ERA CO BIOTECH

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ERA-Net Cofund on Biotechnologies.

About

ERA CoBioTech is the ERA-Net Cofund Action on Biotechnology under H2020 with 25 partners. The network aims to strengthen the European Research Area (ERA) in the field of Biotechnology through enhanced cooperation and coordination of different national and regional research programs, promoting systems biology and synthetic biology as technology drivers and to speed up research and innovation in industrial biotechnology.

ERA CoBioTech covers three disciplines within Biotechnology:

- Synthetic biology, a field of science that involves redesigning organisms for useful purposes by engineering them to have new abilities;
- Systems biology, the computational and mathematical analysis and modelling of complex biological systems; and,

Industrial biotechnology, working with nature to maximize and optimize existing biochemical pathways that can be used in manufacturing.

Aim and objectives

The vision of ERA CoBioTech is to have a direct influence on the transformation of the economy into a sustainable bioeconomy by focussing its research activities in certain biotechnology areas related to the global challenges, and by changing the Research, Development and Innovation (R,D&I) landscape towards a more streamlined and supportive environment.

The ERA CoBioTech partners aim to advance research and innovation in industrial biotechnology, to address innovation needs in conjunction with arising societal needs, and to establish systems and synthetic biology as technology drivers.

Through its strategic work, ERA CoBioTech aims to further support activities targeting the strategic needs of biotechnology in Europe, from targeted technology development to translation of marketable products and services for the bioeconomy.

The key objectives of ERA CoBioTech are to:

- Maximise synergies between current mechanisms of biotechnology research funding in Europe
- Foster the exchange of knowledge across borders
- Demonstrate how a bio-based economy can be beneficial for different groups in society
- Maintain and strengthen Europe's position in biotechnology

Challenges

The Green Deal states that climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, Europe has to transform into a modern, resource-efficient and competitive economy.

A sustainable bioeconomy is based on both by trying to establish a stable economy while not depleting natural resources. Biotechnology is vital for the bioeconomy and encompasses a wide range of areas which have the potential to contribute significantly to economic growth and addressing global challenges by creating jobs, revitalising existing industries, and fuelling innovative new sectors.

Biotechnology has been named a Key Enabling Technology (KET) for the transformation from a fossil-based to a sustainable bio-based economy as envisaged by the European Union. While Europe is a leader in developing KETs, it is currently lacking in translation of this knowledge into marketable products and services, a problem which is often branded as the "European Valley of Death". By supporting activities with a strong focus on research, innovation and knowledge translation, the European Commission aims to overcome this obstacle and to expand its leading role in the development of KETs towards translation.

Key Enabling Technologies (KETs) have the potential to help address the societal challenges Europe and the world are facing today, and exploitation of KETs will lead to the creation of advanced and sustainable economies.

Scope, goals and research topics

'Biotechnology for a sustainable bioeconomy' forms the core of ERA CoBioTech. The networks scope aims at biotechnology as a key enabling technology, in the context of the bio-based economy to tackle 21st century societal challenges.

The 2018 SRA of ERA CoBioTech shows a need to boost efforts on the following topics:

- Decarbonisation of the economy by replacement of fossil raw materials by bio-based products, technologies and processes.
- Sustainable alternatives for animal-based products
- Establishing reliable, sustainable and appropriate supply chains of biomass, by-products and waste streams connected to a respective network of bio-refineries throughout Europe
- Support market development for bio-based products and processes, and take into account associated risks and benefits

ERA CoBioTech's work can contribute to a variety of sectors, several of those are covered by the Green ERA-Hub. Biotechnological methods can be applied / adapted to many different fields. This makes biotechnology versatile and interesting for very different groups of users and initiatives from different areas. It provides opportunities for research programming to utilise and combine biotechnological research with other sectors. Across Europe the ERA CoBioTech partners identified 11 overarching areas of strategic priorities, which can all be seen as part of the bioeconomy and are potential areas for joint research programming:

- Health & Pharmaceutical
- Food & Food Processing
- Sustainable Agriculture & Food Security
- Aquaculture and Marine Resources
- Forestry
- Natural Resources & Waste Management
- Biomass & Bioenergy
- Fossil Carbon Substitutes

- Sustainable Industrial Processes
- Industrial Biotechnology
- Biological Data

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