



Funded by
the European Union

"Consumers, Climate & Communication: New Frontiers in Food Safety" -- (*WP5.5 Data results*)

Dr Novieta H Sari
Newcastle University, UK

06 11 2025



Outline:

New Frontiers in Food Safety

- (i) WP 5.5 Interview data findings with 20 respondents per country;
- (ii) Perceive Vs. Facts on Emerging Food Risks;
- (iii) Risk Perception Factors: Key Challenges and Perspectives;
- (iv) Communication Networks and Approaches



Overview: Climate & Food Safety *create*

Uncertainty is an inherent component of risk (Aven, Renn, and Rosa 2011).

Risk is defined as uncertainty regarding cost, loss, or damage (Hardy, 1923).

*When People don't feel confident that their food is safe, **mistrust grows** (Sari, 2025)*

Emerging risk is defined as a risk to human, animal, or plant health that arises from a new source, or from an increased susceptibility or exposure to an existing source

"Risk communication should **promote awareness and understanding** of the specific issues under consideration during the risk analysis; [and]...foster public understanding of the process, **to enhance trust and confidence** in the safety of the food supply"

(Source: Codex Alimentarius Commission Working Principles for Risk Analysis for Application by Governments)



Citizen preferences for risk communication associated with emerging food risks linked to climate change

Sari Novieta H., Feliciano Rodney J., Orszagh Erika, Moriceau Nicolas, Benighaus Ludger, Reale Filippo, Dendler-Rafaeld Leonie, Kaszaf Gyula, Szakos David & Frewer Lynn J.

To link to this article: <https://doi.org/10.1080/13669877.2025.2553851>

CHALLENGES

What are Emerging Food Risks in Public Perception? ***Do they understand? – Majority, NO***

“I don’t know if this is emerging...there is a mix-up of...You know, hazardous stuff” (UK, F)

“I don’t have much information about the risks that may arise due to climate change...” (HU, F)

WP 5.5 Science to Society: Data Finding in UK, FR, HU, GR

Finding Facts: 20 respondents, 4 countries

1. Most respondents likely cannot differentiate between existing food hazards and emerging food hazards. And some of them are aware that the impacts of climate change on foodborne illness are interrelated.
2. Lack of literacy regarding emerging food safety hazards in education systems and media platforms.
3. Insufficient information regarding food safety risk assessment (e.g., food safety label or certificate), and mitigation and adaptation for emerging food risks identification

WP 5. Science to Society

Public Perception on Emerging Food Safety Risks

Key Findings	Recommendations
1. Citizen priorities were not present in the governance of the food risk systems (e.g., food regulations & policies). Particularly those most deeply affected by the emerging food safety hazards.	- Citizen involved in decisions - Sustainability & Health matter
2. Food Risk Assessments are often conducted in silos , lacking a holistic approach in broader food risk analysis	Accountability mechanisms, Transparent and communicative processes Ensuring the public understands what actions they can take to avoid (e.g., adaptation behaviour) or when faced with such situations (e.g., Outbreaks).
3. Cognitive Behavioural Approach can be applied to promote awareness of climate-related food safety risks.	Leveraging education systems and communication networks The government could identify the physical, social, and psychological vulnerabilities of citizens exposed to emerging food safety hazards while providing targeted literacy support and information for those at higher risk, working together with local communities and doctors.
4. Mitigation and Adaptation for Emerging Food Risk Identification	- Local governance Support - Act on emerging risks

