

**EMERGING
RISK
IDENTIFICATION
SYSTEM**
Enhancing Food Safety in New Zealand

ERIS: Identifying emerging food safety risks and supporting NZ horticulture to respond with science-based solutions

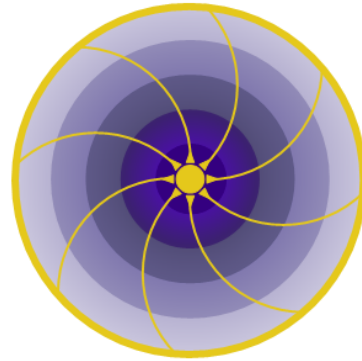
Coordinators:
Nicola King (ESR)
Kate Thomas (NZFS)
Seamus Watson (ESR)



Ministry for Primary Industries
Manatū Ahu Matua



Horizon scanning for food safety



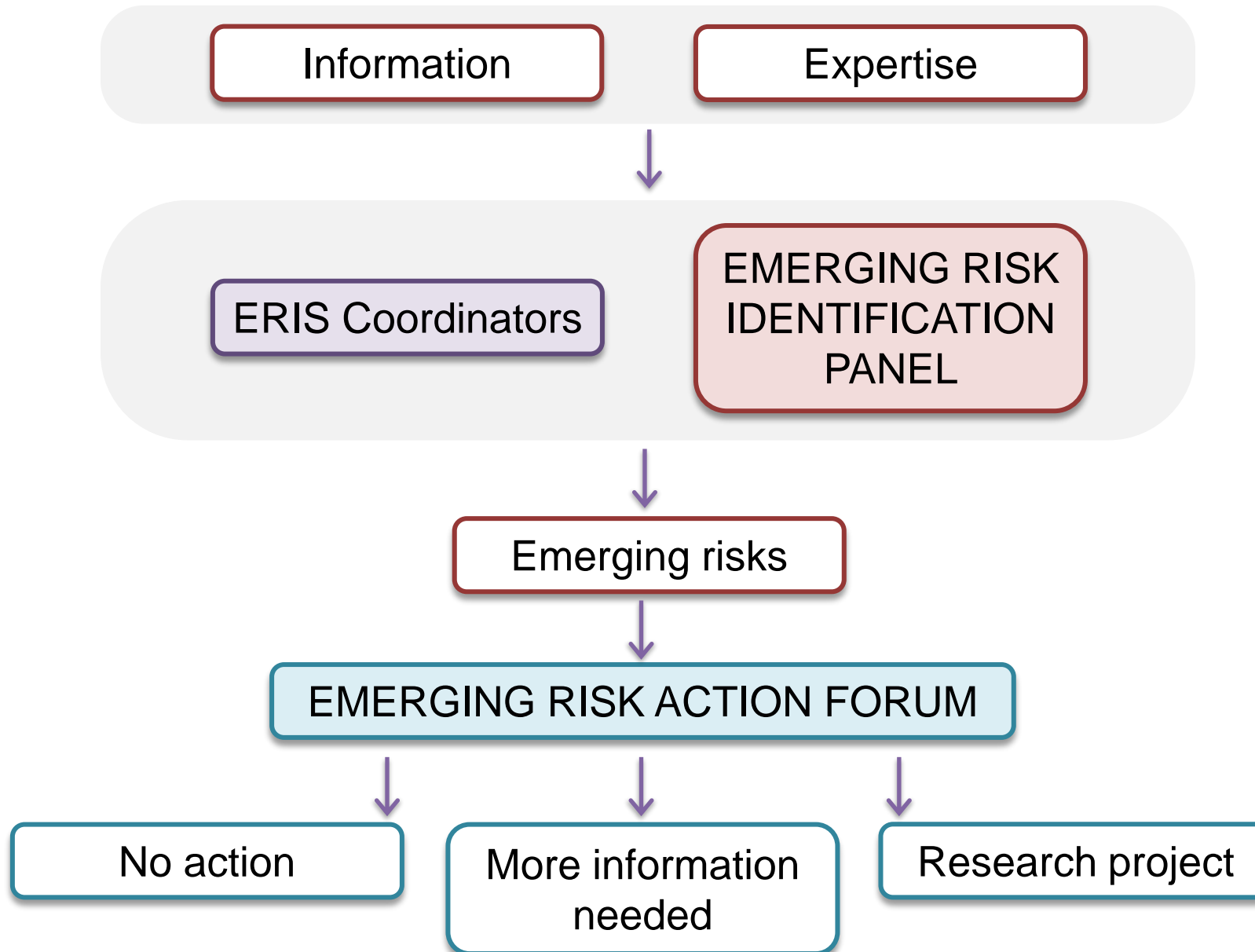
EMERGING
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Enhancing Food Safety in New Zealand

