



CATALYSE

Catalysing scientific innovation into food safety action

CATALYSing Food Safety Innovations

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Ghazal Nemati (Agroscope) and Noémie Matthey (Agroscope)*



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Project funded by



Schweizerische Eidgenossenschaft
Confédération suisse
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Swiss Confederation

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

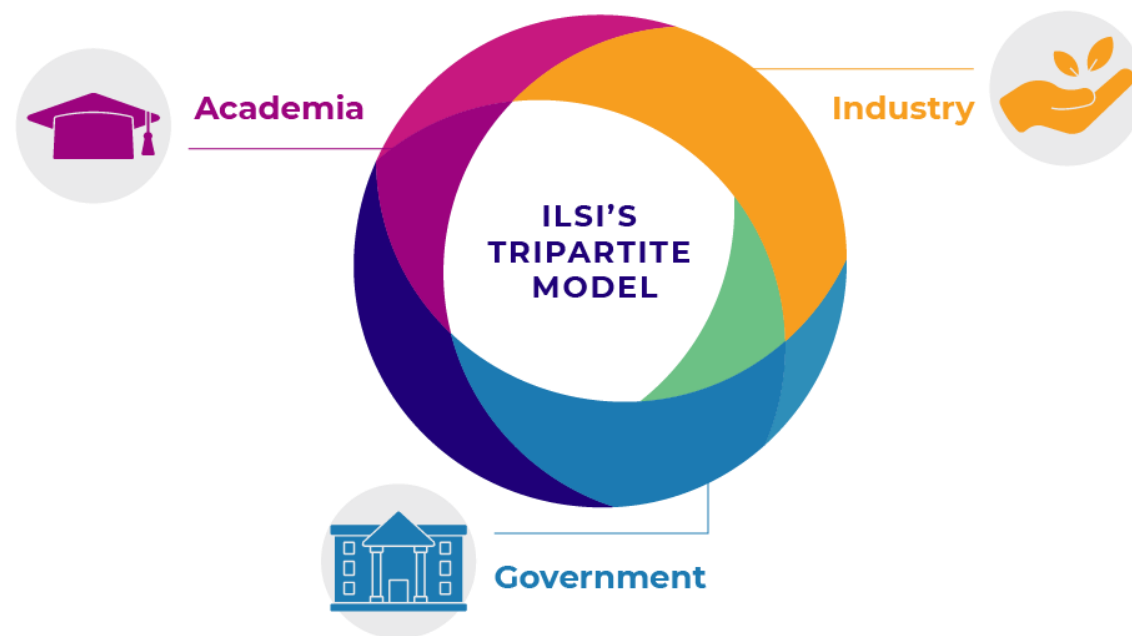


**UK Research
and Innovation**

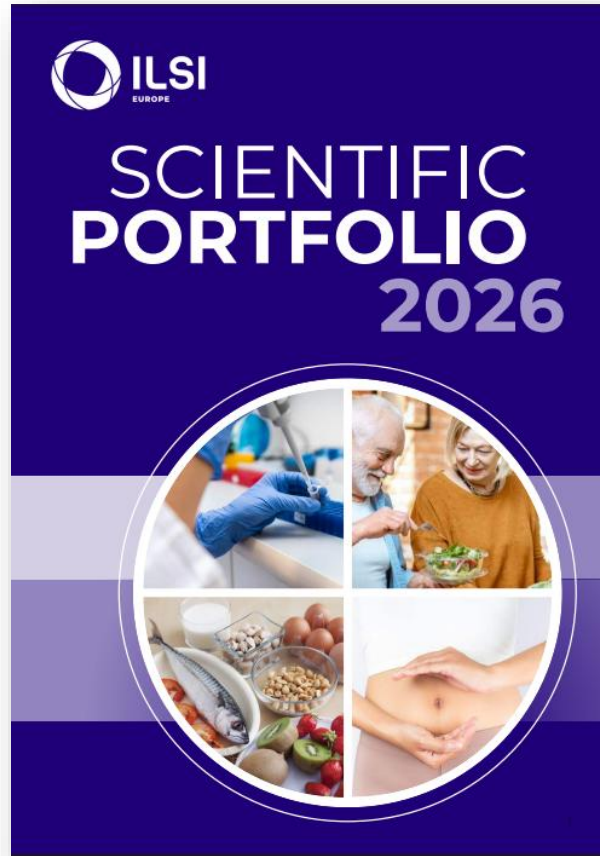
This project has received funding from UK
Research and Innovation (UKRI)

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

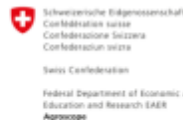
Resistance to change

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

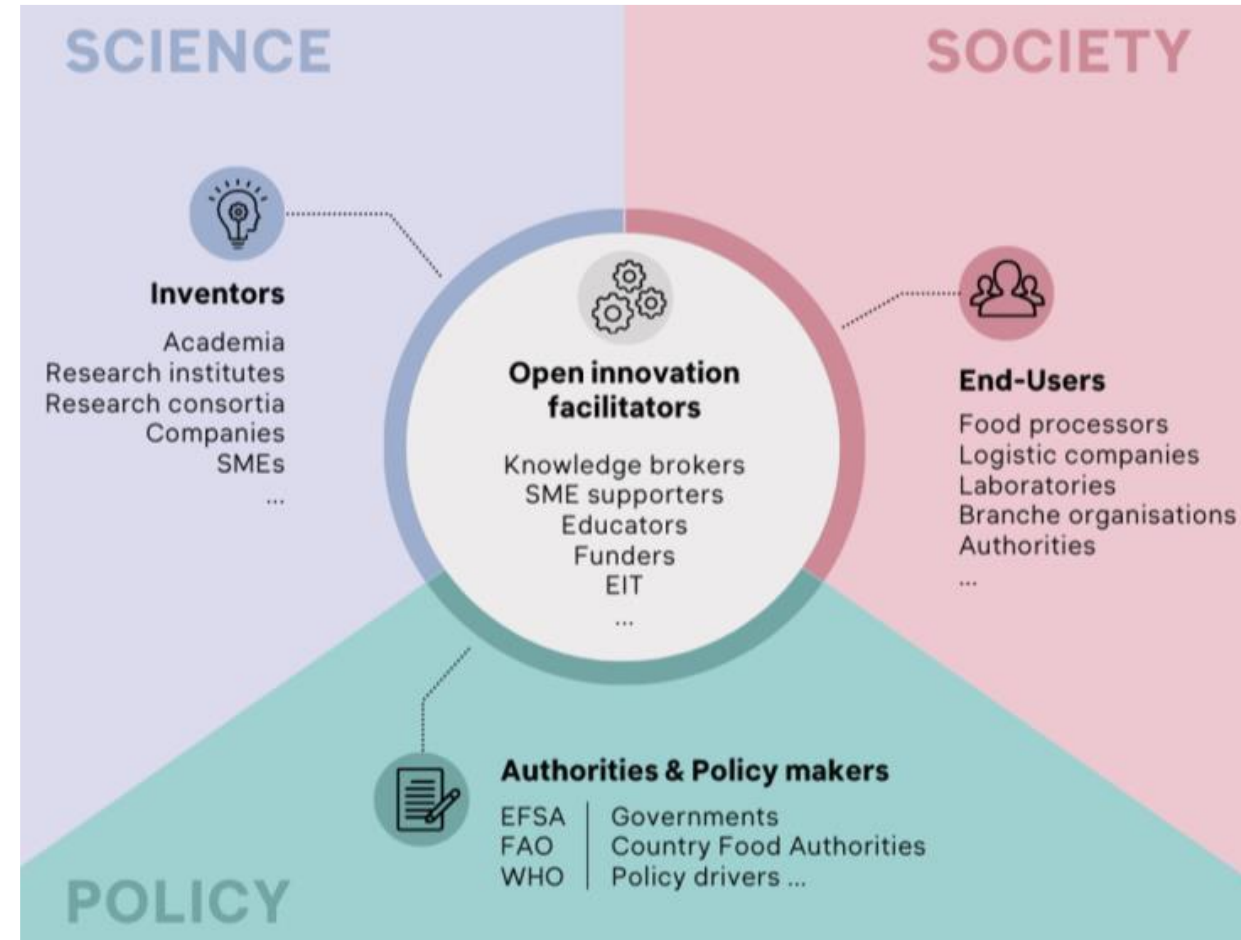
Overall concept

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

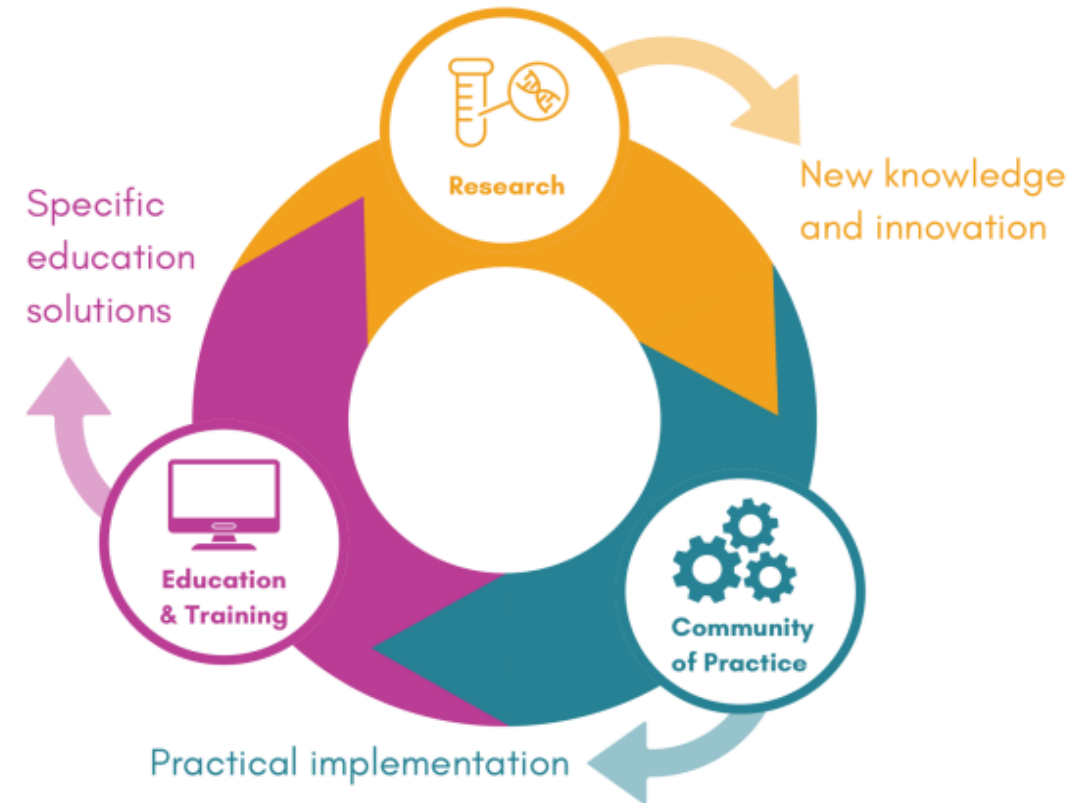
Thematic network ensuring food safety
by translating research & innovation into practice



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.