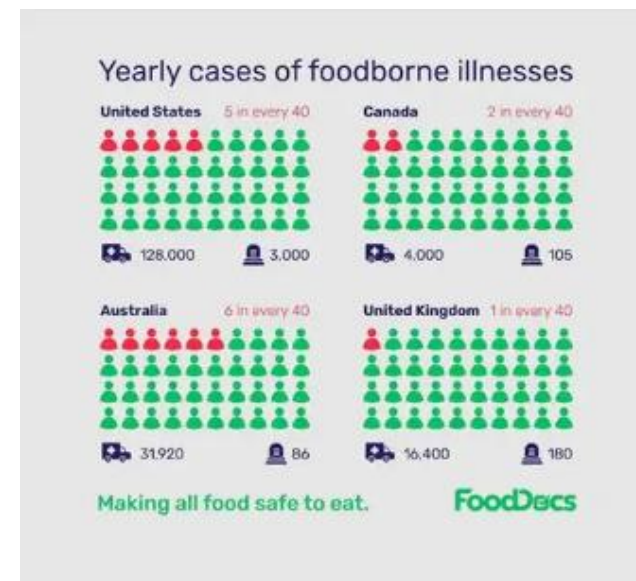
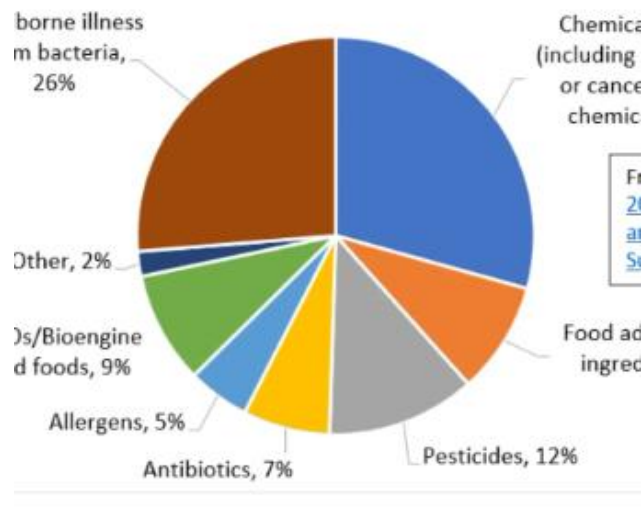
What information do people receive?

Which one is caused by Climate change? --- ???

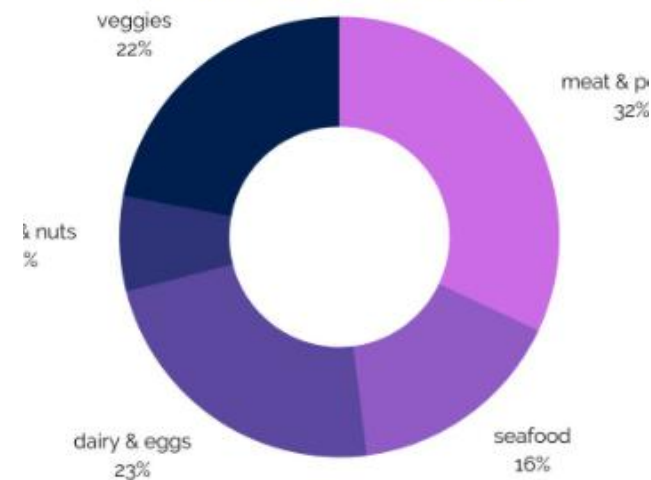
- Each year worldwide, unsafe food causes 600 million cases of foodborne diseases and 420 000 deaths. 30% of foodborne deaths occur among children under 5 years of age. WHO estimated that 33 million years of healthy lives are lost due to eating unsafe food globally each year, and this number is likely an underestimation (WHO, 2024).

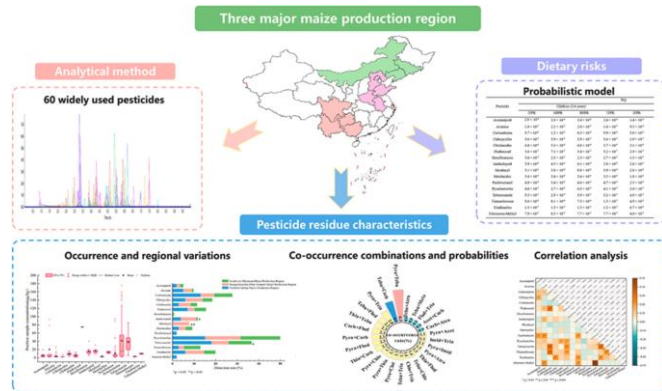


Most important food safety issue to consumers in March 2024



REPORTED CAUSES OF FOODBORNE ILLNESSES





Food Control

Volume 180, February 2026, 111677



Pesticide residues in maize kernels: Monitoring and human dietary risk assessment

Longbing Wei ^a, Xiaozhong Zhang ^b, Xing Liang ^c, Junwei Cui ^a, Xinglu Pan ^a, Xiaohu Wu ^a, Jun Xu ^a, Fengshou Dong ^a, Yongquan Zheng ^a

