European Commission

Research and Innovation

Integration of Social Sciences and Humanities in Horizon Europe

1st Monitoring report on SSH-flagged projects funded under Pillar II of Horizon Europe

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First monitoring report on SSH-flagged projects funded under Pillar II of Horizon Europe

European Commission
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EUROPEAN COMMISSION

Integration of Social Sciences and Humanities in Horizon Europe

First monitoring report on SSH-flagged projects funded under Pillar II of Horizon Europe

2021-2023

2025 Directorate-General for Research and Innovation

Contents

Foreword

This report presents the significant progress made in the integration of social sciences and humanities (SSH) in research and innovation (R&I) projects funded under Horizon Europe, the European Union's (EU) current Framework Programme for R&I (2021-2027).

The Draghi Report on the "Future of European competitiveness", emphasises the importance of preserving fundamental European values for creating a fair and prosperous society, such as equity and social inclusion. As the EU continues promoting social fairness and building a resilient, competitive and prosperous Europe, the effective integration of SSH research across R&I fields has become both a strategic asset and a powerful enabler. SSH research offers numerous opportunities to deliver scientific knowledge, technological know-how and innovation that is socially inclusive, takes into account economic, social and human aspects, and supports policy development and public trust in science.

The European Commission has a long-standing commitment to ensuring that SSH research is integrated into its R&I programmes and activities. It is a commitment that was already evident under the previous Framework Programme for R&I, Horizon 2020, and which continues to be a priority under Horizon Europe.

This report provides an analysis of how SSH research is embedded in EU-funded R&I projects in the 2021-2023 period, highlighting progress achieved, showcasing good practices, underlining the added value of SSH disciplines and the key role of interdisciplinary research. A notable trend has emerged, with approximately 40% of the topics funded under Horizon Europe Global Challenges and European Industrial Competitiveness Pillar being relevant to SSH, demonstrating the increasing integration of SSH research across various R&I fields. Although it is still early to assess the final outcomes of the projects funded under Horizon Europe, SSH integration is well under way.

In an increasingly multidisciplinary approach, STEM (Science, technology, engineering and mathematics) and SSH are coming together in areas such as life sciences, circular economy, cultural and creative industries, and artificial intelligence. The EU continues to strive for strengthening SSH-STEM cooperation and fostering impact-oriented R&I through Horizon Europe. The results of this report demonstrate a strong momentum for SSH integration, with a new vision towards societal value and adaptation.

Looking ahead, the European Commission is keen to continue its close cooperation with Member States and Horizon Europe Associated Countries as well as the scientific community and partner organisations, including in the context of the European Research Area, to strengthen the societal impact of research and shape a shared, forward-looking vision for an inclusive, sustainable, and competitive Europe.

We are on a promising journey, so let's pursue it together.

Marc Lemaître, Director-General, Directorate-General for Research and Innovation (RTD)

Executive summary

The integration of social sciences and humanities (SSH) into science, engineering, technology and math (STEM)-research is an important part of the Horizon Europe (HE) framework programme to increase the societal and economic impact of research and innovation projects, in line with HE Regulations[1]. This report showcases the SSH integration for projects funded in the period 2021-2023, mainly under Pillar 2 "Global Challenges and European Industrial Leadership" of Horizon Europe. A full analysis covering the entire duration of Horizon Europe is expected after 2027, once the full budget of Horizon Europe is committed.

The results show a positive trend with around 40% of HE Pillar II topics being SSH-flagged, hence where the integration of SSH research is considered of high relevance for achieving the topic's objectives and expected impact. In total, €7.2 billion went to SSH-flagged topics, which was about 41% of the total budget. In terms of SSH partners in these projects, 88% of the projects had at least one SSH partner, while 22% of the total partners were representatives of SSH fields. In terms of coordination, 42% of the projects had a SSH coordinator. The highest amount of SSH partners were, excluding Cluster 2 "Culture, Creativity & Inclusive Society", in Cluster 5 "Climate, Energy & Mobility" and Cluster 6 "Food, Bioeconomy, Natural Resources, Agriculture & Environment" (both 21%), and Cluster 3 "Civil Security For Society" (20%). The lowest level was in Cluster 4 "Digital, Industry & Space" (14%) and Cluster 1 "Health" (12%). The countries that contributed the most to SSH integration were Italy, Germany, and Spain.

Given the different methodology within Horizon 2020, in which the SSH integration analysis was performed taking into account the curriculum vitae of participants, it is difficult to make a direct comparison between Horizon Europe and Horizon 2020. Yet, the share of the budget going to SSH-flagged topics can be compared, where we see a rise from 33% to 41% of the budget going to SSH topics.

In conclusion, monitoring SSH integration in the first three years of HE has shown that in order to have appropriate data, deliverables and progress reports of the projects need to be analysed. This was not possible at this stage as many of the funded projects have just or recently started, but it will be considered at the end of the HE programme. On the other hand, the current report builds also on good practices collected and interviews conducted with project coordinators, where some lessons may be learnt, such as:

- Finding a common understanding is a challenge: if partners in a project manage to find a joint language, this may reduce barriers during the implementation of the project.
- The management and coordination team may play a key role in creating an appropriate environment for the different disciplines to work together and make the interdependence of the work packages effective and useful for the project's impact.
- Project activities can foster joint learning and collaboration, such as the creation of neighborhood regeneration offices that fuse SSH engagement methodologies and STEM decision support tools.

[1] Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) : "*Under the pillar 'Global Challenges and European Industrial Competitiveness', SSH should be fully integrated across all clusters*"

1. Introduction

In this report, a quantitative assessment of the social sciences and humanities (SSH) integration for research and innovation projects across Horizon Europe is provided for 2021, 2022 and 2023[2]. The report builds on the monitoring efforts of SSH integration started in Horizon 2020. A final report will present the assessment of the integration of SSH for the entire duration of Horizon Europe (2021-2027).

The legal basis of Horizon Europe is described in *Regulation 2021/695 - Horizon Europe - the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination* and describes the guidelines for the integration of SSH as a cross-cutting issue across the programme:

"The Programme should support R&I activities in the field of social sciences and humanities (SSH). This entails advancing scientific knowledge in that domain and making use of insights and progress from SSH to increase the economic and societal impact of the Programme. Under the pillar 'Global Challenges and European Industrial Competitiveness', SSH should be fully integrated across all clusters. Beyond the promotion of SSH in projects, the integration of SSH should also be supported through the inclusion, whenever appropriate, of independent external experts from the field of SSH in expert committees and evaluation panels, and through timely monitoring and reporting of SSH in funded research actions. In particular, the level of mainstreaming of SSH should be monitored across the Programme."

To address complex, multifactorial challenges affecting European citizens, SSH disciplines such as economics, anthropology, psychology, sociology, philosophy, linguistics, arts and other disciplines are integrated into science, technology, engineering and mathematics (STEM) research. Technical challenges do not always take into account societal challenges that go with it, whether it considers end-users (e.g. ensuring no discrimination in the population in their access to the new technology), or even a cooperation between SSH and STEM (e.g. architects and historians working together in building a replica of the Globe Theatre).

The monitoring report mainly focuses on Horizon Europe priorities under Global Challenges and European Industrial Leadership (Clusters 1-6), and specifically the SSH-flagged topics in these clusters, including the EU Missions. In addition, the report briefly also provides some insight on research through Widening participation and spreading excellence (WIDERA), Marie Sklodowska-Curie Actions (MSCAs), European Research Council (ERC) and Research Infrastructures (RIs).

For each area, examples of good practice are provided; these were chosen based on their approach and their methodology of combining STEM and SSH. The approach and methodology were described through selected interviews with project coordinators, conducted by the network of cluster 2 national contact points Net4Society, in coordination with the European Commission.

The report ends with overall conclusions stemming from the data and good practices outlined, which are followed by recommendations on how to strengthen the societal impact of research and innovation activities, and contribute to European Competitiveness and Resilience.

A detailed description on the new methodology used in this report is provided in Annex I.

[2] See annex 1 for more information. Cutoff date for data collection was 18/11/2024.

What you need to know before reading

SSH-flagged topics

SSH-flagged topics are topics of a basic STEM nature, that require research insights generated by SSH researchers to help projects funded under such topics achieve the topic's expected outcomes. Projects funded under SSH-flagged topics engage in a specific type of interdisciplinarity, that is based on research collaboration between researchers coming from the SSH and STEM fields.

Who is an SSH partner?

The term SSH partner is used throughout the report. If a partner is responsible for at least one deliverable (lead beneficiary) that is considered of SSH nature, this partner is considered as an **SSH partner**. If the partner is not responsible for deliverables considered as SSH, then this partner is NOT considered a SSH partner. Thus, for example, 50% SSH partners means that half of the partners in a project are responsible for SSH deliverables.

What is the difference in data interpretation compared to the Horizon 2020 monitoring report?

The data presented here are not comparable with the data found in the previous Horizon 2020 SSH integration reports. The current methodology differs from the previously used methodology. To provide one example: the previous report reported SSH integration based on the profiles of the researchers involved in the project (66% or more of the experts listed in the Grant Agreement as taking part in the project had an academic and/or professional background in SSH), while the current report considers SSH integration on the basis of the deliverables that can be defined as SSH-relevant.

Which parts of Horizon Europe are covered, and which are not?

The image below provides an overview of Horizon Europe structure. The parts that this report covers are earmarked in blue.

2. Integration of SSH in projects funded under pillar II "Global challenges and European industrial competitiveness" of Horizon Europe

2.1. General assessment and key findings in 2021-2023

2.1.1. General trends in funding and SSH partners' involvement

In total, for the period of 2021 to 2023, there were 1,203 topics funded under Pillar II, of which 480 SSH-flagged (40%). The budget going to these SSH-flagged topics was €7,254,452,174 out of a total budget of €17,491,646,681 (41%). Under the SSH-flagged topics, 1,281 projects were funded, with the majority being in Cluster 1 (290) and the lowest amount being in Cluster 3 (41).

The **total budget** going to SSH partners in projects under SSH-flagged topics is €1,825,748,960 euro, which is 25% of the budget going to SSH projects, and 10% of the overall budget (all topics).

The percentage of projects, funded under SSH-flagged topics, with **at least one SSH partner** was high at 88%. Even when excluding Cluster 2 (where all projects have at least one SSH partner due to the scope of the cluster), the percentage is still 85%. However, this also means that 15% of projects did not have any SSH partner. Overall, there were 19,785 partners, of which 4,331 (22%) are SSH partners. Excluding Cluster 2, this drops down to 17%.

It should be noted though that the non-SSH partners part does not consist solely of STEM researchers. In fact, partners of a project can be involved in other types of activities within the consortia such as website building, ICT-activities, general management activities, communication and so on. Thus, even in Cluster 2 where a very high percentage for SSH partners is expected (as Cluster 2 is SSH oriented), SSH partner "only" constitute 52% of the total partners in the projects, because of these partners who are involved in work that is neither STEM nor SSH. Therefore, if the 52% of Cluster 2 is viewed as a reasonable percentage for a "heavy" SSH involvement cluster, then the percentages of clusters 5 and 6 are quite decent overall (see Annex 3 for more detailed overviews for all clusters).

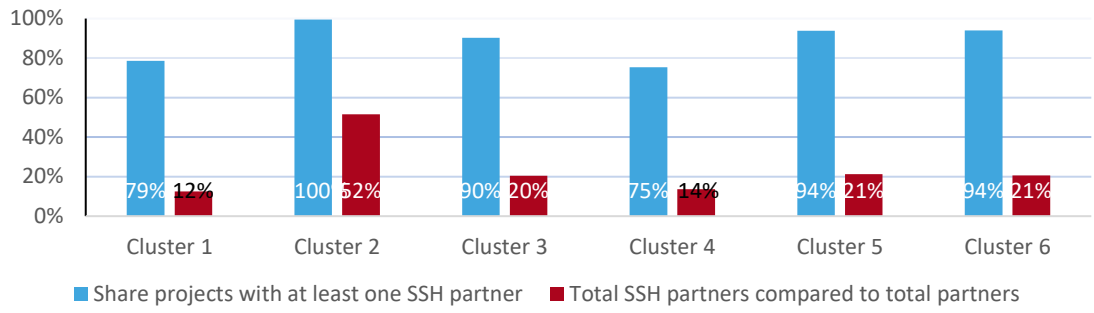


Figure: share of SSH partners in projects

The *lowest* involvement of SSH partners is in Cluster 1 (12%), even though in absolute terms it also has the *highest* budget specifically for SSH topics (an overview of clusters is available in annex 3, including disaggregated data per country).

