



# CATALYSE

Catalysing scientific innovation into food safety action

## CATALYSing Food Safety Innovations

*Dr. Isabelle Guelinckx, ILSI Europe*



**Co-funded by  
the European Union**

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**Project funded by**



Schweizerische Eidgenossenschaft  
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Federal Department of Economic Affairs,  
Education and Research EAER  
**State Secretariat for Education,  
Research and Innovation SERI**

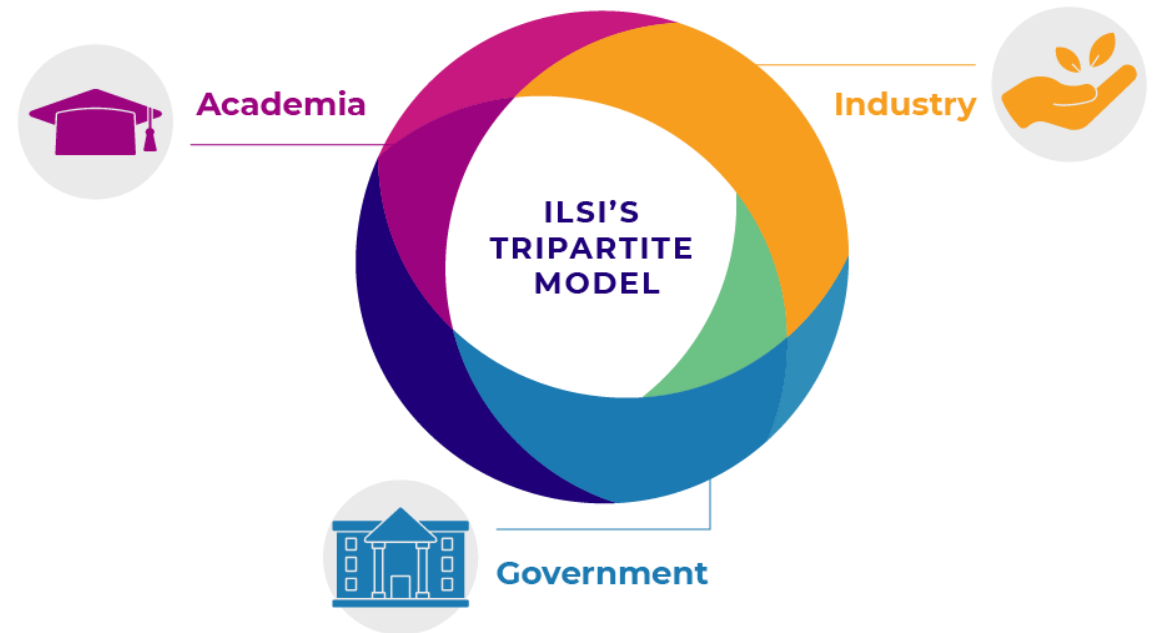


**UK Research  
and Innovation**

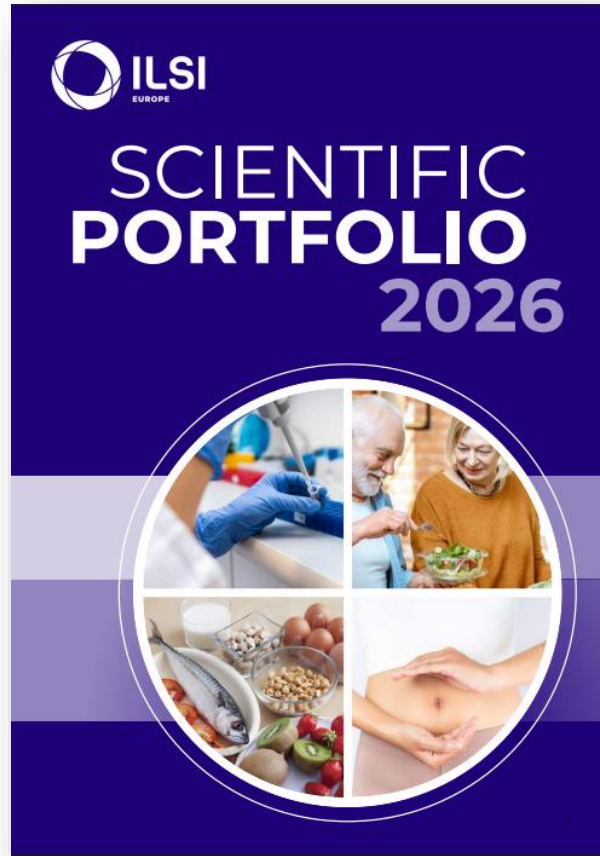
This project has received funding from UK Research and Innovation (UKRI)

# Our mission

- science-based guidance
- food sector
- foster collaboration
- facilitate consensus building



# Our portfolio



New approaches for food safety



Food Allergy



Food Packaging



Food-related Contaminants



Microbiome



Nutrition, Development & Healthy Ageing



EU-Funded Projects

# Introduction: Food Safety

**Food safety** is a critical aspect to **ensure** that the food we consume is **free** from harmful **contaminants**.

According to the WHO, contaminated food causes **600M cases of foodborne diseases** and **420K deaths** every year, resulting in **33M healthy life years lost**, and this is possibly an underestimation.



A 2019 World Bank report states US\$110B is **lost** each year in **productivity** and **medical costs** due to unsafe food in low- and middle-income countries.

**Contaminated product recalls affect benefits and create food waste.**

# Opportunities

## INNOVATIONS IN RESEARCH



Lack of collaboration and information sharing

Regulation

Costs

Lack of awareness

Lack of dissemination to small/traditional producers

Resistance to change

## FOOD BUSINESS



# Who we are?

Project Coordinator



# CATALYSE



3-year project

Jan 2024 - Dec 2026



17 partners

From research, industry, regulatory bodies



13 countries

Spanning across Europe

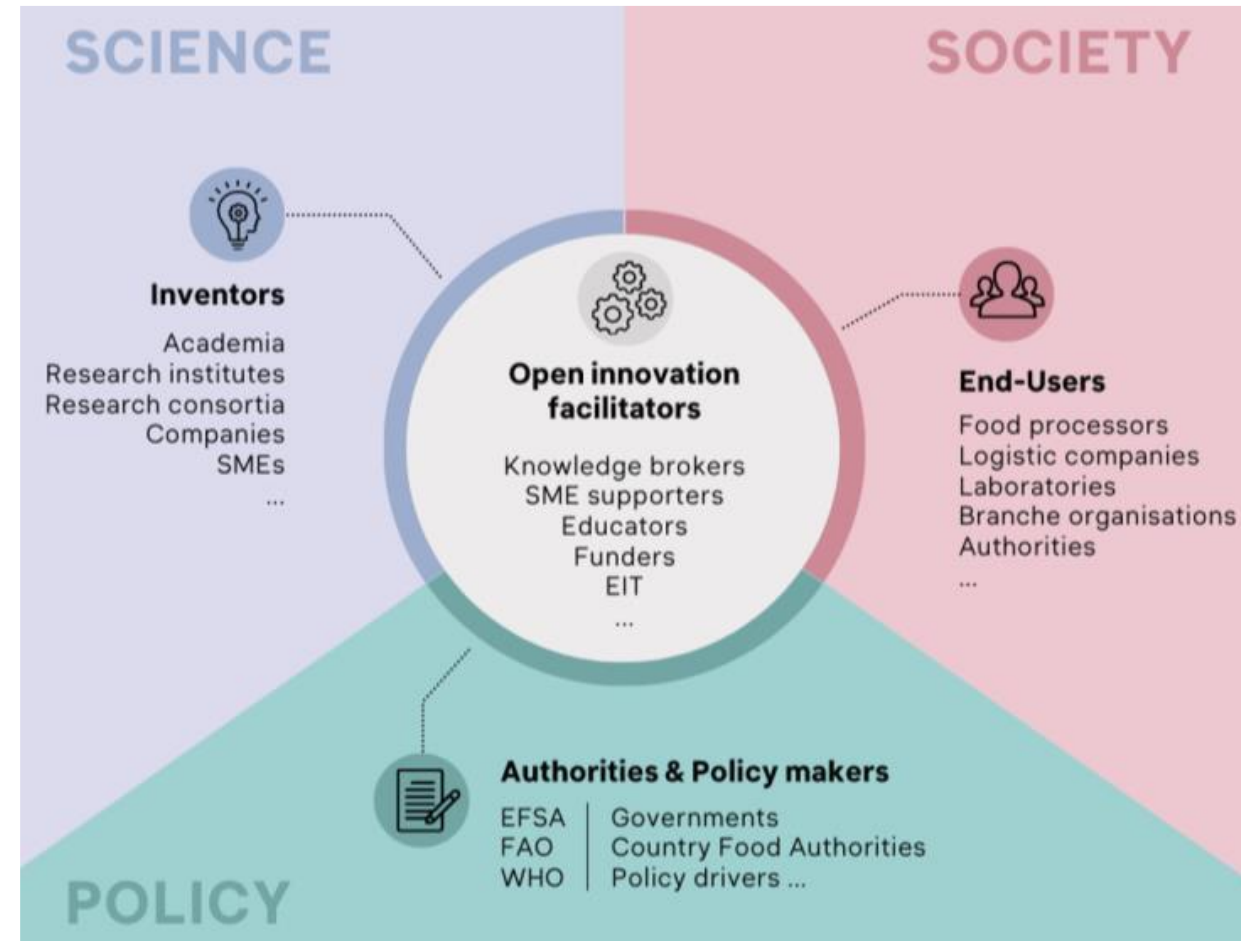
# Overall concept

Thematic network ensuring food safety  
by translating research & innovation into practice

- ✓ **Sustainable & inclusive community**
- ✓ **Online & in practice**
- ✓ **Demand driven**
- ✓ **Scientific and business community  
in Food System**

# Overall concept

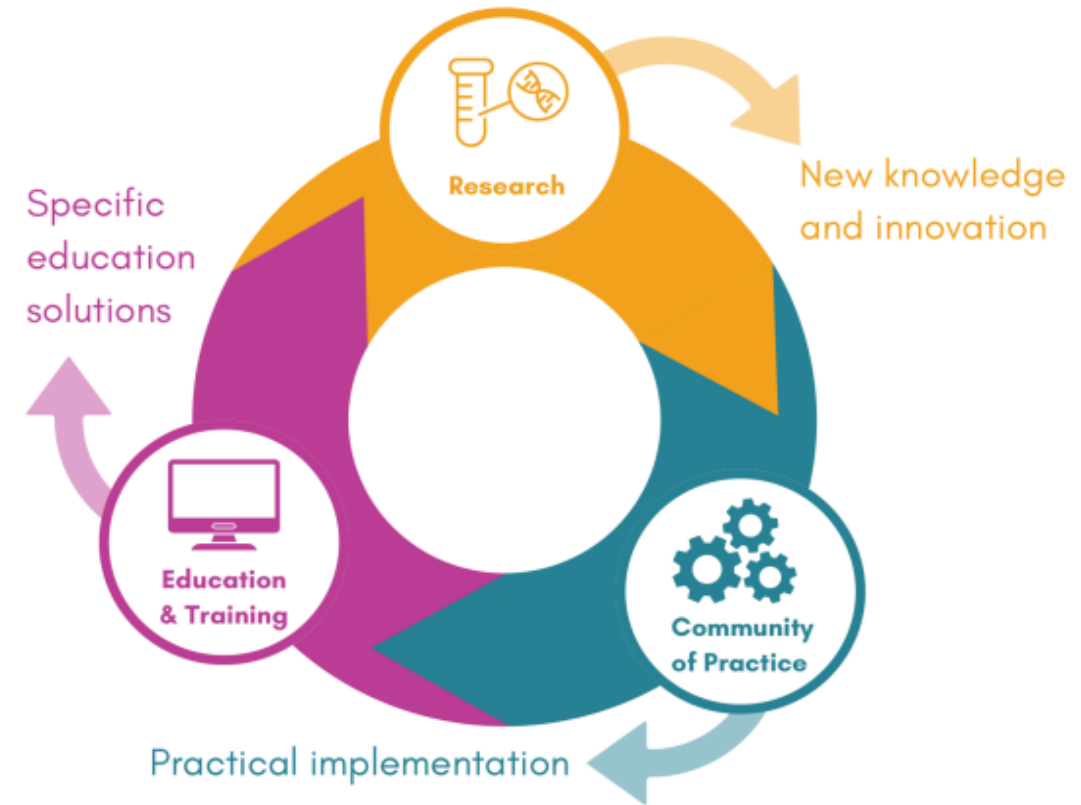
Thematic network ensuring food safety  
by translating research & innovation into practice



# Community of Practice on Food Safety Innovations

*“Community of Practice is a group of people who **share a concern or a passion** for something they do and **learn how to do it better** as they **interact regularly.**”*

*Etienne Wenger*



# CATALYSE RESULTS

1. Prioritised list with needs from end-users
2. List of high potential innovations
3. Searchable knowledge database
4. High quality education programs and training materials
5. Business support for new businesses & SME's
6. Vivid Community of Practice promoting knowledge transfer

**→ Improved uptake of new innovations in food safety**

# CATALYSE – Working model

## COLLECT

Compile past, ongoing, and future food-safety related projects and identify food chain limitations and expectations to anticipate suitable implementation.

