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How to ensure health safety in Europe?

The vision of EU-LIFE research institutes

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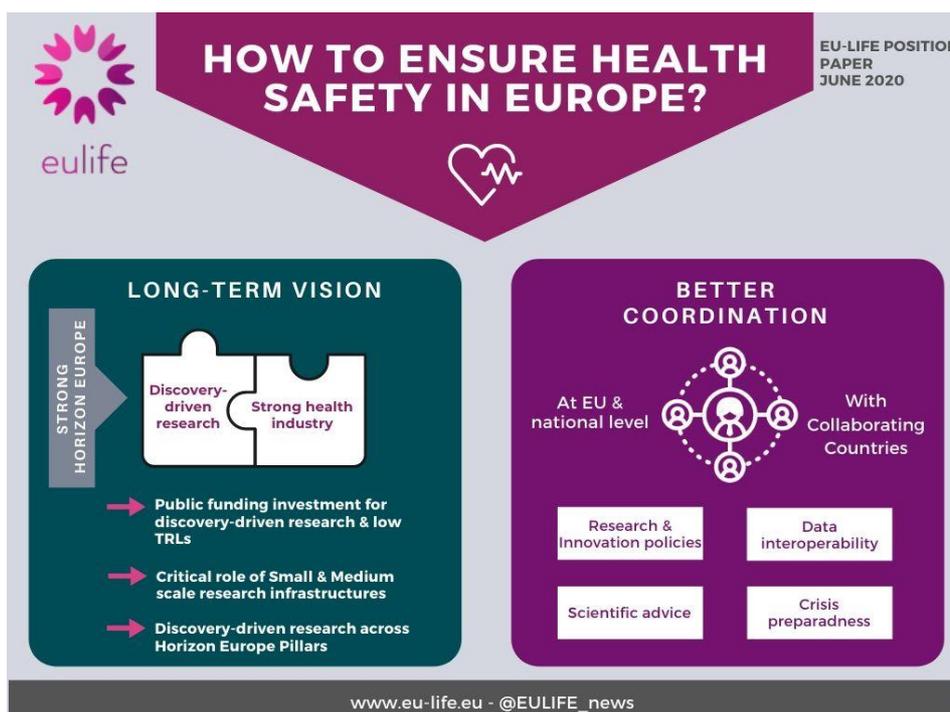
SUMMARY

The current COVID-19 pandemic dramatically highlighted how vulnerable Europe is regarding health safety. The health and wellbeing of European citizens requires a long-term vision and better coordination among European countries in order to be better prepared and respond more effectively to current, emerging and future global health crises.

Only discovery-driven research, embedded in a strong health industry ecosystem, will bring Europe lasting – and faster – solutions to the health challenges of our society. One without the other will not suffice and both are essential to maintain high quality care at an affordable level for all European citizens.

The EU Multiannual Financial Framework (MFF) needs to give health safety a greater focus and stronger foundation. The recent proposal of the European Commission (EC) for the MFF recognises the above points, but it is clear that the allocated funds are insufficient to make the urgent investments in research and innovation that are needed to drive health safety. That is why we urge the European Council and the European Parliament to set a higher Horizon Europe budget (€ 150 billion) for research and innovation as suggested by Pascal Lamy's report, together with a dedicated programme for European health systems' preparedness and improvement.

Finally, we call for stronger coordination at both European Union and national levels, as well as with other collaborating territories regarding research and innovation policies, infrastructures, data interoperability, scientific advice and crises preparedness.



1. Lessons learned from the present crisis

The COVID-19 outbreak took us all by surprise and its impact has been more devastating than we might ever have envisaged. In a few months, more than 2 million European citizens have been infected, 180 thousand have died¹, and the immense impact on the economy is leading to a recession not seen since World War II. While the full impact of the COVID-19 pandemic is not yet clear, a few lessons can already be drawn.