Gather intelligence on
emerging food safety
issues and risks

Support decision-
making over future
research

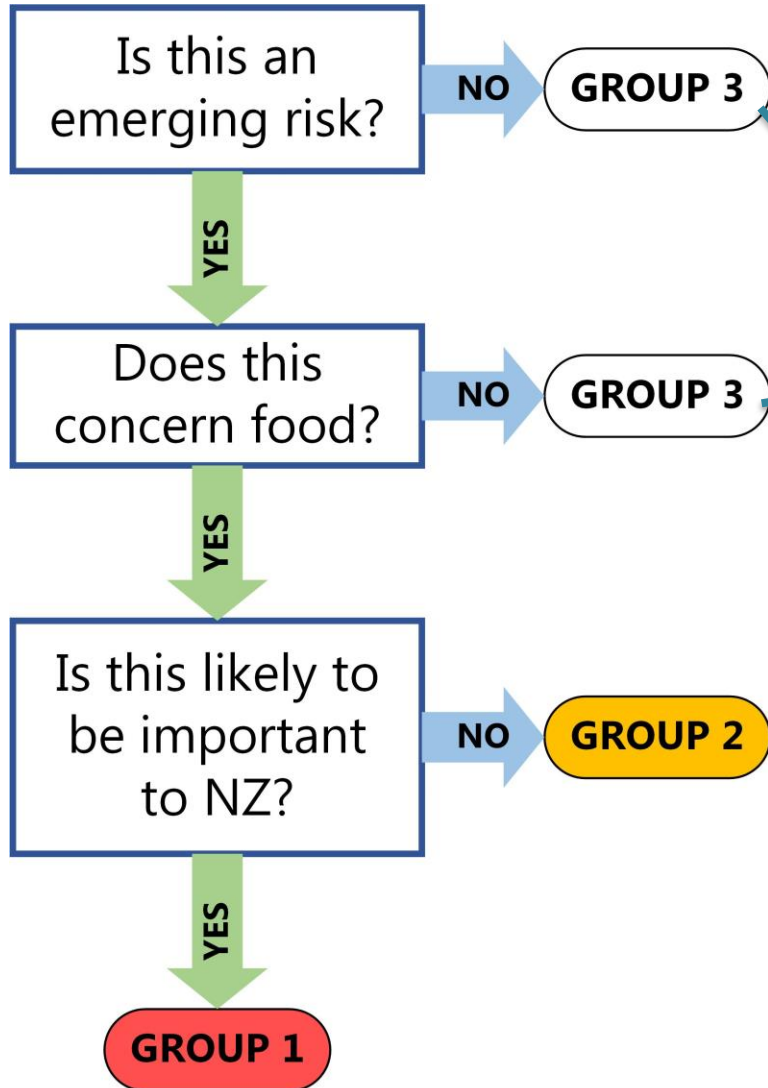
ERIS system



ERIS Scope

	In	Out
Food	<ul style="list-style-type: none">– Substance intended for human consumption (food, drink, gum)	<ul style="list-style-type: none">– Cosmetics, tobacco, drugs– Animal feed, crop seeds– Supplements (unless added to food)
Hazard	<ul style="list-style-type: none">– Biological, chemical, physical– Potential for adverse health effect in humans	<ul style="list-style-type: none">– Animal pathogens– Plant pathogens (unless zoonotic)
Emerging risk	<ul style="list-style-type: none">– New hazard in food– Known hazard, new exposure– Change in population susceptibility	

