

Contribution of the Leibniz Association to the call for feedback on missions

In February 2018, the European Commission published the report “Mission-oriented Research & Innovation in the European Union” drafted by Mariana Mazzucato. The report gives strategic recommendations on a new mission-oriented approach for the future EU Framework Programme for Research and Innovation. According to the report, the future missions will bring together knowledge-oriented frontier research and technological innovation, combine varied instruments and funding schemes and thus take different approaches to solving the overarching aim of the mission.

The Leibniz Association expresses its support for the new mission-oriented approach as it reflects Leibniz institutes’ cooperative approach and strong links to society. Leibniz institutes conduct problem-oriented interdisciplinary research and foster close collaborations with national, European and international partners. Tackling global challenges is a key driver for Leibniz institutes because they were founded out of necessity to address social demands. Therefore, the UN Sustainable Development Goals are a suitable policy frame for the research conducted at Leibniz institutes. Although research is international, global and genuinely unrestrained, the proposed missions by the Leibniz Association focus on EU priority areas that deliver high European added value.

The Leibniz Association calls on the European institutions in close cooperation with the member states and relevant stakeholders to develop an adequate governance framework for the mission-oriented approach. For the time being, the intervention logic remains vague and the linkage to national and other EU funding programmes is not yet clear. In addition, changes to EU regulation related to the successful implementation of missions require long legislative procedures. The coordination of funding instruments as well as the evaluation and monitoring of the mission-related programmes and research activities should be in line with the simplification approach pursued by the European Commission.

The Leibniz Association as a European research organisation proposes five missions which represent ideas for future missions within the EU Framework for Research and Innovation. They address EU priority areas and are framed by the Leibniz institutes’ inherent approach to foster mutual knowledge transfer from research to society. In the selection of missions it will be paramount to maintain the balance between funding of knowledge-oriented fundamental research and technological innovation-oriented projects.

MISSION - Sustainable food production will secure societies in a changing world in the next decades

Agriculture, aquaculture, and mariculture produce food and commodities from biomass, support sustainable use of natural resources, and secure future energy supplies. They are closely linked to the protection of the respective ecosystems, including soils and water, as well as climate protection measures. Related changes in the general conditions of targeted ecosystem use include a global competition for farm land, lakes, rivers, and coastal waters, for which new environmentally and socially compatible formats must be found.

Research needs to develop sustainable technologies for producing foodstuffs and agri-/aqua-/maricultural commodities and examine the resource efficiency of food production systems. In a

consorted action with agri-/aqua-/mariculture and society in general, perspectives for sustainable use of the resource, the respective ecosystem, in the context of the development of rural areas need to be developed. We face challenges for traditional agricultural landscapes and seascapes in the light of climate change, the growing pressure of urbanisation on agriculture and coastal waters, the dangers of increasingly monocultural land and sea use, the compatibility of alternative cultivation and traditional production methods, the need for soil conservation, water conservation and the demands of water and ecosystem management. Natural resources, therefore, need to be protected and alternative ways of using agricultural landscapes, seascapes, and ecosystems in general (nature conservation, recreation, tourism) must be found.

EU priority areas: Food and Natural Resources, Health, Climate, Energy & Mobility

MISSION - One Health - integrate human, animal, plant and ecosystems health until 2030

The concept of OneHealth is based on the assumption that human, animal, plant and ecosystem health are inextricably linked and therefore cannot be considered in isolation. This is illustrated by diseases of animal origin such as SARS, avian influenza, Ebola and Zika that globally threaten human and animal health as well as biodiversity conservation. Current single-discipline approaches to solving human health problems or fighting environmental deterioration are clearly failing to meet the global challenges.

