

*Phytoplankton – the foundation of the oceanic food chain  
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## THE CHALLENGE

The threat of food insecurity is a critical global challenge, compounded by climate change and population growth. Forward-thinking solutions are needed to meet this challenge and one potential area for exploration is microbiomes, which are communities of microbes (bacteria, viruses, fungi, etc) in a certain environment. Microbiomes are known to regulate the productivity and health of major food sources across land and sea. Therefore, they can positively impact food production, food and nutrition security and ultimately influence human health. However, we lack a deep understanding of the microbiomes associated with our food systems.

## PROJECT OBJECTIVES

**SIMBA** aims to gain a better understanding of microbiomes' structure and functions, related to marine and terrestrial food chains and to verify the sustainability of microbial innovations of the food system. Focusing primarily on agriculture and aquaculture, **SIMBA** will harness complex soil and marine microbial communities for sustainable food production, delivering tangible benefits to society.

## AT A GLANCE

**PROGRAMME:** Horizon 2020 (Sustainable Food Security)

**TYPE OF ACTION:** Innovation Action (IA)

**DURATION:** November 2018 – October 2022

**CONSORTIUM:** 23 partners in 11 European countries

**COORDINATOR:** Natural Resources Institute Finland (Luke)



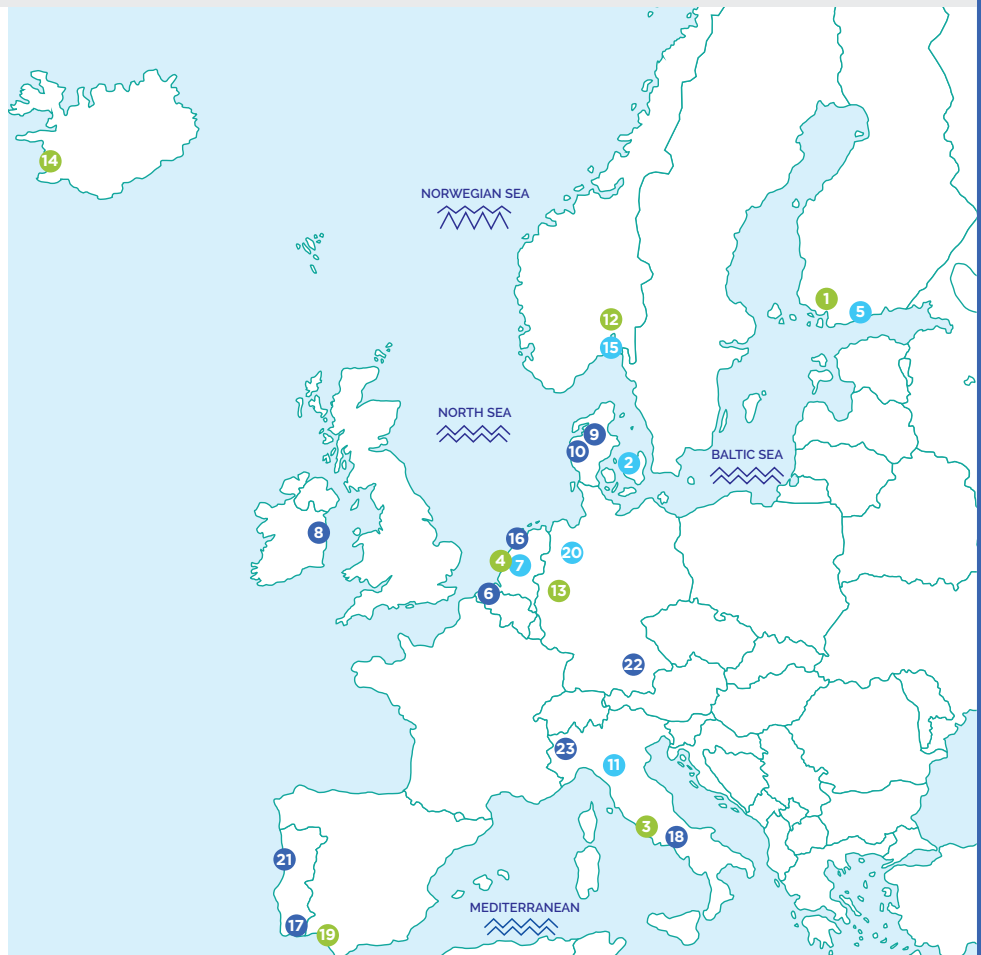
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## EXPECTED RESULTS

- Open access database with new and pre-existing microbiome data to identify microbes that can perform useful functions in the food production process.
- Improved understanding of the role of salt-tolerant microbiomes in the cultivation of salt resistant crops.
- The application of starter cultures in food products with beneficial vitamins, polyunsaturated fatty acids and antioxidants contributing to health human benefits.
- Enhanced consistency of microbiomes in field applications.
- Improved understanding of the functions of individual and sustainable diet-induced variations in gut microbiota.
- Near to market ready development of cost-effective applications of new microbes, food, crop and algae products.
- Proven increase in sustainability of European food systems by implementing the microbial interventions.

## CONSORTIUM: 23 PARTNERS IN 11 EUROPEAN COUNTRIES

- 1 Natural Resources Institute Finland (Luke)
- 2 Københavns Universitet (UCPH)
- 3 Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA)
- 4 Stichting Nederlandse Wetenschappelijk Onderzoek Instituten (nwo-i)
- 5 Helsingin Yliopisto (UH)
- 6 Bio Base Europe Pilot Plant VZW (BBEPP)
- 7 Wageningen University & Research (WUR)
- 8 Aquatt UETP CLG (AQUATT)
- 9 Fermentationexperts AS (FEXP)
- 10 FermBiotics ApS (FermBiotics)
- 11 Università di Parma (UNIPR)
- 12 Norsk Institutt For Vannforskning (NIVA)
- 13 Rheinische Friedrich-Wilhelms-Universität Bonn (UBO)
- 14 Matis ohf (MATIS)
- 15 Norges Miljø-Og Biovitenskaplige Universitet (NMBU)
- 16 Salt Farm Texel (SFT)
- 17 Necton - Companhia Portuguesa De Culturas Marinhas Sa (NECTON)
- 18 Agriges S.r.l. (AGRIGES)
- 19 Fundacion Centro Tecnológico Acuicultura De Andalucia (CTAQUA)
- 20 Universität Bielefeld (UNIBI)
- 21 Allmicroalgae Natural Products Sa (ALLMICROALGAE)
- 22 SUDAO AGRO GmbH
- 23 Centro Culture Sperimentali Aosta S.r.l. (CCS Aosta)



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