## TRANSLATE

Bridge the gap between theoretical knowledge and practical policy by translating innovative solutions into pragmatic, applied solutions.

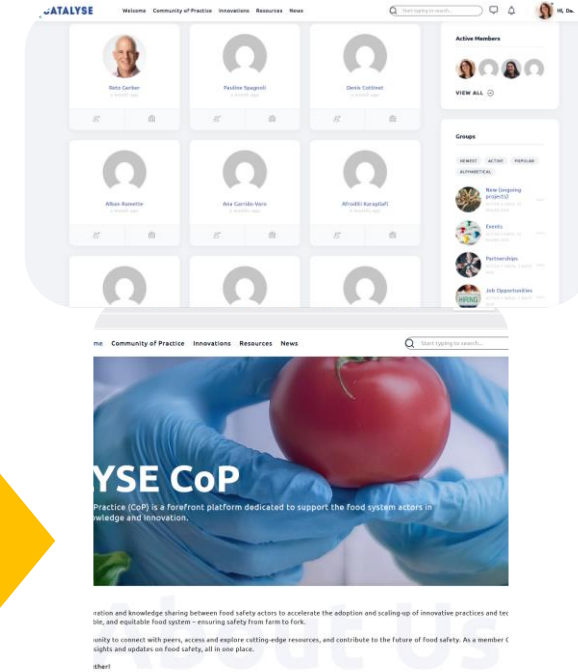
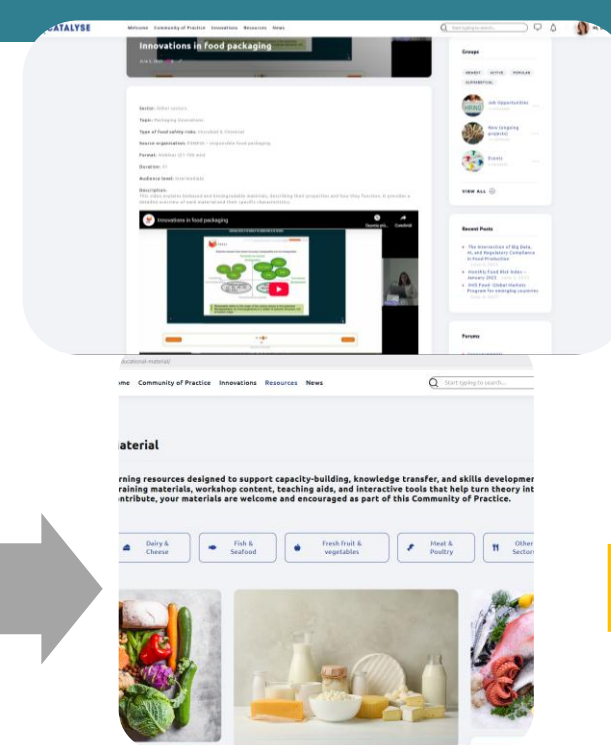
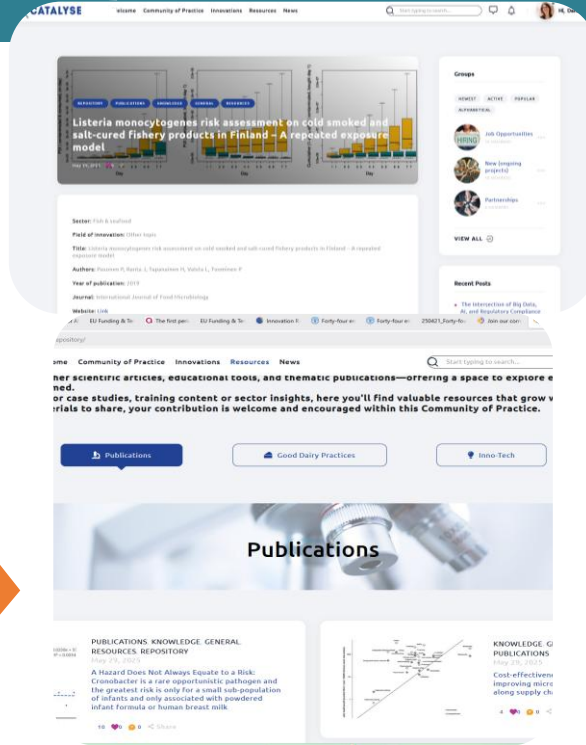
## FACILITATE

Establish a unified networking platform for stakeholders to share information and follow up on innovations and their implementation progress.

## EDUCATE

Raise critical issues within the food chain to technical audiences and simplify scientific concepts to non-scientific audiences.





**Collect Needs**

- Fluid network of solution providers

**Resource library**

- Papers
- Patents
- Guidelines
- Factsheets

**Education and Training**

- Demos
- Courses
- Videos
- Tutorials

**Community of Practice (CoP)**

- Blog for experts
- Posts of SH
- Feedback section
- News

# CATALYSE Community of Practice (CoP)

Online platform having all Food Safety updates in one consolidated place.

The screenshot shows the CATALYSE CoP website interface. At the top, there is a navigation bar with the CATALYSE logo, a search bar, and user information. The main content area features a large image of hands in blue gloves holding a red tomato. Below the image, there is a central orange box with the text: "A unique, collaborative space that is accessible to everyone." Surrounding this central area are several callout boxes with arrows pointing to specific parts of the website:

- Networking**: Points to the top navigation bar.
- Sharing innovative solutions**: Points to the right side of the main content area.
- Knowledge sharing & educational resources**: Points to the bottom right of the main content area.
- Periodic webinars with innovators**: Points to a small circular icon at the bottom right of the main content area.
- Events and trainings**: Points to the bottom left of the main content area.
- Mentorship programs**: Points to the left side of the main content area.

The website text includes:

**WELCOME TO CATALYSE CoP**

The CATALYSE Community of Practice (CoP) is a forefront platform dedicated to support the food system actors in the uptake of food safety knowledge and innovation.

**A unique, collaborative space that is accessible to everyone.**

Our mission is to foster collaboration and knowledge sharing between Food safety actors to accelerate the adoption and scaling-up of innovative practices and technologies. By working together, we build a more resilient, sustainable, and equitable food system – ensuring safety from Farm to fork.

We invite you to join our Community to connect with peers, access and explore cutting-edge resources, and contribute to the future of food safety. As a member CATALYSE Community of Practice, you will have access to the latest insights and updates on food safety, all in one place.

Let's advance food safety together!



## Sector

Cheese, Dairy and alternatives

Meat & Poultry

Fish & Seafood

Grain & Cereals

Fresh Fruit & Vegetables

Plant-based & alternative protein

Processed & Packaged food

Beverages

## Topics

CONTROL MEASURES

DETECTION METHODS

HIGYENE BY DESIGN

PACKAGING INNOVATION

DIGITALIZATION AND AI

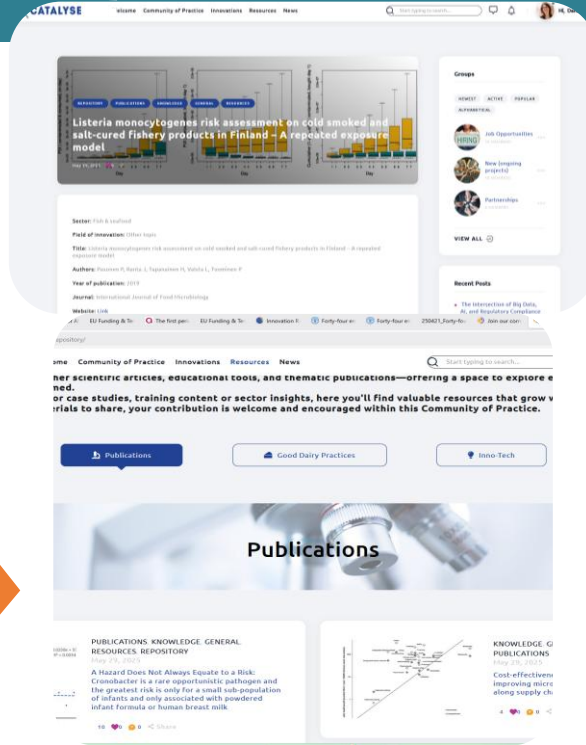
OTHERS





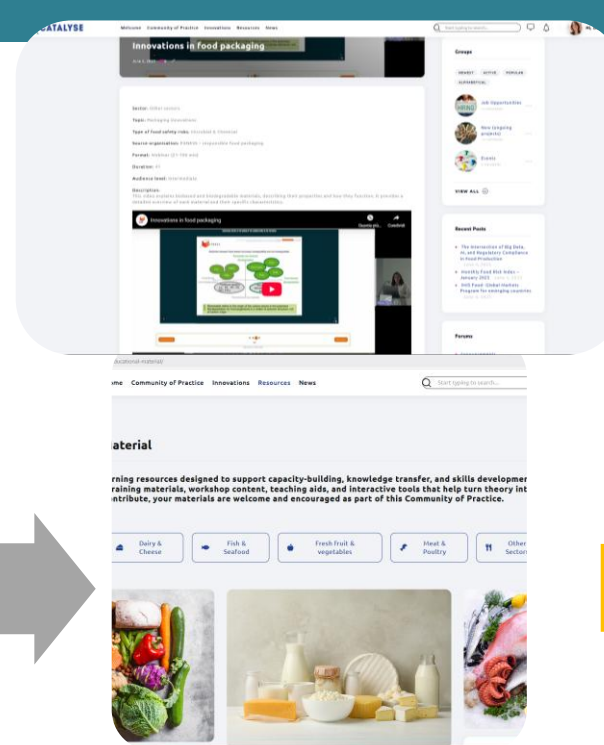
## Collect Needs

- Fluid network of solution providers



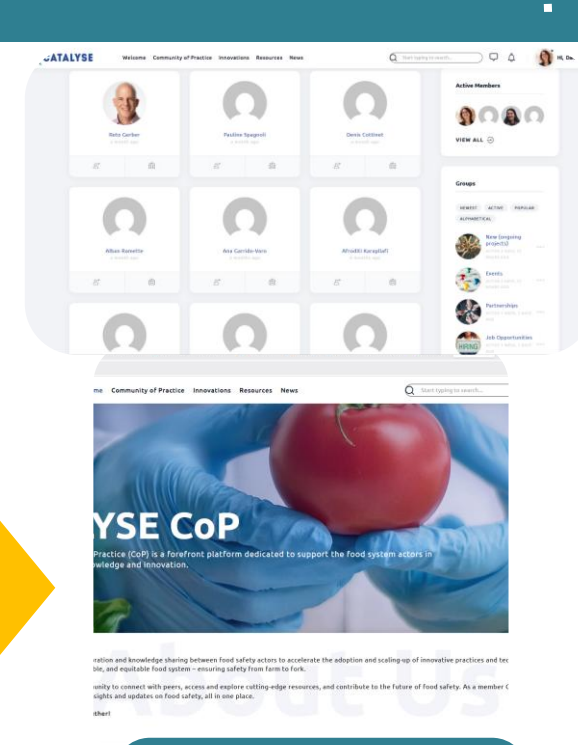
## Resource library

- Papers
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- Guidelines
- Factsheets



