

Europe needs a science spending spree, Tallinn conference told

European investment in research and innovation has been stagnant. Reinvigorating it will mean a continent better equipped for the challenges of tomorrow.

Europe needs to significantly increase its spending on research if it is to keep pace with the rest of the world, a conference in Estonia has heard. At current levels, it risks falling behind even developing nations, some of which are spending more than European countries on R&D.

Opening the *European Research Excellence – Impact and Value for Society* conference, in the Estonian capital Tallinn on 12 October, Mailis Reps, its minister for education and research, lamented that “although research and innovation is acknowledged

as a priority in Europe, more urgent political issues too often overshadow it.”

Yet she said research is “an essential element for uniting Europe,” recalling the words of Estonia’s president, Kersti Kaljulaid, who in June 2017 talked of stemming “the tide of pessimism that has prevailed in the EU in recent years”. This goal is at the heart of the Tallinn Call for Action, which aims to bring about “a vital change in policy choices” at the national and EU levels when it comes to science and innovation spending.

Other global players are moving fast. Industrial



Research Institute 2017 estimates put Asia at 42% of all global R&D investment, and China’s science and innovation spending is expected to keep growing at around 7% annually (The OECD predicts China will overtake the US in total R&D spending by about 2019). South Korea has doubled its R&D spending in the past 20 years to reach 4.29% of GDP in 2014, and countries such as Mexico, India and Brazil are all moving ahead too. As the Call for Action notes, “investing in research and innovation is a necessity for competitiveness, not a luxury.”

RESEARCH AND INNOVATION IS AN ESSENTIAL ELEMENT FOR UNITING EUROPE

Amid discussions of the post-2020 EU budget, R&D spending in the 28-country bloc has been identified as hovering just around 2% GDP for the last five years. This is slightly under the 2015 global average of 2.23%, calculated by the World Bank, and still a full percentage point below the Europe 2020 strategic target.



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increasing funding. As science penetrates many facets of life, citizens need to understand the value of research to make informed choices. Several speakers cited Estonia's experience in engaging the public in a conversation on the country's 2018 budget, which resulted in a 11% increase in R&D spending fully endorsed by taxpayers.

A day earlier, at a *Nature Café* panel on measuring and communicating the impact of excellent research, Andres Metspalu of the Estonian Genome Center at the University of Tartu, described the necessity of science communication in establishing the Estonian Biobank, which now covers some 5% of the country's adult population. To Metspalu, open communication with all stakeholders in the project, as well as treating citizens as partners is what ultimately ensured successful technology transfer from an academic setting to national hospitals.

Professor Mark Ferguson, director of Science Foundation Ireland, spoke of the need to justify the increasing cost of research to society through a diverse portfolio of investments and an in-built process of assessing the societal returns on these investments. "In uncertain times, investment in innovation will always be an excellent use of taxpayers' and shareholders' money," he said. ■



WHEN IN DOUBT, INVEST IN SCIENCE

The LAB-FAB-APP report on science funding, completed in July 2017 and chaired by former WTO director-general, Pascal Lamy, says doubling the budget of the post-2020 research and innovation programme would be "the best investment the EU can make". In a video message to the Tallinn conference, European Commissioner for Research, Science and Innovation, Carlos Moedas, noted that there is ample evidence of added value from research spending. According to the Tallinn Call for Action, every €1 invested in

R&I under Horizon 2020 nets a GDP increase of up to €8.5, translating into a total of up to €600 billion by 2030.

Thomas Christensen, head of operations at Novo Nordisk Foundation, described public and private research funding as complementary, where the latter supplements the former as a more agile source of investment free of political control. A funding ecosystem is required, he said, and participants highlighted the utility of "free thinking", high-risk and application-oriented research, experimenting with various funding mechanisms and creating more space for

young researchers.

Panelists at a session on frontier research discussed the role of missions, moonshots and 'blue sky' science in addressing global challenges. "If you are uncertain about the future, the only way to reduce this uncertainty is to create the future. To do that, you have to go to the frontiers," Pim Tuyls, CEO of Intrinsic ID, a digital security company, told the conference.

COMMUNICATING FOR IMPACT

The role of good science communication was highlighted as being essential in the goal of