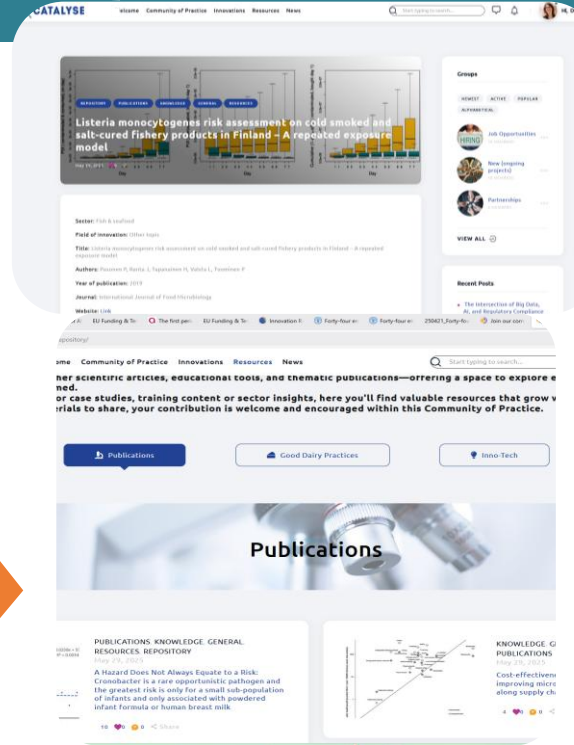
CATALYSE CoP

CATALYSE Platform



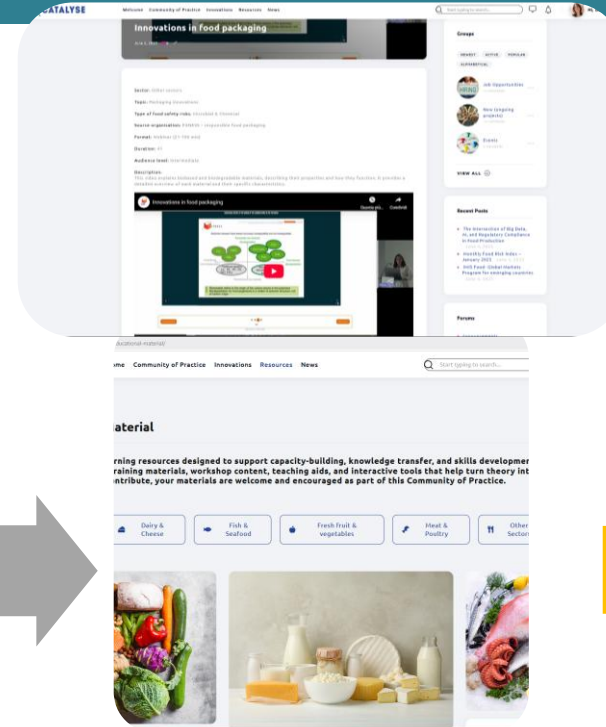
Collect Needs

- Bluid network of solution providers



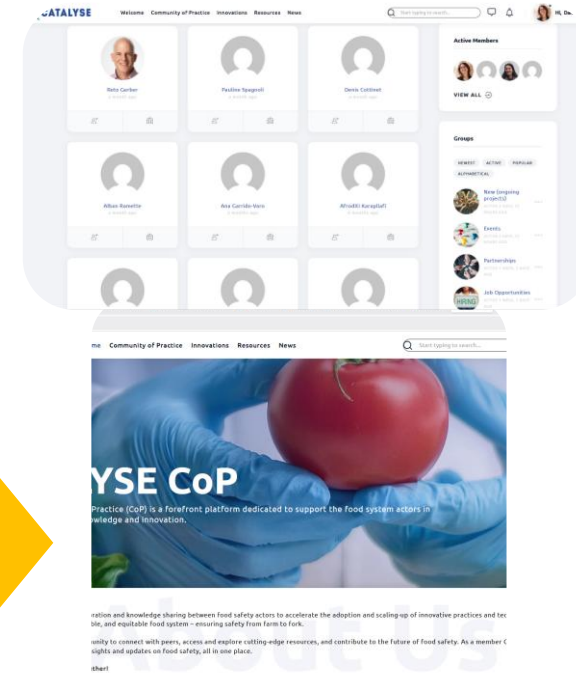
Resource library

- Papers
- Patents
- Guidelines
- Factsheets



Education and Training

- Demos
- Courses
- Videos
- Tutorials

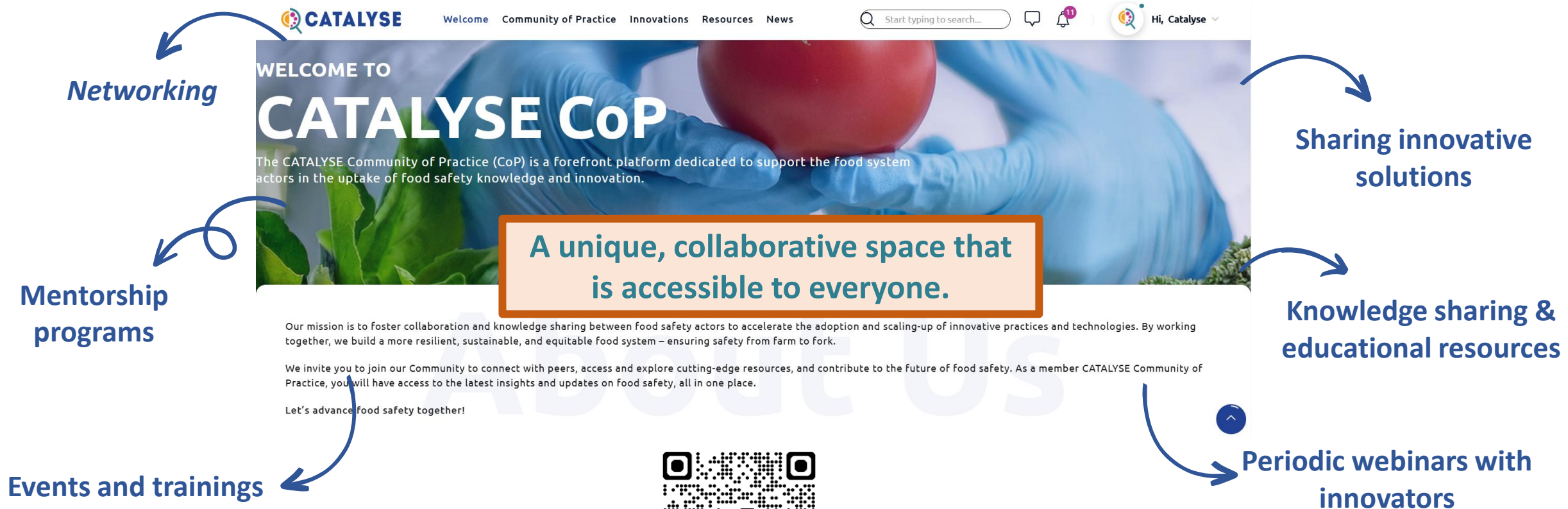


Community of Practice (CoP)

- 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.



WELC
CA

The CATA
the uptak

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



 **CATALYSE**

The names of sectors and topics are subject to change.

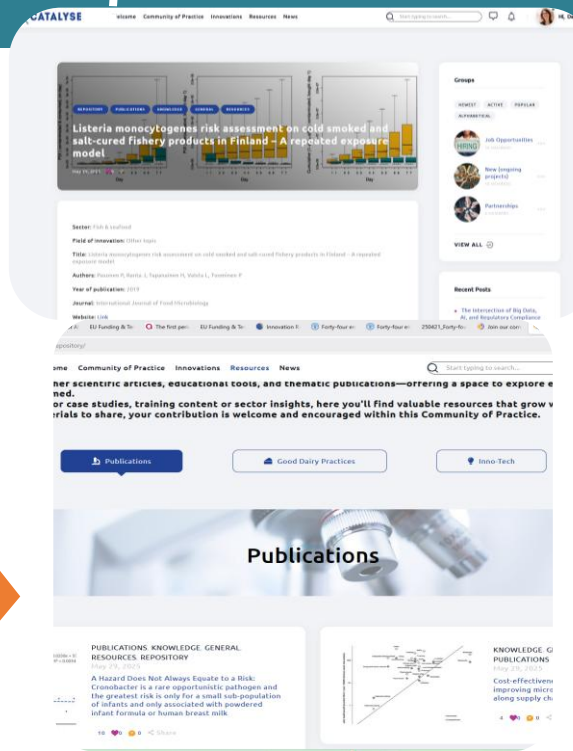
<https://catalyse-cop.eu/>





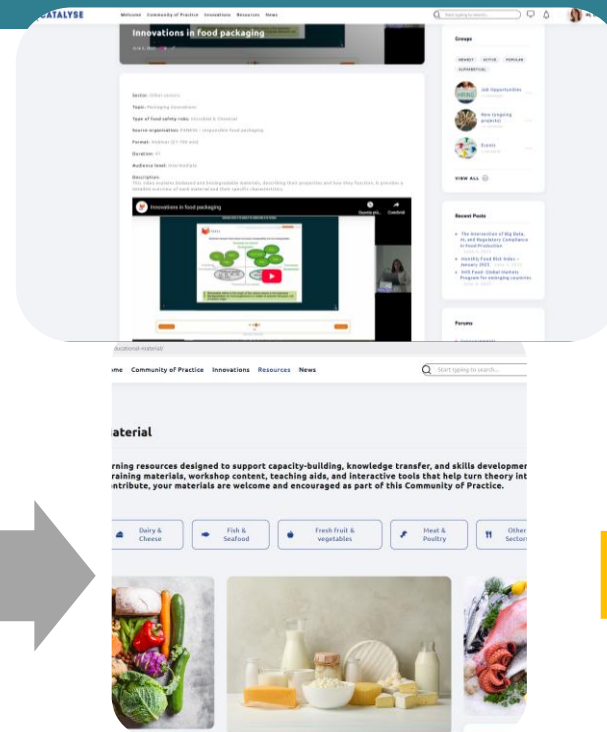
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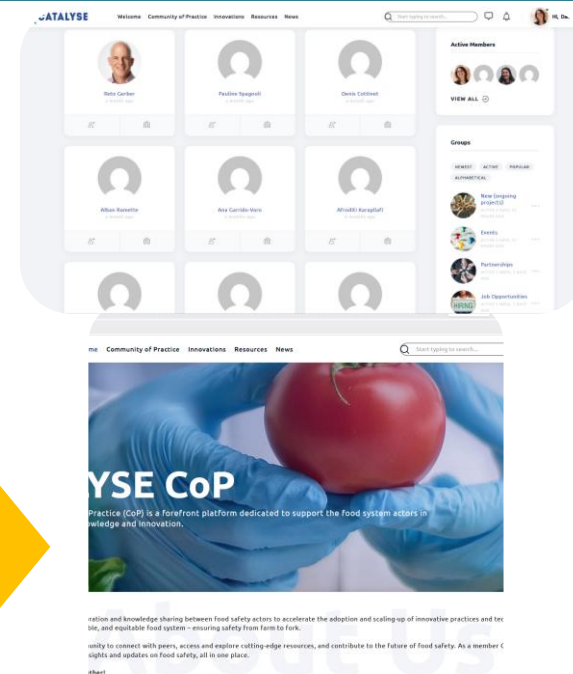
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TRANSLATION

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

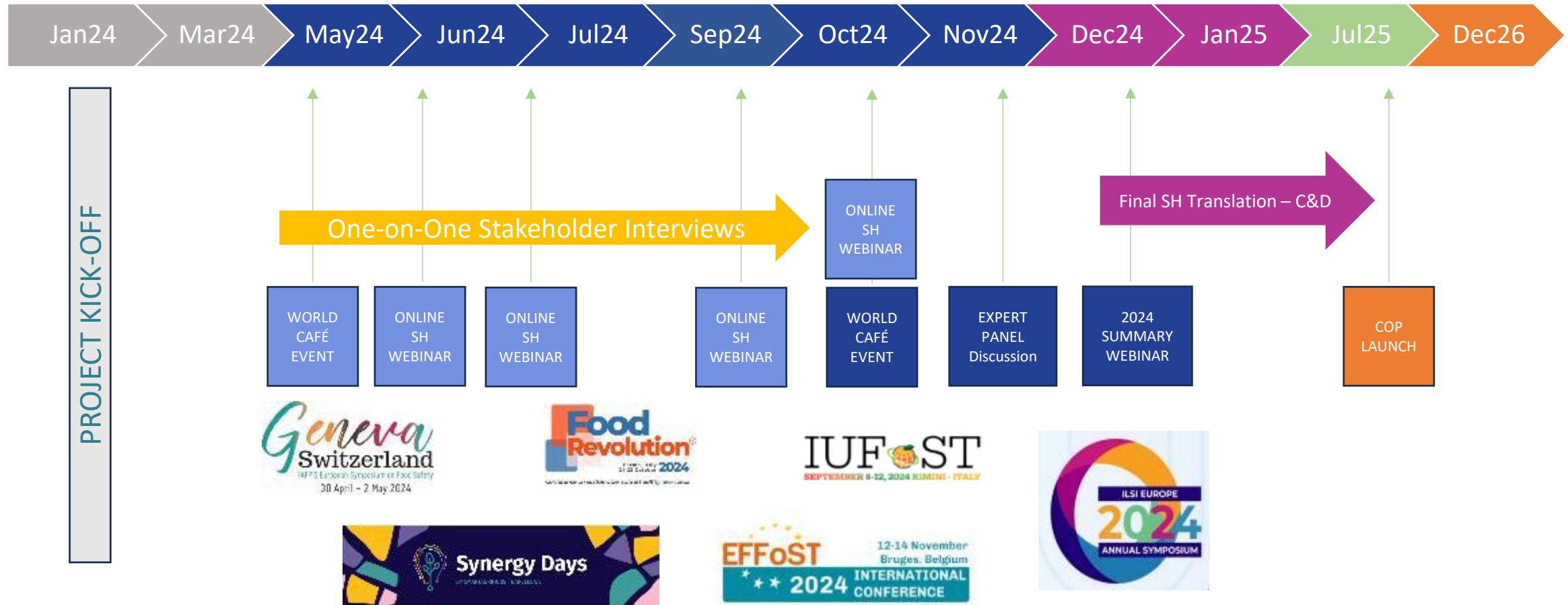
- IAFP Conference
- IUFOST
- Synergy Days



