Commission proposal for Horizon Europe

THE NEXT EU RESEARCH & INNOVATION PROGRAMME (2021 – 2027)

#HorizonEU

Inclusive Society
Harald Hartung
Impact of SSH for a European Research Agenda
28/11/2018 Vienna
One of the great mistakes is to judge policies and programs by their intentions rather than their results.

Milton Friedman
While benefiting from world–class research and strong industries…

Our knowledge and skills are our main resources.

→ 7% of the world's population
→ 20% of global R&D
→ 1/3 of all high-quality scientific publications

…Europe fails to transform leadership in science into leadership in innovation and entrepreneurship
Horizon Europe
an
Evolution no Revolution

*(Structure and Novelties)*
Horizon Europe: evolution not revolution

Specific objectives of the Programme

Support the creation and diffusion of high-quality knowledge
Strengthen the impact of R&I in supporting EU policies
Foster all forms of innovation and strengthen market deployment

Optimise the Programme’s delivery for impact in a strengthened ERA

Pillar 1
Open Science
- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2
Global Challenges and Industrial Competitiveness
- Health
- Inclusive and Secure Society
- Digital and Industry
- Climate, Energy and Mobility
- Food and natural resources
- Joint Research Centre

Pillar 3
Open Innovation
- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Strengthening the European Research Area
- Sharing excellence
- Reforming and Enhancing the European R&I system
Lessons Learned from Horizon 2020 Interim Evaluation

- Support breakthrough innovation
- Create more impact through mission-orientation and citizens' involvement
- Break down silos
- Move from output to impact

Key Novelties in Horizon Europe

- European Innovation Council
- R&I Missions
- Collaborative and cross-sectoral approach - Clusters -
- Impact Pathways
No Discipline knows more than all disciplines.

Francois Taddei, Director of the Centre for Research and Interdisciplinarity at Paris Descartes University
Pillar II – Evidence from the Impact Assessment

A systemic approach along the lines of the SDGs and the Paris Climate Agreement

- **Clusters** break classical boundaries between disciplines, sectors and policy areas
- **Interdisciplinarity** brings more collaboration and increased impact (Allmendinger, RISE policy brief, 2015)
  - It generates new knowledge with transformative power
  - Explores and exploits new types of problem-driven and user-oriented R&I
  - Accelerate value creation across different industries (e.g. synthetic biology, nanoscience, smart cities)
- Engaging all actors to co-design and co-create research and innovation
- **Better alignment** with actions in the rest of the world
Social Sciences and Humanities (SSH) in Horizon Europe
Inclusive and Secure Society: fact & figures

- Freedom in the World Report 2018: democracy faces **most serious crisis** in decades. Decline in democratic standards a constant trend of last decade. Various European surveys show **declining levels of trust** to political institutions.

- Cultural Heritage creates **12 million jobs**; promotes European values and helps develop a European Identity.

- Automation impact: **14% of jobs** in 32 OECD countries are highly automatable, equivalent to 66 million jobs (OECD 2018. Also Mckinsey 2017).

- Need to reduce **rising inequalities** (European Pillar of Social Rights).

- Largest number of arrivals of **refugees and migrants** since end of Second World War. Respond to challenges, promote integration, enhance governance.
CLUSTER 2: Inclusive and Secure Society

Sustainable Development Goals
Three Intervention areas especially relevant for the SSH in Cluster 2:

- **Democracy**
  Strengthen European democratic values and address issues of trust.

- **Cultural Heritage**
  Safeguard and promote our cultural heritage.

- **Social and economic transformations**
  Take advantage of socio-economic transformations and promote inclusive growth while responding to globalization, and technological advancements.
Democracy: Broad Lines of Activities

- **The history, evolution and efficacy of democracies**, at different levels and in different forms; digitisation aspects and the effects of social network communication and the role of education and youth policies as cornerstones of democratic citizenship;

- **Innovative approaches** to support the transparency, responsiveness, accountability effectiveness and legitimacy of **democratic governance** in full respect of fundamental rights and of the rule of law;

- Strategies to address **populism, extremism, radicalisation, terrorism** and to **include and engage** disaffected and **marginalised citizens**;

- Better understand the role of **journalistic standards and user-generated content** in a hyper-connected society and develop tools to combat disinformation;
Democracy: Broad Lines of Activities

