

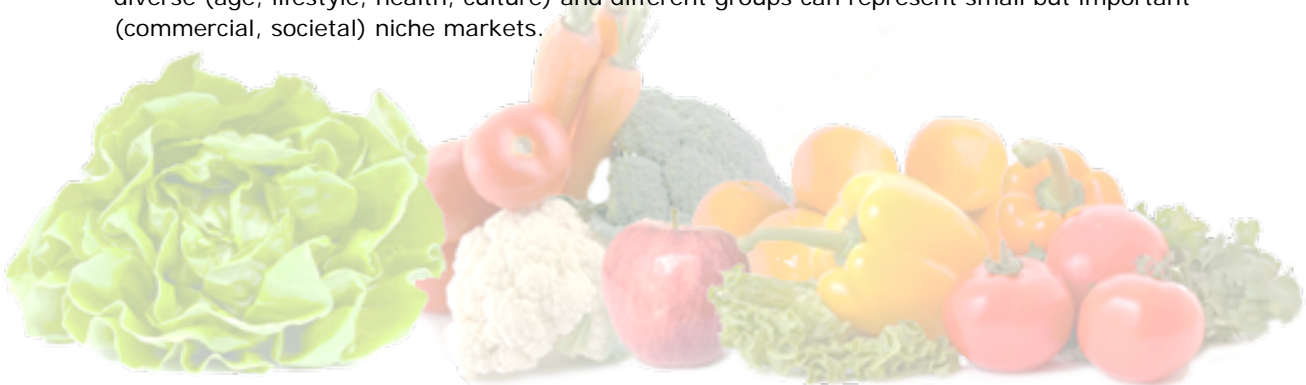


'Smart and sustainable food solutions as part of a circular economy for a healthy and joyful life'

FOODforce <http://www.foodforce.org/> is a network of more than 30 leading European universities and research provider organisations covering all of Europe and active in the areas of food production and processing linked to nutrition and health. FOODforce members are connected with their local stakeholders, ranging from primary producers, manufacturing industry, packaging, ICT industry, food processing industry up to local processors and retailers (mainly SMEs, but also big companies), and can secure a demand-driven interactive approach in education, knowledge transfer and innovation to these local markets. FOODforce members have broad remits, but share a common interest in multidisciplinary food science and innovation. We provide a proactive forum for discussions on delivery of best practice and societal impact and facilitate international aspects of knowledge exchange and innovation, both within and outside the EU. FOODforce supports research and innovation by tackling several Societal Challenges: '*Food Security, sustainable agriculture, marine and the bioeconomy*', '*Health, demographic change and well-being*' and '*Supply of raw materials, resource efficiency and climate*'. As a voice of European Universities and research institutes in food, nutrition and health, Foodforce wants to share opinions with the EC in order to help and advise both ambitions and implementation of policies.

From the perspective of FOODforce, some consumer-driven trends are calling for smart and sustainable food solutions, including:

- ✓ A growing consumer demand for minimally processed food. Consumers have a generally positive perception of "not industrial over-processed food". This trend also empowers consumers for healthier food choices and diets;
- ✓ An increasing consumer pull for natural /Clean Label ingredients due to concerns (justified or not) about "E numbers" and due to perceived beneficial effects of less refined ingredients;
- ✓ A growing interest from the consumer in traditional, regional and artisanal prepared food as an important aspect of his or her culture and heritage. More and more consumers want food from their own country, region or even local area;
- ✓ An increasing number of consumers want to explore and experience food from other cultures, and food can even function as a gateway to understand these cultures;
- ✓ The agrifood market can be capricious and thus the sector has to react swiftly. Consumers are very diverse (age, lifestyle, health, culture) and different groups can represent small but important (commercial, societal) niche markets.



Taken together, there is a general consumer trend for keeping “freshness”, “natural” and “nutritional character/ value”, for foods and ingredients contributing to healthier and more joyful lives, but without compromising shelf-life and, of course, maintaining safety of the foods. The real challenge for the food industry is how to adapt to these consumer trends, while at the same time the sector is under pressure from low margins, high competition, drive for higher efficiency and decreasing number of primary producers. Apart from calling for smart and sustainable food solutions, future growth of the food sector will require re-thinking of the organisation of the food value chain, including empowering local, short(er) value chains where SMEs are an important engine.