CONFERENCE SESSIONS

- EFFoST conference
- ILSI Europe Annual Symposium

Stakeholder Engagements 2024

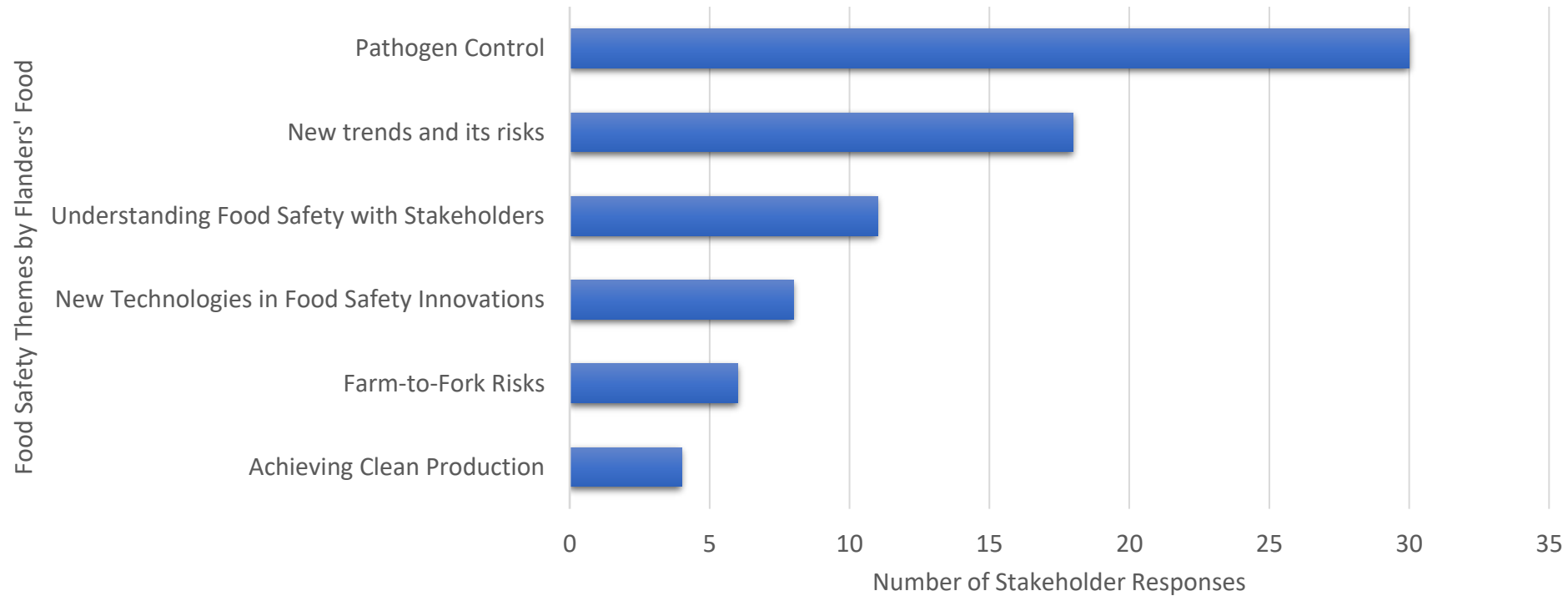


STAKEHOLDER NEEDS IDENTIFIED

1. STAKEHOLDER's CONCERNS in FOOD SAFETY

Food safety priorities for stakeholders

Which is the most concerned food safety topic?