## Education and Training

- Demos
- Courses
- Videos
- Tutorials



## Community of Practice (CoP)

- Blog for experts
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- Feedback section
- News

TRANSLATION

## STAKEHOLDER INTERACTIONS

### TO UNDERSTAND:

- THE NEEDS AND PRIORITIES + BARRIERS AND LEVERS IN FOOD SAFETY APPLICATION INNOVATIONS
- KNOWLEDGE EXCHANGE, EDUCATION AND TRAINING

INVOLVE STAKEHOLDERS TO **COBUILD**  
THE COMMUNITY OF PRACTICE  
FOR THE BENEFIT OF ALL



Active • Community • Practice

# Multidimensional STAKEHOLDER engagement



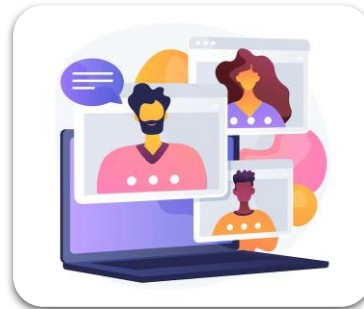
## ONLINE SURVEY

113 stakeholder responses



## STRUCTURED INTERVIEW (1-on-1)

84 stakeholders interviewed



## ONLINE WORKSHOPS

4 webinars



## IN-PERSON WORKSHOPS

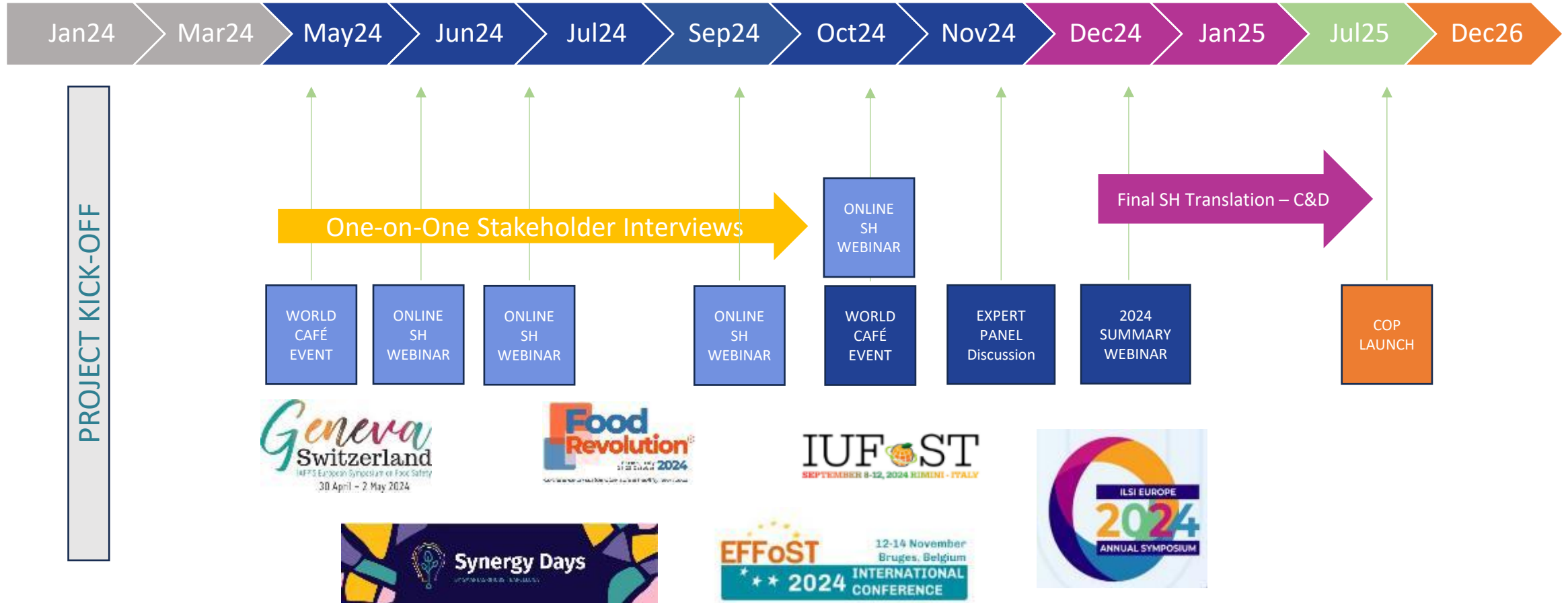
- IAFP Conference
- IUFOST
- Synergy Days