Another indicator of SSH integration is the percentage of SSH coordinators. In total, 42% of the projects have been coordinated by a SSH coordinator, which becomes 33% when excluding Cluster 2. The highest percentage of SSH coordinators is in Cluster 2 (81%), while the lowest is found in Cluster 4 (25%).

SSH partners per organisation

On a global level, it is clear that SSH partners mainly come from higher or secondary education (HES), while SSH partners hardly come from Public Bodies (PUB).

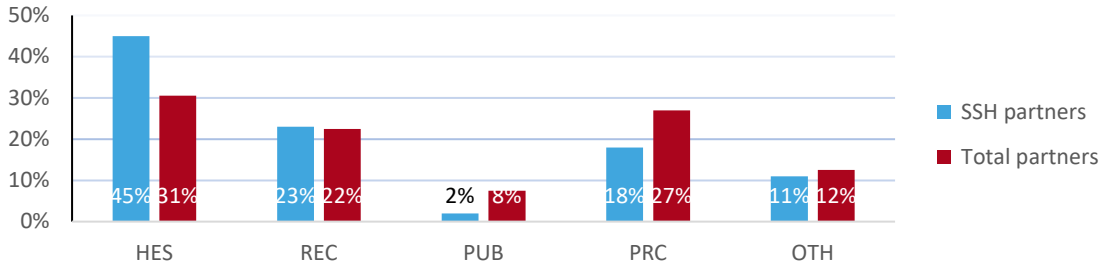


Figure: Type of organisations participating as an SSH partner versus overall participation

Horizon Europe SSH integration comparatively to Horizon 2020

The success of Horizon Europe SSH integration can be viewed in terms of how it compares to Horizon 2020. However, the comparison is difficult due to numerous reasons: Clusters do not exactly match with the Societal Challenges in Horizon 2020; the methodology to analyse SSH integration has changed as well.

In general, Horizon Europe seems to be supporting more SSH integration than Horizon 2020, with more budget going to SSH-flagged topics and more budget going to SSH partners both for topic specific and total budget. However, while the budget going to SSH-flagged topics is easy to compare between Horizon 2020 and Horizon Europe, this is not the case for the budget going to SSH partners, as the definition of SSH partner is different and hence the calculation is different. Thus, these numbers are more indicative than fully comparable. In terms of the number of SSH partners, more projects have at least 1 partner.

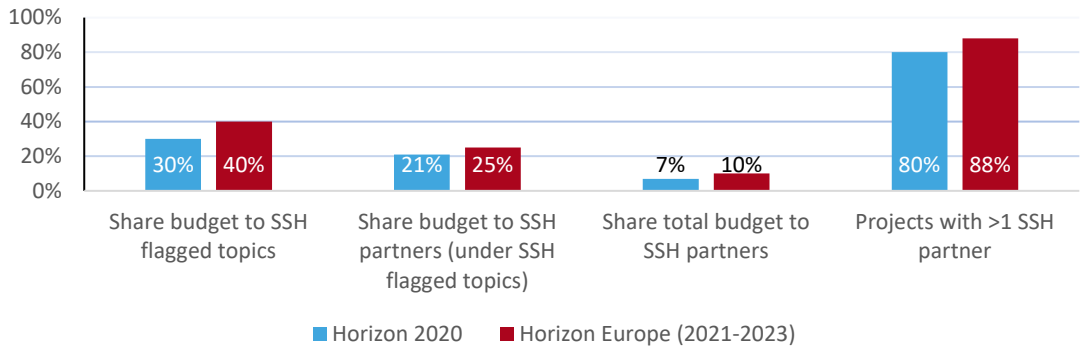


Figure: Budgets and SSH partners in Horizon 2020 and Horizon Europe.

2.1.2. SSH partners per country

Horizon Europe is an international programme and thus, involves a large variety of countries. By a relatively wide margin, the three countries contributing the most SSH partners to projects are Italy (11%), Spain (10%) and Germany (10%). These three countries almost account for 1/3 of the total share of SSH partners. The best performing Associated Country is the United Kingdom, which is the sixth country contributing SSH partners (6%).

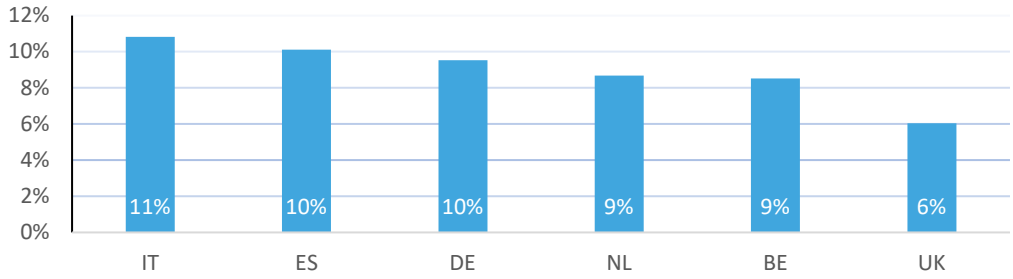


Figure: Top six countries in which SSH partners are based[3]

Looking at geographical distributions, there is great diversity. While the entire European Union contributes 86%, 14 European Union Member States account for 75% of the total share. Even more so, the top six countries described above (including United Kingdom), account for over half of the total share. This indicates clearly that providing SSH partners is uneven in terms of countries, with half of the European Union contributing ¾ of the total, and the other half just 11% - which is just one percentage point more than the contribution of Associated Countries (10%).

Compared to Horizon 2020, there is a higher share of Associated Countries (6% in H2020, 10% in HE), a lower share of Third Countries (4% in H2020, 3% in HE) and an increased share for the top 6 countries (53% to 54%), and top 20 countries (87% to 91%).

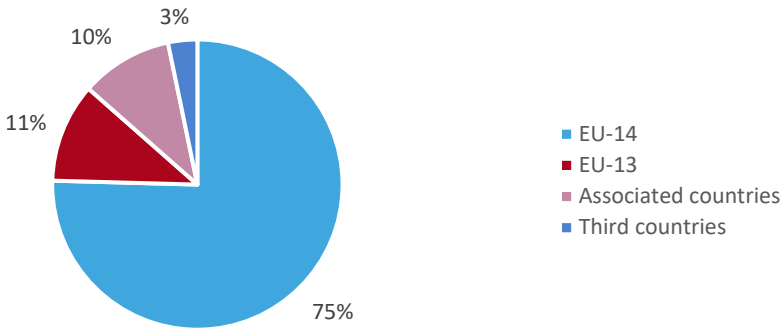


Figure: Share of SSH partners according to different regions

[3] Countries not mentioned in top 6 were left out, as they constitute less than half – meaning that several countries would not be visible, as the contribution is less than 1%. The full table of SSH contribution can be found in annex 3.

2.2. Overview by Cluster and examples of best practices

2.2.1. Cluster 1 – Health

Cluster 1 'Health' aims at improving and protecting the health and well-being of citizens of all ages. This is done by generating new knowledge, developing innovative solutions and integrating a gender perspective to prevent, diagnose, monitor, treat and cure diseases.

Between 2021 and 2023, there were 96 topics for Cluster 1, of which 56 (58%) were SSH-flagged topics. The total budget for the topics was €3,269 million, with 64% for SSH-flagged topics (€2,105 million).

In terms of projects funded, 290 projects have been funded under SSH-flagged topics, with 79% having at least one SSH partner. However, the share of SSH partners compared to all partners in project is lower. While in total there were 4,449 partners, only 12% were SSH-partners.

The highest share of SSH partners in a project was 63%. Overall, 32% of all SSH-flagged projects had SSH coordinators. SSH partners received 16% of the budget going to SSH topics, while this was 11% when looking at the total budget.

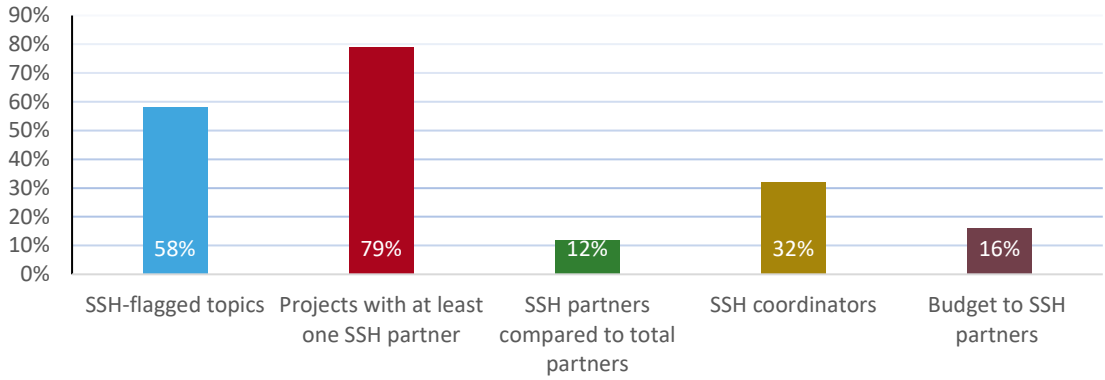


Figure: Overview of statistics for Cluster 1

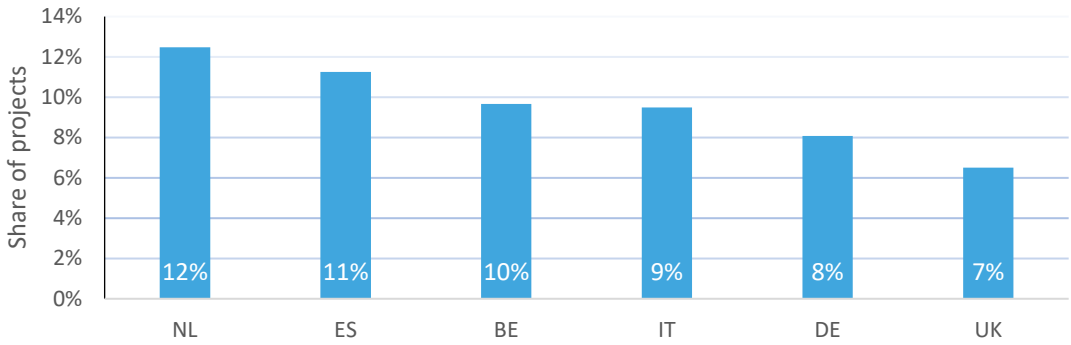


Figure: top six countries in which SSH partners are based for Cluster 1

Most SSH partners are based in The Netherlands (12%), followed closely by Spain (11%) and Belgium (10%).

Cluster 1 project example: the secret is in the joint design

INSPIRE: *INtegrated Short-term PalIlative REhabilitation to improve quality of life and equitable care access in incurable cancer*

https://palliativeprojects.eu/inspire/about-inspire/
Cordis website:
https://cordis.europa.eu/project/id/101057043

INSPIRE aims to provide a clinically and cost-effective palliative rehabilitation intervention for the quality of life, symptom alleviation and disability of people with cancer. In particular, the project focuses on providing equitable access to rehabilitation to ensure that everyone has access to the right care for their needs.

SSH and STEM collaboration

The nature of the topic addressed, namely, palliative care and the evaluation of a complex intervention in the healthcare sector, highlighted the need for a multidisciplinary approach.
The involvement of SSH was not an afterthought but a foundational element of the project's architecture from its early development phases.
The key elements that facilitated the effective integration of SSH into the project were mainly three:

1. **Previous experience in interdisciplinary collaboration:** many of the researchers involved in the project had previous experience working with SSH experts, which facilitated productive dialogue and the creation of a common language.
2. **Joint design:** the project was built from the outset with SSH integration, avoiding the ineffective approach of developing a STEM project first and then attempting to add an SSH component later.
3. **Project objectives and its interdisciplinary nature:** the primary goal of the study was to assess the impact of rehabilitation on patients' quality of life. This objective inherently embraces social and psychological dimensions alongside the clinical aspect. As a result, the contribution of SSH was not merely complementary but intrinsic to achieving the project's goals.