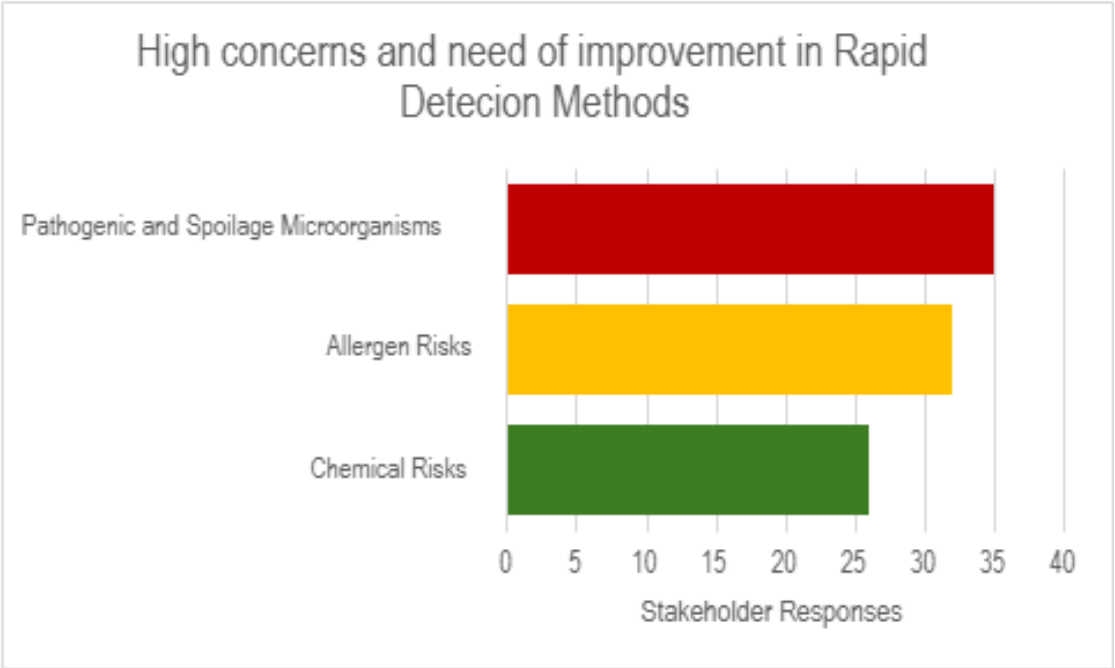
N=77

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

Existing CONTROL MEASURES



Existing RAPID DETECTION METHODS

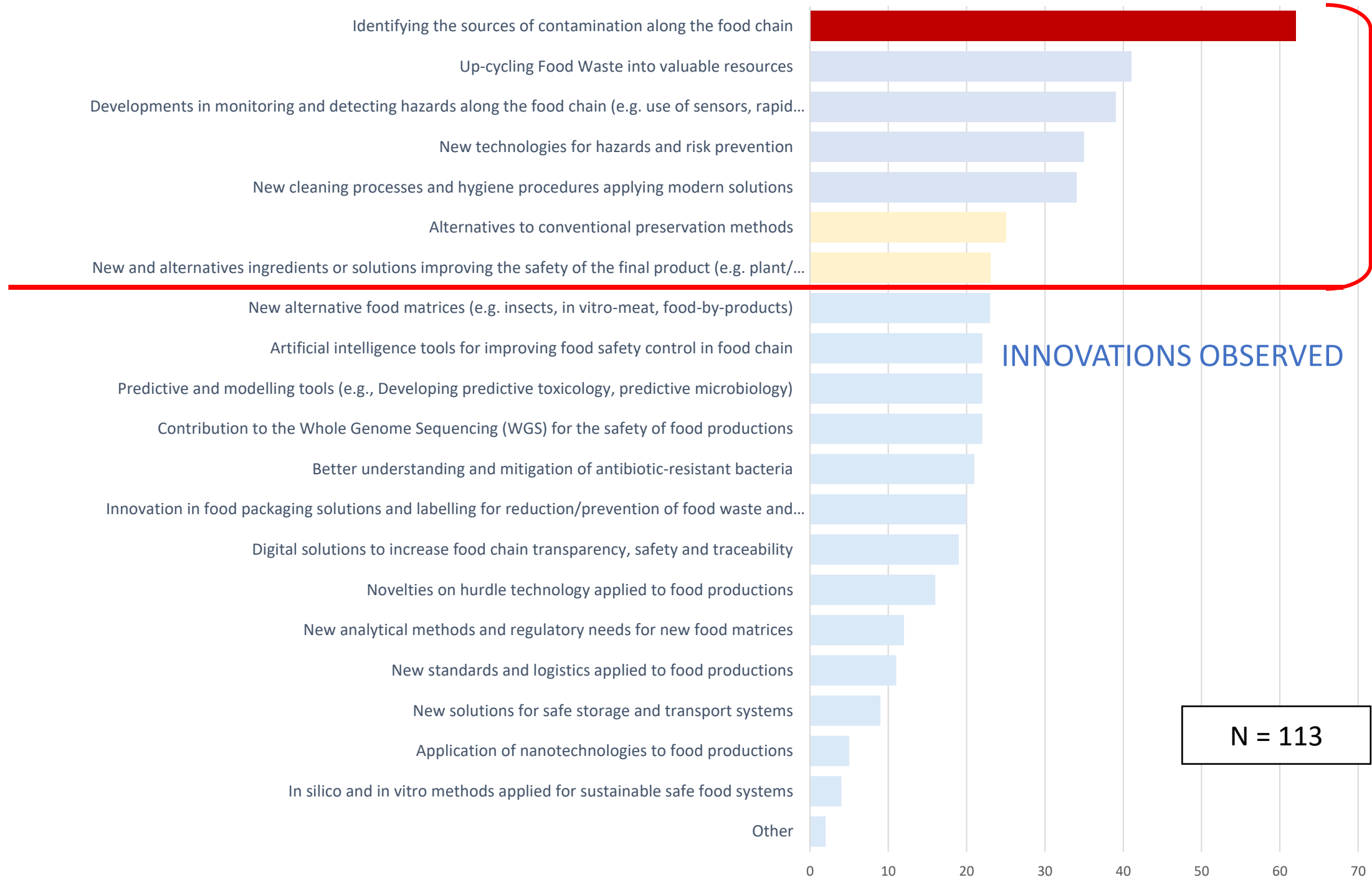


N = 113

RESULTS

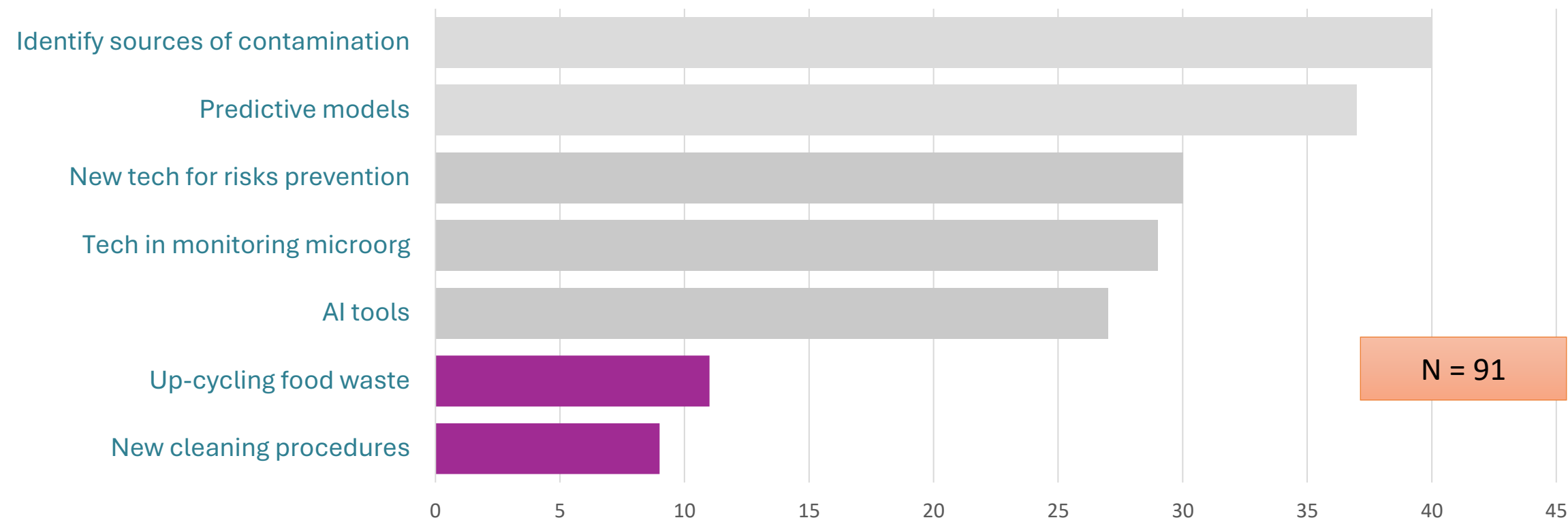
2. IDENTIFIED INNOVATIONS & BARRIERS FOR IT'S UPTAKE

RANKING OF MOST PROMISING INNOVATIONS



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

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

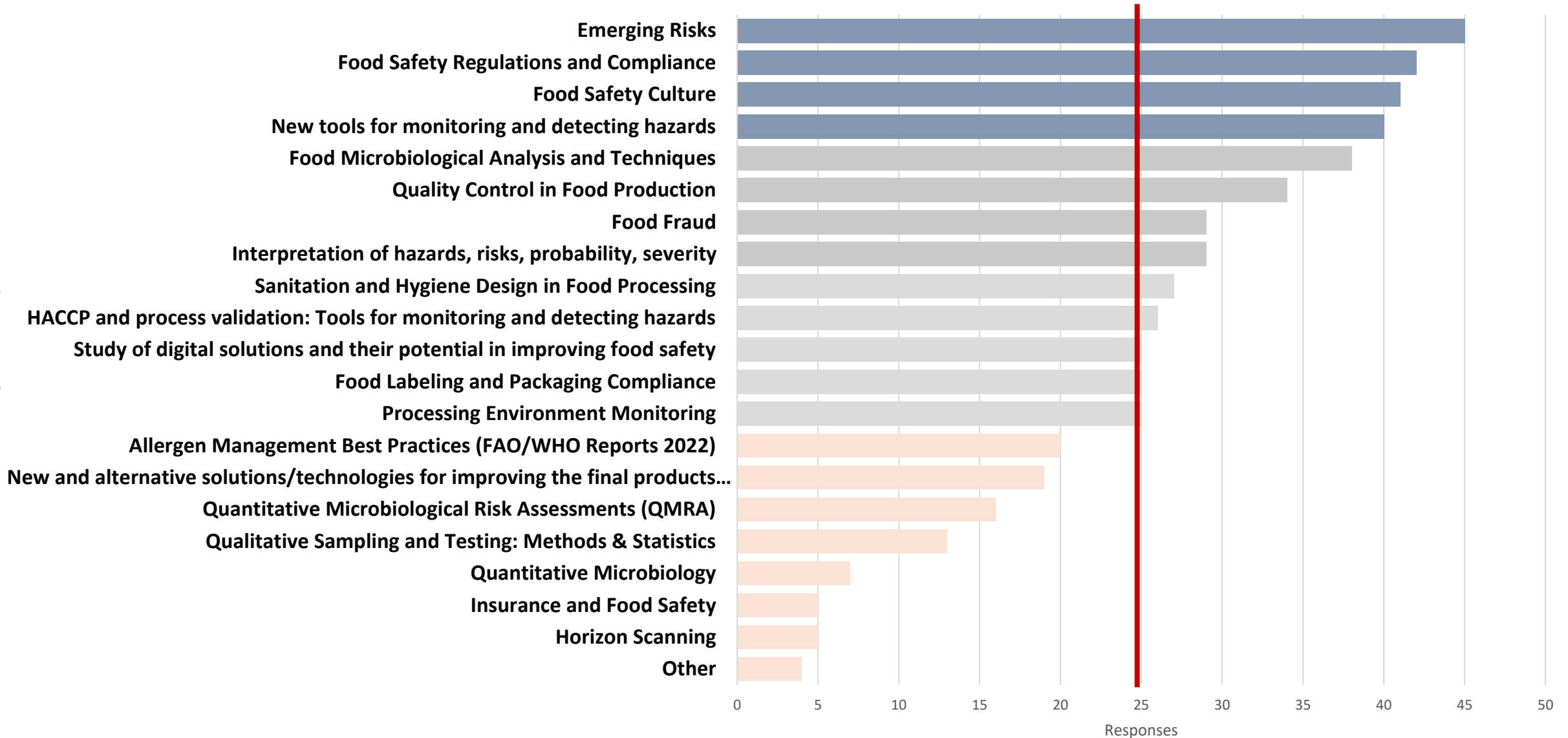
RESULTS

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



N = 26

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**



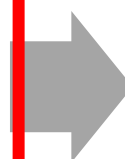
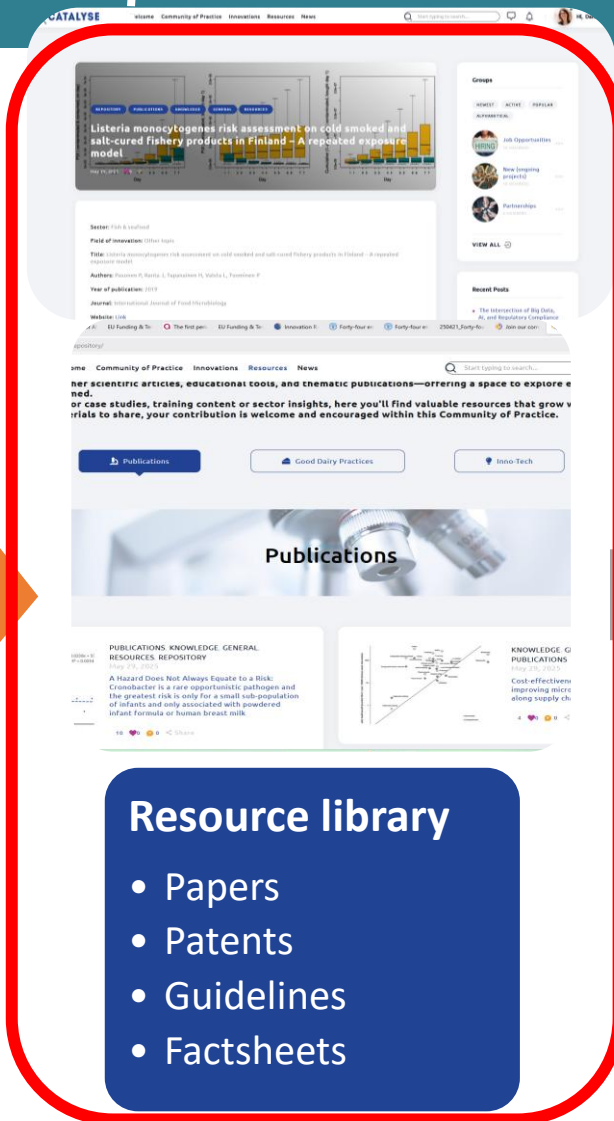
Collect Needs

- Fluid network of solution providers



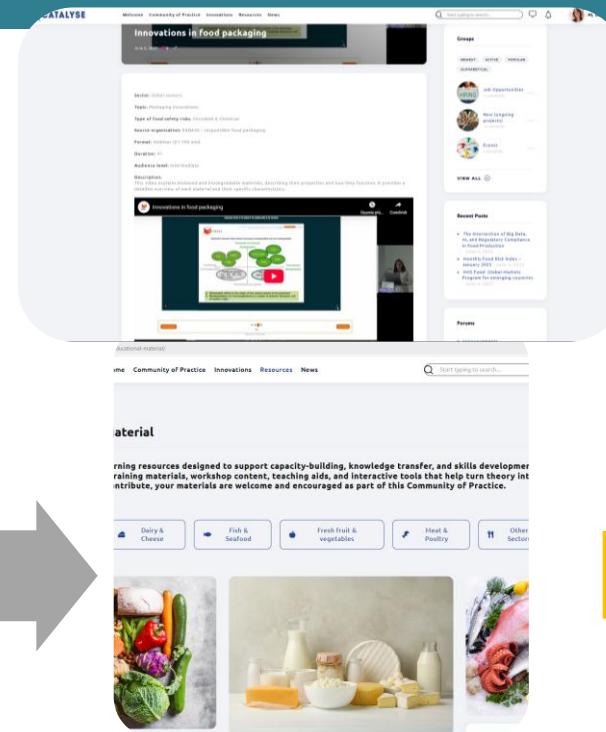
Resource library

- Papers
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- Guidelines
- Factsheets