## CONFERENCE SESSIONS

- EFFoST conference
- ILSI Europe Annual Symposium

# Stakeholder Engagements 2024

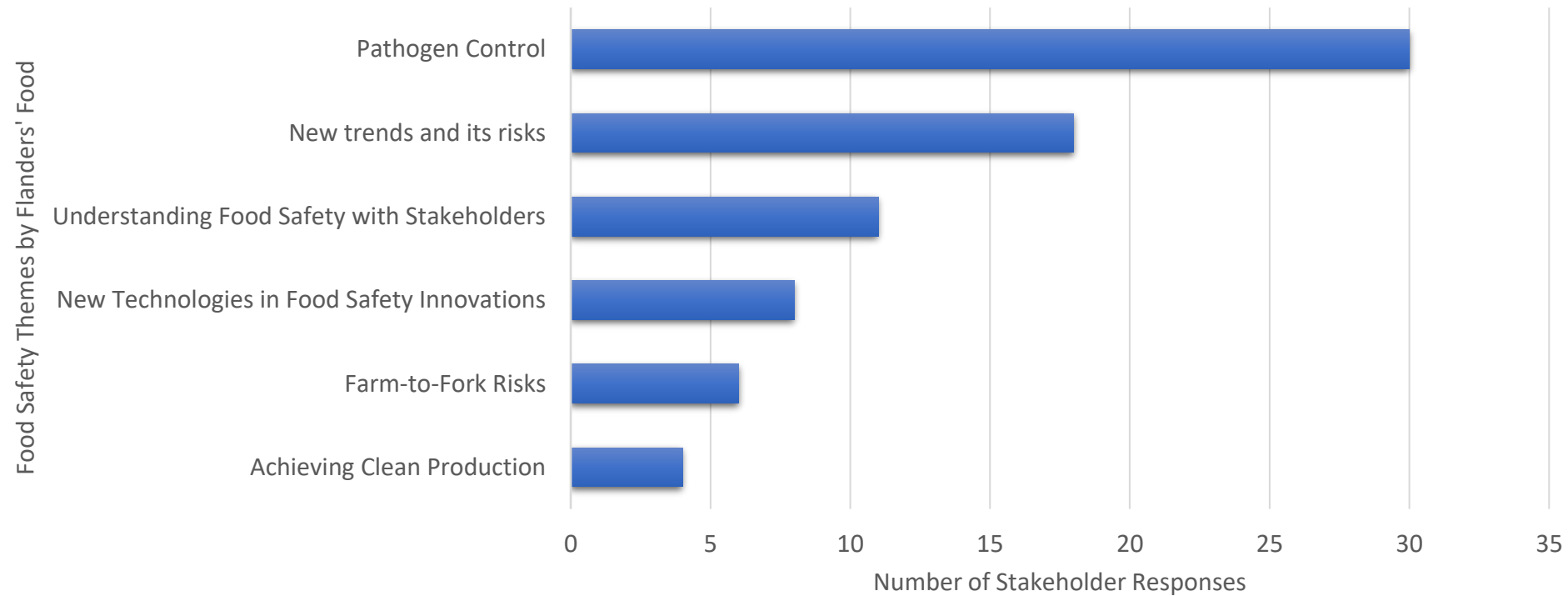


# STAKEHOLDER NEEDS IDENTIFIED

## 1. STAKEHOLDER'S CONCERNS in FOOD SAFETY

# Food safety priorities for stakeholders

## Which is the most concerned food safety topic?



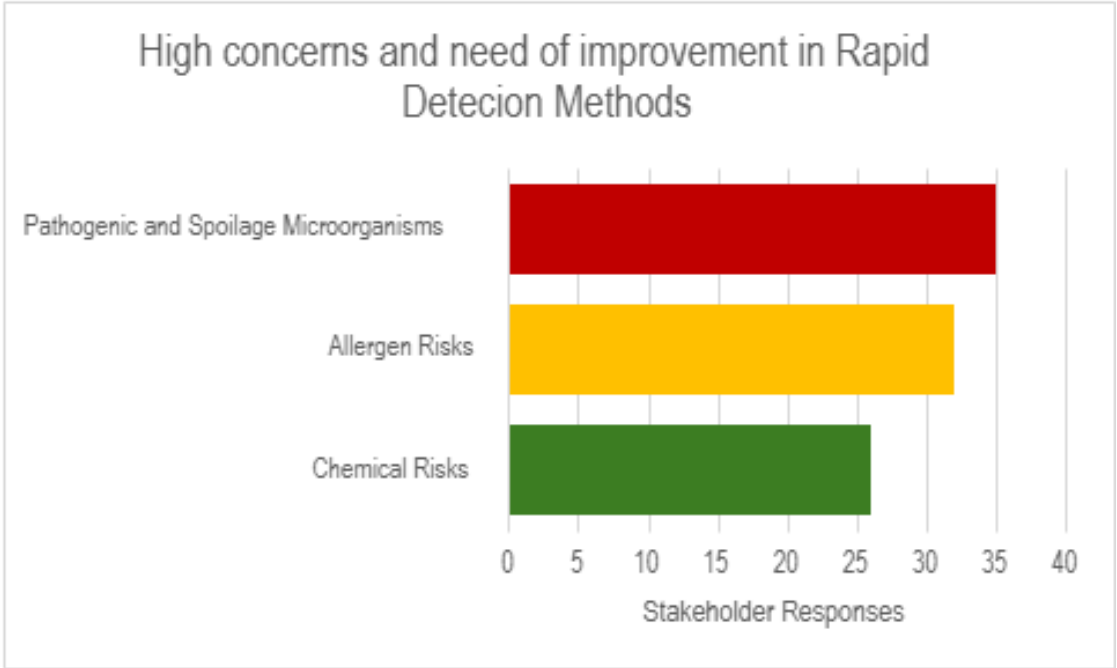
**N=77**

# Control Measures In General Are Of Higher Priority Than Rapid Detection Methods

### Existing CONTROL MEASURES



### Existing RAPID DETECTION METHODS

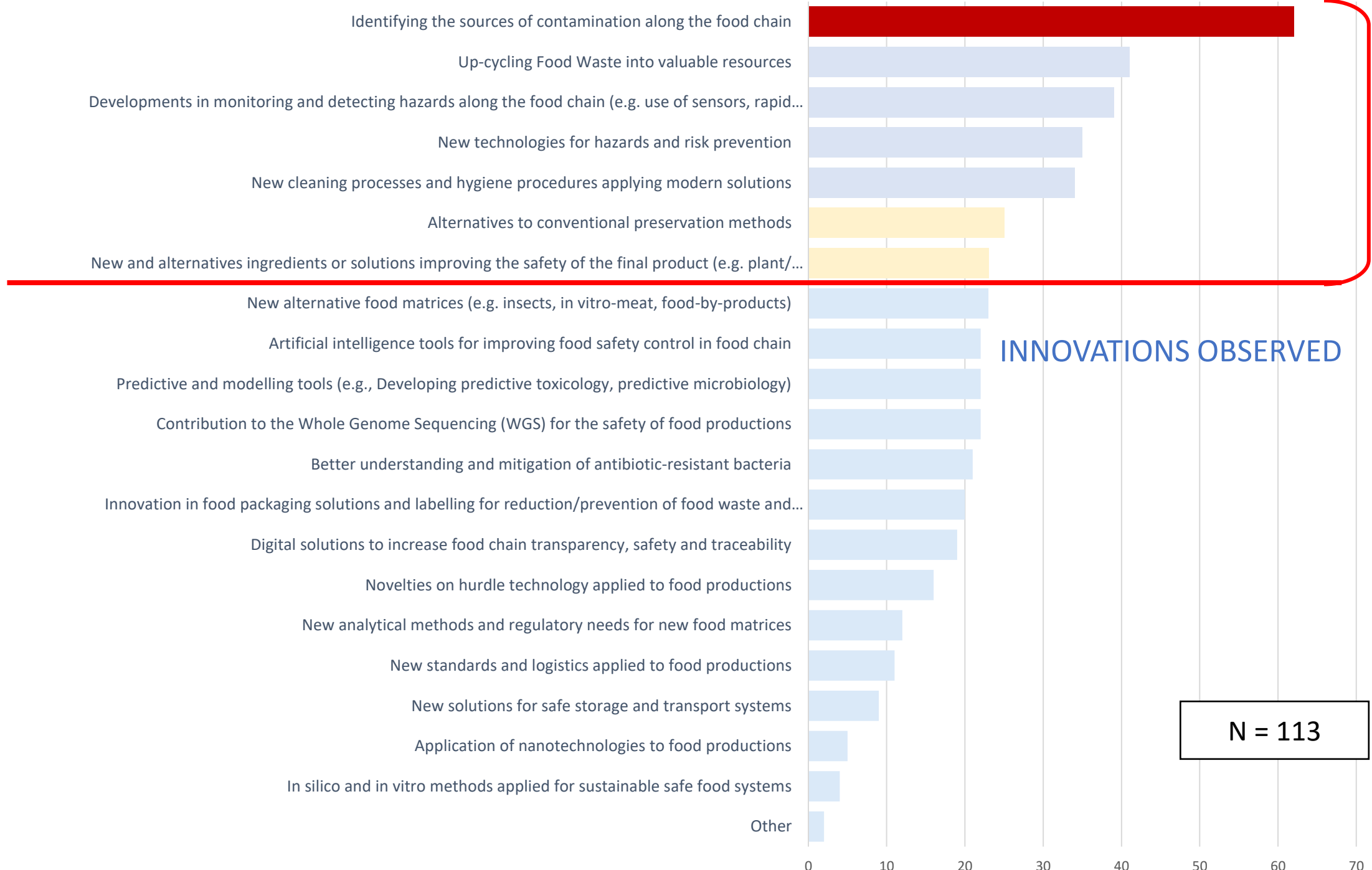


N = 113

# RESULTS

## 2. IDENTIFIED INNOVATIONS & BARRIERS FOR IT'S UPTAKE

# RANKING OF MOST PROMISING INNOVATIONS

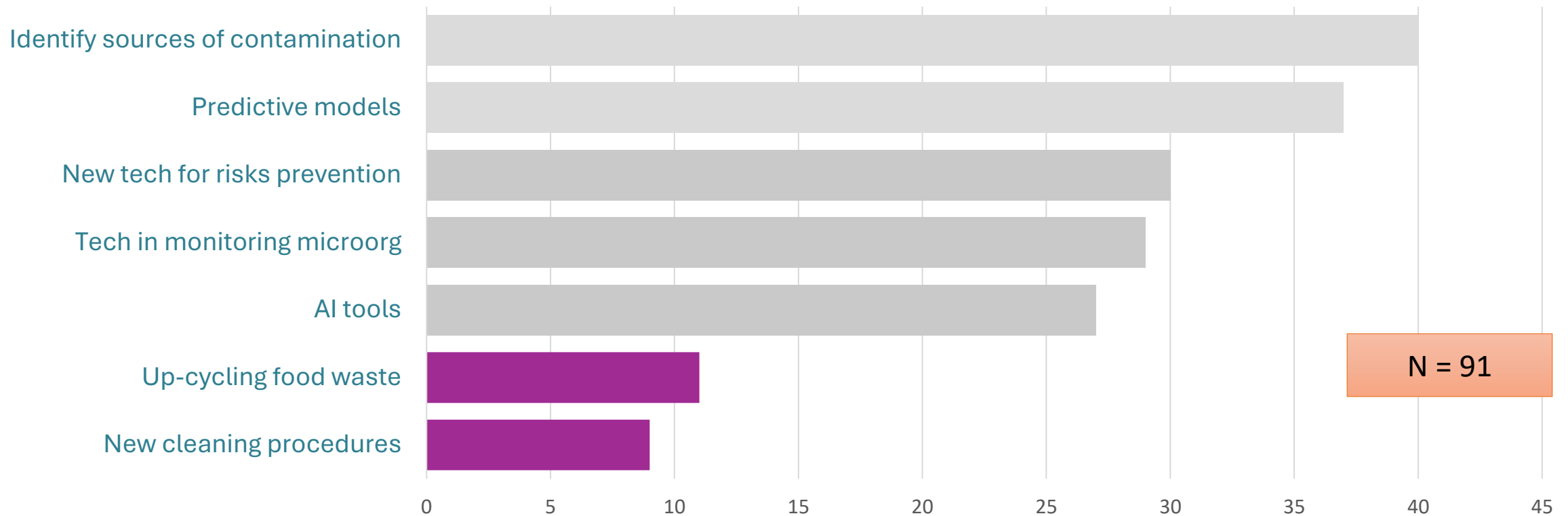


INNOVATIONS OBSERVED

N = 113

# Identified Contamination And Predictive Models Are Most Helpful

Which specific innovations do you see as most facilitating for addressing current food safety concerns?



# COST or LACK OF COLLABORATION are Primary Barriers

Barriers	Barrier Priority Ranking			
	Industry	Academia	Public Authorities	Civil Society
Costs	3	3	<b>1</b>	<b>1</b>
Lack of Awareness	4	4	<b>2</b>	<b>2</b>
Regulation	<b>2</b>	<b>2</b>	3	3
Lack of Collaboration	<b>1</b>	<b>1</b>	4	4
Lack of Dissemination to Small/Traditional Producers	<b>5</b>	<b>5</b>	<b>6</b>	<b>5</b>
Resistance to Change	<b>6</b>	<b>6</b>	<b>5</b>	<b>6</b>

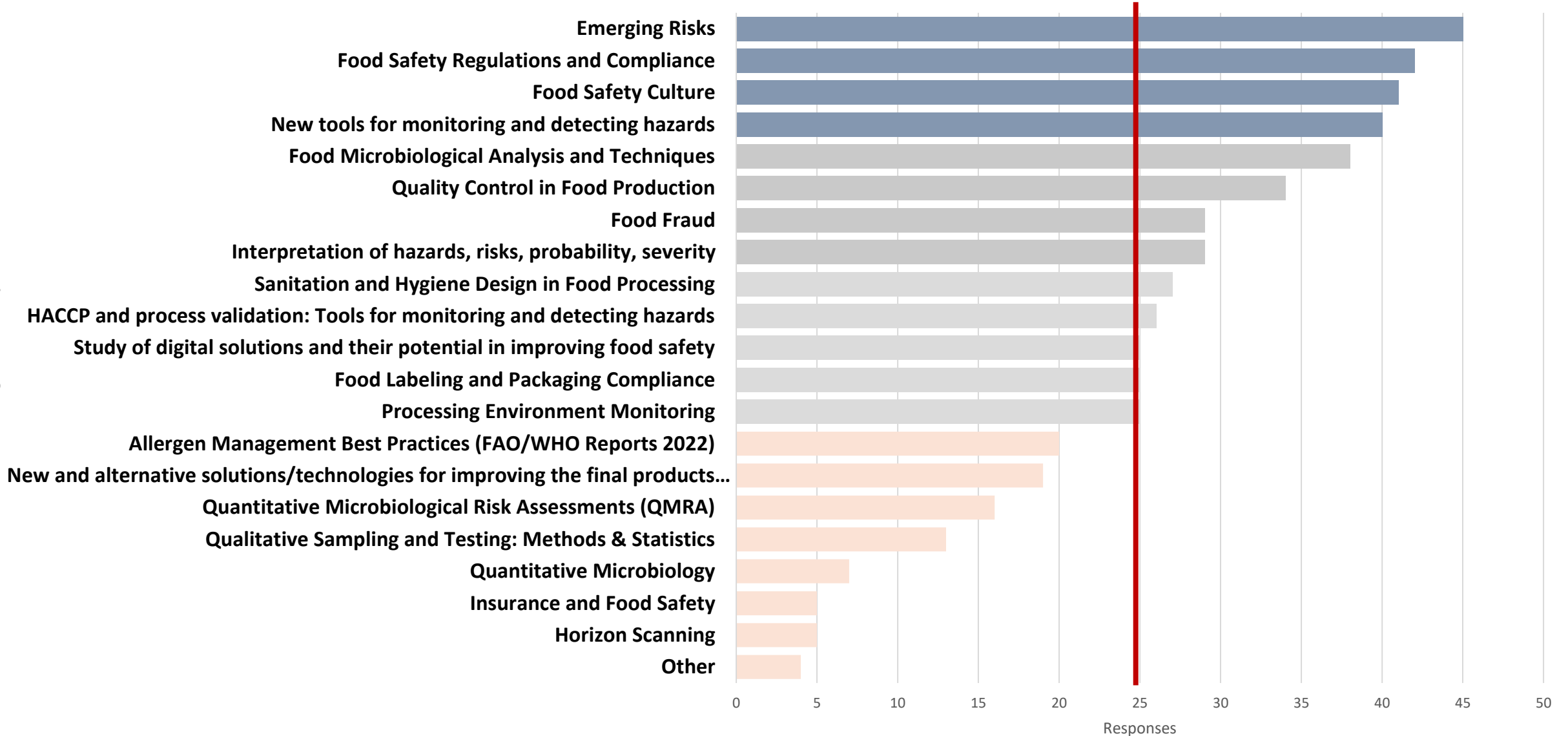
# RESULTS

## 3. PRIORITIZED EDUCATIONAL TRAINING/COURSES

# What topics would you prioritize for training/courses?

N = 112

Training/Courses subjects



# Follow-up at in-person workshop session



## CATALYSE FOCUS AREAS

- 1. Control measures**
- 2. Detection methods**
- 3. Digitalization and risk analysis**  
(AI tools in food safety, big data)
- 4. Hygiene by design**
- 5. Packaging Innovations**



## Collect Needs

- Fluid network of solution providers

## Resource library

- Papers
- Patents
- Guidelines
- Factsheets

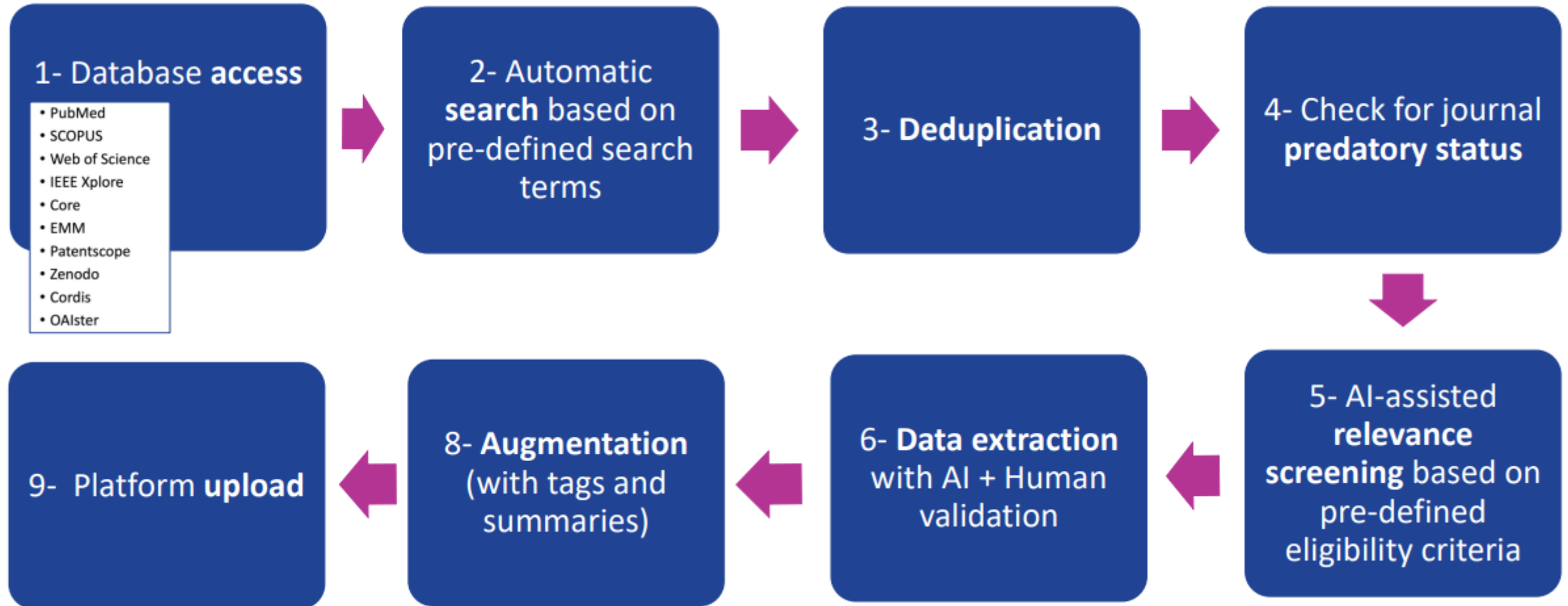
## Education and Training

- Demos
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## Community of Practice (CoP)

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# Facilitation of CATALYSE Database Platform



# Collection of recent Publications Shared with the CoP

## Selection of 120 practical publications for the CoP homepage Dairy & Alternatives

### Mineral Oil Hydrocarbons in Dairy Products

**Table of Contents**

- Introduction ..... 1
- Use and Input Sources ..... 2
- Limits and Benchmarks ..... 2
- Toxicity and Analytics ..... 4
- Data Situation ..... 6
- Conclusions ..... 7

**Author**

Jan-Erik Ingenhoff



#### Introduction

For some time now, mineral oil hydrocarbons in foods have been the subject of intense discussion. Also regularly confronted with measurable residues of mineral oil hydrocarbons, the dairy sector is being called upon to determine potential input sources and to use targeted measures to prevent their transfer to foods.