- The role of **multi-cultural citizenship and identities** in relation to democratic citizenship and political engagement;
- The **impact of technological and scientific advancements**, including big data, online social networks, and artificial intelligence on democracy;
- **Deliberative and participatory democracy** and active and inclusive citizenship, including the digital dimension;
- The **impact of economic and social inequalities on political participation** and democracies, demonstrating how reversing inequalities and combatting all forms of discrimination, including gender, can sustain democracy.
Cultural Heritage: Broad Lines of Activities

- **Heritage studies and sciences**, with cutting edge technologies including digital ones;
- **Access to and sharing of cultural heritage**, with innovative patterns and uses and participatory management models;
- **Connect cultural heritage with emerging creative sectors**;
- The **contribution of cultural heritage to sustainable development** through conservation, safeguarding and regeneration of cultural landscapes, with the EU as a laboratory for heritage-based innovation and cultural tourism;
- **Conservation, safeguarding, enhancement and restoration of cultural heritage and languages** with the use of cutting edge technologies including digital;
- Influence of **traditions, behavioural patterns, perceptions and beliefs on values and sense of belonging**.
Social and Economic Transformations: Broad Lines of Activities

- Knowledge base for advice on investments and policies especially education and training, for high value added skills, productivity, social mobility, growth, social innovation and job creation. The role of education and training to tackle inequalities;
- Social sustainability beyond GDP only indicators especially new economic and business models and new financial technologies;
- Statistical and other economic tools for a better understanding of growth and innovation in a context of sluggish productivity gains;
- New types of work, the role of work, trends and changes in labour markets and income in contemporary societies, and their impacts on income distribution, non-discrimination including gender equality and social inclusion;
- Tax and benefits systems together with social security and social investment policies with a view to reversing inequalities and addressing the negative impacts of technology, demographics and diversity;
Social and Economic Transformations: Broad Lines of Activities

- **Human mobility** in the global and local contexts for better migration governance, integration of migrants including refugees; respect of international commitments and human rights; greater, improved access to quality education, training, support services, active and inclusive citizenship especially for the vulnerable;

- **Education and training systems to foster** and make the best use of the EU's digital transformation, also to manage the risks from global interconnectedness and technological innovations, especially emerging online risks, ethical concerns, socio-economic inequalities and radical changes in markets;

- **Modernisation of public authorities** to meet citizens’ expectation regarding service provision, transparency, accessibility, openness, accountability and user centricity.

- **Efficiency of justice systems** and improved access to justice based on judiciary independence and rule of law principles, with fair, efficient and transparent procedural methods both in civil and criminal matters.
Socio-economic sciences and humanities (SSH)

• **Integrated approach:** SSH included as an integral part of the activities, working beyond 'silos' (e.g. understanding the determinants of health and optimising the effectiveness of healthcare systems)

• The *Inclusive and Secure Society* challenge: issues such as smart and sustainable growth, social transformations, social innovation and creativity, the position of Europe as a global actor

• **Bottom-up funding:** ERC, MSCA, Research Infrastructures
Impact

(Definition, Assessment Measuring)
## EVOLUTION FOR HORIZON EUROPE

### Horizon 2020 system

- **3 headline indicators** not directly attributable to the programme
- **55 Horizon 2020 Key performance and Cross-Cutting issues** indicators:
  - 27 are related to **management and implementation data** (e.g. funding, participation)
  - 28 are related to **outputs, results or impacts**, out of which:
    - none is related to the whole programme (covering only programme parts)
    - 9 relate to publications
    - 7 relate to intellectual property rights and innovations
    - 4 relate to leveraged funding
    - 4 relate to researchers’ mobility and access to infrastructures

### Evolution for Horizon Europe

- All Horizon 2020 indicators related to outputs, results and impacts are maintained but streamlined and further specified to cover the whole Programme
- Management and implementation data are still collected and made available in close-to-real time through **online Dashboard** but are not part of “performance indicators”
- Key indicators are set at **Programme level** according to the Programme objectives and are attributable to the Programme
- Key indicators are classified according to **9 key impact pathways**, for tracking impact through short, medium and long term indicators – for more accurate reporting over time
- Higher reliance on external data sources, qualitative data and automated data tracking to **minimise burden on beneficiaries**
- Possibility for programme part or action specific indicators (but not in the legal base)
## Examples of KPIs H2020 1/2