Challenges and strategies of a good collaboration between STEM and SSH

One of the most significant aspects of this collaboration is its cross-disciplinary nature. There are no rigid divisions between disciplines; rather, every activity and deliverable of the project results from a multidisciplinary contribution. This approach has made it possible to avoid the separate management of clinical and social aspects, enabling continuous and harmonious integration. For instance, social science researchers actively participate in clinical work, directly interacting with physicians and contributing their expertise to assessing the impact of therapies on patients' quality of life.

Several strategies have contributed to the smooth progress of the collaboration. First and foremost, SSH integration was considered an essential part of the project from the beginning, avoiding any division into separate phases. Additionally, the project was conceived as a unified entity, where every phase and activity are analysed while considering both disciplinary approaches. This strategy ensures a broader overall perspective and greater coherence among the various research components.

2.2.2. Cluster 2 – Culture, Creativity and Inclusive Society

This cluster aims to strengthen European democratic values, including rule of law and fundamental rights, safeguarding our cultural heritage, and promoting socio-economic transformations that contribute to inclusion and growth.

By default, Cluster 2 supports SSH type of research and innovation. Thus, all topics in Cluster 2 are SSH-flagged by definition – thus, in this Cluster the differentiation between SSH-flagged and non-SSH-flagged is not used. Between 2021 and 2023, there were 82 topics for Cluster 2. The total budget for the topics was €717 million.

In total, 231 projects have been funded, with all of them having at least one SSH partner. The share of SSH partners compared to all partners is half (52%). This 52% is not, as one might expect in an SSH cluster, higher, because there are various tasks that are neither SSH nor STEM research and innovation related, such as management, communication, website building, amongst others. Thus, around 50% can be seen as a sort of logical ceiling for the number of SSH partners possible, which is relevant to compare other clusters to. SSH partners received 48% of the total budget, and 65% of the budget going to SSH-flagged topics.

Additionally, 81% of all projects had SSH coordinators.

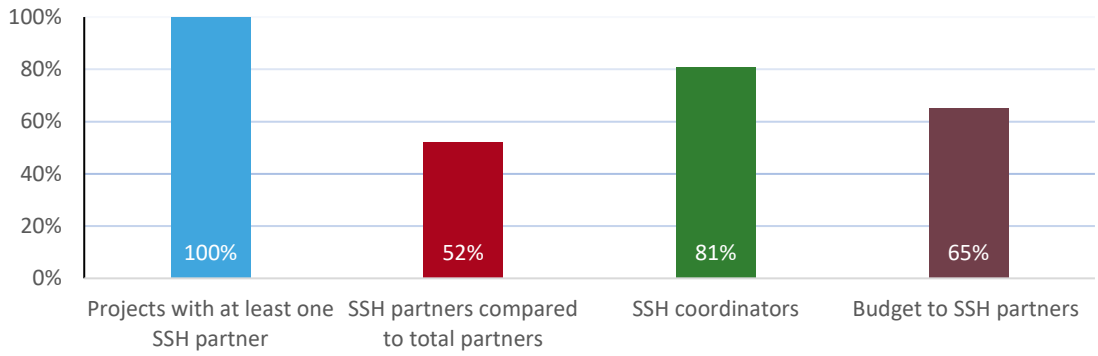


Figure: Overview of statistics for Cluster 2

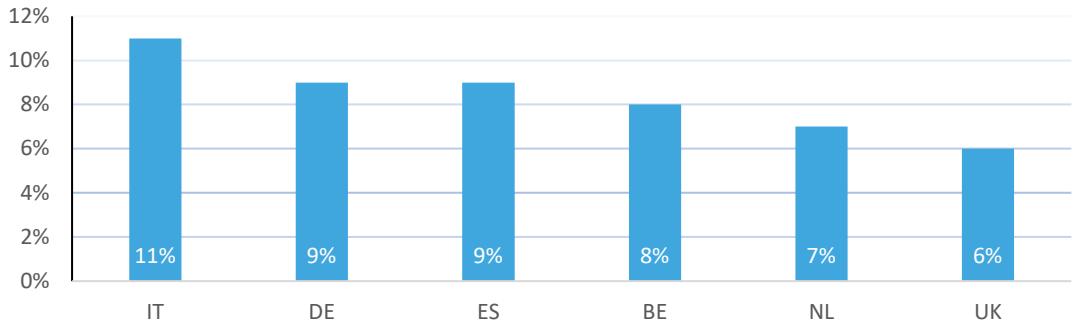


Figure: top 6 countries in which SSH partners are based for Cluster 2

Of all SSH partners, 11% are located in Italy, and 9% in Germany and Spain.

To note, among others, that the participation of Cultural and Creative Industries (CCIs) is explicitly encouraged under Cluster 2, which may further strengthen the interdisciplinary characteristics of the research funded. CCIs are important players not only as economic drivers but also as contributors to social innovation, democracy, and sustainability—core priorities across Cluster 2. Often call topics do generally seek interdisciplinary consortia.

Due to its particular focus, one could also observe a very strong integration between different SSH disciplines across the Cluster.

Cluster 2 project example: new research directions become possible by combining SSH and STEM

MEMENTOES: *iMmersive gamEs for Museums as vehicles to Engage visiTOrs in Empathetic reSponses*

https://mementoes.eu
Cordis website:
https://cordis.europa.eu/project/id/101061496/en

MEMENTOES aims at creating historical video games for museums. Using immersive storytelling techniques, the video games would allow visitors of museums to live the parts of people throughout history, thereby creating empathy and a deeper historical understanding.

SSH and STEM collaboration

On the SSH side, museums (e.g. historians) and legal experts were involved; on the STEM side, IT and game developers. Due to the nature of the project, such a combination of disciplines was essential, because both sides completed the gaps other disciplines might have had.
For example, the game developers needed the historical scenarios (e.g. scenarios about the gulag) of the museums to start developing the game, while the legal experts ensured that the scenarios would be suitable for younger people (e.g. depictions of rape or genocide).
This is also reflected in the main work packages and the meetings the partners had. There were monthly meetings, with an iterative process going on, where scenarios were updated based on the software and A.I. or on legal recommendations, or the game was adjusted based on comments from the historical side or the legal side.
One example of this, is that from the IT side, generative A.I. (A.I. that would produce, for example, new areas in the game as a museum visitor plays the game) was meant to be used in a game. However, this was then, despite the technological innovation of it, removed, because it would move to much towards ahistorical areas (because the generative A.I. could not account for historically accurate environments or events if they were not written into a scenario beforehand).

Challenges and Strategies of a good collaboration between STEM and SSH

The main challenge is that all partners speak a different “language”. The process of overcoming this barrier can take some time. This may be overcome by having everyone make their point and then find a common ground in each of these points.
The cooperation between SSH and STEM not only serves the project but can also serve to show new research problems. The inclusion of SSH dimensions shows new research areas and adds a humanistic overview for very technological research.

2.2.3. Cluster 3 – Civil Security for Society

Cluster 3 'Civil Security for Society' responds to the challenges arising from persistent security threats, including cybercrime, as well as natural and man-made disasters.

Integrating the SSH dimension in projects funded under this cluster is essential to assess the potential impact of innovations on end-users and to improve their social acceptance. For instance, in funded initiatives on border checks (which involve the collection of data on identity, biometrics, documents, and risk assessment) SSH expertise can help address concerns related to privacy, ethics, and public trust. This, in turn, contributes to more inclusive and responsible innovation and, ultimately, to greater societal uptake.

Between 2021 and 2023, there were 82 topics for Cluster 3, of which 27 (33%) SSH-flagged topics. The total budget for the topics was €595 million, with 26% for SSH-flagged topics (€152 million).

In terms of projects funded, 41 projects have been funded under SSH-flagged topics, with almost all of them having at least one SSH partner (90%). However, the share of SSH partners compared to all partners in projects is only a fifth (20%). The highest share of SSH partners in a project was 83%. SSH partners received 26% of the budget going to SSH topics, while this was 7% when looking at the total budget.

Additionally, 29% of all SSH-flagged projects had SSH coordinators.

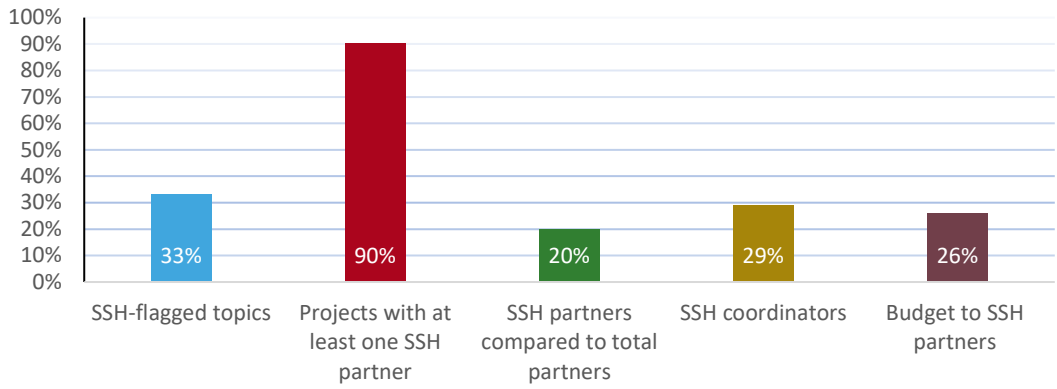


Figure: Overview of statistics for Cluster 3

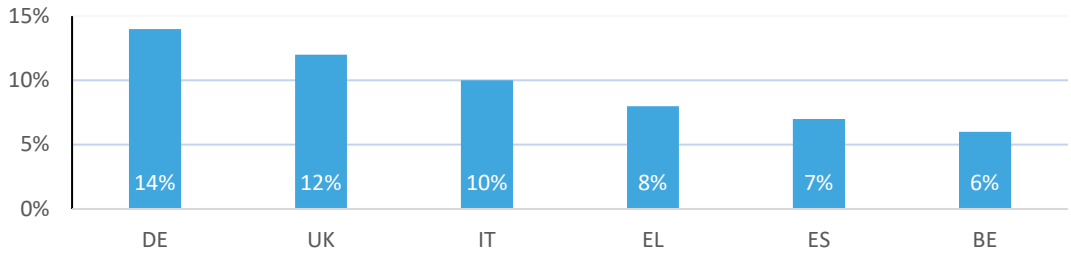


Figure: Figure: top 6 countries in which SSH partners are based for Cluster 3

Overall, 14% of the SSH partners are located in Germany, while 12% in the United Kingdom and 10% in Italy.

Cluster 3 project example: you need a 'translator' that knows multiple disciplines

GEMS: *Gaming Ecosystem as a Multilayered Security Threat*

https://www.projectgems.eu/
Cordis website:
https://cordis.europa.eu/project/id/101121345

The GEMS project is focussed on the spread of extremism within the gaming community. It aims to provide law enforcement with a training curriculum to battle this extremism, and develop an A.I. tool called *The Watchtower* that will detect and prevent extremist content in online gaming.

SSH and STEM collaboration

The project employs two main disciplines. First, the sociologists in the project focus on the creation of a Sociology of Gaming and Radicalisation. Secondly, IT-experts who develop *The Watchtower*, which is a tool designed to detect and prevent extremist content in online gaming. In addition, there is also intersectoral cooperation with law enforcement, as one of the goals is to provide law enforcement with training.

Challenges and Strategies of a good collaboration between STEM and SSH

The main challenge faced in the different discipline is languages. As the coordinator explained, an engineer might say "*How many tokens are needed for x, y and z*", and it would not be understood by the sociologists in the project. The project coordinator had previous experiences with interdisciplinary projects and knew that there was need for a person who had knowledge of both the A.I. side and the sociological side, as to bridge the gap between the disciplines.

The benefits of the cooperation, aside from the obvious benefits for the project goal, are also in how the different disciplines have their own methodological expertise or background that comes into play. For example, law enforcement might be interested in the conclusion of a certain research document on extremism, but the sociologists can interpret the data and methodology better through their methodological expertise in these types of studies.