Show more

+ Add to Mendeley Share Cite

<https://doi.org/10.1016/j.foodcont.2025.111677>

[Get rights and content](#)

Aflatoxins in Food: Global Threats, Health Risks, and Cutting-Edge Control Strategies

March 26, 2025

Robin Rijal



Cow cubicle matting confirmed as source of chemical milk contamination

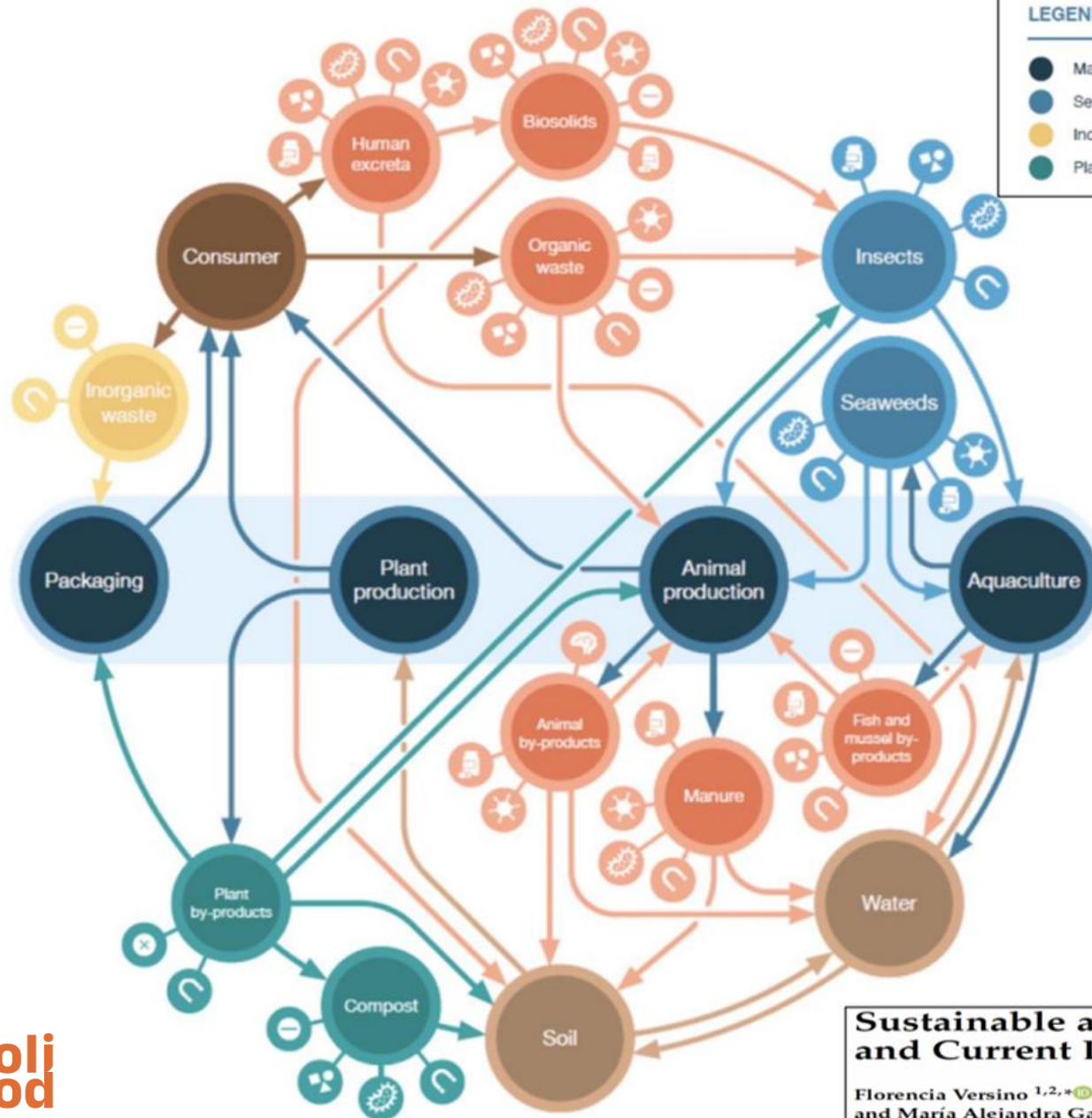
The Department of Agriculture has confirmed that old cubicle matting made from recycled conveyor belt material was the source of chemical milk contamination on a dairy farm in Co Cork.