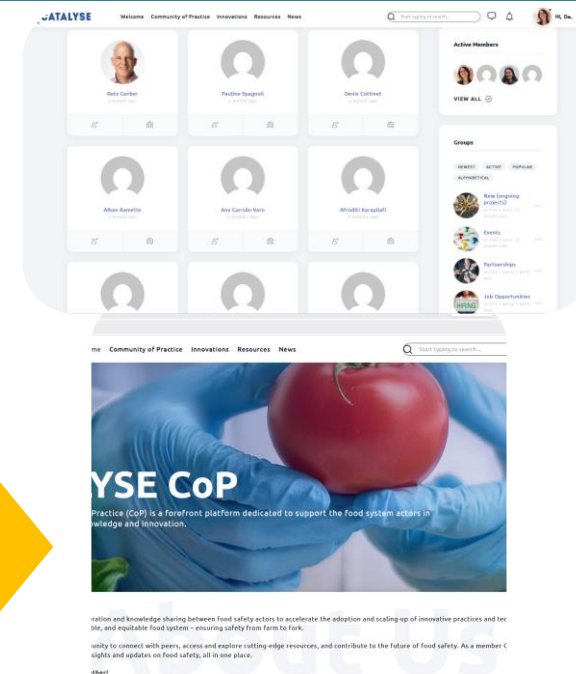
Education and Training

- Demos
- Courses
- Videos
- Tutorials

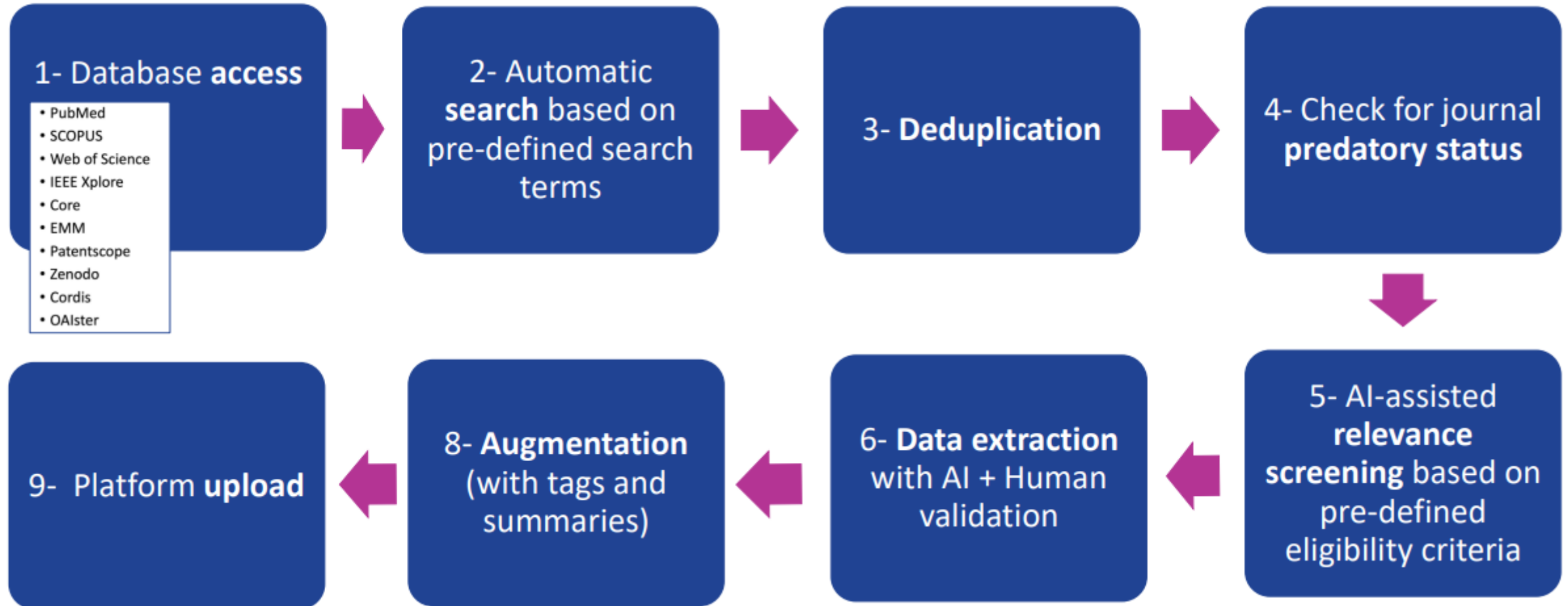


Community of Practice (CoP)

- Blog for experts
- Posts of SH
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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

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Author

Jan-Erik Ingenhoff



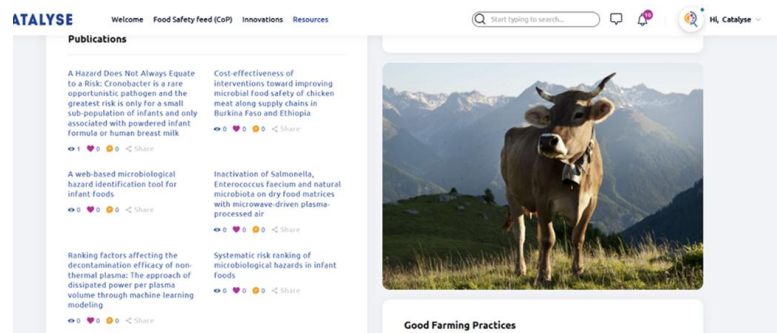
Introduction

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.

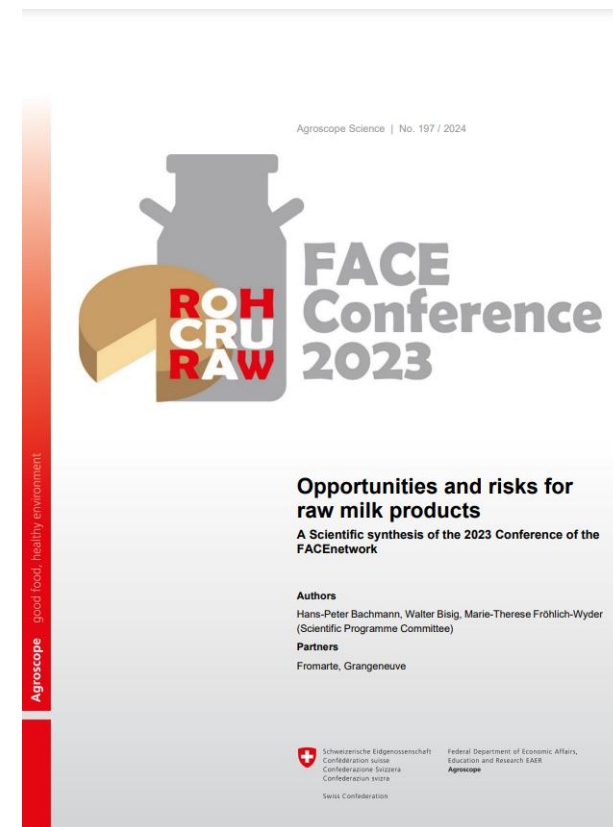
The term 'mineral oil hydrocarbons' (MOH) describes a complex mixture of various substances containing between 10 and 50 carbon atoms. According to their nature, MOH are divided into two groups: 'MOSH', which represent the fraction of mineral oil saturated hydrocarbons, consisting of paraffins and naphthenes,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



Agroscope Magazine



Agroscope Transfer



Agroscope Science



Collect Needs

- Bluid network of solution providers



Resource library

- Papers
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- Guidelines
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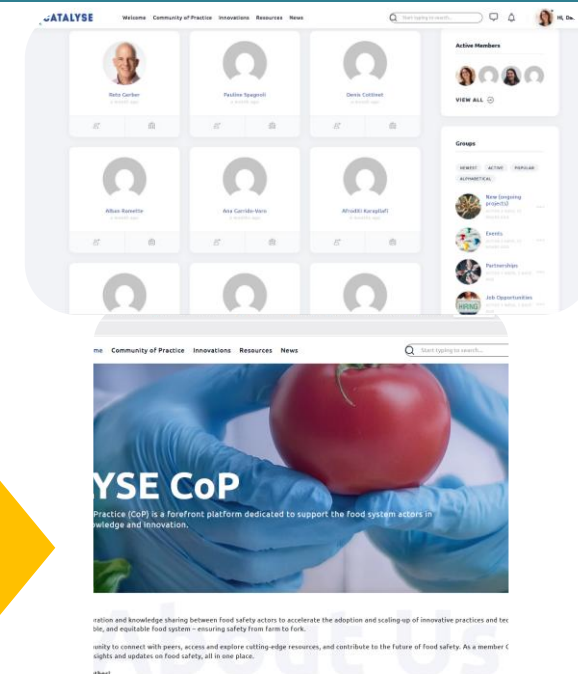
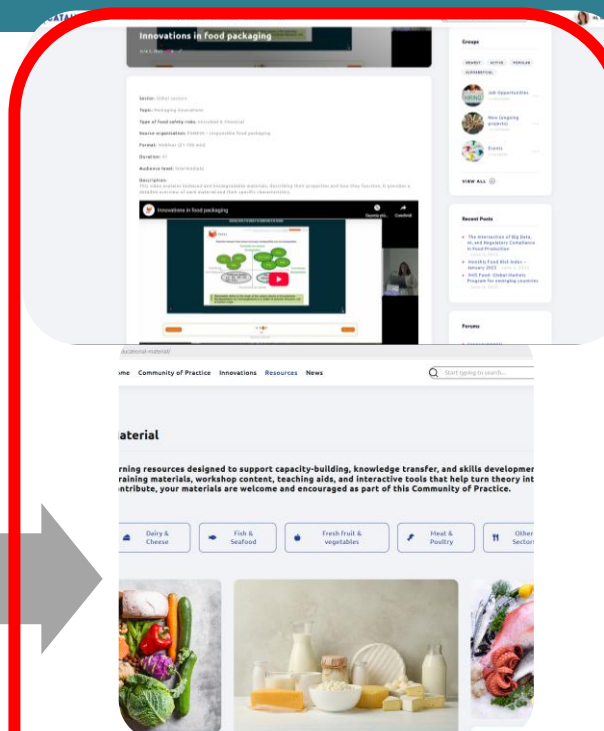
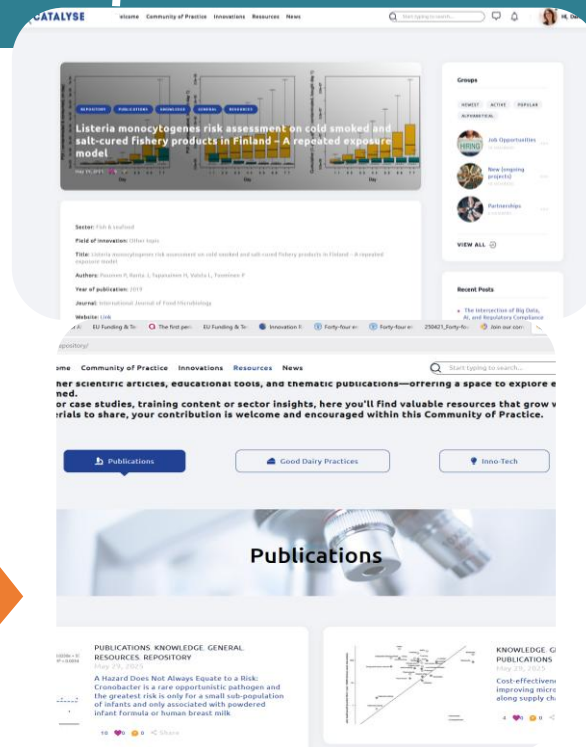
Education and Training

- Demos
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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

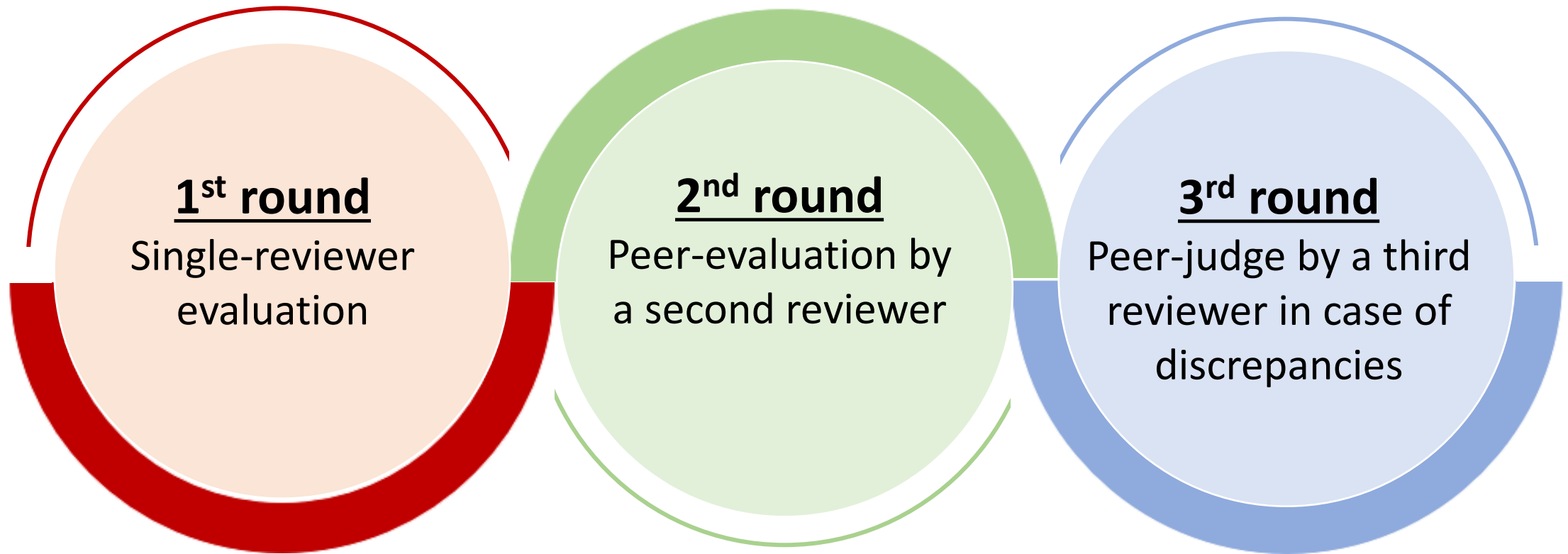
- ✓ Beginners (*High school graduates*)
- ✓ Intermediate (*BSc-level understanding in life science*)
- ✓ Experts (*Advanced or specialized knowledge*)