2.2.4. Cluster 4 – Digital, Industry and Space

Cluster 4 aims at shaping competitive and trusted technologies for a European industry with global leadership in key areas, enabling production and consumption to respect the boundaries of our planet, and maximizing the benefits for all parts of society in the variety of social, economic and territorial contexts in Europe. All this aims to build a competitive, digital, low-carbon and circular industry, ensuring sustainable supply of raw materials, developing advanced materials and providing the basis for advances and innovation in global challenges to society.

Between 2021 and 2023, there were 284 topics for Cluster 4, of which 82 (29%) SSH-flagged topics. The total budget for the topics was €4,617 million, with 33% for SSH-flagged topics (€1,540 million).

In terms of projects funded, 260 projects have been funded under SSH-flagged topics, with three out of four projects having one SSH partner (75%). The share of SSH partners compared to all partners in projects is far less (14%). The highest share was 100% in a project. SSH partners received 15% of the budget going to SSH topics, while this was 5% when looking at the total budget.

Additionally, 25% of all SSH-flagged projects had SSH coordinators.

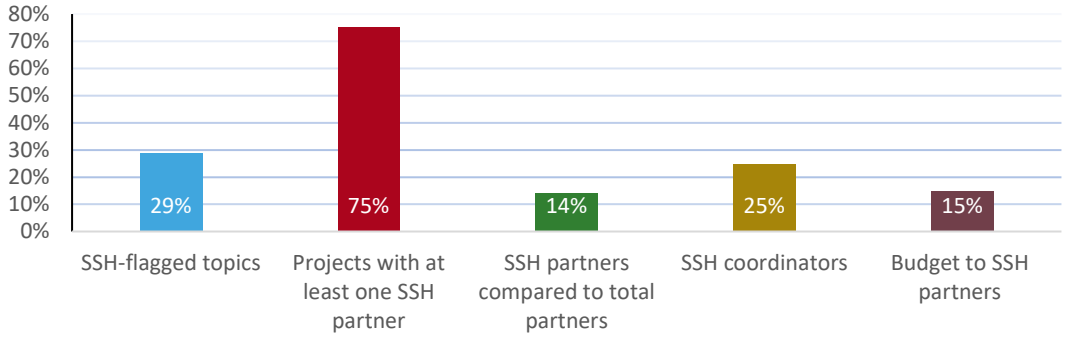


Figure: Overview of statistics for Cluster 4

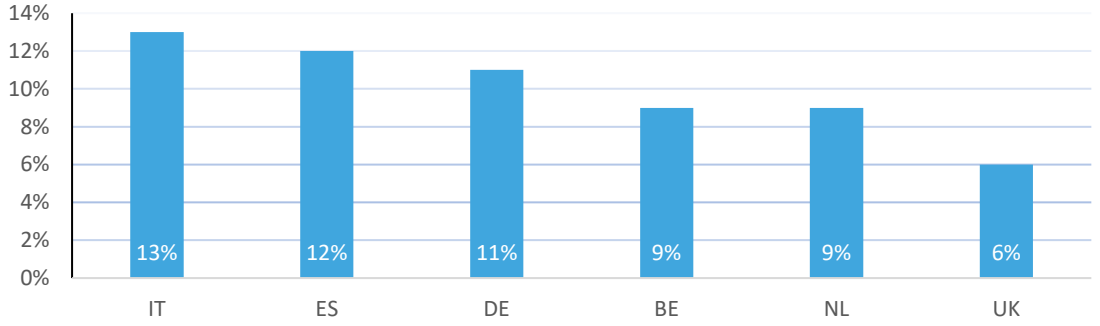


Figure: top 6 countries in which SSH partners are based for Cluster 4

SSH partners were located mainly in Italy (13%), Spain (12%) and Germany (11%), having over 1/3 of the total share of SSH partners.

Cluster 4 project example: the importance of a joint glossary

SHARESPACE: *Embodied Social Experiences in Hybrid Shared Spaces*

https://sharespace.eu/
Cordis website:
https://cordis.europa.eu/project/id/101092889

The vision of SHARESPACE is the creation of future Social Hybrid Spaces (SHS) shared by humans and avatars engaged in embodied collaborative tasks, where social sensorimotor primitives are transparently captured through mobile connected innovative sensors, and then reconstructed using novel extended reality (XR) technology. Through a cognitive architecture, virtual avatars will facilitate joint-action, distance-based learning, and social cohesion in the hybrid societies of the future, by reconstructing core social sensorimotor primitives into virtual ones.

SSH and STEM collaboration

The presence of SSH researchers was driven by the need to explore not only the technical aspects of these technologies but also their broader impact on society and individuals. Although the project was primarily technical in nature, it quickly became clear that the adoption of these technologies would have direct consequences for end-users. This realisation led to the inclusion of experts from disciplines such as philosophy, ethics, and anthropology to reflect on the social and moral impacts of human-AI interactions. In particular, they explored issues such as the ethical limits of human-avatar interactions, seeking to understand if and when such interactions can be considered ethically acceptable. Moreover, SSH researchers actively participated in the project's development phases, going beyond mere theoretical oversight and engaging directly in the field. They conducted interviews with developers, participants, and other stakeholders, observing how the technology was being used and collecting direct feedback from end users. This hands-on approach enabled the gathering of crucial empirical data to understand how people perceive and interact with emerging technologies, ultimately helping to shape the project's future direction.

Challenges and Strategies of a good collaboration between STEM and SSH

The strong synergy between STEM and SSH is particularly evident in the structuring of tasks and work packages within the project. SSH researchers have been involved from the outset in defining project specifications and scenarios.
Two key work packages have seen significant contributions from SSH experts: the first focuses on establishing the project's initial objectives and specifications, while the second deals with real-world pilot studies, where SSH researchers closely monitor the technology’s evolution in its applied context.

To facilitate this interaction, a joint glossary has been developed, incorporating definitions of both technical and ethical terms to prevent misunderstandings across disciplines. This glossary has played a crucial role in aligning expectations and terminology among researchers from different backgrounds, enabling more effective communication on complex topics such as movement and motion encoding, as well as the ethical implications of the technology. Enriched with references to key publications, the document serves as a foundation for a shared language within the project.
Beyond producing common documentation, SSH researchers have actively participated in project dissemination events, contributing not only to showcasing technical progress but also to raising philosophical and ethical questions regarding the adopted approach. Their continuous presence in these events has encouraged ongoing reflection on the potential social and cultural impacts of emerging technologies.

2.2.5. Cluster 5 – Climate, Energy and Mobility

Cluster 5 aims to fight climate change by better understanding its causes, evolution, risks, impacts and opportunities, and by making the energy and transport sectors more climate and environment-friendly, more efficient and competitive, smarter, safer and more resilient.

Between 2021 and 2023, there were 340 topics for Cluster 5, of which 88 (26%) SSH-flagged topics. The total budget for the topics was €5,139 million, with 24% for SSH-flagged topics (€1,255 million).

In terms of projects funded, 208 projects have been funded under SSH-flagged topics, with almost all projects having one SSH partner (94%). The share of SSH partners compared to all partners in projects is far less (21%). The highest share for a project was 90%. SSH partners received 27% of the budget going to SSH topics, while this was 6% when looking at the total budget.

Additionally, 38% of all SSH-flagged projects had SSH coordinators.

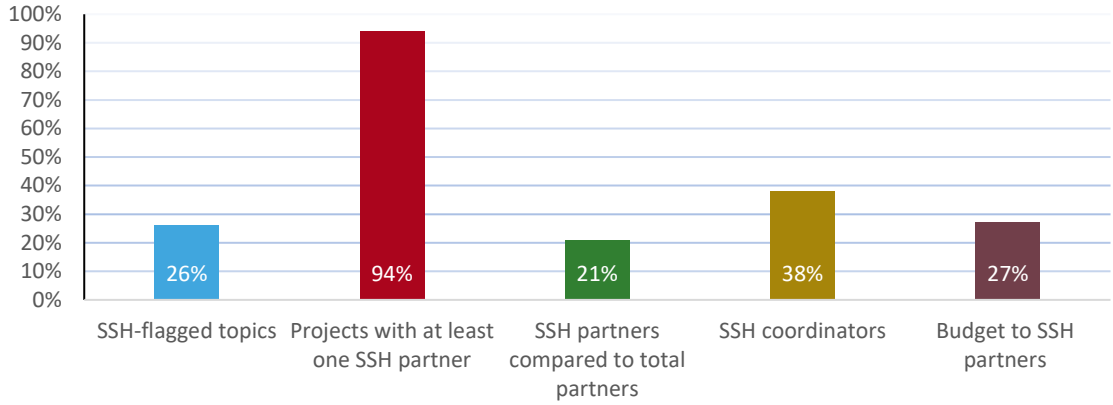


Figure: Overview of statistics for Cluster 5

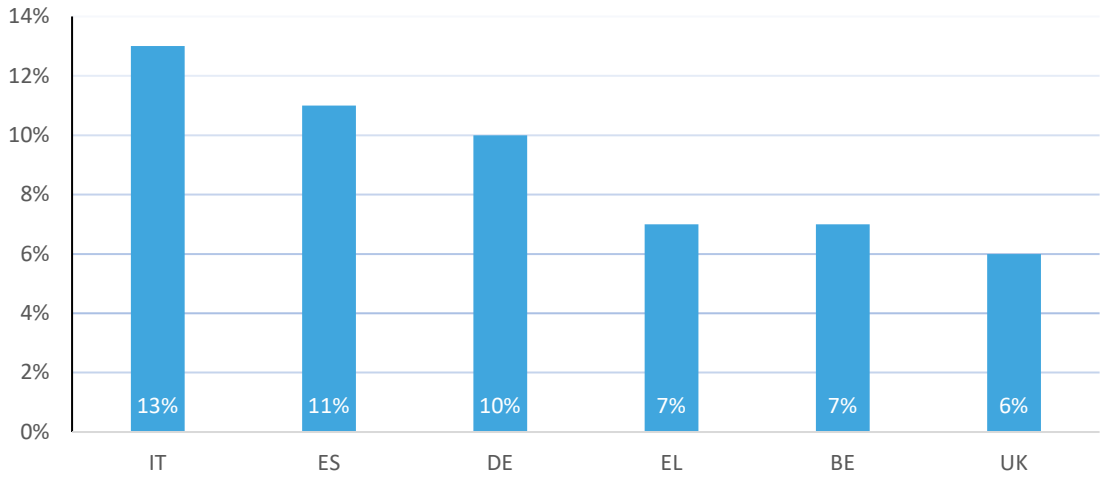


Figure: top 6 countries in which SSH partners are based for Cluster 5

As with Cluster 4, a third of SSH partners in Cluster 5 are located in Italy (13%), Spain (11%) and Germany (10%).

Cluster 5 project example: when social acceptability is key for the project

REGEN: *Regeneration of neighbourhoods towards a low-carbon, inclusive and affordable built environment*

https://regenproject.eu/
Cordis website:
https://cordis.europa.eu/project/id/101123325

REGEN aims to pave innovative pathways for the decarbonisation of European neighbourhoods and cities. It aims to tackle urgent socioeconomic, climate and built environment challenges by designing a multifaceted toolbox leveraging cutting-edge digital technologies and life cycle sustainability assessments while engaging stakeholders and influencing behavioural change. The project proposes a holistic methodology and framework (Assessment Framework for Urban Regeneration) through which a catalogue of 50 urban regeneration interventions will be validated.

SSH and STEM collaboration

The use of SSH methodologies ensures that innovative technologies and interventions are effectively presented to a wider audience, facilitating adoption and tangible impact. While STEM provides tools and solutions, SSH fills the gaps by addressing the economic, social and communication aspects critical to achieving measurable results, such as reducing carbon emissions and increasing energy efficiency.

SSH researchers have been involved from the earliest stages of the proposal and they contribute to the definition of the methodologies underlying stakeholder engagement and the creation of living labs, providing local authorities with accessible tools to effectively implement involvement practices. Furthermore, the four demonstration sites (Spain, Italy, Ireland and Luxembourg) feature SSH experts dedicated to the methodological support of local authorities in the implementation of social engagement practices.

