

Horizon Europe Missions ... what's the state of play?

When the European Commission launched its current research and innovation (R&I) framework programme – Horizon Europe (2021-2027) – much was made of a novel feature, called “missions”, aimed at tackling some of society’s greatest challenges.

The Horizon Missions were inspired by the United States’ now famous 1960s ‘moonshot’ Apollo space programme which [NASA](#) today calls a “dramatic and ambitious goal [involving] enormous human efforts and expenditures to make [it] a reality by 1969”.

Combining R&I with new forms of governance, citizen engagement and collaboration, the European Commission named five societal challenges to be tackled through its own series of moonshot missions: 1) cancer, 2) climate change, 3) healthy oceans/water, 4) climate-neutral/smart cities, and 5) soil health.

By design, the Horizon Missions were longer and bigger in scope than any one country or organisation could muster, and more than the sum of science and policy together.

Built to last...

Their clearly stated ambitions were to deliver concrete results using innovative, representative, sustainable and people-centred approaches guided by appointed experts assembled into dedicated Mission Boards. Anyone with an interest in a brighter future was encouraged to get involved, including scientists, entrepreneurs, citizen groups, schools, etc. And each Mission was given a specific timeframe and budget – depending on the complexity and size of the challenge.

It was at the inaugural *European R&I Days* (September 2020), that the appointed Mission Boards presented their first Mission Statements to the Commission, after lengthy consultation with stakeholders as well as citizens, learning about their expectations and needs through a series of events hosted across the EU.

The Missions were deliberately evocative and quite specific in a couple of cases:

Mission **CANCER**: save the lives of more than three million people, improve expectancy and quality of life

Mission **CLIMATE**: prepare Europe for adapting to climate change; create 150 climate-resilient regions and communities

Mission **CITIES**: 100+ model cities (living labs); turn all cities in Europe climate-neutral by 2050

Mission **SOIL**: contribute to the objective of 75% healthy soils in Europe; support 100 demonstration cases

Mission **WATERS**: clean oceans, seas and waters from pollution; restore eco-systems; foster a CO₂-neutral blue economy

Objectives of the five EU Missions of Horizon Europe until 2030, as depicted in the [Mutual Learning Exercise \(MLE\) on EU Missions](#) (a series of thematic reports have been produced on the national-level implementation of Missions, covering governance structures, mission portfolio analysis, funding instruments, and citizen engagement).

Feeling the pulse midway

EURAXESS Worldwide (EWW) provides an overview of the Missions' overall progress at what is just past the midway point of the seven-year Horizon Europe programme, and in the second part of this feature, we delve into the main (direct) health-related challenge, **Mission Cancer**.

The overview is drawn from an evaluation carried out in 2023 assessing the governance, funding structures, budget, and operations of each Mission. The findings are captured in individual [Mission Area Reports](#) as well as a consolidated summary review, all published in September 2023. A [Commission Communication](#) with supporting political messages and an outlook on the Missions' future was also drafted alongside a [Staff Working Paper](#) providing technical support for the review.

The “societal relevance” of the five Mission areas is uncontested, according to the consolidated report, “as they address complex challenges facing the EU that require action on the part of governments, businesses, education and research institutions, and civil society”.

The review's authors add that the Mission areas are clearly interlinked and they call for “concerted action to optimise synergies in implementing Missions” backed up by “sustained R&I investment feeding new discoveries and more innovation to implement existing solutions”.

There is also documented evidence that more interdisciplinary R&I is needed, including social sciences and humanities, and the authors encourage the adoption of solutions by specific user groups. It is felt that the “scope of each area is sufficiently broad to stand the test of time to the 2030 horizon addressed by each respective Mission”.

Three policy recommendations are provided in the review:

- 1) Define Mission areas based on an objective evidence base (including assessment of mega-trends, foresight, etc.), and agree on criteria and the procedure for ranking alternative Mission areas, giving sufficient time and means for citizens to propose ideas that feed into a high-level policy debate and final decision.
- 2) Mission area selection requires a deeper understanding of the social factors driving or hindering change, and the social innovations required to achieve it.
- 3) Structured or systematic updating and anticipating of the key trends and factors influencing the five Mission areas is important.

The findings underline both the magnitude of the challenge and the intricate interdependencies within the ecosystem of actors – scientists, citizen, policymakers, etc. – involved. For example, Mission Cancer alone involves researchers, healthcare providers and insurers, medical staff, hospitals/clinics, health ministries, agencies/authorities, patients and patient groups, among others.

MISSION ROUNDUP: BEATING CANCER ONCE AND FOR ALL

In this edition of EWW Newsletter, we offer a roundup of progress and actions under Mission Cancer. Its work focuses on improving our understanding of the disease – how to prevent, detect and diagnosis it earlier – while developing better treatment and support to boost the quality of life for patients and their families.

