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# A joined-up approach to the identification, assessment and management of emerging FOOD SAFETY Hazards and Associated Risks (FOODSAFER)

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## Introduction

In Europe, foodborne hazards, which include **biological and chemical hazards** such as bacteria, parasites, toxins, and allergens, cause already approximately 23 million cases of illnesses and 5,000 deaths per year [1]. Food safety is further under pressure by a range of drivers like **climate change, emerging raw materials** and the circular economy to obtain a more sustainable food system, an **increase in susceptible population groups** in the European population, and **dietary changes**. This shows the need for an **adaption of food safety management systems** to make them more **robust towards emerging risks**. To make this happen, the EU-funded project FoodSafeR was recently established. FoodSafeR is being **led by FFoQSI**, the Austrian Competence Centre for Feed and Food Quality, Safety and Innovation, which is a multidisciplinary, multi-actor joint research hub that includes 8 scientific and 45 national and international business partners from the food system.

## The Consortium

The FoodSafeR consortium includes **19 organisations** from **14 European countries** and consists of academia, industry, food business operators, technology SMEs and startups, food safety authorities, and stakeholders. This expertise is complemented by the **Advisory Board**, consisting of **22 internationally recognized experts** from public health institutions, food authorities and networks. It includes, among others, representatives of the Codex Alimentarius, FAO's Food Systems and Food Safety Division, FDA, and Health Canada.

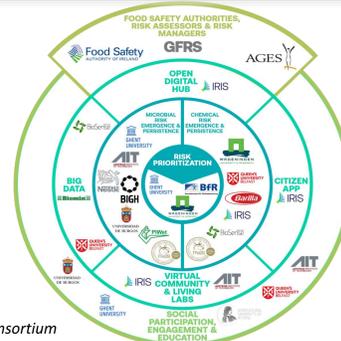


Fig. 1: The FoodSafeR consortium

## Work Packages and Tasks

### WP2 - Microbial hazards

- Identification of emerging microbial risks in novel and alternative food networks (e.g., novel protein foods, ethnic food types)
- Mapping the specifics of alternative food chains and developing software solutions to tackle resulting risks
- Analysis of animal viruses in food products of animal origin to assess the presence of emerging foodborne animal viruses
- Study of antimicrobial resistance in aquatic food production
- Analysis of known biomarkers and in-depth characterisation of the persister phenotype on the microbiome level & in biofilm models

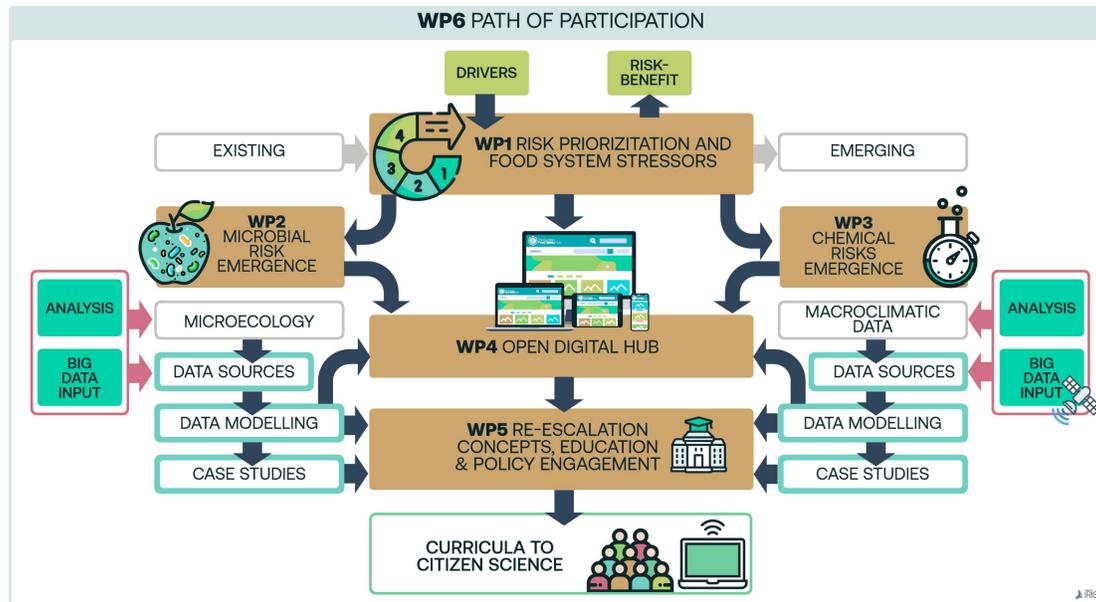


Fig. 2: The FoodSafeR work packages

### WP3 - Chemical hazards

- Improvement of prediction tools for mycotoxins through a big data & machine learning approach
- Investigation of the fate of mycotoxins during thermal food processing using an LC-HRMS 13C-tracer metabolomics approach combined with industrial pilot plant design of experiments
- Development of FoodSmartphone screening tools for testing of tropane alkaloids and pyrrolizidine alkaloids
- Development of portable spectroscopy devices for the detection of illegal addition of toxic chemicals in spices (e.g., lead chromate in turmeric)



### WP1 - Impact analysis of food system stressors

- Design of a holistic and proactive framework considering multiple criteria in risk management and real-time information on the emergence of food safety hazards
- Identification of drivers and indicators of emerging food safety risks by performing a food system analysis



### WP4 - Open Digital Hub

- Development of an Open Digital Hub to connect risk assessors and managers, food safety control authorities, stakeholders, food business operators and consumers
- Interface for accessing the project outputs
- Alerting risk managers to emerging food safety hazards



### WP5 - De-escalation concepts, future-proof food safety management, life-long learning

- Design of a future proof food safety management that is robust towards emerging food safety hazards
- Development of educational material and curricula for professionals active in the food system



### WP6 - Path of participation

- Ensuring Open Science principles and robust data management
- Management of the project to ensure its successful delivery on time, to budget, to scope and quality
- Leveraging synergies with other relevant projects and initiatives
- Enabling active participation of stakeholders and citizens



## Outlook

- **FoodSafeR** will drive forward a sustainable and enduring transformation of the food system to deliver co-benefits for climate, environmental sustainability & circularity, dietary shift, sustainable healthy nutrition & safe food.
- **FoodSafeR** will generate high quality data about emerging microbial and chemical hazards and risks spread easily via the Open Digital Hub and which will be available to everybody.
- **FoodSafeR** offers brilliant network opportunities for the food system community including risk assessors and national authorities.
- **SOON**: Launch of the **FoodSafeR Digital Hub** – please register to stay informed!



SCAN ME to get to the homepage

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### References

- [1] European Commission, Directorate-General for Research and Innovation, Food 2030 pathways for action: food safety systems of the future, Publications Office of the European Union, 2020, <https://data.europa.eu/doi/10.2777/514382>.

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