The involvement of SSH experts was driven by a set of key factors such as addressing urban regeneration in a comprehensive manner by taking into account the role of human behaviour as well as purely technical aspects, and the fundamental role that SSHs could play in ensuring the social acceptability of the technologies developed within the project. Furthermore, the early involvement of SSH experts ensured the alignment of technological development with the needs and expectations of the end users.

Challenges and Strategies of a good collaboration between STEM and SSH

Differences in methodologies, communication styles and target audiences may create obstacles, such as the difficulty of defining shared impact indicators or addressing information asymmetries. However, to overcome these difficulties, a number of actions have been taken including setting up a series of project activities that can foster joint learning and collaboration, such as the creation of neighbourhood regeneration offices that fuse SSH engagement methodologies and STEM decision support tools, thus providing a tangible means to reconcile the two domains.

It is essential to mention that this project by its innovative merger of different fields with distinct approaches, showcases the importance of involving SSH disciplines in future initiatives. Indeed, while challenges exist, the experience highlights the necessity of early collaboration and a shared vocabulary to reconcile differences. SSH and STEM researchers come from different "universes," but convergence is essential for successful interdisciplinary projects.

2.2.6. Cluster 6 – Food, Bioeconomy, Natural Resources, Agriculture & Environment

Cluster 6 aims at reducing environmental degradation, halting and reversing the decline of biodiversity on land, inland waters and sea and better managing natural resources through transformative changes of the economy and society in both urban and rural areas. This aims to ensure food and nutrition security for all within planetary boundaries through knowledge, innovation and digitalisation in agriculture, fisheries, aquaculture and food systems and steer and accelerate the transition to a low carbon, resource efficient circular economy and sustainable bioeconomy, including forestry.

Cluster 6 had 319 topics between 2021 and 2023, of which 150 SSH-flagged (47%). Of the total budget (€3,156 million), 47% (€1,482 million) was allocated to SSH-flagged topics. In total, 251 projects were funded under SSH topics. Most projects had at least one SSH partner (94%), while compared to the total of partners, SSH partners represented 21% of the total. The highest share of SSH partners in a project was 100%. Additionally, 40% of the projects were coordinated by SSH coordinators. SSH partners received 28% of the budget going to SSH topics, while this is 13% of the total call budget.

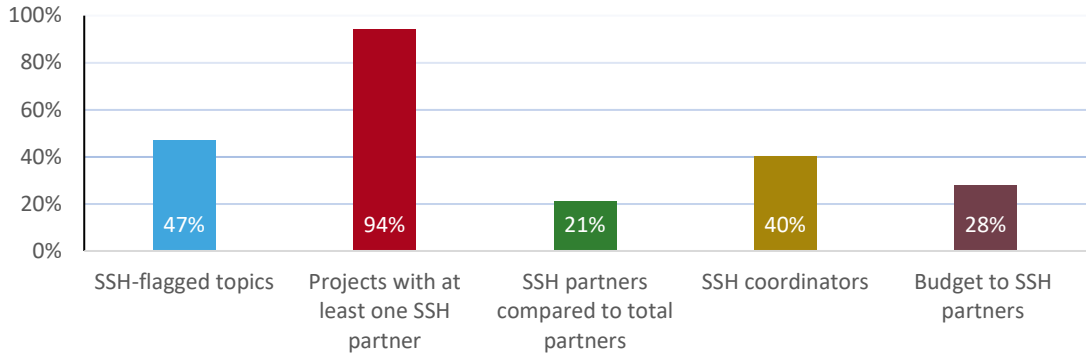


Figure: Overview of statistics for Cluster 6

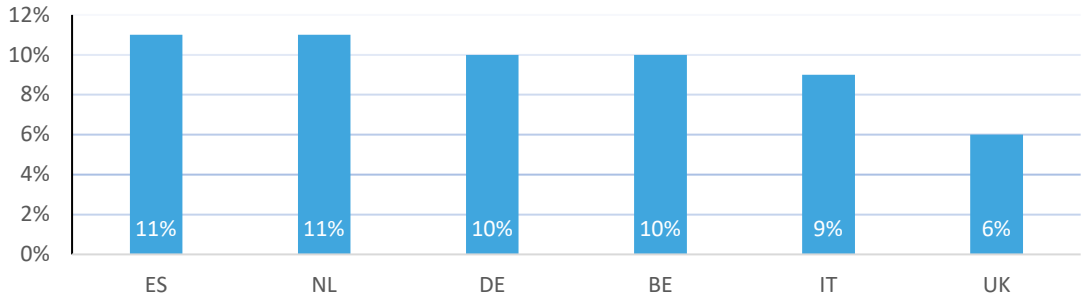


Figure: top 6 countries in which SSH partners are based for Cluster 6

Over 40% of SSH partners are based in Spain (11%), The Netherlands (11%), Germany (10%) and Belgium (10%).

Cluster 6 project example: interconnected disciplines are a 'must'

GeneBEcon: *Capturing the potential of Gene editing for a sustainable BioEconomy*

https://genebecon.eu/
Cordis website:
https://cordis.europa.eu/project/id/101061015

The GeneBEcon project aims at harnessing New Genomic Techniques (NGTs) to drive sustainable advancements in plant breeding, farming, and biobased industries. By developing climate-friendly and less polluting solutions, particularly in agriculture and aquaculture, the project aligns with key European sustainability goals.

SSH and STEM collaboration

The collaboration between researchers and experts from both the natural and social sciences in this project stems from the need to ensure that scientific research goes beyond laboratory experimentation and has a real impact on society. To achieve this, GeneBEcon has involved SSH experts to help translate research into tangible and meaningful outcomes.

A key aspect of this approach is assessing the impact of research. Integrating different disciplines allows for a more comprehensive analysis of the innovations developed in the project from multiple perspectives:

- Economic – to evaluate the sustainability and market potential of the products of new technologies.
- Regulatory – to support the development of policies suited to emerging scientific advancements.
- Social – to understand public perception and stakeholder acceptance of innovations.

Another crucial reason for involving SSH in GeneBEcon is to support policymakers. The European Union and its decision-makers need well-founded, in-depth insights to make informed choices about technological developments. Combining social and natural sciences provides a more complete picture, considering not just the scientific and technical aspects but also the economic and regulatory implications.

Challenges and Strategies of a good collaboration between STEM and SSH

While collaboration between STEM and SSH disciplines is a key component of the project, it has also presented several challenges. To address these, GeneBEcon has adopted a strategy that emphasises interdependence between work packages. The research structure was designed so that different disciplines are interconnected and rely on each other. A concrete example is the study on NGT-derived potato and microalgae, where data from scientific STEM experiments is used by SSH experts for economic analysis and to offer guidance on regulations and public perception. This approach ensures that researchers do not work in isolation but instead contribute their expertise to different phases of the project.

In addition, the management and coordination team played a key role in creating an appropriate environment for the different disciplines to work together and make the interdependence of the work packages effective and useful for the project's impact.

2.2.7. Cross cluster: EU Missions and New European Bauhaus

EU Missions are a way to bring concrete solutions to some of our greatest challenges. They are aimed to deliver concrete results by 2030. There are currently five such missions: Adaptation to Climate Change, Cancer, Restore our Ocean and Waters, Climate-neutral and Smart Cities, and A Soil Deal for Europe. The New European Bauhaus (NEB) is a policy and funding initiative that makes green transition in built environments and beyond enjoyable, attractive and convenient for all. It promotes solutions that are not only sustainable, but also inclusive and beautiful, while respecting the diversity of places, traditions and cultures in Europe and beyond.

In total, 94 projects were funded under the EU Missions and the NEB. Of these, 94% have at least one SSH partner. The total amount of partners in EU Missions and NEB is 1,716, of which 292 SSH partners (17%), which is 22% for all Clusters. Of the total budget going to EU missions and NEB, 29% goes to SSH partners (which is 25% for all clusters). Thus, there are less SSH partners, but more budget going to them. When comparing specific Missions, the Climate Change mission has the highest SSH integration by a high margin (24% - also above the average for Clusters), as well as the most budget going to SSH partners[4].

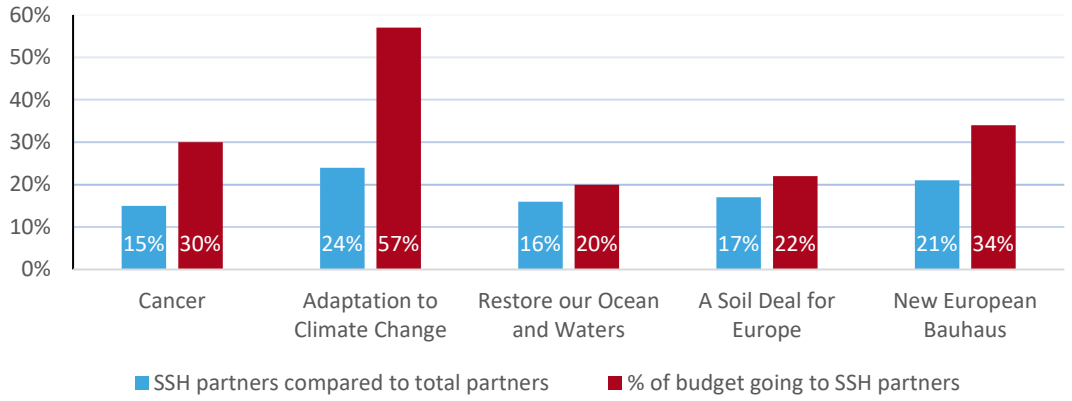


Figure: SSH partners compared to total partners and budget in each EU Mission and NEB

Both the Missions and the NEB by their own nature engage with citizens to boost societal uptake of new solutions and approaches. A recent report, for example, carried on for the Cancer Mission, underlines the importance of improving information and communication on cancer prevention and early detection and screening for EU citizens. More and better actions are needed to address barriers and support citizens in preventing cancer, with actions and initiatives that consider different levels of motivation and beliefs of the population. The Cancer Mission has three board members with professional background in respectively nursing, social sciences (public health community-based research including with minorities), and working with citizens. They have supported the Cancer Mission's efforts to introduce citizen engagement, establish and maintain a dialogue with young cancer survivors. The NEB is about leveraging our green and digital challenges to transform our lives for the better and an invitation to address complex societal problems together through co-creation and naturally integrating SSH.

[4] This is mainly due to one project that had mainly SSH partners, thereby increasing the percentage. In such small samples, one outlier affects an average.

3. Integration of SSH in projects funded under other parts of Horizon Europe

3.1. Widening participation and strengthening the European Research Area

The Horizon Europe work programme "Widening participation and strengthening the European Research Area" (WIDERA) in Pillar III supports a broad spectrum of actions to unlock the potential of the European Research Area by addressing fragmentation of the R&I landscape, reducing geographical disparities in R&I performance, and building R&I capacity through institutional and structural reforms. The WIDERA work programme includes two main components: “Widening participation and spreading excellence” (Widening programme) and “Strengthening the ERA by reforming and enhancing the European Research and Innovation system” (ERA programme).

SSH is strongly embedded in both components of the WIDERA work programme, with SSH experts and SSH approaches and activities featured across funded projects.

The estimation of the % of SSH component in the Widening Participation and Spreading Excellence Programme is between 14%-21% (average 18%). The exact total number is unknown as many projects did not declare the scientific field and many projects declared more than one field. It must be noted here that most of these topics are so-called Coordination and support actions (CSA), which do not have as aim SSH integration – hence the low percentage.