A reassuring conclusion is the readiness of civil society, industry and the research community across Europe to act. Amidst such disruptive and adverse conditions, they have been able to quickly refocus their activities, forge new partnerships and respond fast to the emergent needs of the citizens, in particular at regional and national levels. EU-LIFE institutes contributed to the collective effort to address the immediate needs by refocusing their activity to support large scale testing (mainly with volunteer workforce), as well as working on longer-term solutions through research, whilst at the same time ensuring continuity of other critical research activities as much as possible². At the European leadership level, an important initiative was the fast reaction of EC Commissioner Mariya Gabriel to make resources available and coordinate actions across Europe in research and innovation to combat the pandemic.

However, the COVID-19 pandemic has also made it extremely evident that Europe is not sufficiently equipped to properly ensure the safety of its citizens during such a health crisis. COVID-19 has highlighted too well both the critical dependence of Europe on external supply chains and the lack of coordination amongst the European countries to address a global crisis. This lack of capacity is even more worrisome given that pandemics resulting from infectious outbreaks are not only likely to become more frequent in the future, but also are only a mere fraction of the diverse types of global health challenges - including obesity, cancer, mental illnesses, cardiovascular diseases, metabolic diseases, etc. - that account for enormous health, social, economic and environmental problems. Thus, while the COVID-19 crisis has rapidly exposed the vulnerabilities of Europe's health systems, one should not be led to believe that our health safety and wellbeing is no longer at risk when the pandemic is under control, as it happened in the past for Sars and MERS. The future readiness, affordability and accessibility of European health care requires a **long-term vision and concerted actions**.

2. A long-term vision is mandatory

The response of the world to the current crisis has been reactive and we are now hostage to uncoordinated containment measures and a hopefully fast “scientific miracle” to bring us out of the crisis. It is urgent to change this paradigm towards a

¹ <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>

² see <https://eu-life.eu/newsroom/news/eu-life-institutes-response-coronavirus-outbreak> for a summary of EU-LIFE institutes initiatives on COVID-19

long-term vision that proactively addresses our wellbeing, beyond COVID-19, with concomitant clear health, social, environmental and economic gains.

The critical step for Europe is to ensure **sufficient investments in high-risk discovery-driven research**, combined with a **supportive environment for pharmaceutical industries** (both developers and manufacturers) that fluidly adopts discovery-driven research innovations, and jointly creates rapid medical solutions – from vaccines and diagnostic testing to therapeutics and medical devices. This means supporting, hosting and incentivising scientific, frontier discoveries, and autonomous production and manufacturing of the medical solutions that result from these fundamental discoveries. One without the other will not suffice.

Such long-term vision recognises that the highest gains have historically come from **high-risk discovery research** executed by expert research teams. Several examples like the fight against AIDS or cardiovascular diseases attest to the fact that the best (and in many cases only) solutions emerged from discovery research – not from short-term approaches. More than 80% of medical drugs have been identified through discovery-driven research (e.g. hypertension, cancer, cholesterol³) that was not initially focused on application (for example the study of retroviruses, which was crucial to address AIDS when the disease first appeared, and now used to design diagnostic tests based on the same information). This clearly illustrates that Europe should invest in high-risk, high-gain research – for which the European Research Council⁴ is a proven, but not the only, excellent vehicle – by supporting ground-breaking research, promoting international collaborations and talent circulation, and by supporting essential research infrastructures.

Ensuring health safety therefore means; i) more public investment in the **fundamental and public health research areas** where the private sector is not able to step in due to its high-risk, non-immediate nature and, ii) creating conditions for the private sector to take the lead in the phases of development and production⁵ that follow initial discovery work. Whereas it can seem overwhelming at first sight, **the required increase in funding will only represent a very small fraction of the direct and indirect costs caused by a health crisis** – as demonstrated by the economic impact of the current pandemic.

In particular, without a strong EU Multiannual Financial Framework (MFF) - and within it a commensurate **funding of Horizon Europe** of at least € 150B like proposed by Lamy report - Europe and its Member States will not have the required resources to ensure the health safety of its citizens. Therefore, alongside the urgently needed EU priorities on the Green Deal and Digital Transformation, we urge the EU to prioritise discovery-driven research in Horizon Europe.