Applicable in Europe

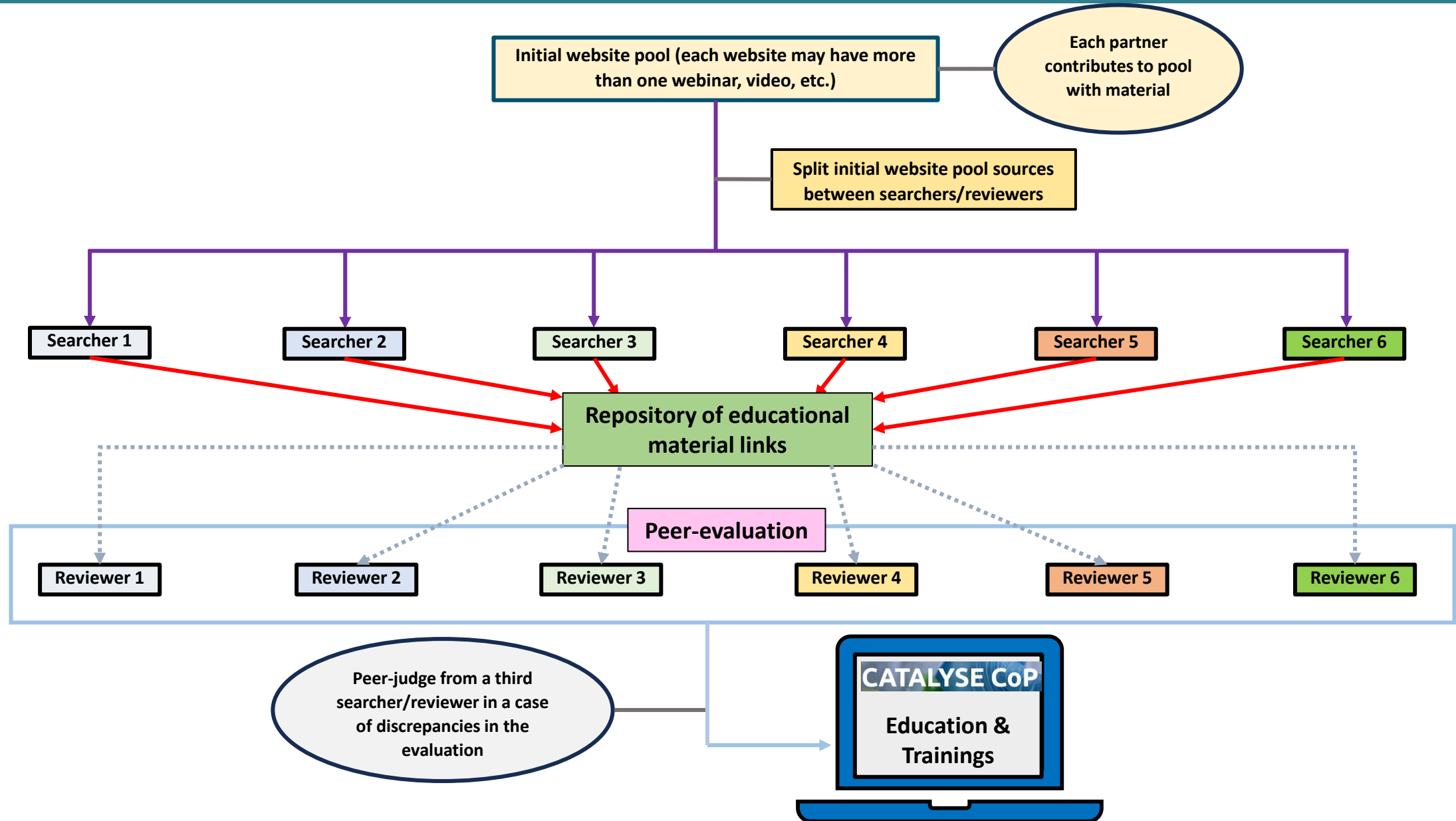
English language

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



■ Non-food safety ■ Food safety

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

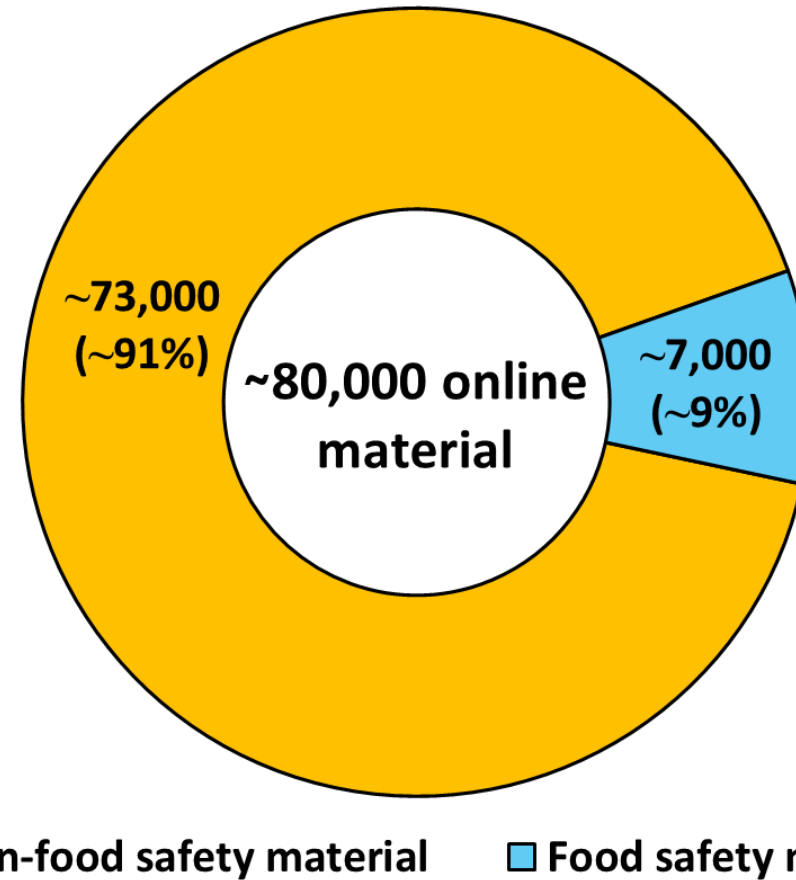
**Produced by 150
different organisations**