The Department of Agriculture confirmed that old cubicle matting was the source of the contamination.

Despite the Facts ...

holi
food



LEGEND

- Main production domains
- Secondary production systems
- Inorganic by-products
- Plant-based by-products
- Natural resources
- Consumer
- (By-)products containing animal proteins

SELECTED FOOD SAFETY HAZARDS

- Pathogenic bacteria
- Viruses
- Heavy metals
- Pharmaceuticals
- Dioxins and PCBs
- PFASs
- Mycotoxins
- Prions

Despite the Facts:
It's COMPLEX!!



Foods **2023**, *12*, 1057. <https://doi.org/10.3390/foods12051057>

Sustainable and Bio-Based Food Packaging: A Review on Past and Current Design Innovations

Florencia Versino ^{1,2,*}, Florencia Ortega ^{1,3}, Yuliana Monroy ¹, Sandra Rivero ^{1,3}, Olivia Valeria López ⁴ and María Alejandra García ^{1,3}

Risk Perception Factors

Key Challenges in Climate-Related Food Risk



Social Amplification & Attenuation

Public reactions can exaggerate or downplay risks. Influenced by cultural, social, and emotional factors.



Media Framing & Agenda Setting

Media shapes which risks are visible and how they're interpreted. Narratives can either raise awareness or create confusion.



Trust & Cognitive Biases

Trust in institutions affects risk acceptance. Biases like optimistic bias and heuristics distort perception



Why People View Risks Differently



Natural vs. Technological

Natural risks, like floods, tend to be more accepted than technological risks, such as chemical contamination.



Voluntary vs. Involuntary

Voluntary risks, like eating raw fish feel less threatening than involuntary risks, such as contaminants in milk.



Familiar vs. Non-Familiar

Familiar risks, like seasonal food shortages, are seen as less alarming than non-familiar risks, such as new synthetic chemicals.



Control vs. Non-Control

Risks perceived as controllable, like washing vegetables, cause less concern than risks beyond one's control, like microplastics.



High Frequency/Low Consequence vs. Low Frequency/High Consequence

High-frequency risks with lower consequences, like mild food spoilage, are accepted more than low-frequency risks with higher consequences, like chemical contamination.



