

# Science policy in a world facing sustainability and societal challenges

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Countries are investing more and more in research and development. Internationally, this investment rate is measured by R&D intensity. This indicator shows how much countries invest in research and development relative to their gross domestic product, which measures the size of their economy. Belgium's R&D intensity is more than 3% of GDP. This is a strong performance, especially considering only a few European countries - including Germany, Sweden, and Austria - have reached the 3% threshold set by the European Lisbon Strategy. This is in line with the European Innovation Scoreboard index. According to this composite index, which looks not only at R&D expenditure but also at a wide range of research and innovation indicators, Belgium is among the top performers in Europe.

Although most research and innovation is carried out by companies, universities and public research institutions play a significant role. All these actors contribute to Belgium's research and innovation system's success. In addition, boundaries between industry and the public sector have become more blurred in recent decades due to their increased collaboration. This makes it easier to commercialize scientific breakthroughs, which in turn can boost productivity and prosperity.

The main investment sources for research and innovation are companies and public institutions. Besides these investments, governments have taken on an increasingly important role as funders through competitive direct support and tax incentives. Direct support in Belgium is mainly offered by the regional governments, while indirect fiscal support is the Federal Government's responsibility, more specifically, BELSPO and the Public Service of Finance. Finally, the EU Framework Program, has a total of 95.5 billion euros in funding for its last edition: Horizon Europe. These three levels of public funding each contribute to supporting the development of future technologies that will make our economies more productive and give us a competitive edge.

The interdependence of regional, national, and international levels in implementing and funding research and innovation impacts how governments define their science and innovation policies. BELSPO is, therefore, positioned at the interface between these three levels. BELSPO coordinates between the concerned federal actors and facilitates cooperation between regional and federal institutions. Finally, BELSPO officially represents Belgium in international institutions for scientific matters that fall within the federal government's competence and determines, in consultation with the Regions, the position that Belgium will take in international forums.

Due to its role as an intermediary between the different policy levels and the various research areas of its federal scientific institutions, BELSPO is active in very diverse fields. Spread over several sites in Brussels, from the Mont des Arts to the Uccle plateau, and the site where we currently are (the Cinquantenaire Park), the federal scientific institutions cover a wide range of activities. In addition to the scientific approach of institutions such as the Royal Meteorological Institute and the Museum of Natural Sciences, there is cultural and historical research at the Royal Library and the Museum of Art and History, among others.

Scientific research and emerging technologies have been constants throughout the federal scientific institutions' history. Consider, for example, the role the Museum of Natural Sciences has played and continues to play in evolutionary research on plants, animals, and human species. Theories that, after decades of extensive research, became known to the general public through the institution's dissemination of scientific knowledge and public outreach. Or consider BELSPO's role in space policy, through which technologies initially developed for space applications find their way into other economic sectors.

Beyond the institutions that are part of BELSPO, BELSPO also contributes to the funding of other national and international research infrastructures: such as the negotiations currently taking place for the Einstein telescope. This new European research infrastructure will allow us to explore and explain the universe through gravitational waves, opening up a new spectrum to complement conventional and radio telescopes.

Technologies and scientific ideas cannot be separated from the social context in which they are created. Since the 1970s and 1980s, more attention has been paid to the ecological and societal impact of science, technology, and innovation. These two elements are the focus of today's presentations at this conference. The role of research and innovation in the transition to a sustainable society and the societal impact of new technologies are also crucial to BELSPO. BELSPO, in its strategic plan for 2020-2024, has explicitly committed itself to contributing to sustainable development based on the United Nations Sustainable Development Goals (SDGs). To achieve this, BELSPO has implemented a social and environmental management system to enable the department to measure its operations' social and environmental impact.

Moreover, on December 17, 2021, the Belgian Climate Centre was established, supported by State Secretary Thomas Dermine and BELSPO. The centre's core tasks are to strengthen scientific research capacity, improve knowledge transfer to a broad group of stakeholders, and, finally, increase the applicability of future research programmes to climate action.

In conjunction with the green transition, which will fundamentally change our society and the way we produce and consume, another transition is high on the international agenda, namely the transition to a digital society. These two phenomena are often referred to as the twin transitions. BELSPO pays attention to digitalisation in its transversal policy and strategic objectives. This includes continued digitization of the federal collections, which began many years ago, making it easier to share these valuable collections with a broader audience.

Furthermore, BELSPO is also attentive to the digital divide resulting from the increasing use of digital applications in an ever-growing number of societal domains. In accordance with the law of July 19, 2018 on accessibility of government agencies' websites and mobile applications, BELSPO guarantees digitally accessible procedures, and conducts an annual analysis of this goal.

MERI, a department within BELSPO responsible for the production of the official EUROSTAT and OECD statistics on R&D and innovation in cooperation with the Regions and Communities has invited a series of experts whose research topics are in line with the cited sustainability and societal impact challenges. Their presentations will reflect the latest ideas and approaches within the various fields of knowledge in which they are active.