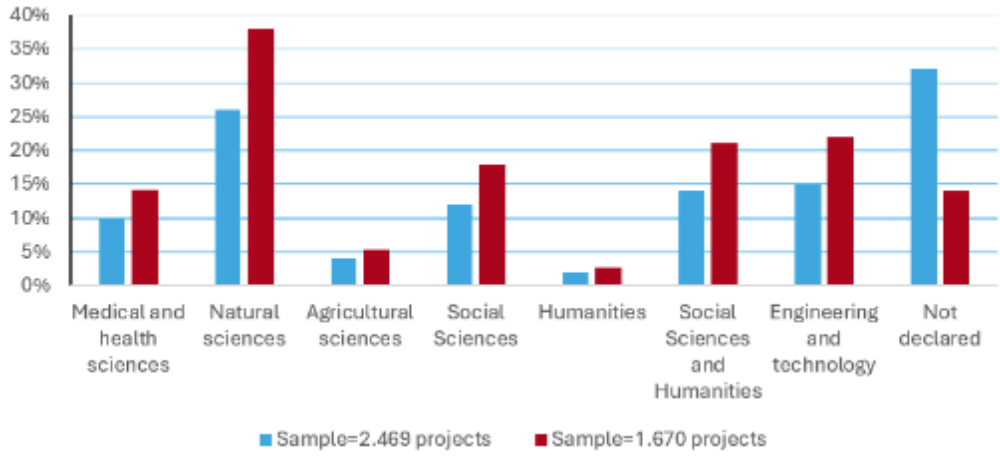


Figure: SSH components in Widening Participation and Spreading Excellence Programme *according to different fields*

Project example in ERA

INSPIRE: Europe's Centre of Excellence on Inclusive Gender Equality in Research & Innovation: Creating Knowledge & Engaging in Collaborative Action

https://www.inspirequality.eu/
Cordis website:
https://cordis.europa.eu/project/id/101058537

INSPIRE brings together leading academics and experts, innovative knowledge, policy approaches, and practices to establish a sustainable, globally renowned, high-quality European centre of excellence on inclusive gender equality in research and innovation. Throughout its different activities, the project incorporates social science theoretical and conceptual framing alongside methodological approaches. The expertise in this area is illustrated across the project. In particular, the project established Knowledge and Support Hubs as well as Communities of Practice to build a Centre of Excellence on inclusive gender equality in research and innovation. It carried out extensive literature reviews and interviews to understand the local and contextual mechanisms of gender equality interventions and programmes, to encourage innovative solutions that are context sensitive and rooted in specific local histories and contexts. Furthermore, consortium members presented the project at the ISA World Congress of Sociology.

Project example in Widening

CETE-P: *Establishing the Center for Environmental and Technology Ethics – Prague*

https://cetep.eu
Cordis website:
https://cordis.europa.eu/project/id/101086898

The ethical challenges posed by emerging technologies and climate change have been critically examined by ethicists in newly founded research centres in much of the Global North.Yet, there is no comparable research programme in the Czech Republic, and only a few relevant research initiatives in the entire CEE region. The ERA Chair position held by Prof. Mark Coeckelbergh, one of the most prolific and innovative authors in philosophy of technology and environment, will help to remedy this situation by establishing an internationally excellent research center for environmental and technology ethics at the Institute of Philosophy (IP), the largest humanities institute of the Czech Academy of Sciences. The centre will contribute to advancing state-of-the-art knowledge in environmental and technology ethics, in particular by focusing on issues that are globally under-researched, and/or imperative in the CEE region. At the same time the project will enable the IP to implement a set of organisational measures and structural changes, in particular in the areas of HR, international grant support, research management and institutional culture. With massive support from the IP management, planned and realised in cooperation with the ERA Chair holder, these changes will improve the international visibility of the IP, helping it to both succeed in competing for EU research funds and better integrate the IP into the European research landscape. By deploying smart means of approaching diverse target groups, this project aims to overcome the existing barriers between the general public, concerned stakeholders and the IP's research community. The project will alsofacilitate the flow of expert ethical opinions in the wider societal debate. In its long-term impact, this project shall contribute to further increase in public visibility of SSH research and its relevance for tackling urgent societal and political issues.

3.2. Research Infrastructures

The Research Infrastructures (RI) programme of Horizon Europe in Pillar I, similarly to Horizon 2020, has maintained four main lines of funding:

1) Supporting the development of scientific services for researchers, through the European Strategy Forum on Research Infrastructures (ESFRI) Roadmap (developed by an advisory body made up of experts from national ministries). The EU does not pay for the construction of new RIbut covers the cost of facilitating inter-governmental agreement on a new RI and offers funds for the preparatory phase.
2) Supporting transnational access to RI services across the EU, making it possible for researchers to use facilities outside their national science system.
3) Fostering the joint work on RI technological developments across EU countries, to improve the performance of RI services.
4) Promoting the EU's open science policy, notably through the development of a European Open Science Cloud (EOSC).

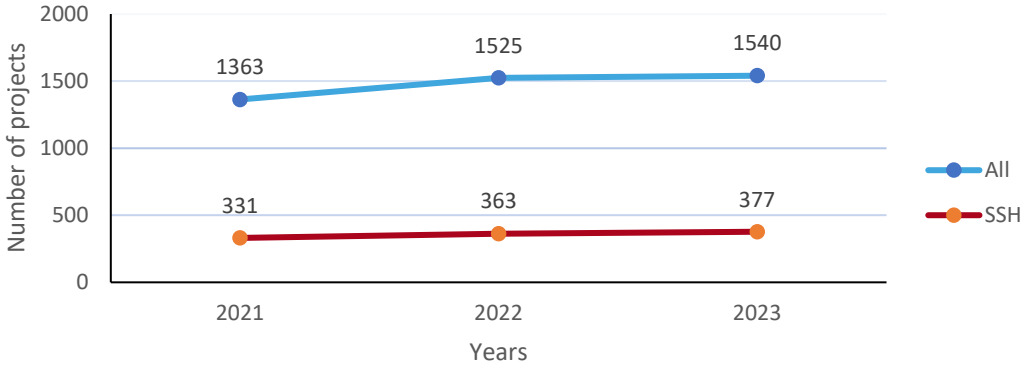
While for this type of projects it is not appropriate to refer to SSH integration, it is important to highlight that some RIhave been funded in the area of SSH research throughout all types of funding. In the **first** group (calls labelled INFRA-DEV) the European Commission funds projects aimed at developing the design and governance of a new RI in the field of SSH; E-RIHS (on heritage science), GGP-5D (generations and gender demographic studies), GUIDEPREP (a cohort study on growing up digital), OPERAS-PLUS (on open scholarly communication in Social Sciences and Humanities), RESILIENCE (on religion studies), SoBigData PPP (a platform for the design and execution of large-scale data science and social mining experiments), EHRI-IP (on holocaust research), RIECS-Concept (on citizen science). These projects received a total EU contribution of around €22 million. In the **second** group (calls labelled INFRA SERV) the Commission funds projects aimed at providing researchers with access to services. There are some projects destined to SSH researchers: Infra4NextGen (providing data resources on topics relevant for Next Generation EU) and ATRIUM (services for research in arts and humanities), with a total EU contribution above €19.5 million. The **third** type of projects, funded via calls labelled INFRA-TECH, also includes one project for SSH communities. SoGreen aims at enhancing the capacities of the four leading social science infrastructures in Europe (ESS ERIC, SHARE ERIC, GGP and GUIDE) to facilitate the study of the social aspects of the green transition (EU contribution of €5 million). In the **fourth** group (calls labelled INFRA-EOSC), EU-funded projects are dedicated to supporting FAIR data practices across scientific disciplines and to developing other tools enabling research data curation, storage, and access. Many of these projects include some activities aimed at SSH communities: OSCARS, FAIRCORE4EOSC, FAIR-IMPACT, OS-TRAILS, EOSC BEYOND, EOSC ENTRUST, FIDELIS, EOSC DATA COMMONS, LUMEN. These projects received a total aggregated funding of over €83 million, but it is important to note that their SSH dimension can be small.

Projects in the RI programme aim at developing scientific services, they do not carry out research as such. Therefore, they offer less opportunities for SSH integration in other research areas. But there are nevertheless some good examples to highlight such as the grant BeYond-COVID (funded via a special emergency call in 2021 with €12 million) tackling the challenge of pooling SARS-CoV-2 data coming from different sources (such as universities, research centres, hospitals, and laboratories), connecting them, standardising them and facilitating access. The consortium includes a SSH partner in charge of working with patient organisations and the broader public to collect feedback on the social and legal aspects of opening access to infectious disease data.

3.3. Marie Skłodowska-Curie Actions

The Marie Skłodowska-Curie Actions (MSCA) is the EU's reference programme for doctoral and postdoctoral training, supporting researchers at all stages of their career and developing excellent doctoral programmes. As a "bottom-up" programme, MSCA funds research across all disciplines and fosters cooperation between academia, industry and innovative training.

The overview below applies to three MSCAs, Postdoctoral fellowships (PF), Doctoral Networks (DN) and Staff Exchanges (SE), which fund research projects and are attributed to two specific panels: SOC (Social Sciences and Humanities) and ECO (Economic Sciences). From 2021 to 2023, 1071 out of 4428 projects have been funded belonging to SSH, which represents 24.2% of all PF/DN/SE projects funded so far under MSCA under the 2021, 2022 and 2023 calls.



In terms of specific actions, SSH disciplines are consistently most strongly represented in Postdoctoral Fellowships, currently at 26% and similar to the representation in the previous Framework Programme (28% at the end of H2020). The share in the other two actions is equally comparable to the usual trends for SSH in MSCA.

	All	SSH	Share
PF	3824	993	26%
DN	446	48	10.8%
SE	158	30	15%

3.4. European Research Council

The European Research Council of Horizon Europe (ERC) in Pillar I supports frontier curiosity-driven research across all fields. Research is funded without any pre-determined priorities and based on scientific excellence alone. As such, the ERC is not mandated to mainstream/integrate SSH, as it treats this domain in the same way as all other fields, with a large share of ERC funding.

Interdisciplinarity in ERC projects

With a view to considering forms of 'integration' of SSH and other domains (life sciences, physical sciences and engineering), one can look at interdisciplinarity; for practical reasons this can be defined as involving SSH and one of the other two domains, while recognising that interdisciplinarity also occurs within domains. As the ERC funding programme is fully "bottom-up", it welcomes but does not prescribe interdisciplinary as a funding priority or evaluation criterion. However, a recently completed report[5] on the scientific assessment of completed ERC projects concludes that projects funded by the ERC often have a strong interdisciplinary nature, and over 70% of them either produced results that were applicable in other areas (beyond the main project goals) or brought together research fields that had previously seen little interaction. It also concludes that ERC funding made the creation of interdisciplinary research teams possible, and such interdisciplinary projects were more likely to lead to major scientific advances and breakthroughs.

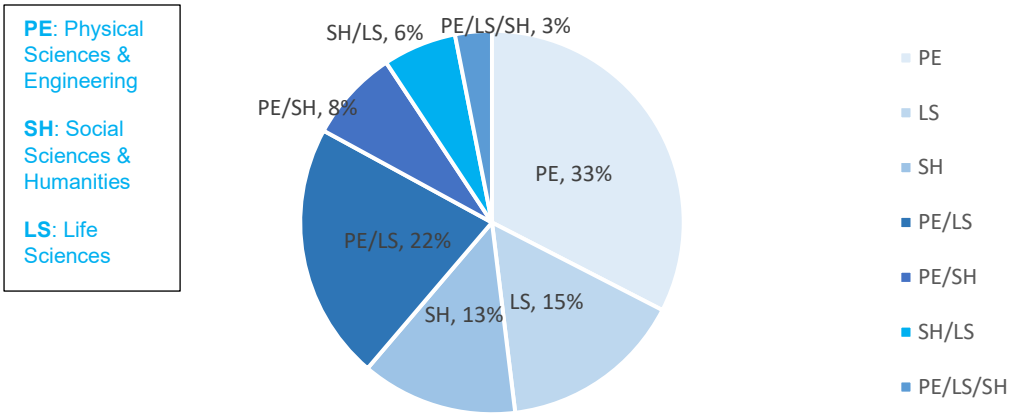


Figure: Interdisciplinarity in ERC Synergy Grants from 2022-2024[6] (total number of projects: 129)

ERC Synergy Grants are given to small groups of two to four Principal Investigators to jointly address ambitious research problems.[7] While interdisciplinarity is not a selection criterion, many Synergy projects combine different disciplinary perspectives. Based on a preliminary analysis, of the 129 projects funded in 2022-2024, 14% of the projects have SSH and another scientific domain, while 3 % of the projects combine disciplines from all three scientific domains.

[5] The ERC pioneering years, Scientific assessment of completed ERC projects, FP7 review (2015-2022)
[6] There was no Synergy Call in 2021.
[7] ERC Work programme 2025

Project example in MSCA

UnderTheSands: Ancient irrigation detection and analysis using advanced remote sensing methods.

https://underthesands.icac.cat/
Cordis website:
https://cordis.europa.eu/project/id/101062705

Remote sensing is one of the many methods for studying ancient irrigation and water management systems. The challenge of using such a method is that it usually only focuses on a specific region, detecting mostly isolated channels. This can constrain our understanding of ancient irrigation systems.

