.

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

- Researchers from the scientific community are not using to their full potential the available competencies from professionals in science engagement. Researchers are not trained to do public science engagement activities; often their explanatory approach is ill-suited for democratic and digital societies. Researchers are not encouraged by the current evaluation system to perform outreach activities. This applies to research coming from the industry and from the public-funded institutions.
- 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.
- Science communicators do not have the appropriate access to best practices in science engagement emerging from EU-funded projects.
- Research done on science engagement and its impact is insufficient and insufficient spread of the outcomes of research on science engagement.

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

- All research EU calls should have mandatory engagement activities that would have to be done with science” engagement professionals. This should include research performed by universities, SMEs, private companies, foundations, research organizations. These funds should be proportionate to the overall funding.
- Topics that emphasize the live interaction between citizens and physical science engagement opportunities.
- Financial mechanisms encouraging networking events and activities where best practices are shared and experiences by the participants. Virtual sharing should be an add-on to these events, not the core of an action.
- Financial mechanisms to allow the documentation, identification and dissemination of emerging trends from these events.
- Financial mechanisms for the mapping of existing and emerging practices in science engagement.
- Calls encouraging research in science engagement done with practitioners and university-based researchers.

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

- Increase of and better suited engagement activities, respecting both the public's needs and expertise of science engagement professionals.
- Knowledge sharing of science engagement best practices, pitfalls and learnings
- Better coordination of existing resources and practices and better use of EU funds.
- Enhanced integration of field realities and practices and theoretical research learnings; mutual learning between theory and practice.
- Mapping (identification, access and impacts) of existing and emerging practices in science engagement.

Do you have further comments?

The implementation mechanisms need to be re-designed to increase accessibility of funding to relevant stakeholders, and to increase the relevancy of project outcomes. EC to encourage and monitor meaningful and useful results instead of focusing on financial monitoring. The level of details required by the EC reporting system should be significantly reduced to allow beneficiaries to devote their time and resources to the actual research and coordination/support actions. External audits performed on EU projects should compare results/outcomes with expenditures; a financial threshold to be set by the EC under which auditors cannot ask for explanations.

Priority 2 – Integration of citizens in the innovation process

Full description of priority: Innovation: Integration of citizens and society as in the innovation process to come up with science/technology based solutions that will have a good uptake from society / Foster culture of entrepreneurship.

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

- Insufficient recognition of the ideas and solutions that can emerge from citizens' collective intelligence and from "co -design". Not enough upstream mechanisms where society has an input in research policies, in order to anticipate and diminish resistance to the uptake of research findings.
- Not enough dialogues with the citizens that would empower them and equip them to make informed choices that correspond to their values.
- Formal education settings not always suited to develop a culture of scientific entrepreneurship and to foster innovative ideas to the markets.

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

- Topics that encourage all forms of Do It Yourself (DIY) where upstream innovation is recognized as valuable. Solutions and ideas emerging from these DIY practices should be able to find financial and business mechanisms (with the industry or public-institutions) to develop them into available products and services. Science centres and museums are labs and hubs that can connect DIY movements and businesses.
- Topics that aim at developing creativity.
- Calls to implement face-to-face citizens' consultations on various research topics (subjects), at the European and local/regional/national levels.
- Calls encouraging the consultation of citizens throughout the research-to-innovation process.
- Topics that encourage entrepreneurship in informal settings. As Hubs that bring together science, technology, different publics, businesses etc., science centres and museums can trigger entrepreneurship and should be reinforced in this role.

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

- Sustainability of local/regional / national synergies amongst science engagement actors all through the innovation chain.
- More creative solutions (products and services) to societal problems; better adapted solutions that reflect needs and values of citizens.
- Research policies informed by the expressed needs of citizens, delivering products and services adapted to citizens' needs. Thus better uptake of scientific findings.
- More entrepreneurs that develop (put on the market) products and services that enhance the common good.

Do you have further comments?

The EC is currently encouraging large consortiums on calls where the amount of funding is scarce compared with the requirements. This leads to Consortiums where beneficiaries can each have small amounts of money and tasks; this can bring reduced levels of engagement in the project, proportionate to the resources received. Large consortiums do not necessarily give rise to large impacts, nor do small consortiums necessarily have small impacts – the impactful project PLACES had 4 beneficiaries.

Priority 3 – Engagement of young people in STEM

Full description of priority: Young people engagement in STEM learning and career, in informal settings where interest and motivation are encouraged as much as learning and where channels/tools contemporary to young people (such as social and interactive media, art&science) are used. Uptake by the EC of research findings that demonstrate the value of motivation, interest and enjoyment as agents of change in in young people, and the need to start from early age.