A paradigm shift is urgently required to de-sectoralize human, animal, plant and ecosystem health. The aim of this mission is to establish the OneHealth approach as a unifying principle by 2030, spreading the recognition that human health is directly related to the health of the environment we live in. Research contributing to the goal of good health of people, animals and ecosystems needs to integrate several scientific disciplines – human and veterinary medicine, ecology, evolutionary biology and conservation science – and has to be conducted in collaboration with societal stakeholders. Such a comprehensive research approach should be used to investigate e.g. the interaction of farm animal health, crop production and human health, the problem of emerging and re-emerging infectious diseases, and the challenge of antibiotic resistance.

EU priority areas: Health, Climate, Energy & Mobility, Food and Natural Resources

MISSION - Engendering a deeper understanding of knowledge cultures for a democratic, knowledge-based, inclusive society by 2030

Knowledge, the access and capacity of handling it, is key to an inclusive, free and resilient society. Digitalisation provides us with the opportunity of worldwide social interaction and creates the unprecedented chance to let people everywhere participate in the gain of information and knowledge. Yet, knowledge cultures differ significantly. They are deeply rooted in the way professional, social, intellectual and cultural lives are cultivated and maintained. At the same time, access to knowledge is still not equally distributed nor are people equipped to deal with the growing

complexity of information and the differences in knowledge cultures and to contextualize sources. This has led to deep trenches that run through societies. Decided promotion of understanding research contexts and processes, as well as providing opportunities to acquire competences in dealing with effects of interpretational sovereignty will lead to more resilient and secure societies. Increasing the basis for participation by 30% in 2030 is a target that can be measured in the provision of sustainable quality open access sources as well as the implementation of education environments, both institutional and non-institutional.

A holistic and systemic approach is essential to successfully address the complexity of the mission. It requires efforts across the disciplines and sector and along the research chain (from History to Natural Sciences, as well as from the economic, service, tech and social to the urban development and design sector). It can pave the way for collaborations between researchers with specialists in consumer electronics and social entrepreneurs to come to unique conclusions and innovations that will gain ground in all levels of societies. Special relevance might evolve from the integration of social entrepreneurs, who again can engross scientific findings into their business models and daily work, building up future trends.

EU priority areas: Inclusive, Resilient & Secure Societies, Innovative sustainable and digital industry

MISSION - Seamless High-Speed Access for Every European Citizen – 10+GB/s by 2030

The digital transformation of the European industry requires future mobile networks and connectivity systems that support ultra-high speed and seamless performance for a huge number of connected devices and applications. The goal of this mission is to bring seamless, secure, and reliable 10+ GB/s connectivity to every European citizen to enable new user experiences, work-life models, business concepts and societal interaction on a pan-European level. This mission requires application-oriented advances as well as disruptive concepts on all vertical technology levels.

EU priority areas: Inclusive, Resilient & Secure Societies, Innovative sustainable and digital industry, Climate, Energy & Mobility, Health

MISSION – Total Resilient Industrial Processing and Integrated Digital Environments by 2030

The dependency on availability, safety, security and other parameters of digital infrastructures grows significantly. This mission includes the holistic addressing of all dependability risks caused by digital processes and infrastructures. Based on concepts of self-awareness digital systems should be enabled to reason upon their state and act according to resilience policies such that critical situations can be completely avoided. This includes both technical challenges caused by infrastructure, malicious attacks and natural catastrophes.

EU priority areas: Inclusive, Resilient & Secure Societies, Innovative sustainable and digital industry, Climate, Energy & Mobility, Food and Natural Resources



The Leibniz Association

The Leibniz Association connects 93 independent research institutions that range in focus from the natural, engineering and environmental sciences via economics, spatial and social sciences to the humanities. Leibniz institutes address issues of social, economic and ecological relevance. They conduct knowledge-driven and applied basic research, maintain scientific infrastructure and provide research-based services.

The Leibniz Association identifies focus areas for knowledge transfer to policy-makers, academia, business and the public. Due to the importance of the institutions for the country as a whole, they are funded jointly by the Federation and the Länder, employing some 18,700 individuals, including 9,500 researchers. The entire budget of all the institutes is approximately 1.8 billion Euro.

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