³ Spector et al 2018

⁴ <https://erc.europa.eu/sites/default/files/document/file/2019-qualitative-evaluation-projects.pdf>

⁵ https://ec.europa.eu/research/eic/pdf/ec_rtd_eic-vision.pdf

Crucially, investment in innovation and manufacturing cannot and should not replace investment in discovery-driven research. That is why at least € 150B is needed for Horizon Europe and within it, at least 35% should go to Pillar I. Moreover, since discovery research is not only achieved through the ERC - and collaborative approaches to global challenges are also critical -, Pillar II should support **collaborative multidisciplinary research** aimed at understanding fundamental mechanisms behind health and disease, climate change, and other major challenges facing humanity, and actively include low Technology Readiness Levels (TRLs) 1-3.

The current crisis also showed that **small and medium scale research infrastructures** mainly hosted at research institutes and universities play a critical role in the response to pandemics like COVID-19. They are agile and can rapidly respond to emergent needs by re-shifting their focus, providing state-of-the-art support; and are the natural hubs of critical mass expertise (researchers, engineers, data scientists, modellers). They provided diagnostics, data analysis, expert volunteers and equipment during the current pandemic. Therefore, **small and medium scale research infrastructures must be better supported in their central role** – again stressing the urgent need for a strong budget for cutting edge, disperse research infrastructure in Horizon Europe's Pillar I.

Finally, a long-term vision recognises that **scientific literacy** is key for decision making and for supporting our society in its response to a global crisis. There needs to be enduring and formal forms of participation of scientific experts informing policy making. In parallel, citizens need to be well prepared to navigate through the wealth of information and to make informed decisions; only possible with higher scientific literacy. Key examples are understanding the intrinsic concept of doubt in scientific approaches and the ability to assess (any type of) risk. This urgently needed literacy will only be achieved through a steady and continuous investment in scientific education for all ages in both formal and informal settings.

3. Better coordination is needed

The current crisis also clearly shows that decisions taken singularly by any country or region do not suffice; we are only as strong as our weakest link. Coordinated action can influence the world globally. To face current and future challenges, we need strong coordination in Europe and beyond. What does this mean?

First, **increasing the European dimension** to leverage responses to upcoming crises. This is a time for more Europe, not less. It is striking that some countries, like The Netherlands, Denmark, Sweden or Austria among others, who from their dimension could benefit more from a coordinated approach to containing global threats, are reluctant to develop a stronger MFF that would allow for a more effective coordination. For instance, an EU dimension can leverage capacity of European countries by creating redundant, regional supply chains; harmonising and sharing relevant data to allow for impactful research; developing common frameworks and infrastructures that allow data sharing in due time to inform policy making (e.g. the

European Data Cloud); and making joint preparedness plans that allow European countries to effectively tackle emergencies together.

Second, with research and innovation clearly being the best way to identify solutions to future crises, European Member States must ensure robustness of their national scientific and innovation capacity as well as their infrastructures. Without this robust, complementary basis, EU investment will fail to meet its objective. It is therefore now more than ever evident that EU Members States must renew - and increase – their commitment to a long-term investment of at least **3% of their GDP in research and innovation**.

Investment at the national level in research and innovation capabilities is, therefore, critical. In addition, several studies show that it makes good economic sense. For example, a recent study in The Netherlands indicates that every additional €1 invested in discovery research performed in knowledge institutions (such as research institutes and universities) is reported to generate at least €4.2 of added value for society⁶. Regarding past research and innovation European programmes, it is estimated that each €1 invested generates an impressive €13 for the business sector⁷.

Finally, better and more effective coordination requires strong and trustworthy relationships between EU and other **collaborating territories** such as the UK, Switzerland, Norway and worldwide regarding broad aspects for preparedness to emerging crises.

Barcelona, June 2020

⁶ <https://economie.rabobank.com/publicaties/2019/oktober/50-miljard-euro-investeren-in-onderwijs-en-innovatie-verdubbelt-economische-groei/>

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https://ec.europa.eu/research/horizon2020/pdf/proposals/horizon_2020_impact_assessment_report.pdf



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