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24/01944-3	24/5497	19.11.2024

Thematic input to the next European Framework Program for Research and Innovation (FP10)

The Norwegian University of Life Sciences (NMBU) welcomes the opportunity to give input to the next European Framework Program for Research and Innovation (FP10). With this input note NMBU wishes to contribute to the thematic planning of FP10 by sharing our recommendations.

Thematic areas particularly important for us to cooperate on at European level in the upcoming Framework Programme

a) Sustainable food systems and biotechnology

Novel biotechnological approaches are needed to achieve a more sustainable production of food and feed that enhances soil health and minimizes environmental impact.

One example is the development of novel methods for successful **engineering of soil microbiomes** used for mitigation of greenhouse gas emissions, or for plant growth promotion through improved control of plant pathogens.

A second example is sustainable **protein production** by developing new legume varieties which, combined with suitable bacterial inoculation, have the dual capacity of improved nitrogen fixation and greenhouse gas mitigation. Another encouraging strategy for protein production involves using innovative methods to produce single-cell proteins that take advantage of sustainable resources.

Research and development leading to such biotechnological methods contributing to the given environmental and climate benefits and sustainable food and feed production in Europe require collaboration of various European expertise in the next Framework Programme.

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b) Transition to a low-emission society

Among the new political priorities from the President of the EU Commission, both "A new plan for Europe's sustainable prosperity and competitiveness" (including closing the innovation gap with the US and China - Mario Draghi) and "Supporting people, strengthening our societies and our social model" are relevant for a transition to a low-emission society.

There is a need for transition to a low-emission society, among others in line with NOU 2023:25 "The transition to low emissions – Climate policy choices towards 2050". Such a restructuring process will first and foremost be based on scientific research and development and implementation of new technologies. However, such a restructuring process will also be highly dependent on social science research, among others due to the need for more knowledge about how various kinds of institutional arrangements and policy instruments might influence Europe's transition to a low-emission society and Europe's competitiveness. The institutional arrangements and policy instruments are also of utmost importance for maintaining the Europeans' way of life and quality of life, food safety, water and nature, and to protect the European countries' values and democracy.

c) Circular economy and waste management

To ensure sustainable prosperity and a necessary transformation of the society, increased circularity in the economy without leading to increased pollution emissions must be promoted. This involves developing and implementing technologies and processes that reduce waste and promote reuse and recycling.

Europe faces an increasing need for mining activities to replace the import of minerals from China. To do this better, we must focus on sustainable extraction methods that minimize environmental impact. For example, the Norwegian government has allocated 25 million NOK to the Geological Survey of Norway (NGU) to increase mineral extraction, including along the coast. This initiative can serve as an example of how national investments can support European goals.

A significant barrier to effective mass recycling is the conflict between industry and waste management, especially since one-third of the waste comes from the construction sector. To overcome this challenge, we need to develop better waste management systems and promote collaboration between industry players and the waste sector.

By addressing these priorities, a new FP will support sustainable development and economic growth in Europe.

d) AI and robotics for sustainability

Exploiting the potential of AI and robotics is essential to developing sustainable solutions to challenges in food production and natural resource management. Research focus in this area is essential for Europe and Norway to remain competitive.

Areas of particular importance for Norway in European Partnerships and Missions

The Missions program has proven itself in the past year as an alternative funding mechanism breaking disciplinary boundaries and so called 'silo-thinking'. These missions should continue, and we must conclude that their objectives have not yet been reached. This holds particularly for the following three: climate adaptation, smart cities and a soil deal.

The co-funded European Partnerships where the Research Council of Norway (RCN) contributes as the Norwegian funder of research calls are important. We can point at the European Partnerships Biodiversa+ (biodiversity), Water4All (water security), CEPT (clean energy transition), EUPAHW (animal health and welfare) and Agroecology as examples. A pre-condition is that the funding mechanism is clear and easy to understand. Here Norway should participate where there are clear strategic interests. The portfolio-boards at RCN can have an important function.

Important themes for Norway can be sustainable feed and animal welfare in aquaculture, the North and Nordics, Arctic challenges including (adaptation to) the most rapid climate change and effects on biodiversity, specific Nordic issues of food security, the continued use and increasing importance of the Seed Vault, as well as human and animal health where Norway is in the front and could be useful as exemplary.

Regards

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Skriv inn tittel

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