<table>
<thead>
<tr>
<th>#</th>
<th>Key performance indicator</th>
<th>Definition of the indicator</th>
<th>Type of data required</th>
<th>Baseline at the start of Horizon 2020 (latest available)</th>
<th>Target at the end of Horizon 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Societal Challenges - Publications in peer-reviewed high impact journals in the area of the different Societal Challenges</td>
<td>The percentage of publications published in the top 10% impact ranked journals by subject category</td>
<td>Publications from relevant funded projects (DOI: Digital Object Identifiers); Journal impact benchmark (ranking) data to be collected by commercially available bibliometric databases</td>
<td>[new approach under Horizon 2020]</td>
<td>[On average, 20 publications per €10 million funding (for all societal challenges)]</td>
</tr>
<tr>
<td>15</td>
<td>Societal Challenges - Patent applications and patents awarded in the area of the different Societal Challenges</td>
<td>Number of patent applications by theme; Number of awarded patents by theme</td>
<td>Patent application number</td>
<td>[new approach under Horizon 2020]</td>
<td>On average, 2 per €10 million funding (2014 - 2020)</td>
</tr>
<tr>
<td>16</td>
<td>Societal Challenges - Number of prototypes and testing activities</td>
<td>Number of prototypes, testing (feasibility/demo) activities, clinical trials</td>
<td>Reports on prototypes, and testing activities, clinical trials</td>
<td>[new approach under Horizon 2020]</td>
<td>[To be developed on the basis of first Horizon 2020 results]</td>
</tr>
</tbody>
</table>
## Examples of KPIs - H2020 2/2

<table>
<thead>
<tr>
<th>#</th>
<th>Key performance indicator^2</th>
<th>Definition of the indicator</th>
<th>Type of data required</th>
<th>Baseline at the start of Horizon 2020 (latest available)^3</th>
<th>Target at the end of Horizon 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Societal Challenges - Number of joint public-private publications</td>
<td>Number and percentage of joint public-private publications out of all relevant publications</td>
<td>Properly flagged publications data (DOI) from relevant funded projects</td>
<td>[new approach under Horizon 2020]</td>
<td>[To be developed on the basis of first Horizon 2020 results]</td>
</tr>
<tr>
<td>18^*</td>
<td>New products, processes, and methods launched into the market</td>
<td>Number of projects with new innovative products, processes and methods</td>
<td>Project count and drop down list allowing to choose the type processes, products and methods</td>
<td>[new approach under Horizon 2020]</td>
<td>[To be developed on the basis of first Horizon 2020 results]</td>
</tr>
<tr>
<td>19^*</td>
<td>Percentage of the overall Energy challenge funds allocated to the following research activities: renewable energy, end user energy-efficiency, smart grids and energy storage activities</td>
<td>Percentage of the overall Energy challenge funds allocated to the following research activities: renewable energy, end user energy-efficiency, smart grids and energy storage activities</td>
<td>Financial data related to the funds allocated to the mentioned activities under Societal Challenge “Secure, clean and efficiency energy”</td>
<td>[new approach under Horizon 2020]</td>
<td>85%</td>
</tr>
</tbody>
</table>

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^2: Key performance indicators

^3: Baseline and target values are provided for reference purposes only and should be interpreted with caution.
LEARNING FROM HORIZON 2020 INTERIM EVALUATION

- Specificity of research and innovation (R&I) investments:
  - risky endeavor involving multiple trials and errors
  - spreading widely and unexpectedly into multiple domains & applications
  - providing invaluable solutions often in the very long term

- Need to be able to tell the difference EU funding is making at any moment in time: tell the story of the programme as a whole, according to its set of objectives

- Need realistic indicators to track progress in short, medium and long term

- Need minimised burden on participants, also after project ends

- Need distinction between management indicators & performance indicators
TRACKING IMPACT IN HORIZON EUROPE

THREE TYPES OF IMPACT BASED ON OBJECTIVES

**Scientific impact**
Create and diffuse high-quality new knowledge, skills, technologies and solutions to global challenges

**Societal impact**
Strengthen the impact of research and innovation in developing, supporting and implementing EU policies, and support the uptake of innovative solutions in industry and society to address global challenges

**Economic impact**
Foster all forms of innovation, including breakthrough innovation, and strengthening market deployment of innovative solutions
CLASSIFICATION OF IMPACTS FOR THE INTERIM EVALUATION