The term 'mineral oil hydrocarbons' (MOH) describes a complex mixture of various substances containing between 10 and 50 carbon atoms. According to their nature, MOH are divided into two groups: 'MOSH', which represent the fraction of mineral oil saturated hydrocarbons, consisting of paraffins and naphthenes, and 'MOAH', which represent the mineral oil aromatic hydrocarbons substance group.



## Agroscope Magazine

**ATALYSE** Welcome Food Safety feed (CoP) Innovations Resources

Start typing to search...

**Publications**

**A Hazard Does Not Always Equate to a Risk.** *Cronobacter* is a rare opportunistic pathogen and the greatest risk is only for a small sub-population of infants and only associated with powdered infant formula or human breast milk.

**A web-based microbiological hazard identification tool for infant foods.**

**Ranking factors affecting the decontamination efficacy of non-thermal plasma: The approach of dissipated power per plasma volume through machine learning modeling.**

**Cool-effectiveness of interventions toward improving microbial food safety of chicken meat along supply chains in Burkina Faso and Ethiopia.**

**Inactivation of *Salmonella*, *Enterococcus faecium* and natural microbe on dry food matrices with microwave-driven plasma-processed air.**

**Systematic risk ranking of microbiological hazards in infant foods.**

**Good Farming Practices**

## Agroscope Transfer

Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
Agroscope

Agroscope Science | No. 197 / 2024

## FACE Conference 2023

### Opportunities and risks for raw milk products

A Scientific synthesis of the 2023 Conference of the FACENetwork

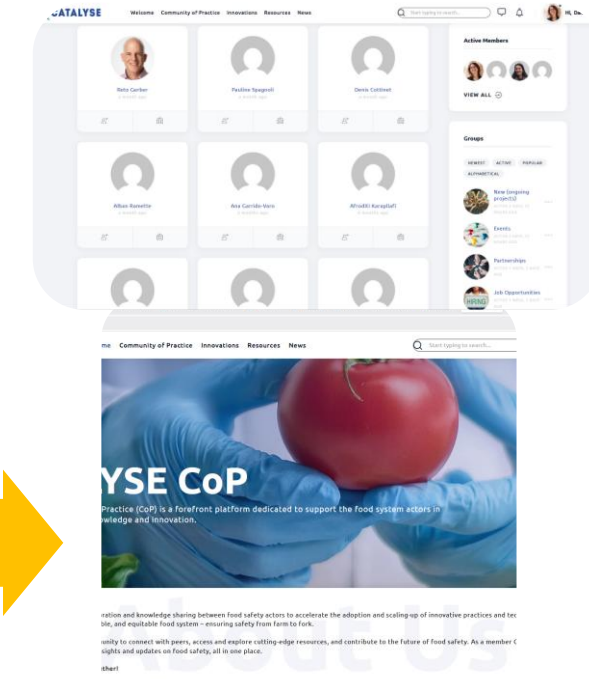
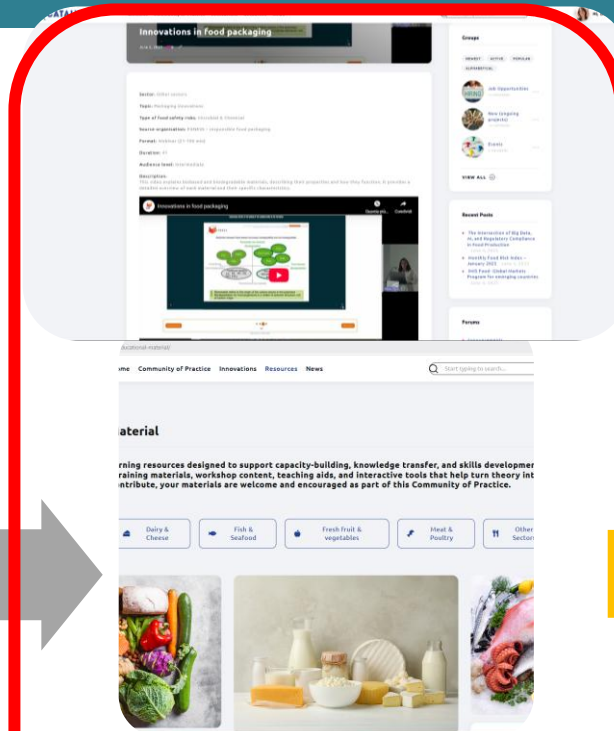
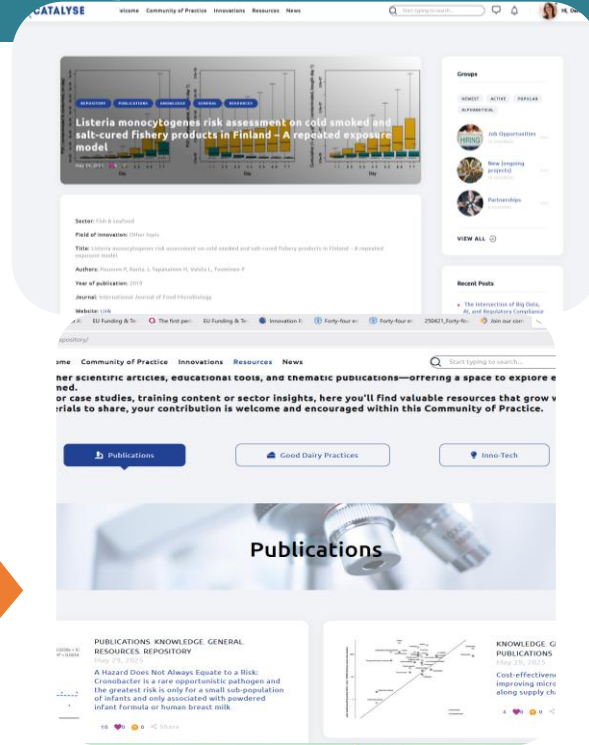
**Authors**  
Hans-Peter Bachmann, Walter Bisig, Marie-Therese Fröhlich-Wyder (Scientific Programme Committee)

**Partners**  
Fromarte, Grangeneuve

Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
Agroscope

## Agroscope Science



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# Criteria to ensure high quality & trustworthy materials

## Creation of governance system

### Content aligned on thematic topics:

- ✓ *Control measures*
- ✓ *Digitalization & AI*
- ✓ *Hygiene by design*
- ✓ *Detection methods*
- ✓ *Packaging innovation*

### Content Evaluation Criteria

- Scientific integrity and objectivity
- Possibility of clear content description
- Audiovisual quality

### Content Material criteria

#### Target audience

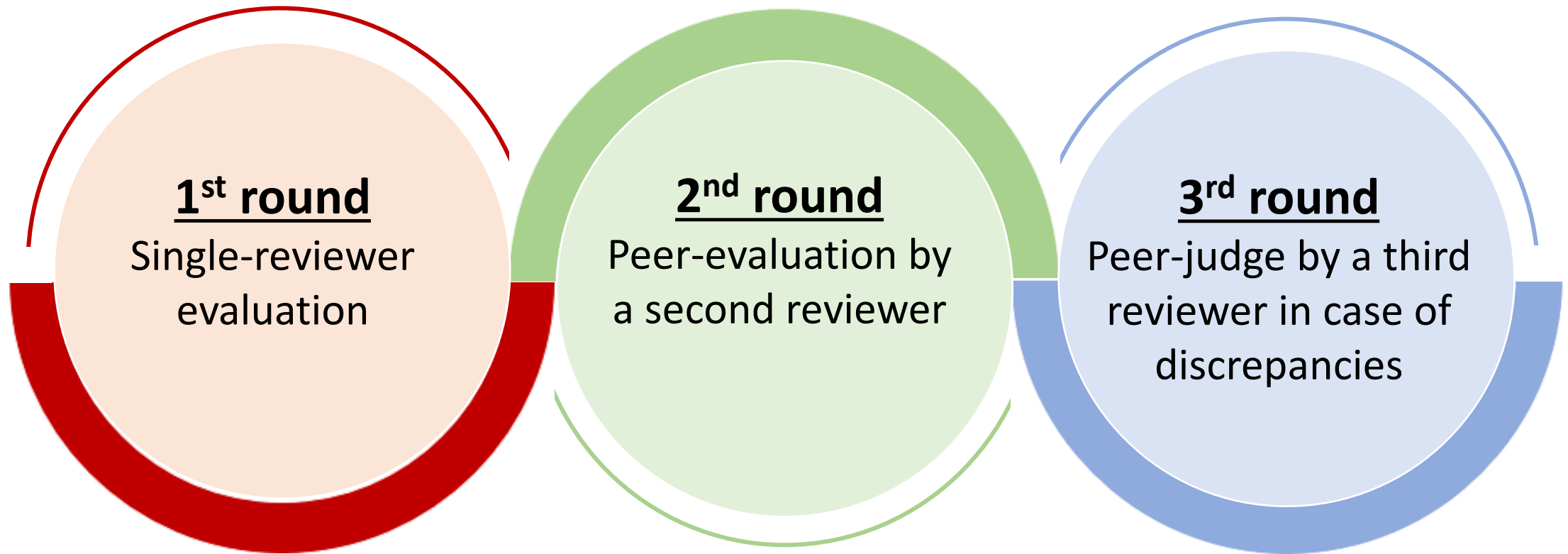
- ✓ *Beginners (High school graduates)*
- ✓ *Intermediate (BSc-level understanding in life science)*
- ✓ *Experts (Advanced or specialized knowledge)*