Collection of existing educational material

Initial website pool: 173

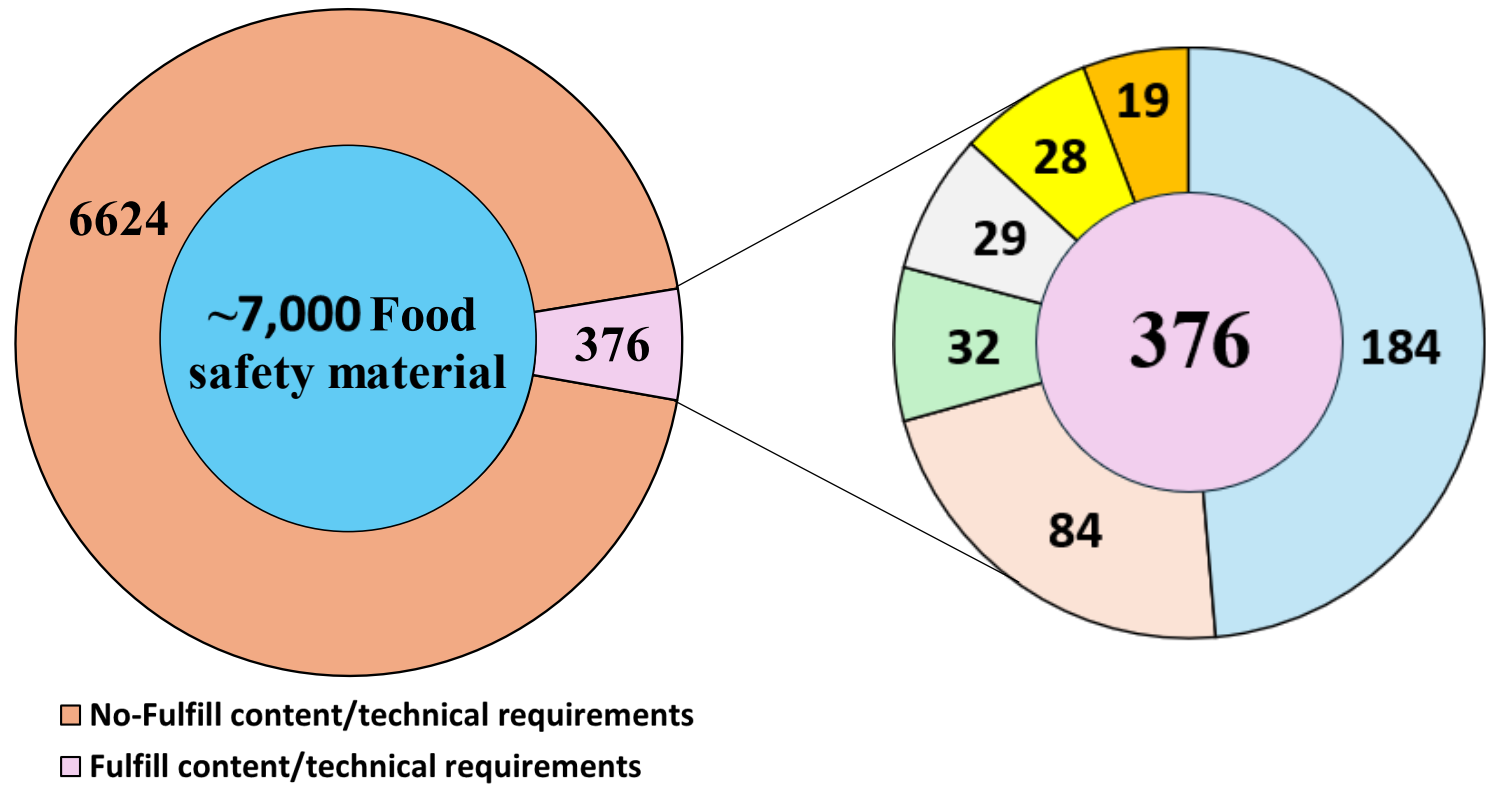


Screening of online educational and training materials for Food safety relevance

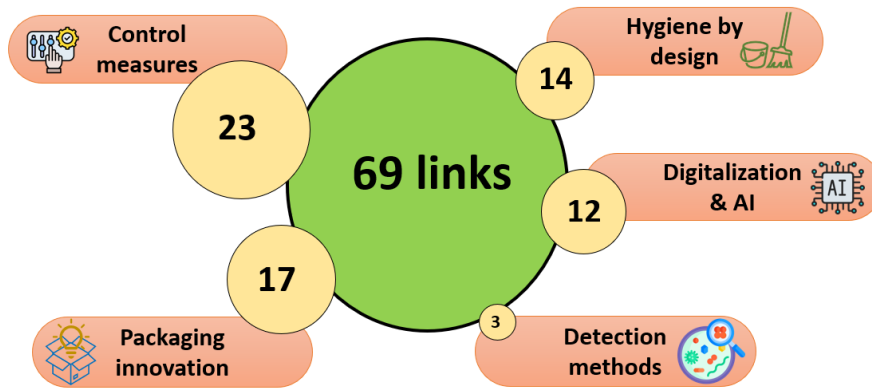


Sources and screening of the material

Based on **single-reviewer** evaluation

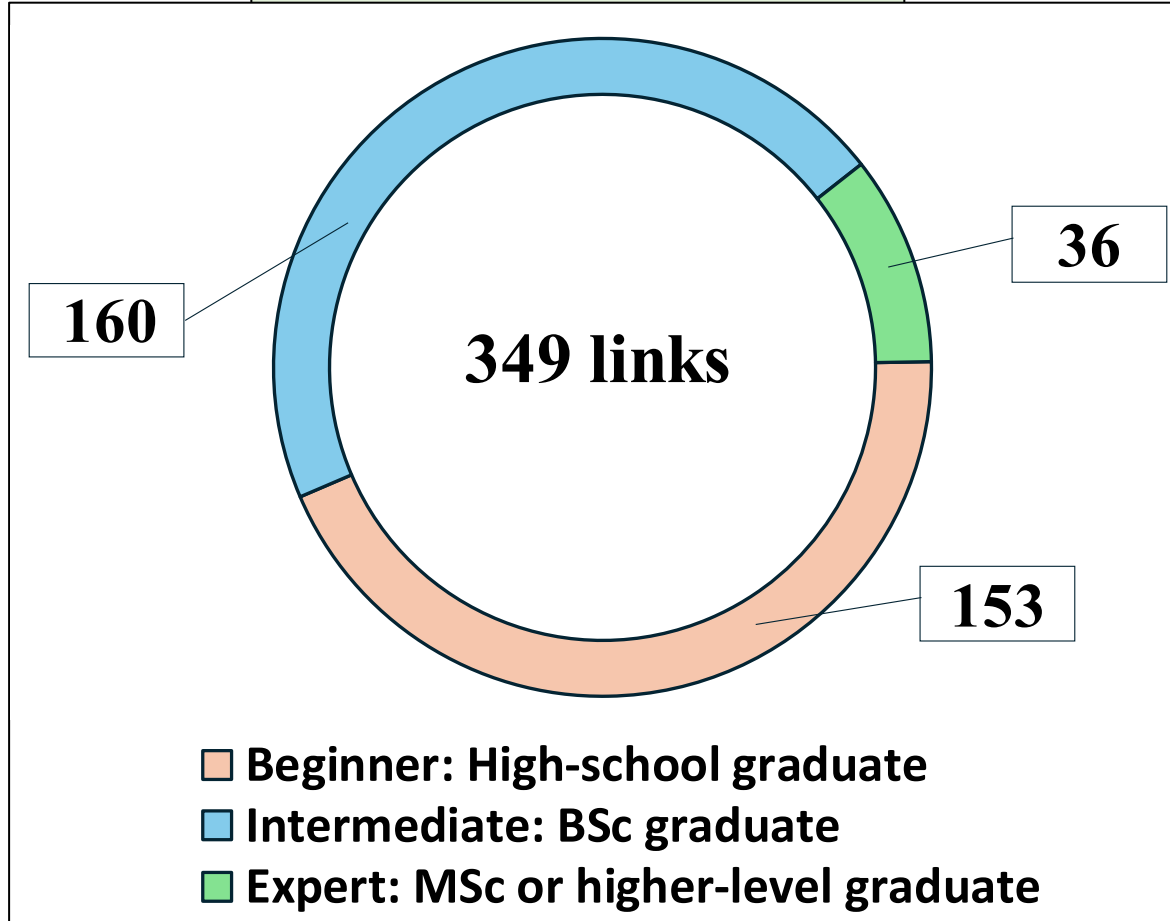


- Control measures
- Digitalization and AI
- Hygiene by design
- Packaging innovations
- Detection methods
- Others

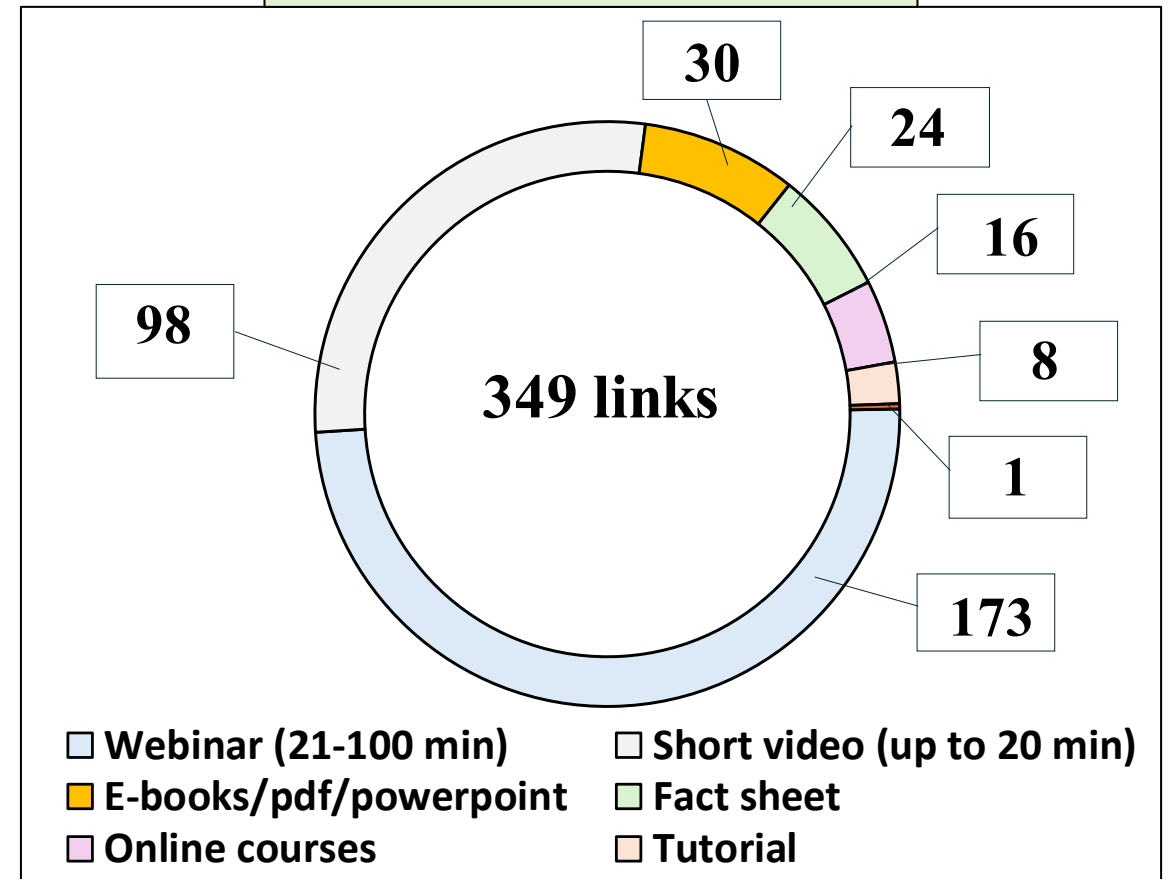


Overall Facilitation of Educational Materials

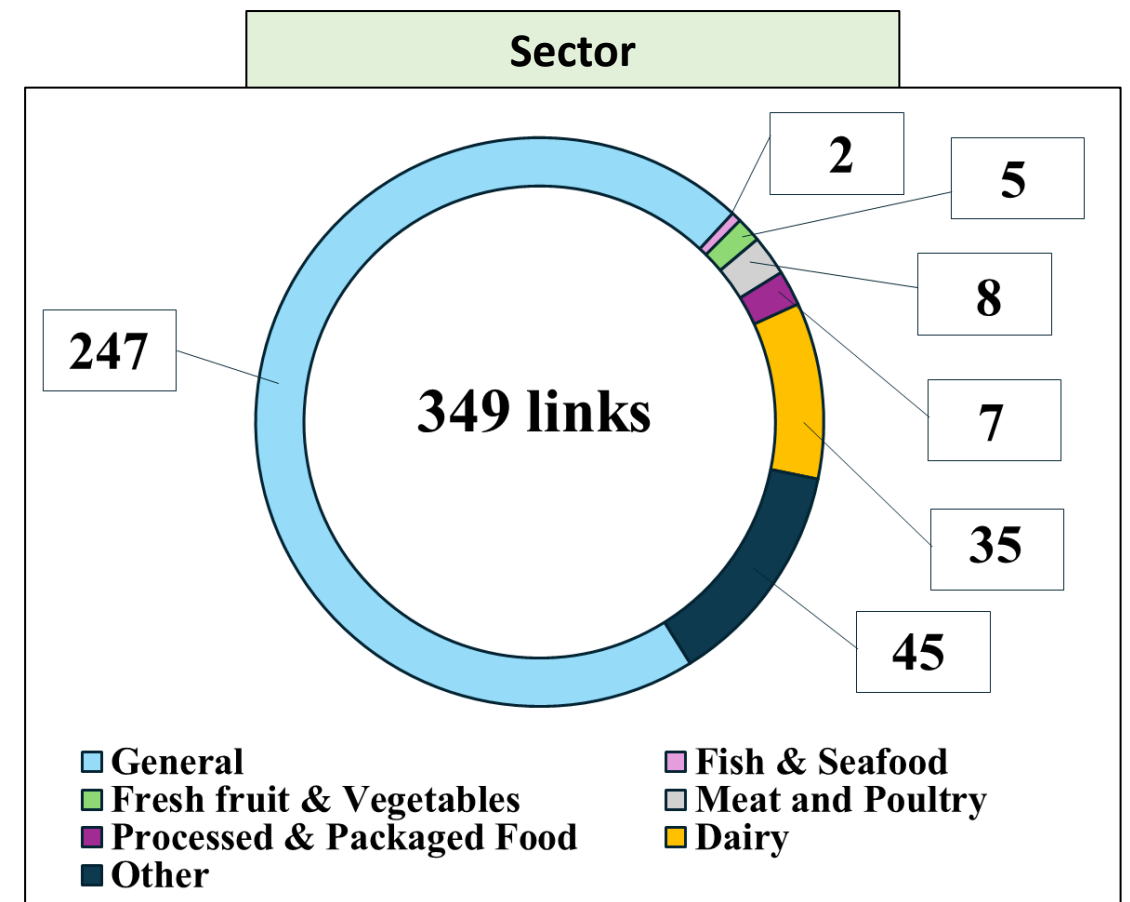
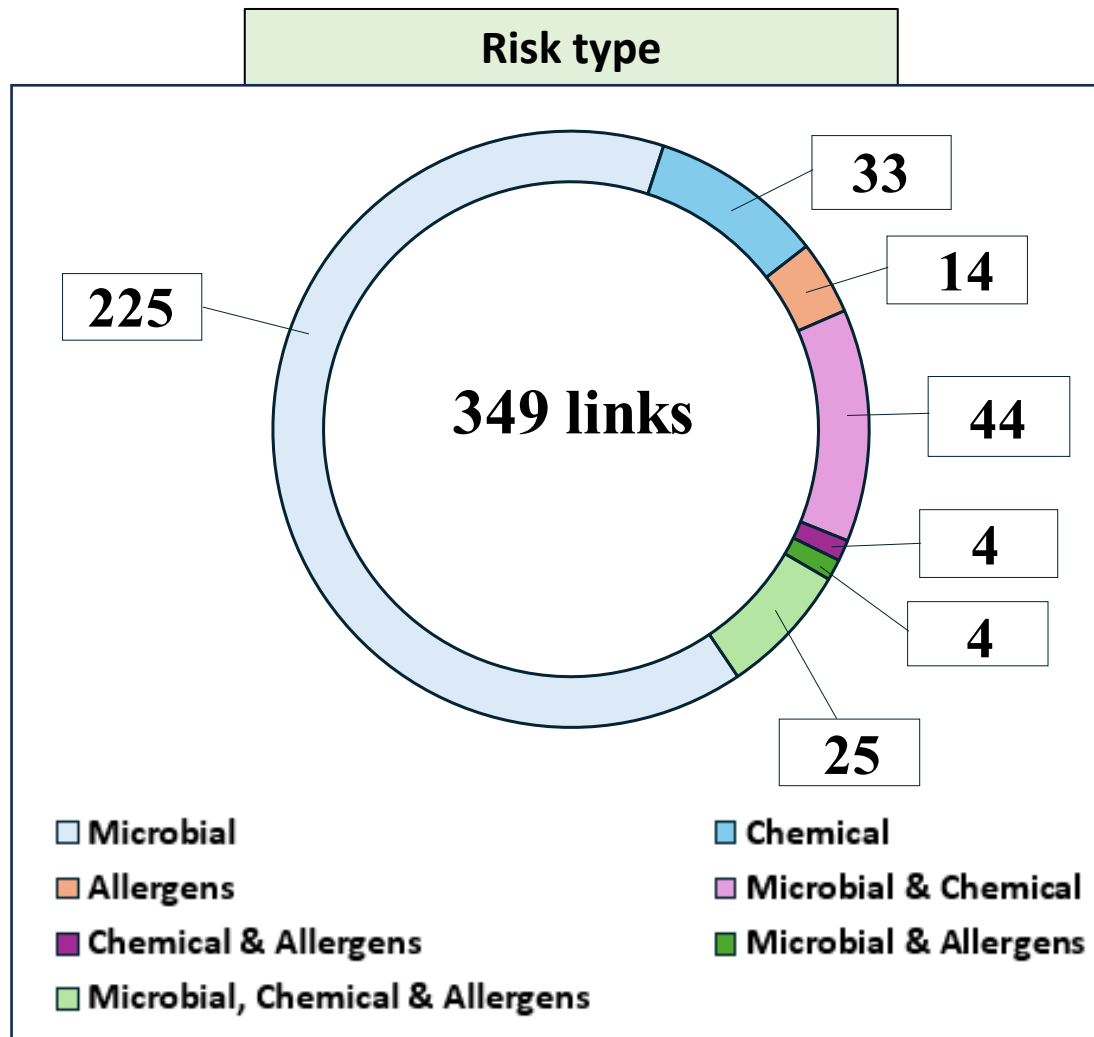
Audience level