Female vs. Male

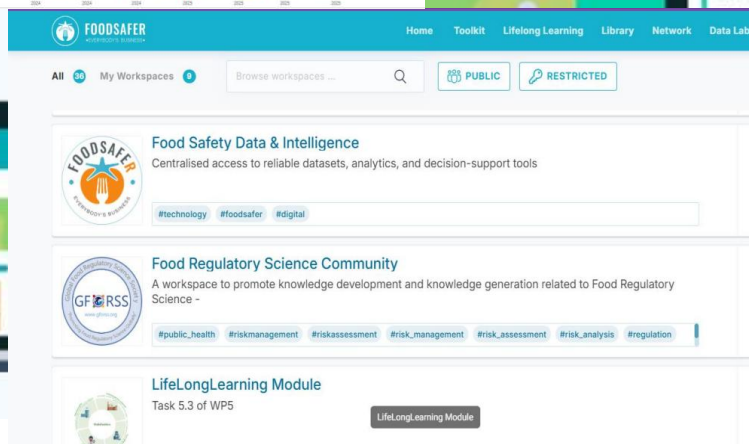
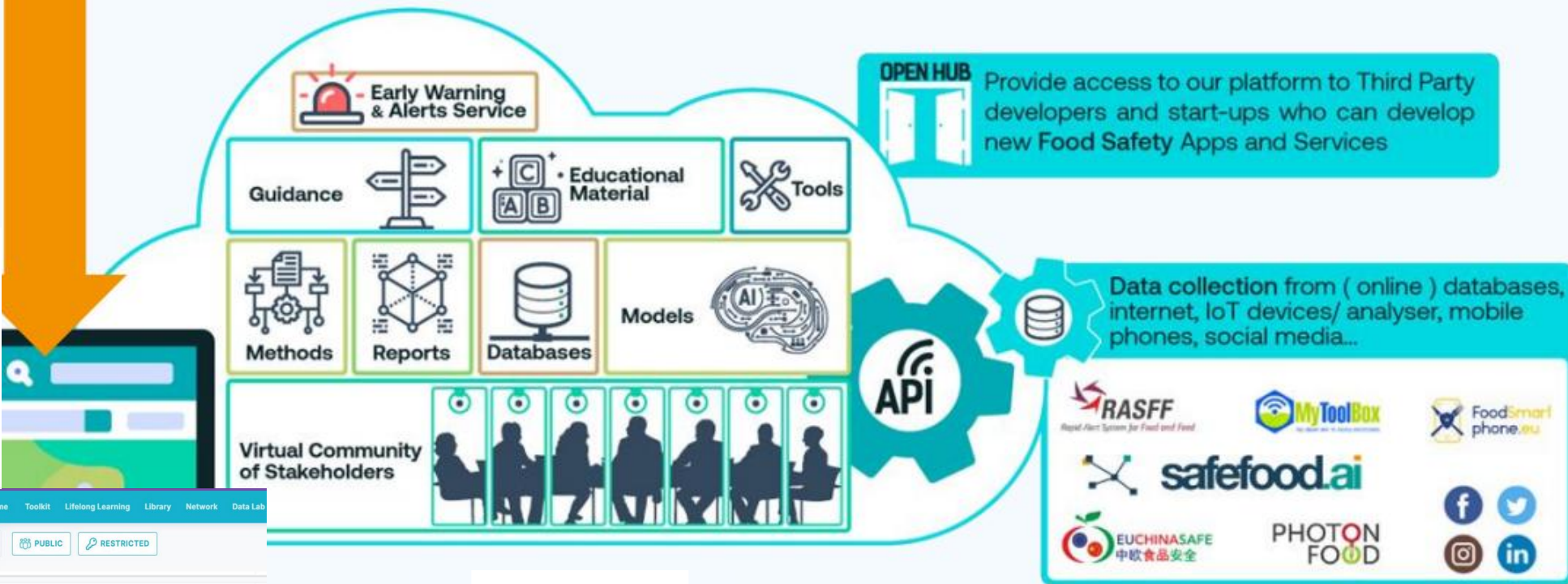
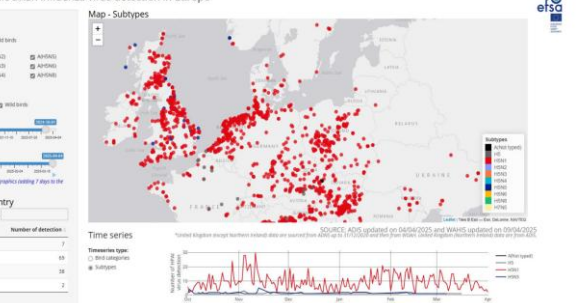
Women often perceive higher risks, such as chemical residues in milk, than men.

One-stop-shop information tool



– Case study

ic avian influenza virus detection in Europe



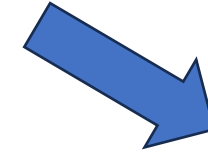
Link: <https://my.foodsafer.com>

Risk Communication Approach



Proactive Risk Communication and Management

- Leverage Social Media & Information Tool: AI-generated News/Algorithmic Curated
- Risk Negotiation (Ehling-Schulz, 2024, <http://dx.doi.org/10.2471/BLT.23.290672>).
- Lesson learned, e.g., Honduras case – Salmonella Braendersup outbreak, see: [Codex and a Honduran emergency](https://doi.org/10.2807/1560-7917.ES.2024.29.1.2300273); <https://doi.org/10.2807/1560-7917.ES.2024.29.1.2300273>
- Clear labels, simple visuals, and messages that connect scientific evidence to everyday concerns.



Be Agile, Timely, Clear,
and Understandable (to
Adopt and adjust);
Science-based &
Technology → **BUILD
TRUST**



Leveraging Citizen Science and Local Knowledge

Citizen Science Engagement

Engaging non-experts in data collection broadens the scope of scientific research and improves monitoring accuracy.

Utilising Local Knowledge

Integrating traditional farming practices and community observations enriches risk assessments with contextual insights.