Applicable in Europe

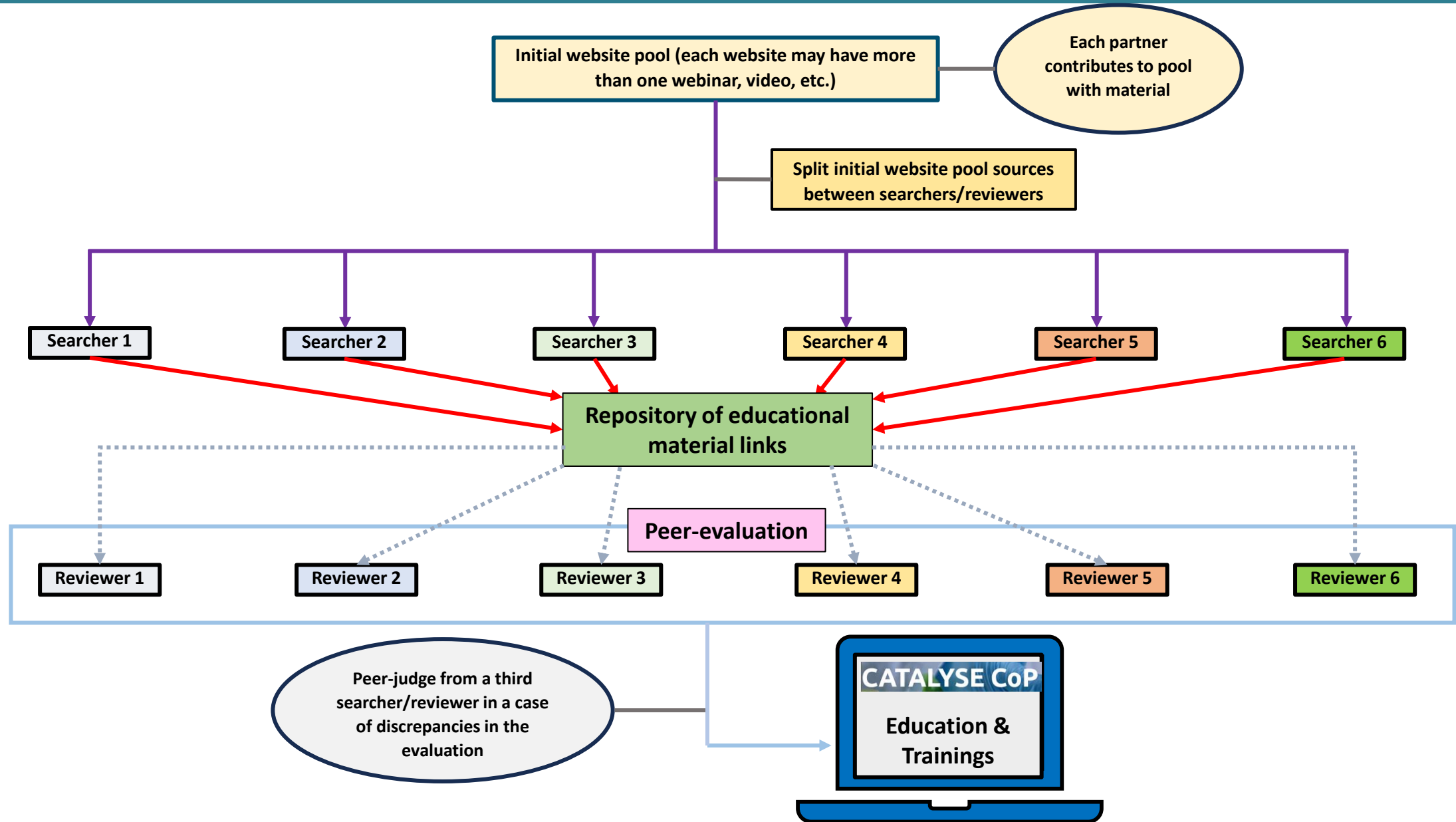
English language

No commercial endorsement materials

# Evaluation process



# Evaluation process of educational material



# Structured material description

- Direct link
- Source organization
- Title of material
- Audience level
- Sector
- Type of food safety risks
- Two-level keywords
- Type of material
- Duration (where applicable)
- Short content description



# Sources and screening of the training material

Screening of online educational and training materials for Food safety relevance



- Clips
- Videos
- Webinars
- E-books
- Online tools
- Podcasts
- Tutorials
- Online food safety education material packages