The EU-funded UnderTheSands project aims to overcome this limitation. It will produce a workflow for the detection and analysis of ancient irrigation networks in diverse environments. To do this, UnderTheSands will use a combination of novel remote-sensing techniques such as the multi-scale relief model and archaeomorphology, as well as sources like synthetic aperture radar.

Project example in ERC

DELTA-LANG: *The Delta of Language*

Cordis website:
https://cordis.europa.eu/project/id/101118756

The project investigates a previously unexamined hypothesis: whether meaning conveyed in spontaneous speech, when converted into digital quantitative features and analysed using natural language processing tools, can serve as a predictive indicator of transitions from remission to psychotic relapse. The project integrates insights from linguistics, neuroimaging, psychiatry, and e-health to identify language metrics associated with symptom variability and the neural signatures of psychosis.

4. Recommendations and conclusions

This section provides key conclusions based on the data presented in the report, as well as practical recommendations on how best to ensure an efficient SSH integration within a research and innovation project. Moreover, it also presents a forward-looking outlook on how to strengthen the societal impact of EU-funded R&I activities.

1. Key facts and figures of SSH integration in Horizon Europe in 2021-2023

In short, 41% of the budget (€7.2 billion) went to SSH-flagged topics (which were 40% of the total amount of topics) in Horizon Europe Pilar II. Of the projects funded under these topics, only 12% did not have any SSH partner, while 22% of the total amount of partners were SSH partners.

The largest numbers of SSH partners are located in Italy (11%), Germany (10%) and Spain (10%); who together make up 31% of all SSH partners. These countries are closely followed by researchers based in the Netherlands (9%) and Belgium (9%). The United Kingdom (6%), as a third country first and then as an Associated Country to Horizon Europe, is the sixth contributing country in terms of SSH integration.

2. Three key strategies for successful SSH integration

The **first** recommendation for a good SSH integration is achieving a good common language. SSH disciplines and STEM disciplines generally use a different language – in fact, this is even an issue between SSH disciplines, where certain concepts have different meaning according to the discipline, and even statistics are interpreted differently. Achieving a common language is key to any form of success.

Secondly, researchers and participants from different disciplines have different priorities. Looking at the Cluster 2 good practice example: ***MEMENTOES:*** *iMmersive gamEs for Museums as vehicles to Engage visiTOrs in Empathetic reSponses,*[8] historians, law-experts and IT-specialists had different priorities, while aiming for the same overarching goal to deliver video games for museums as vehicles to engage visitors in empathetic responses. Even if certain IT-measures were impressive, the overall objective was not to provide an innovative game, but a historically accurate and immersive game. It is therefore important to have a clear goal for the project under which all disciplines can unite and can clearly understand what they bring to the project.

Thirdly, it is important to have an interdependency between work packages in a project. Work packages are usually interlinked, so there is a necessity to cooperate between all actors, and not to consider SSH-related activities in isolation. This will require that all involved researchers follow the overall project lifecycle, to understand the struggles of other disciplines, and to keep in touch through general meetings, where all disciplines get together to provide their views and problems.

3. Methodology of monitoring SSH integration in Horizon Europe in 2021-2023

SSH integration in Horizon Europe is monitored through how many topics have been flagged as SSH-relevant, how many projects under these topics have SSH partners, and how much budget went to projects funded under these topics and SSH partners. This approach enables comparable, quantitative data analysis of a wide variety of EU-funded projects, across multiple budget years

[8] iMmersive gamEs for Museums as vehicles to Engage visiTOrs in Empathetic reSponses | MEMENTOES | Projekt | Fact Sheet | HORIZON | CORDIS | European Commission

and at huge scale. This is the best solution in place – balancing the requirements and needs for applicants, project consortia, implementation agencies, policy makers and monitoring obligations.

SSH-flagged topics are featured prominently in most clusters, and almost all projects under these SSH-flagged topics have at least one SSH partner. However, the number of SSH partners in relation to the total number of project partners is low, with roughly 1 out of 5 project partners being an SSH partner, even under SSH-flagged topics. In addition, the quality of the integration was not measured, thus with the current methodology it is difficult to assess how much the SSH partners contributed to a project

4. Moving forward

a. SSH integration monitoring in Horizon Europe:

For the final years of Horizon Europe, the current approach of SSH integration monitoring will be continued, culminating in a final report on SSH integration in Horizon Europe foreseen in 2028.

The intention is that SSH flagging of topics will be done more selectively. SSH flagging should concentrate on those topics where it is expected that any project based on the topic, will not only benefit from SSH disciplines, but will need SSH disciplines to achieve a desired societal outcome and impact.

Furthermore, future analysis will be expanded to monitor SSH integration of all projects – including projects funded by topics that have not been SSH-flagged. There are indications that SSH disciplines are included also in non SSH-flagged topics, where both topics and project consortia include SSH research since it fits the purpose of the call or their projects. Furthermore, there are projects that naturally include SSH research and innovation activities, where the expected outcomes of the projects can only be achieved through SSH means. Thus, this results in symbiotic cooperation between STEM and SSH.

A recent survey within the Programme Committee configuration of Horizon Europe Cluster 2 ‘Culture, Creativity and Inclusive Society’, which aimed at mapping national, regional or institutional support to SSH integration and the evaluation and monitoring of SSH, confirmed the guiding role of the European Commission:

- Continuing to mainstream SSH integration in EU R&I programmes;
- Focusing on areas where SSH is less represented (health, AI, energy, etc.);
- Providing guidelines, training and best practices, which would lead to a common approach across Member States;
- Developing more precise mechanisms to measure the impact of SSH, which is currently underdeveloped.

Discussions with EU Member States, Associated Countries and broader stakeholders’ community under the European Research Area also highlight the need to upgrade the process of SSH integration towards a more output-oriented approach aiming at increased societal and economic impact.

b. Increasing competitiveness and societal impact of European R&I funding programmes through greater use of SSH:

Technological progress must go hand in hand with social inclusion. The Draghi Report on EU Competitiveness[9] underscores the need to boost EU productivity and global competitiveness as

[9] The Draghi report on EU competitiveness

means to sustain Europe's social model and uphold its core values: prosperity, equity, freedom, peace, and democracy within a sustainable environment. R&I are key enablers of this transformation, positioning Europe to lead in strategic technologies while tackling pressing societal challenges. To achieve this, SSH must play a central role, not only in addressing complex societal challenges, but also in shaping, developing, and implementing inclusive and impactful solutions, where SSH integration should enhance the societal and economic impact of R&I activities.

Science and technology offer huge opportunities for cooperation of STEM and SSH research and innovation, e.g. from behavioural neuroscience and biopsychology to phenomenological analyses of how people use public transport to improve the attractiveness and use of public transport services.

SSH integration is aimed at this synergistic cooperation, where the *whole becomes more than the sum of its parts* on the one hand, and on the other hand, where science and technology deliver knowledge and know-how that is tailored to societal needs. A more output-oriented approach should reflect the idea of having impact for society, instead of reflecting a rather methodological insertion of SSH into STEM. This should be reflected in the term "SSH integration" and would make also the collaboration and efficiency between SSH fields and STEM disciplines clearer and more meaningful.

The EU's R&I programmes provide great opportunities and incentives for increasing SSH and STEM cooperation in R&I in Europe. There are several aspects on which it can focus to increase this SSH and STEM cooperation even further.

- **First**, we need to continue improving the integration of SSH and STEM disciplines in EU-funded R&I initiatives. This can also be done by promoting dialogue and strategic cooperation between researchers, funders and policy makers in the EU.
- **Second**, there should be way supporting cooperation between projects and stakeholders involved in SSH and STEM research and innovation.
- **Third**, a new methodology to monitor SSH and STEM cooperation should be developed to ensure better qualitative and quantitative evaluation of the outcomes of SSH integration in R&I projects and programmes.

Conclusion

To end this report, it is important to emphasise the commitment of the European Commission in supporting, monitoring and improving SSH integration, and to move towards an impact and outcome-oriented approach for research funding. Moving forward, the European Commission will, together with Member States and stakeholders, continue promoting SSH integration, as key driver for greater societal impact, strengthened public trust and better societal uptake of technologies in Europe, that fits the European shared values and long-term vision.

5. Acknowledgements

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Finally, a special thanks goes to the scientists of the project examples provided under Horizon Europe Clusters.

ANNEX 1: Statistical tools and methodology

To understand how social sciences and humanities (SSH) are being incorporated into Horizon Europe (HE) projects, a new methodology (compared to the one used in the H2020 SSH monitoring report[10]) was developed to track SSH integration.

This method involved reviewing project deliverables from projects funded under SSH-flagged topics from Pillar 2 (i.e. Clusters 1-6) HE Work programmes of the first three years of Horizon Europe, 2021, 2022 and 2023. The HE SSH integration monitoring report is based on the analysis of such project Deliverables, taking into account their name and their description. Deliverables represent an objective output of the project (as they track the activities that a project implemented) and thus serve as a good indicator as they can be used to monitor the number of deliverables related to SSH of a given project, as well as the level of SSH integration. The analysis of Deliverables was used to determine whether a partner in a project contributes or works on SSH (i.e. if a partner is responsible for at least one deliverable that is considered as SSH, then this partner is considered as a SSH partner). The identification of partners as a 'SSH partner' is the basis for the analysis carried out.

This implies a fundamental difference with respect to the H2020 SSH integration monitoring report, in which the starting point for the analysis was the curriculum of the scientists, available in Part B of the proposals/projects. This information is no longer available in HE projects. Information on the H2020 methodology is available on the report.

Scope of the HE SSH integration monitoring report: topics included in the analysis

This report covers topics included in the HE Pillar 2 Work Programmes 2021-2023. In particular, the projects analysed are those funded under SSH-flagged topics.

SSH-flagged topics require research insights generated by SSH researchers to help projects funded under such topics achieve the topic's expected outcomes. Projects funded under SSH-flagged topics engage in a specific type of interdisciplinarity, that is based on research collaboration between researchers coming from the SSH and STEM fields

The types of actions covered in this report include:

- RIA (Research and Innovation Actions)
- IA (Innovation Actions)
- CSA (Coordination and Support Actions)
- CO-FUND (European partnerships)

This report covers also projects funded under Missions and the New European Bauhaus (NEB) but not under Joint Undertakings.

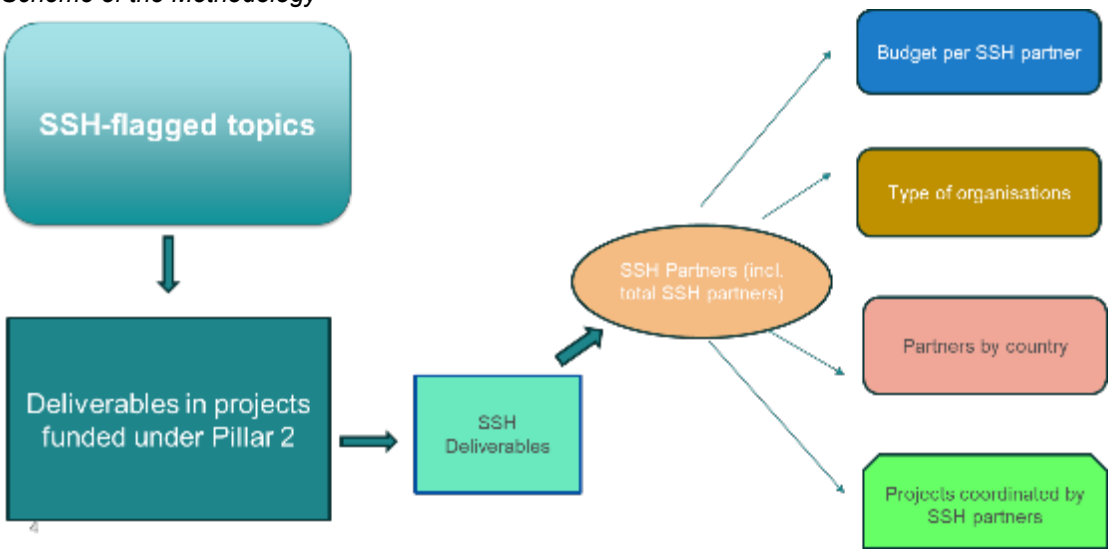
Data extraction

The data for the study have been extracted from CORDA (Common Research Datawarehouse), the common data warehouse of the European Commission which consolidates the information managed by the eGRANTS corporate suite of tools.