In 2020, 2.7 million people in the European Union were diagnosed with cancer, and another 1.3 million lost their lives to it, including over 2,000 young people. On present trends, cancer cases are predicted to increase by some 24% by 2035, making it the leading cause of death in the EU.

New and better R&I is a clear driver of progress under Mission Cancer. Major developments since the Mission was launched include the launch of [Europe's Beating Cancer Plan](#) and a new [European Cancer Inequalities Registry](#) (run by the EU's Joint Research Centre) to address disparities in cancer, Europe-wide.

The Mission supports projects in novel treatments, personalised medicine, digital health, and more. It also underscores the importance of public engagement, raising awareness, and involving patients in the research process.

The Mission Board for Cancer provides strategic guidance and collaborates with the [European Health Data Space](#) to leverage datasets for better cancer outcomes, as demanded under the [European Health Union](#) – where Member States “work together to improve prevention, treatment and aftercare for diseases such as cancer” and in tackling medical crises, meeting demand for medications, etc.

The Commission's Research Directorate-General has a dedicated [Mission Cancer](#) website with a wealth of information for EWW members, including opportunities for research, innovation, technology and actions to tackle cancer. Consult the EU's [Funding and Tenders Portal](#) and especially the [EU4Health Programme](#) for future actions and updates.

The Commission website also signposts cancer-related R&I project results (total EU-funding well over EUR 4 billion) that can be found on the [CORDIS](#) platform, including 46 projects working together in clusters and supported by Mission Cancer.

Other project references can be consulted via the Digital Europe programme including the [European Cancer Imaging Initiative](#) and related projects such as [EUCAIM](#) (federated European data infrastructure for cancer images), [QCLN](#) (cybersecurity in the health sector), and [GDI](#) (genomic data infrastructure).

Another noteworthy theme supported by the European Regional Development Fund's ([ERDF](#)) Interregional Innovation Investment (I3) Instrument is *I3 Strand 1*, which called for projects to “unlock digital growth potential”, deploy solutions for improving the accessibility and efficiency of services, and to bridge the persisting digital divide.

The call covered three main areas: digital economy and innovation; digitalisation of public administration; and **digitalisation of healthcare**. And according to the [‘Europe fit for the digital age’ Strategy](#), the now closed call for proposals targeted investments in businesses, administrations, and for citizens.

Several EU-funded projects are using artificial intelligence (AI) to tackle cancer and improve patient quality of life, such as [ASCAPE](#), [PANCAIM](#), [QUALITOP](#), and [CLARIFY](#) (see also the [blog](#)). All of these were previously featured as part of the [European Week Against Cancer](#), hosted by the Association of European Cancer Leagues (ECL) and celebrated at the end of May (read the article on the European Health and Digital Executive Agency, [HaDEA](#), website 'EU health research projects using AI to improve cancer treatment and patients' quality of life').

[Cancer Patients Europe](#) is also a useful reference point for more initiatives, including R&I developments, in this area.

Europe's Beating Cancer Plan

Five years ago, Commission President von der Leyen committed to a new European strategy supporting Member States and stakeholders in their efforts to tackle cancer and reduce the suffering it causes. This led to the Beating Cancer Plan which was eventually adopted in February 2021. The Plan focuses on four key pillars: (1) prevention; (2) early detection; (3) diagnosis and treatment; and (4) quality of life of cancer patients and survivors. Indeed, advances in cancer detection, treatment and care have markedly improved survival rates over the past 20 years. See cancer-related projects on [EU4Health](#) and follow debates on survivors' 'right to be forgotten'.

The right to be forgotten...

While data, digital technology and increasingly AI are heralded in some circles for their power to tackle disease, others are expressing concern about the way data is used not only before and during cancer patients' medical journey but also after they have been given the all-clear.

Today, there are more than 12 million people with a history of cancer in Europe alone, thanks largely to advances in science and improving healthcare management. But for people who beat the scourge, their health records can impact their future employment prospects, access to finance, and other socio-economic interactions.

A feature of the General Data Protection Regulation (GDPR) in Europe is the "right to be forgotten" (RTBF), principally meaning the removal of personal data from the internet. For people with experience of cancer or other severe medical conditions, the application of RTBF principles paves the way to fairer access to financial services – long-term loans, mortgages, health insurance – as they return to normal life.

A survivor code

On 14 May, a high-level EU-hosted event directly addressed the subject of '[Cancer survivorship: advancing the right to be forgotten](#)'. To date, 12 Member States have adopted legislation or voluntary measures on cancer survivors' RTBF after a designated time. Five of them – France, Belgium, Netherlands, Luxembourg, Italy – also apply a grid reference system to codify this right.

While some countries favour legislation, Commission representatives at the May event noted certain advantages – more tailored and nuanced outcomes – emerging from a voluntary industry code of conduct. Using national reference grids as a starting point, it was suggested that an EU-backed version of the code could provide a fast and effective solution for the 15 Member States with no RTBF mechanism currently in place.