Type



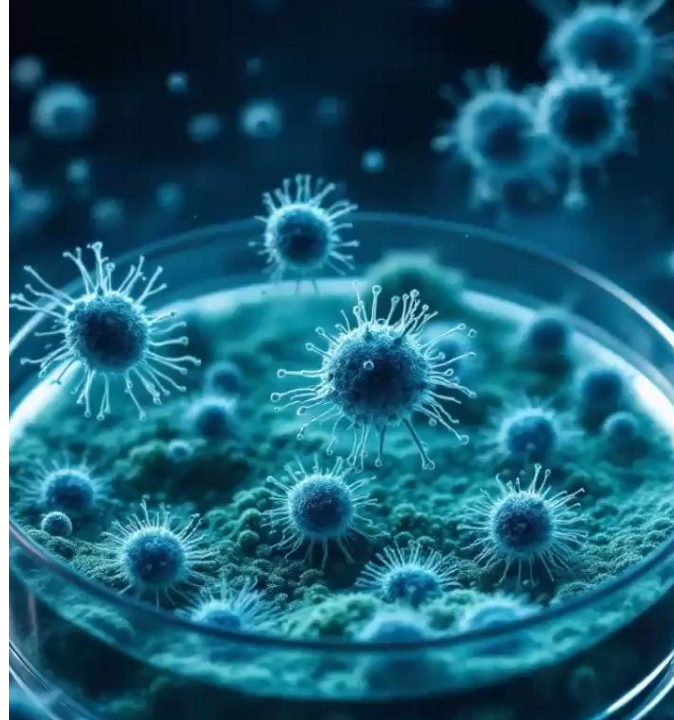
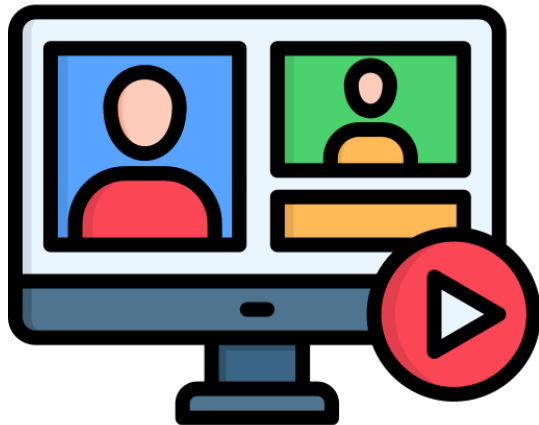
Overall Facilitation of Educational Materials



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

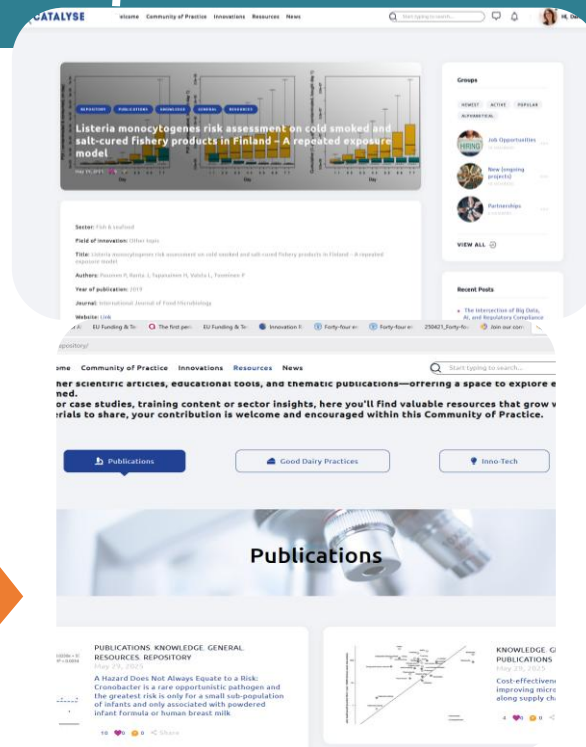
IAFP Webinar: May 15, 2025, 10:30-11:30 AM CST

Moderated by Dr. Abdullatif Tay, PepsiCo



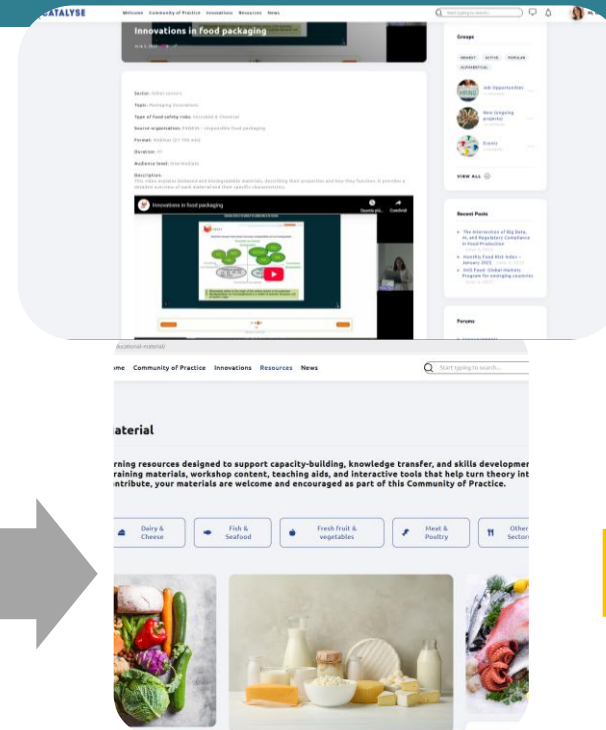
Collect Needs

- Bluid network of solution providers



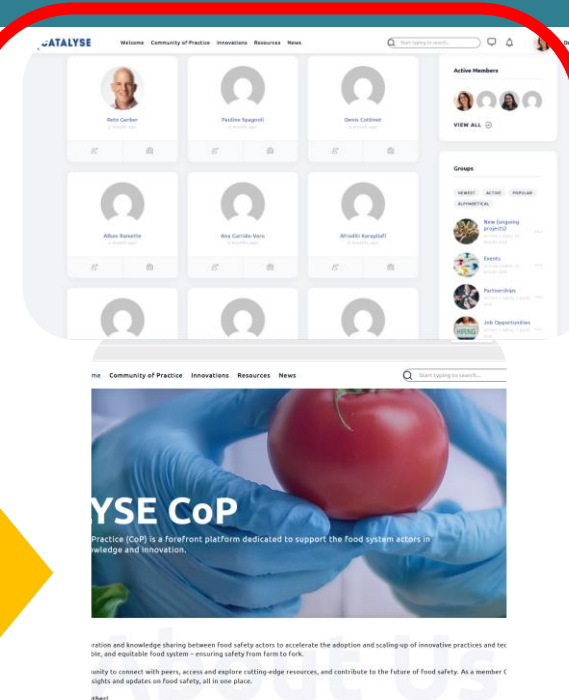
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Education and Training

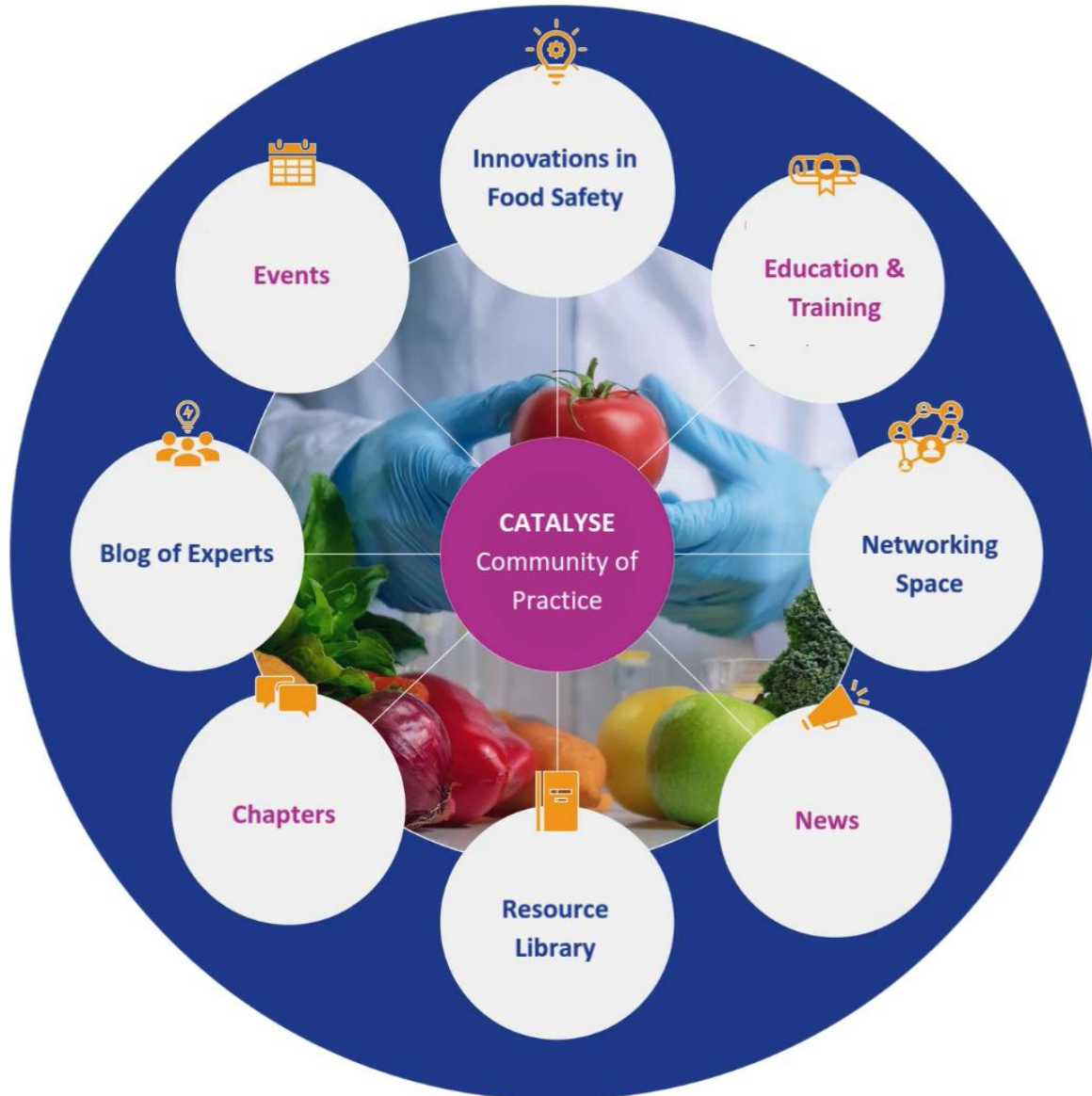
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Join our Community of Practice



Consortium

Project Coordinator



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syreon
Research Institute



FINNISH FOOD
AUTHORITY
Ruokavirasto • Livsmedelsverket



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

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Federal Department of Economic Affairs,
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Agroscope





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UK Research
and Innovation

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