Supporting Policymakers

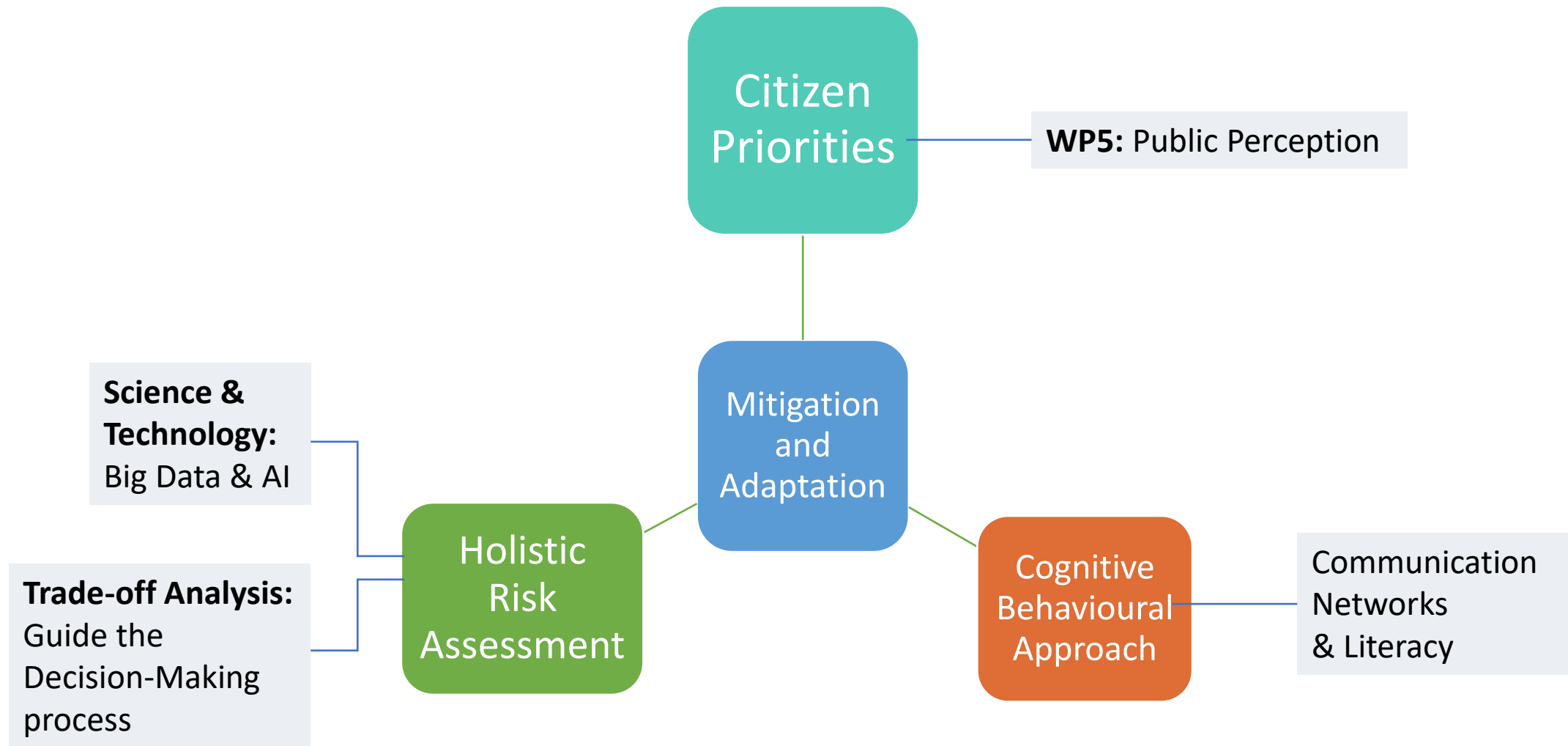
Policymakers can enhance citizen science by providing tools, training, and collaborative platforms to foster inclusion.

Building Community Resilience

Participatory methods increase policy legitimacy and empower communities to better manage climate-related risks.

WP 5. Science to Society

An Integrated Risk Communication Framework for Emerging Food Risk Identification



THANK YOU



Funded by the European Union's Horizon Europe Research and Innovation Programme (Grant Agreement No. 101059813) and UKRI (Grant Reference No. 10040684).

Email: novieta.sari@newcastle.ac.uk

<https://holifoodproject.eu/>