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

- Difficult for young to see STEM knowledge connection with real world and careers. Few aspire to become scientist but for many STEM career equals "becoming a scientist": lack of awareness of the diversity of STEM careers. Families have big influence on students' aspirations: family "science capital" KCL-ASPIRES
- Schools: Science curricula designed for obtaining a science degree, focussing on essential knowledge. Schools tend to avoid teaching STEM as part of a broad set of related skills; have difficulties to develop contextualized STEM education as they are assessment-driven. Formal education tends to induce a disconnection between what is learned and real life environment.
- Young, often girls, are driven by societal values and often chose a scientific profession if they see its value; receptive to contextualized engagement with true dialogue, respectful of different opinions, with live experiences. Informal settings have a tradition of social, physical etc interactivity updated by contacts with publics.

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

Call topics that:

1. encourage interdisciplinary and innovative modes of science engagement with young people; promote experiences over dissertations, dialogues over explanations; and promote presentation of balanced and sometimes contradictory views reflecting the true endeavour of scientific research.
2. make use of informal setting and build better connections between formal and informal education.
3. encourage meaning over learning.
4. encourage the exploration of forms of science engagement where co-creation is encouraged as well as art & science and connexions with humanities and social sciences. Support of young people-based initiatives.
5. encourage innovative ways that reflect and appeal to the concerns and values of young people with a clear emphasis on girls, presenting STEM in close relation to present and future societal challenges and everyday life, highlighting the use of STEM by a wide range of professionals.
6. support the engagement of parents.

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

- Forms of engagement that help young people to recognize the connections between STEM curricula to STEM based career and to societal challenges.
- More young people interested in science and technology and eventually choosing STEM based careers.
- Incorporation of science and society encompassing its economic, ethical, historical, artistic, creative, etc. aspects and that thus, appeal to young people.
- Products and activities in science engagement where the voices of young people are part of the design of the activity.

Do you have further comments?

Funding mechanisms adapted to nature of activities. Funding mechanisms should recognize the differences between innovative undertakings and long-term permanent actions. Innovation should not be measured by numbers. A wide impact action does not necessarily have to be innovative. Societal actors that engage in the long-term (such as museums/science centres.) should have lines of funding that acknowledge their specificity in being able to widely implement EU policies in the long term.

Priority 4 – Stimulation of science engagement for adults allowing to shape research agenda

Full description of priority: Stimulation of innovative forms of science engagement with adults who should play an important role in defining research and innovation agenda in line with social needs and priorities and who should be empowered to debate crucial science and society topics.

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

- Adults' contact with science occurs too late in the course of their lives. If school is the place where the competences needed for scientific culture and lifelong learning of science are initially acquired, poor school science often undermines adulthood relationship with science.
- Adults have few opportunities for direct contact with science-in-the-making.
- There is an evident science citizenship deficit. Adults are often unaware of the rights and mechanisms at their disposal to voice their concerns, views and opinions about science and science policy.
- Rather than being told about science, adults should be encouraged to relate science research outcomes to the specific context of their daily lives. For this, engagement with science must be linked to other spheres of culture and existence.

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

- Calls that support the development of modes of science engagement relevant to adults (dialogues, debates, culture-based science, etc.) where science is part of culture with holistic modes of engagement.
- Calls that engage adult Europeans in the research policy making at the local, regional, national and European levels.
- Calls that enable adults to be active participants in co-design and in the DIY informal environment.

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

- Informed and engaged European adult citizens capable of making policy choices.
- Adults engaged in science that can discuss with and guide young people to scientific and technological care.

Priority 5 – Capacity building in European and local institution and networks

Full description of priority: Capacity building in existing and competent European and local institutions and their networks.

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

- Projects create synergies amongst different types of stakeholders (along- the MML principle) but these synergies are not encouraged to last afterwards. When the funding disappears, the incentive to think and plan on a long-term basis is threatened.
- Dissemination of good EU project's results is not encouraged: results arrive at the end of a project when funds are not available anymore to disseminate.
- European organisations dealing with science engagement are potential multipliers for the implementation of EU policies and priorities. Most of them are non-profit organisations that are currently not financially supported by the EU, which would be their natural governmental counterpart. This financial precariousness often results in short term perspectives and actions and in the fragmentation and non-coordination of their activities.

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

- Financial mechanisms to sustain existing networks with a European scope by the allocation of operational grants; sustainability financial mechanisms for local / regional synergies in science communication.
- Forms of dissemination grants that allow EU funded science engagement projects with good results to deploy the dissemination of their results. These grants should be of easy access, after a positive evaluation of their outcomes by the EC.
- Repository of science engagement best practices and research outcomes that targets not teachers but mostly professionals dealing with science engagement - on the model of Scientix, managed by a relevant European non-profit association.

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

- Sustainability of local/regional / national synergies amongst science engagement actors all through the innovation chain.
- Better communication of EU projects results.
- Better use of the European network organizations and of their multiplier (leverage) potentials. Long-term and sustained European actions amongst organisations and networks that reach specific stakeholders.