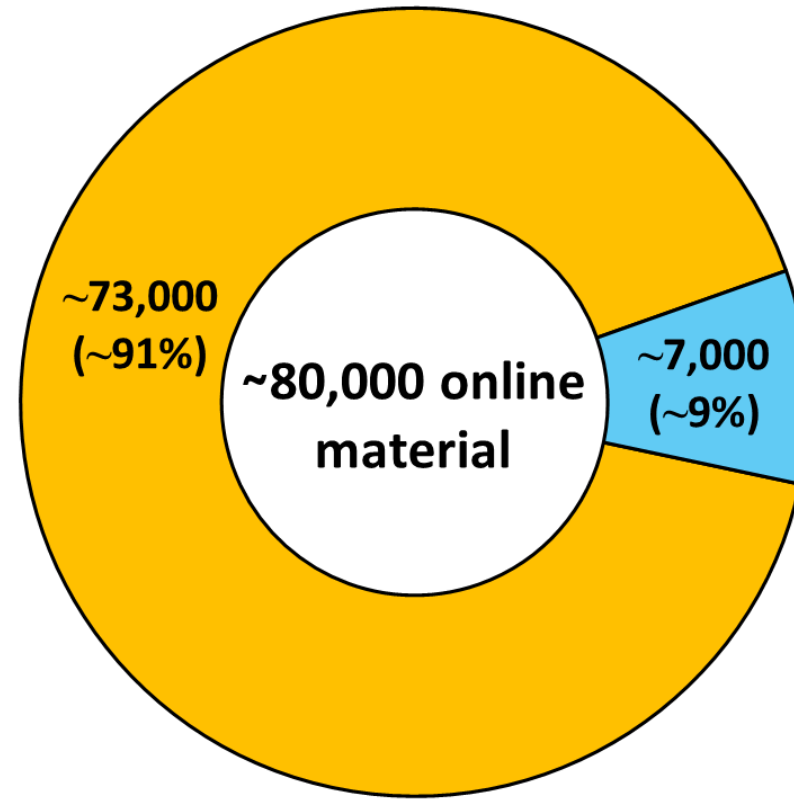
Produced by 150 different organisations

# Collection of existing educational material

Initial website pool: 173



Screening of online educational and training materials for Food safety relevance

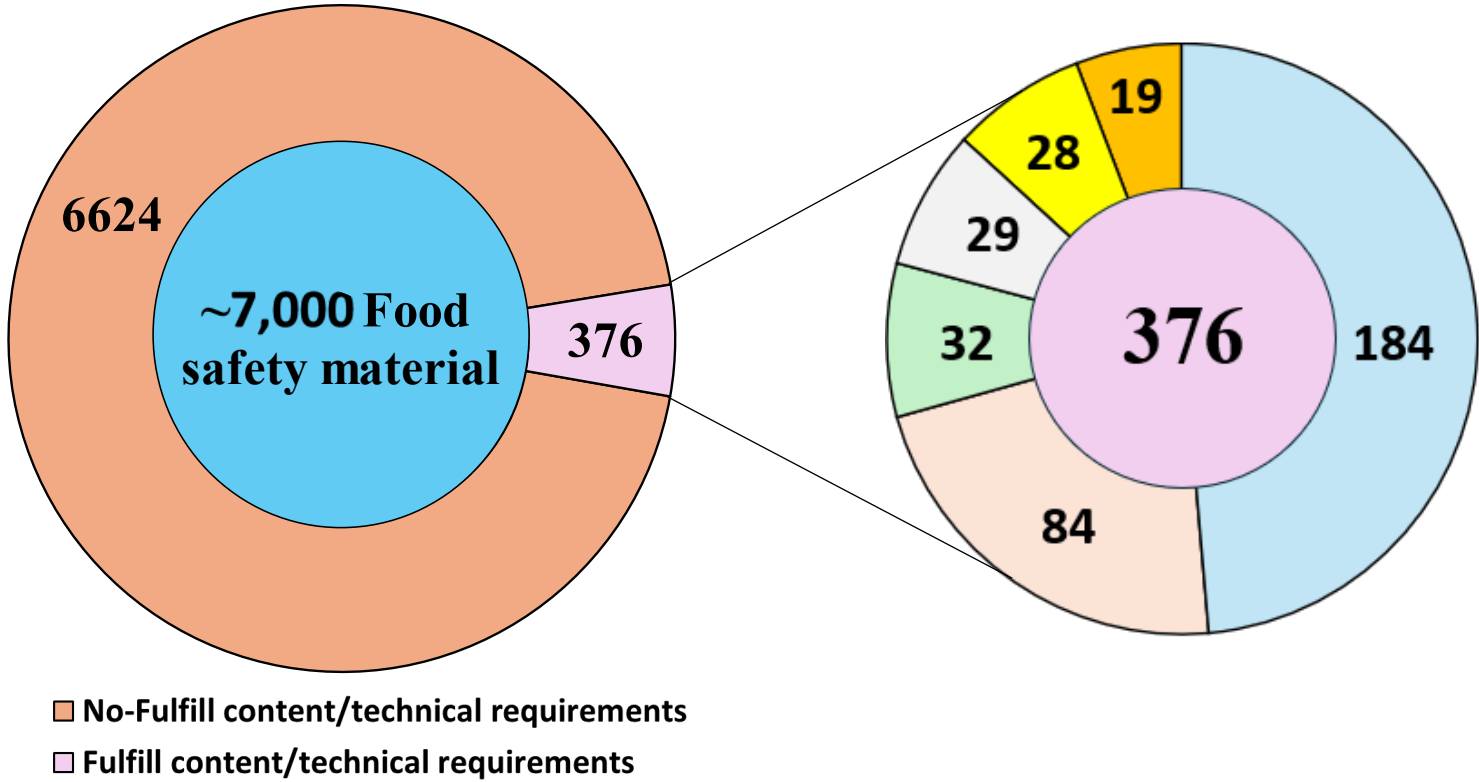


■ Non-food safety material

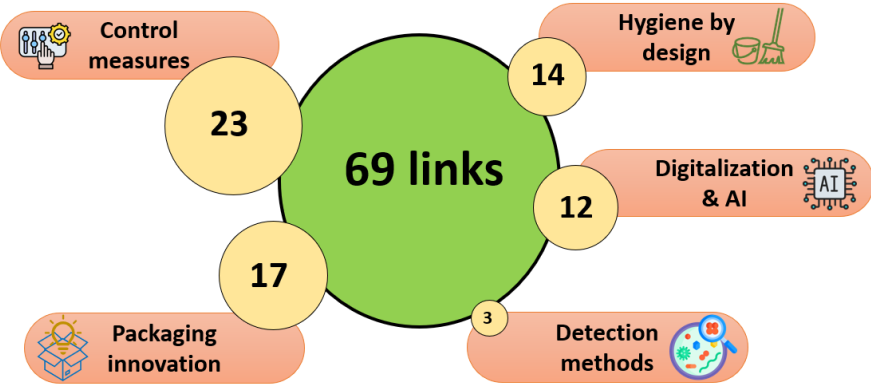
■ Food safety material

# Sources and screening of the material

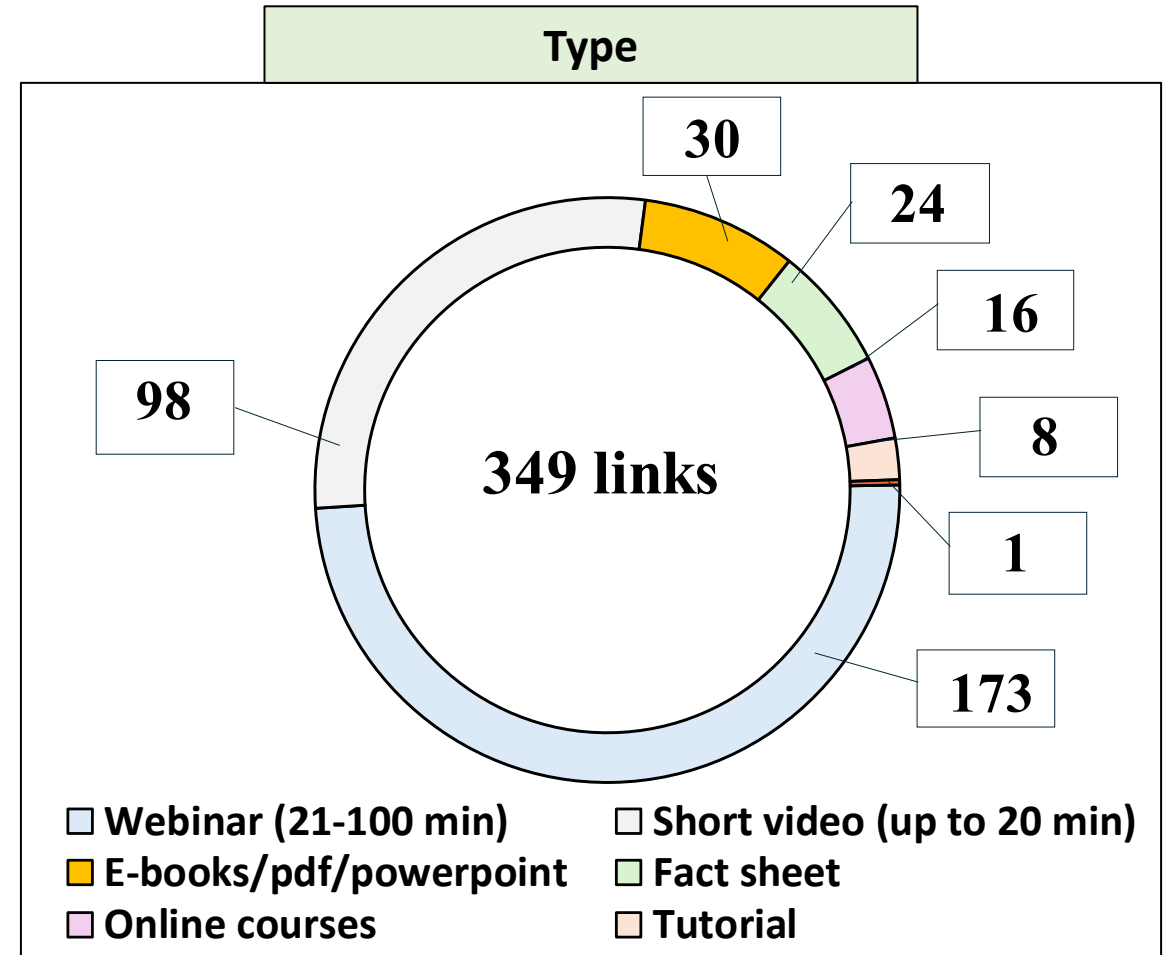
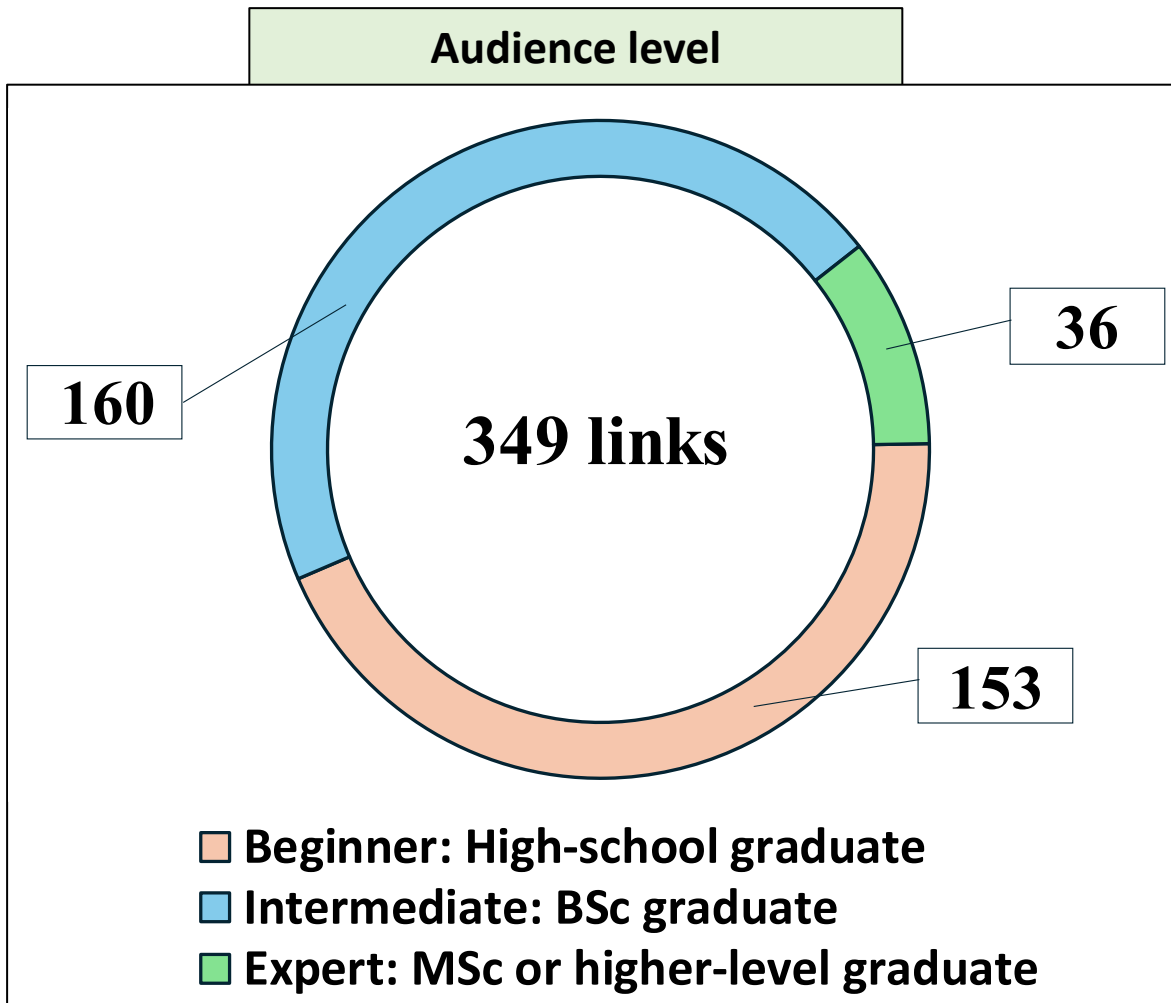
Based on **single-reviewer** evaluation



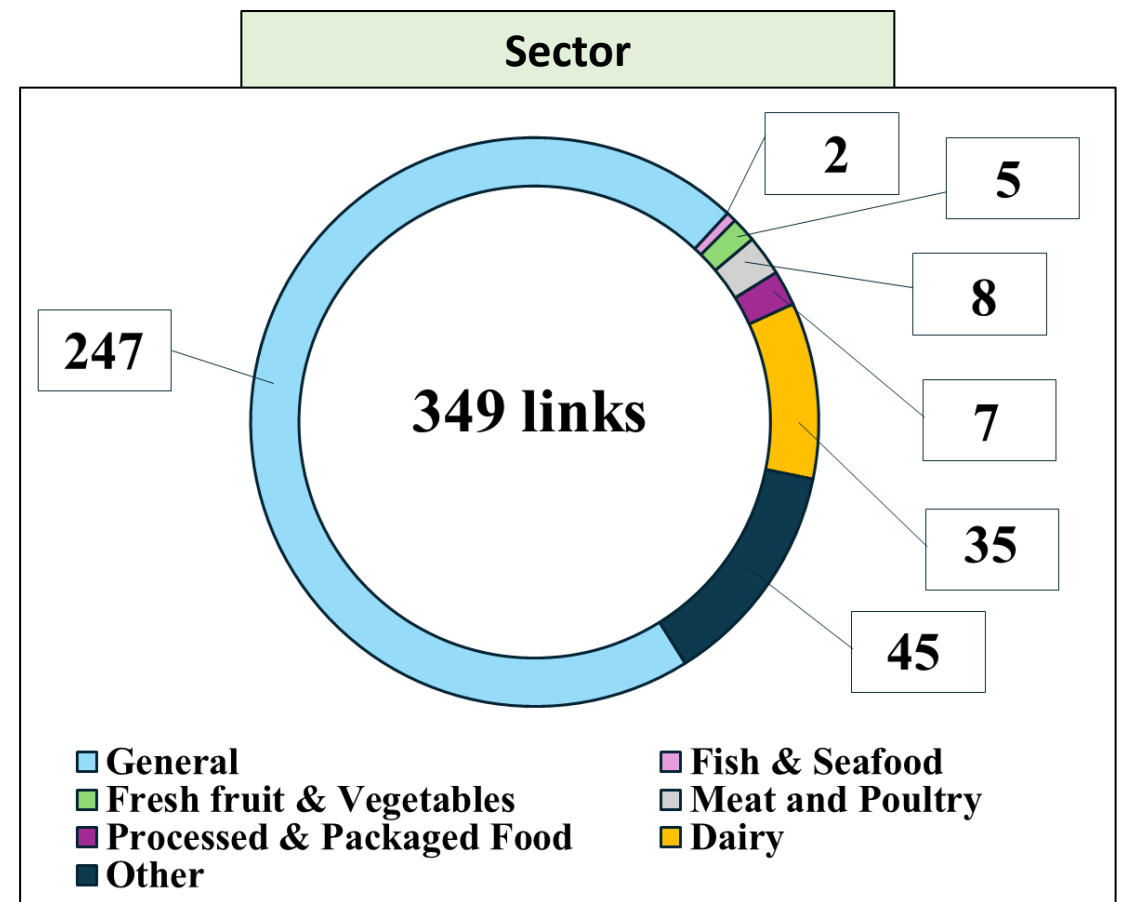
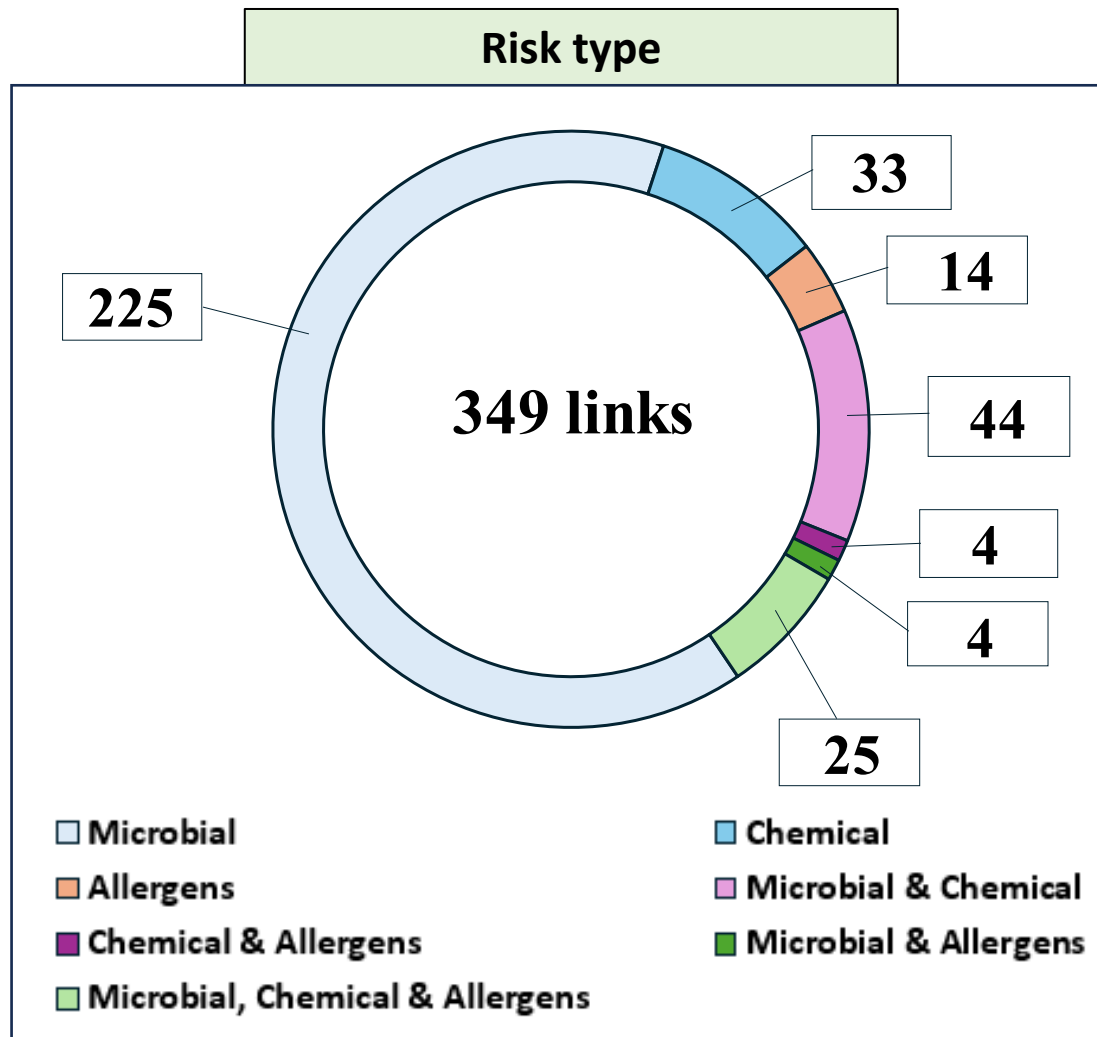
- Control measures
- Digitalization and AI
- Hygiene by design
- Packaging innovations
- Detection methods
- Others