HORIZON 2020

Contribution to expected impacts from projects' outputs + up to 10 to 20 years

Source: Interim Evaluation of Horizon 2020
Different impacts

Societal impact
- Quality of life
- Health
- Environment
- Public services
- Policy
- Creative activity
- Public engagement
- Understanding
- Education

Academic impact
- Theory
- Method
- Knowledge
- Technology development
- Researcher training
- Teaching and training
- Application

Economic impact
- Innovations
- Competitiveness
- Growth
- Jobs
- Budget savings

Source: University of Helsinki
Horizon Europe

Impact pathways will be time-sensitive:

=> **short** (typically as of one year, when the first projects are completed),

=> **medium** (typically as of three years, and for the interim evaluation) and

=> **long** term (typically as of five years, and for the ex-post evaluation).

They will contain both qualitative and quantitative information
9 KEY IMPACT PATHWAYS TO TRACK PROGRESS

1. Creating high-quality new knowledge
2. Strengthening human capital in R&I
3. Fostering diffusion of knowledge and Open Science
4. Addressing EU policy priorities through R&I
5. Delivering benefits & impact via R&I missions
6. Strengthening the uptake of innovation in society
7. Generating innovation-based growth
8. Creating more and better jobs
9. Leveraging investments in R&I
Pathway 6. Strengthening the uptake of innovation in society

STORY LINE: The FP strengthens the uptake of innovation in society, as shown by the engagement of citizen in the projects and beyond the projects by improved uptake of scientific results and innovative solutions.

- **Indicator (short, medium, long-term)**
  
  **Typically As of YEAR 1+**
  - Number and share of FP projects where EU citizens and end-users contribute to the co-creation of R&I content

  **Typically As of YEAR 3+**
  - Number and share of FP beneficiary entities with citizen and end-users engagement mechanisms after FP project

  **Typically As of YEAR 5+**
  - Uptake and outreach of FP co-created scientific results and innovative solutions

Data needs: Collection of data at proposal stage on the roles of partners (incl. citizen) in the projects, structured survey of beneficiary entities and tracking of uptake and outreach through patents and trademarks and media analysis.
Example from a topic
**Expected Impact in Call**

**Topic:** Contemporary radicalisation trends and their implications for Europe (SC6-REV-INEQUAL-02-2016)

**Expected impact:** Research under this topic will considerably **enhance the knowledge base** on the scope, origins, causes and cognitive as well as emotional dynamics of radicalisation. Projects will also **devise new methods** for studying radicalisation **beyond traditional perspectives** in particular in relation to young people. Research will provide the **basis for future evaluation of policies**, envisaging innovative solutions, in particular with regard to their effects on radicalisation and (dis)integration. Research will also **furnish recommendations** on how to address religious fundamentalism in and outside of Europe. Projects will also **produce profiles of recruiters and targeted individuals and groups** such as young women. **Recommendations on effective strategies, practices and new options** of de-radicalisation and for the prevention of radicalisation will be made not least in relation to education policies.

*Source: University of Helsinki*
Writing Impact

1. Read the work programme and identify the expected impacts related to the call
2. Identify additional impacts taken into account in the evaluation criteria
3. **Identify the steps needed to achieve the expected impacts and the relevant stakeholders**
4. Decide what role each stakeholder should play in the project
5. Plan exploitation to involve the stakeholders
6. Plan dissemination and communication activities to involve the stakeholders
7. Plan management of intellectual property and research data
8. Write the proposal

Source: University of Helsinki
Reaching to impact: What are you communicating?

- **Science**
  - Marginalisation, radicalisation, religious fundamentalism, violence

- **Societal aims**
  - Prevention of radicalisation

- **Value-chain and stakeholder needs**
  - Research community, policy makers, advocacy, groups, schools, etc.

- **Channels and actions**
  - Journals, forums, workshops, policy papers, training etc.

*Often this…*

*Should include this!* *Source: University of Helsinki*
The Challenge
Holistic approach to impact

Strategic Programme

Work Programme

Call topic

Proposal

Project

Impact creation

Indicators

Narrative

Impact assessment

Strategic Programme

Work Programme

Call topic

Proposal

Project

European Commission
Thank you!

#HorizonEU

http://ec.europa.eu/horizon-europe