SCOPE: HOW FOODFORCE CAN CONTRIBUTE

- ✓ Support the development and societal introduction / acceptance of high-tech solutions for future food production systems, particularly optimal / minimal processing of raw materials for natural, health-promoting foods and ingredients. It is particularly important to link food processing to primary production of raw materials, ensuring optimization of raw material supply, demand and utilization for maximally efficient food processing;
- ✓ Innovation of less refined and more “natural” ingredients with superior functionalities that allow production of healthy, tasty and more original products and research to understand the structure and functionality of these less refined ingredients in new food solutions;
- ✓ Development of modular food processing units for minimal processing: this will allow more flexible and seasonal small(er) batch processing and make SMEs a much more important player in the food processing chain. Further, the technological transition from bulk towards small batch processing will be favoured;
- ✓ Integrate food safety assessment into all smart and sustainable food solutions, with flexibility and innovation as required to deal with potential challenges such as complex food matrices, allergenicity potential of new/less refined ingredients and minimal processing, enabling the guarantee of food safety;
- ✓ Smarter packaging solutions (going beyond the material science aspects and including smaller quantities and batch sizes) in order to improve food quality (maintain freshness for local markets; improve market access for regional products; improved competitiveness which may enhance export, improve shelf-life, and avoid food waste at the household / end consumer);
- ✓ Better understanding of consumer behaviour, enabling them to make informed choices for personalised nutrition and health by promoting awareness of food-derived health benefits;
- ✓ Consumer engagement in an integrated value (food) chain that improves transparency and integrity;
- ✓ New ICT/big data supported solutions for communication with consumers, tracking and tracing of foods e.g. smart packaging solutions, and supporting the development of a state-of-the-art research infrastructure for food, health and nutrition research & innovation in Europe.

This is only possible in a systemic, integrative, interdisciplinary, cross-sectorial and multi-actor approach. Expected impacts of an improved European food system are:

- ✓ New food and ingredient solutions as requested by consumers and supporting a healthy and joyful life while at the same time being produced in competitive and sustainable fashion;
- ✓ Contribution to smarter (local) food value chains, embedding them within their local territories. This will lead to smart pathways to rural growth and new jobs (local industry, local farmers, local retailer etc.);
- ✓ Creation of new business models, e.g. for sharing modular facilities and services, which will enable access for SMEs, creating new capabilities for them and enhancing their competitiveness;
- ✓ Improved stakeholder engagement and civil society participation leading to higher transparency, consumer trust and assuring food authenticity for the consumer;
- ✓ A much improved food chain system that may serve as a model both within and outside the EU, e.g. for Africa and mega cities / metropolitan regions throughout the world.



FOODFORCE MEMBER ORGANISATIONS

Belgium	<ul style="list-style-type: none"> - Ghent University – “Centre of Expertise Food2Know”. - Leuven Food Science and Nutrition Research Centre (LForCE)
Czech Republic	<ul style="list-style-type: none"> - Food Research Institute Prague (VUPP, FRIP)
Denmark	<ul style="list-style-type: none"> - Aalborg University of Copenhagen - University of Copenhagen - Aarhus University
Finland	<ul style="list-style-type: none"> - VTT Technical Research Centre of Finland
France	<ul style="list-style-type: none"> - INRA, Centre de Recherches de Toulouse - INRA, Centre de Paris Food-Consumer
Germany	<ul style="list-style-type: none"> - Max Rubner-Institut (MRI): Federal Research Institute of Nutrition and Food - University of Hohenheim - German Institute of Food Technologies (DIL)
Iceland	<ul style="list-style-type: none"> - Matís ohf. / Icelandic Food and Biotech R&D
Ireland	<ul style="list-style-type: none"> - Teagasc Food Research Centre, Ashtown
Israel	<ul style="list-style-type: none"> - Technion – Israel Institute of Technology
Italy	<ul style="list-style-type: none"> - University of Bologna – Alma Mater Studiorum - National Research Council – Institute of Sciences of Food Production
The Netherlands	<ul style="list-style-type: none"> - Wageningen University and Research Centre - TNO Quality of Life - Maastricht University / Maastricht University Centre
Norway	<ul style="list-style-type: none"> - Nofima Food Research Institute
Poland	<ul style="list-style-type: none"> - Institute of Animal Reproduction & Food Research of Polish Academy of Sciences – Division of Food
Portugal	<ul style="list-style-type: none"> - Escola Superior de Biotecnologia, Universidade Católica Portuguesa (CBQF)
Romania	<ul style="list-style-type: none"> - National Institute of Research and development for Food Bioresources - IBA Bucharest
Serbia	<ul style="list-style-type: none"> - Institute of Food Technology in Novi Sad (FINS)
Slovak Republic	<ul style="list-style-type: none"> - Food Research Institute (FRI)
Spain	<ul style="list-style-type: none"> - CEBAS CSIC - Institute of Food Science Research, CIAL research institute of the Spanish National Research Council (CSIC) and the Autonoma University of Madrid (UAM) - AZTI Tecnalia - IRTA Research and Technology Food & Agriculture - ainia – centro tecnologico
Sweden	<ul style="list-style-type: none"> - The Food and Bioscience unit (formerly SIK – The Swedish Institute for Food and Biotechnology)
Turkey	<ul style="list-style-type: none"> - TÜBITAK Food Institute Marmara Research Center
United Kingdom	<ul style="list-style-type: none"> - Institute of Food Research (IFR) - Campden BRI





FOODFORCE ASSOCIATED ORGANISATIONS & NETWORKS

- ✓ European Commission – Directorate General Joint Research Centre:
 - Institute for Health & Consumer Protection, Ispra, Italy
- ✓ The European Association for Food Safety, SAFE consortium
- ✓ ETP Food for Life
- ✓ JPI FACCE
- ✓ JPI HDHL
- ✓ ERA-NET SUSFOOD