# Overall Facilitation of Educational Materials



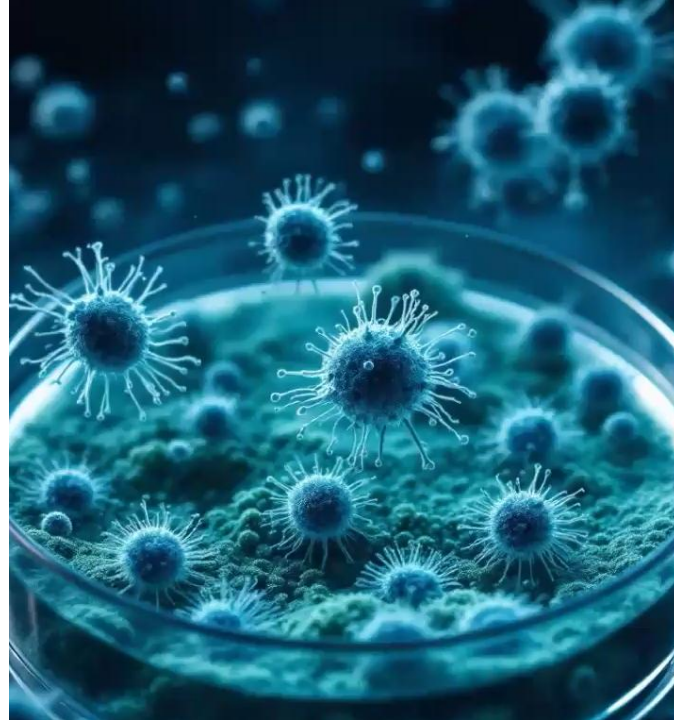
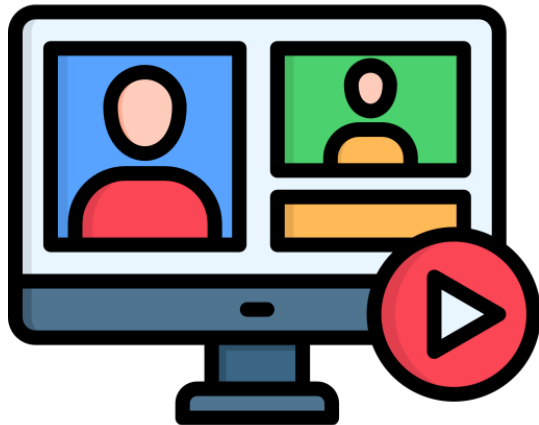
# Overall Facilitation of Educational Materials



# Development of new educational material

- **Webinars:**

- Tools to predict microbial growth
- Emerging risks
- Microplastics



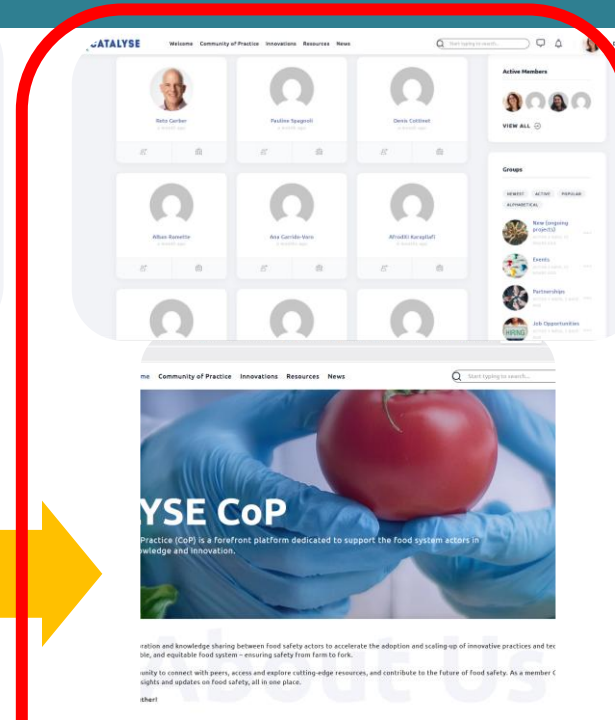
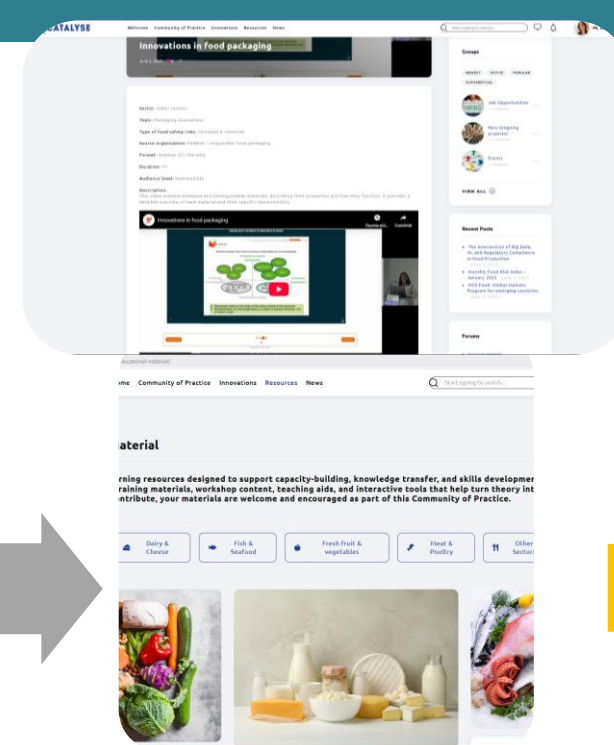
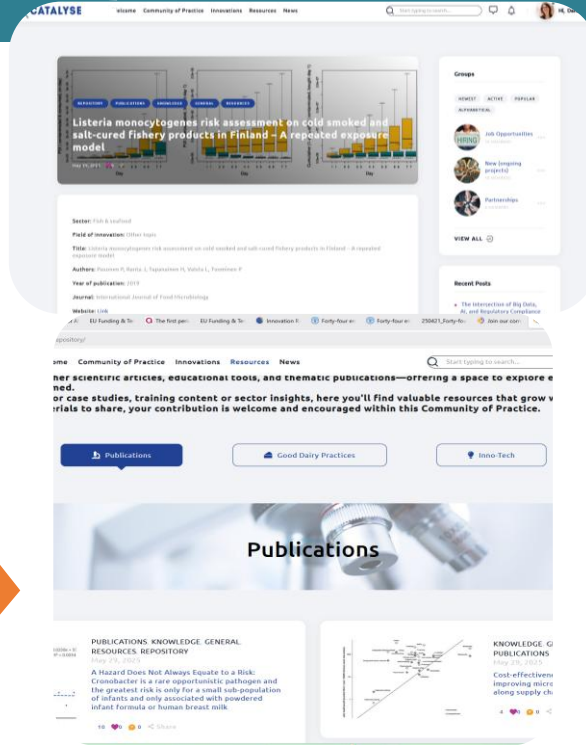
## Predicting the Troublemakers: Guidance and a Computer Tool for Microbial Growth

IAFP Webinar: May 15, 2025, 10:30-11:30 AM CST

Moderated by Dr. Abdullatif Tay, PepsiCo

# CATALYSE CoP

# CATALYSE Platform



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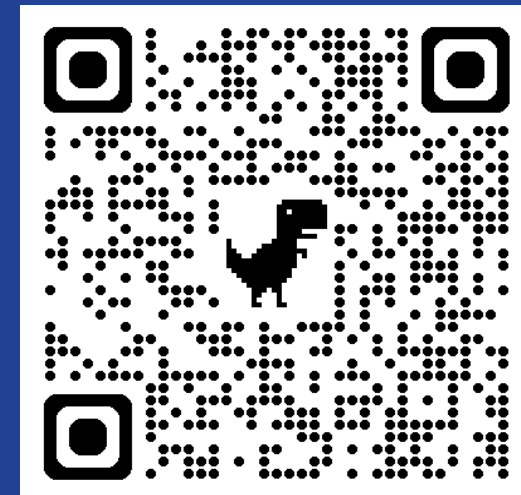
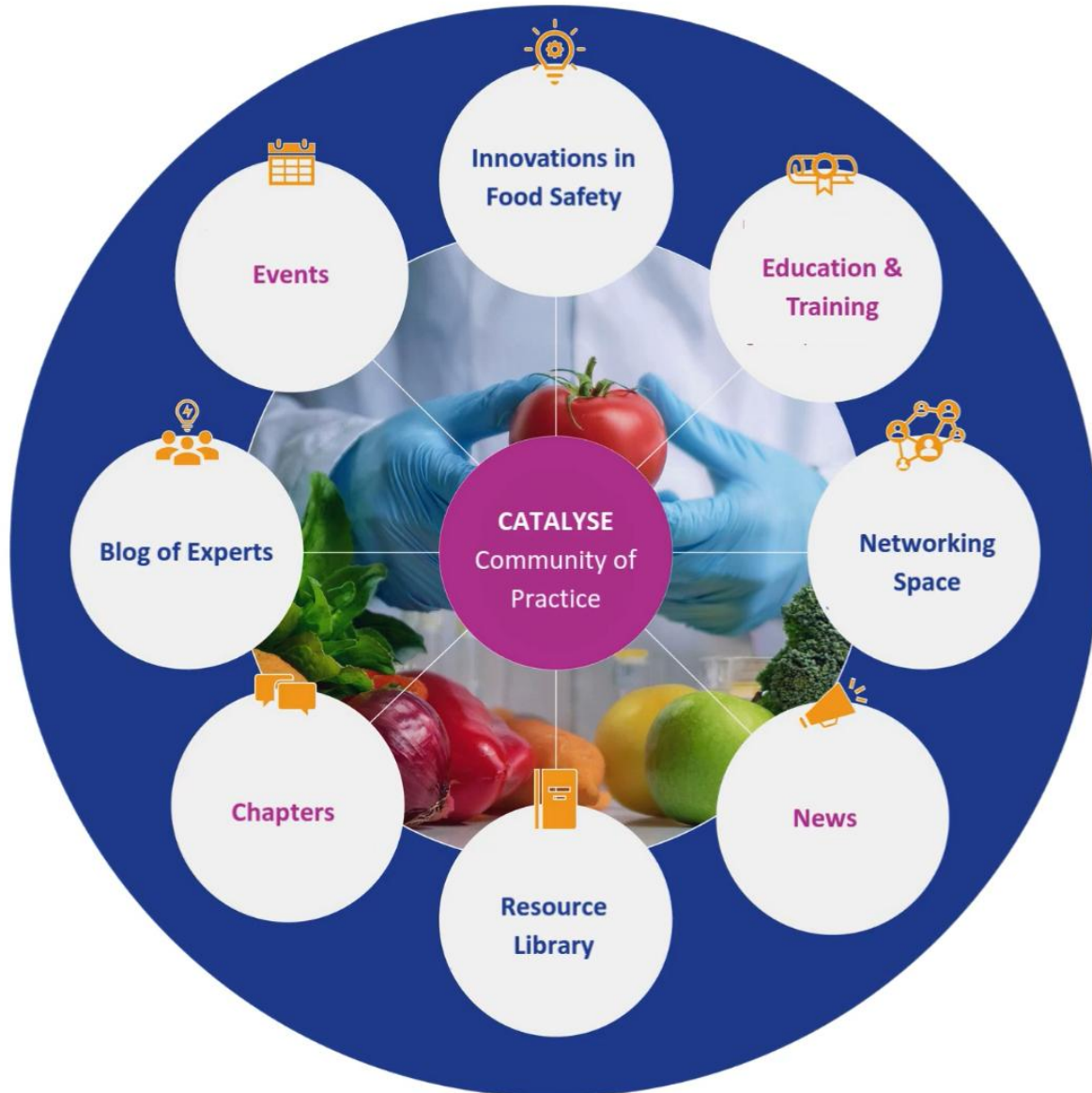
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# Join our Community of Practice



# Consortium

## Project Coordinator





# CATALYSE

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[www.thecatalyseproject.eu](http://www.thecatalyseproject.eu)



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UK Research  
and Innovation

This project has received funding from UK  
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