[10] https://op.europa.eu/en/publication-detail/-/publication/16b7df93-82b3-11ee-99ba-01aa75ed71a1/language-en

The data warehouse is refreshed daily, inter alia with data resulting from the processes of call configuration, proposal submission and evaluation, grant agreement signature and projects lifecycle management.

Scheme of the Methodology



Deliverable analysis

For the projects analysed, the total number of Deliverables was 46.565, of which 9.546 were considered SSH Deliverables.

Data related to Deliverables include their name and description. An example of a typical SSH deliverable's name would be 'Summary for policy makers based on an original research article on the socio-economic effects of air pollution' or 'Policy brief on tools to foster social resilience during transition processes'. While the name is not always self-explanatory, the description of the deliverable provides additional information. With this information, the data analyst determined which Deliverables were considered as to be 'SSH deliverables' versus those that were not.

In relation to disciplines, the list below (adapted from the UNESCO International Standard Classification of Education (ISCED 2011) has been looked at:

Social sciences, education, business and law

- Social and behavioural sciences: economics, economic history, political science, sociology, demography, anthropology (except physical anthropology), ethnology, futurology, psychology, geography (except physical geography), peace and conflict studies, human rights.
- Education science: curriculum development in non-vocational and vocational subjects, educational policy and assessment, educational research.
- Journalism and information: journalism, library and museum sciences, documentation techniques, archival sciences.
- Business and administration: retailing, marketing, sales, public relations, real estate, finance, banking, insurance, investment analysis, accounting, auditing, management, public and institutional administration.

- Law: law, jurisprudence, history of law.

Humanities and the arts

- Humanities: religion and theology, foreign languages and cultures, living or dead languages and their literature, area studies, native languages, current or vernacular language and its literature, interpretation and translation, linguistics, comparative literature, history, archaeology, philosophy, ethics.
- Arts: fine arts, performing arts, graphic and audio-visual arts, design, crafts.

Deliverables whose name or description do not provide a clear SSH content were classified as not being a 'SSH Deliverable'.

Moreover, the following logic has been applied to exclude activities that are relevant for the project but are not explicitly SSH research:

Research on Communication = SSH	Communication activities of the project = not SSH
Research on Management or Business Plan development = SSH	Management activities of the project = not SSH
Research on ethics = SSH	Ethic requirements of the project = not SSH
Research on co-creation, co-design methodologies or implementation of such methodologies by SSH researchers = SSH	Mere implementation of co-creation, co-design activities = not SSH

Identifying SSH partners

The Deliverable analysis was used to determine whether a partner in a project contributes / works on SSH. If a partner is responsible for at least one deliverable that is considered as SSH, then this partner is considered as a SSH partner. If the partner was responsible for no deliverables considered as SSH, then this partner was NOT considered a SSH partner.

Once partners were classified as SSH partners, the following analysis took place:

1. Number of SSH partners:

The analysis provided the number of SSH partners (as an absolute number and as a share of total) per HE Cluster and overall.

2. Budget per SSH partner:

This corresponds to the budget amount given to SSH partners in the projects funded under the SSH-flagged topics.

3. Type of organisation:

This analysis was used to understand to which types of organisations SSH partners belong to. This was determined on the basis of the legal status of consortium partners and their public,

commercial, research and educational affiliation. The five activity types used in this report are those used by the Common Research Data Warehouse (CORDA) as follows:

a. HES Higher or secondary education establishments
b. REC Research organisations
c. PUB Public body (excluding research organisations and higher or secondary education establishments)
d. PRC Private for-profit entities (excluding higher or secondary education establishments)
e. OTH Others

4. Partners per country:

Analysis of SSH partners per country and per type of country (Member State, Associated Country and Third Country), as an absolute number and as a share of total, per HE Cluster and overall.

5. Projects coordinated by SSH partners

The analysis looked also at SSH partners that are coordinators in projects, as an absolute number and as a share of total, per HE Cluster and overall.

Limits of the methodology

The methodology has been developed taking into account the Deliverables of projects of SSH-flagged topics in Clusters 1-6 of Horizon Europe Pillar 2. The analysis was therefore based on the scientific content of the projects. However, there are several limitations to this approach:

1. The first and most important limitation is represented by the description of the Deliverables. Often the description can be a repetition of the Deliverable name or presents acronyms that are difficult to understand without having analysed the project in full. As a consequence, a certain number of Deliverables have been excluded due to unclear descriptions. In this respect, the methodology has likely underestimated the number of Deliverables.
2. Another limitation is represented by analysing only projects funded under SSH-flagged topics. Some projects, even if not funded under SSH-flagged topics, may have SSH activities. This has likely also contributed to the underestimation of the real number of SSH Deliverables analysis.
3. The budget allocated to SSH is based on the analysis of the total budget received by the SSH partner (i.e. the lead beneficiary in charge of an SSH Deliverable) for the whole project. If these participants were also in charge of or contributed to other tasks and work packages within the project, e.g. communication activities, then the share of the budget for SSH activities is probably lower than the total budget of this partner.
4. A final limitation concerns the type of analysis. This methodology presents a quantitative analysis and disregards qualitative aspects of SSH integration.

In **conclusion**, the limits of the methodology will be carefully looked at and tackled (in particular the aspects on the qualitative analysis) for the final report on monitoring SSH integration in Horizon Europe. Moreover, the subsequent report could include new data to be analysed given that many of the projects will have been completed/finalised by then and thus, it will be possible to look at other types of outputs (e.g. publications), which could provide a better idea of the level and quality of SSH integration.
The EC will continue to provide trainings for applicants, in cooperation with Cluster 2 NCP Network, Net4Society. Looking ahead, the EC might engage in the development of new SSH search tools for deliverables, that capture SSH integration in the entire project.

ANNEX 2: List of abbreviations

Acronym	
AC	Associated Countries
CSA	Coordination and Support Action
DG RTD	Directorate-General Research & Innovation
DG EAC	Directorate-General Education and Culture
DoA	Description of Work
ERC	European Research Council
EU	European Union
HE	Horizon Europe
HES	Higher or secondary education establishments
IA	Innovation Action
MSCA	Marie SKŁODOWSKA-CURIE Action
MS	Member States
OTH	Others
PO	Project Officer
PRC	Private for-profit entities (excluding higher or secondary education establishments)
PUB	Public body (excluding research organisations and higher or secondary education establishments)
REC	Research Organisations
R&I	Research and Innovation
RIA	Research and Innovation action
RIs	Research infrastructures
SSH	Social Sciences and Humanities
STEM	Science, Technology, Engineering and Mathematics
WP	Work Programme

ANNEX 3: Overview all clusters

Table: Involvement of SSH partners in projects funded under SSH-flagged topics

Involvement of SSH partners in projects funded under SSH-flagged topics						
Horizon Europe WP parts	Funded projects under SSH-flagged topics	Projects with at least one SSH partner	Share of projects with SSH partners	Partners in projects under SSH-flagged topics	SSH partners in projects under SSH-flagged topics	Share of SSH partners
Cluster 1	290	228	79%	4449	554	12%
Cluster 2	231	230	100%	2781	1435	52%
Cluster 3	41	37	90%	667	136	20%
Cluster 4	260	196	75%	3738	508	14%
Cluster 5	208	195	94%	3489	739	21%
Cluster 6	251	236	94%	4661	959	21%
Total	**1281**	**1122**	**88%**	**19,785**	**4331**	**22%**
Total ex. CL2	1050	892	85%	17,004	2896	17%

Table: Projects and coordinators

Horizon Europe WP parts	Funded projects under SSH-flagged topics	Projects coordinated by SSH partners	Share SSH coordinators
Cluster 1	290	92	32%
Cluster 2	231	186	81%
Cluster 3	41	12	29%
Cluster 4	260	66	25%
Cluster 5	208	79	38%
Cluster 6	251	100	40%
TOTAL	**1281**	**535**	**42%**
TOTAL ex. CL2	1050	349	33%

Table: location of SSH partners

Horizon Europe WP parts		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	**TOTAL**
EU member states	AT	15	53	5	21	33	36	**163**
	BE	54	116	8	44	55	92	**369**
	BG	1	14	1	3	6	4	**29**
	CY	3	13	3	9	7	6	**41**
	CZ	10	23	1	6	7	11	**58**
	DE	46	119	19	55	74	100	**413**
	DK	19	39	-	7	22	31	**118**
	EE	3	25	-	4	2	3	**37**
	EL	18	64	11	26	54	46	**219**
	ES	62	118	9	62	83	104	**438**
	FI	11	53	6	9	17	26	**122**
	FR	22	69	7	24	37	48	**207**
	HR	-	7	-	1	3	3	**14**
	HU	7	19	3	1	2	10	**42**
	IE	12	37	5	15	9	24	**102**
	IT	52	157	14	64	99	83	**469**
	LT	5	11	-	6	3	9	**34**
	LU	1	10	3	5	5	3	**27**
	LV	1	6	-	2	1	3	**13**
	MT	-	3	-	-	-	-	**3**
	NL	69	109	8	44	43	102	**375**
	PL	7	55	2	3	11	19	**97**

	PT	22	43	3	16	27	27	**138**
	RO	13	18	-	3	7	9	**50**
	SE	22	35	-	11	12	25	**105**
	SK	2	6	-	1	5	9	**23**
	SI	2	15	1	6	3	8	**35**
Associated countries	AL	-	1	-	-	-	-	**1**
	AM	-	-	-	-	-	1	**1**
	BA	-	2	-	-	-	-	**2**
	CA	-	3	-	-	-	-	**3**
	FO	-	1	-	-	-	1	**2**
	GE	-	3	-	-	-	-	**3**
	IL	3	4	1	3	3	-	**14**
	IS	-	2	-	1	1	-	**4**
	XK	-	1	-	-	-	-	**1**
	MD	1	-	-	-	-	-	**1**
	ME	-	1	-	-	1	-	**2**
	MK	-	1	-	-	1	-	**2**
	NO	15	25	5	7	24	20	**96**
	NZ	-	2	-	-	1	-	**3**
	RS	1	9	-	4	2	3	**19**
	TR	1	14	2	1	2	1	**21**
	UA	1	6	-	-	-	-	**7**
	UK	37	84	16	30	42	53	**262**
Third countries	BR	-	-	-	-	-	1	**1**

CH	10	23	3	12	21	23	**92**
CN	-	-	-	-	1	-	**1**
CO	-	1	-	-	-	3	**4**
CR	-	-	-	-	-	1	**1**
EG	-	1	-	-	-	-	**1**
ET	1	-	-	-	-	-	**1**
GH	-	1	-	1	3	1	**6**
IN	-	-	-	-	1	-	**1**
KE	1	2	-	-	4	1	**8**
LB	-	1	-	-	-	1	**2**
MA	-	1	-	-	-	-	**1**
NG	-	1	-	-	-	2	**3**
PE	-	-	-	-	-	1	**1**
PH	-	1	-	-	-	-	**1**
RW	-	1	-	-	-	-	**1**
TH	-	-	-	-	-	1	**1**
TZ	1	-	-	-	1	-	**2**
VN	-	-	-	-	-	1	**1**
ZA	1	4	-	1	2	3	**11**
ZW	1	-	-	-	-	-	**1**

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Social sciences and humanities (SSH) are an important research and innovation (R&I) area among the various disciplines. SSH research represents an added value to other types of R&I activities when they can be integrated, providing a higher impact to R&I results. This is called SSH integration, and it represents an obligation under the Horizon Europe (HE) R&I Framework Programme. Overall, 88% of the projects have at least 1 SSH partner, while the amount of SSH partners is 22% of the total partners. This report is the first of HE and it provides data about budget, type of organisations and countries participating in the projects funded in 2021, 2022 and 2023.

SSH integration is well under way, but more concentrated efforts are needed going forward.

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