Triage process



- ▶ Record in ERIS Scanning database
- ▶ List in monthly email
- ▶ Review

>160 Group 3

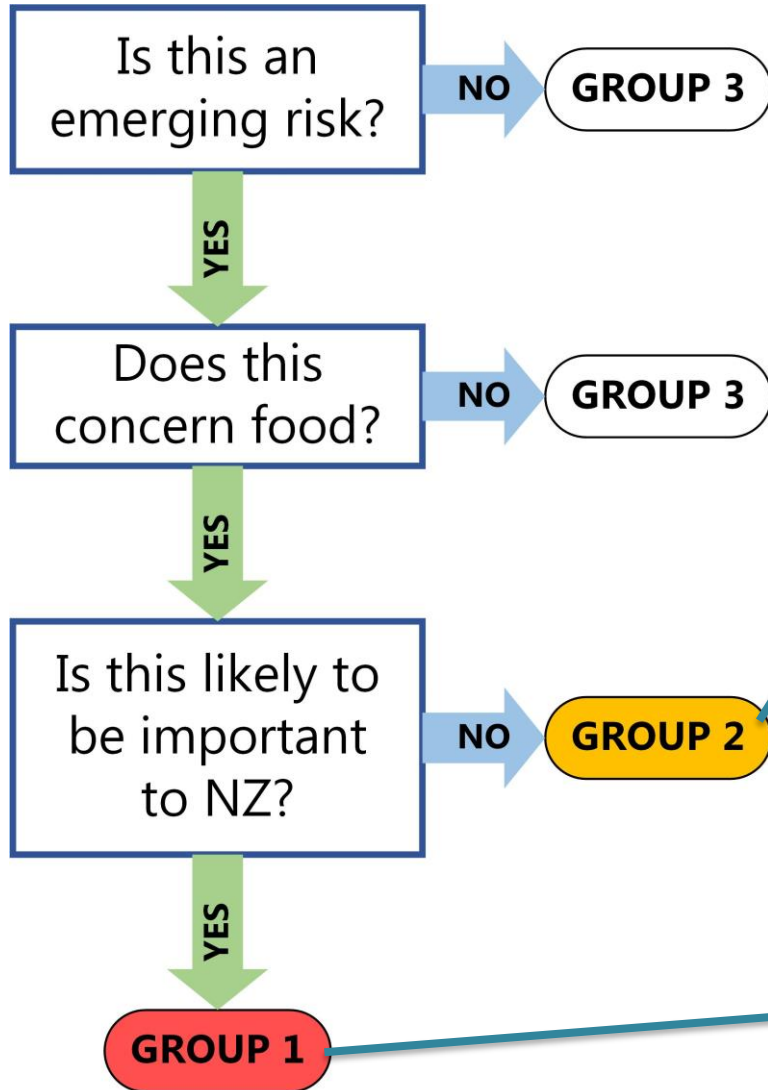
- Artificial sweeteners in the environment
- Edible coatings on fruit
- Enteroinvasive *E. coli* in spring onions (outbreak)

>60 “other”

- HAV food worker vaccination
- Cool chain integrity and climate change
- Hydrogels for sprout/microgreen production

Triage process

- ▶ Record in ERIS Register
- ▶ Briefing note
- ▶ List in monthly brief
- ▶ Discuss at Action Forum



Group 2: No data for NZ food OR controls in place

- *Cyclospora* in fresh produce
- Microbial safety of fruit waxes
- Freshwater cyanobacteria toxins in irrigation water
- Nanoparticle delivery of agrichemicals
- Precautionary labelling for allergens in food
- Foodborne infections from *Arcobacter* spp.

Group 1: Hazard in NZ food, no specific controls

- Microplastics and nanoplastics in food
- Perfluoroalkylated substances (PFAS) in foods
- Fresh produce as a trigger for pollen food allergies

Example 1: Microplastics and nanoplastics in food

INFORMATION

- Scientific publications
- 2019 Risk Profile
- NZ research – finding microplastics/nanoplastics
- 2021 EFSA colloquium

ACTION: No actions, keep watch

- Fundamental research needs
- NZ research is already underway

Example 2: Microbial safety of fruit waxes

INFORMATION

- Fruit waxes could support bacterial pathogen survival
- New research is underway: *Salmonella* and *Listeria* survival on waxed citrus fruit
- Results could reveal food safety risks needing attention

ACTION: Information gathering

- Summary of research to date (US CPS)
- New/ongoing research – results expected Dec 2022

Example 3: Freshwater cyanobacteria toxins in irrigation water

INFORMATION

- Toxin-producing cyanobacteria are present in NZ
- Research shows toxin transferred to crops via water
- Water security issues + climate change increase risk
- Potential for irrigation water limits (some markets)

ACTION: Information gathering, research?

- Reports of contaminated food, human illness?
- How being mitigated (Australia)?
- Toxin metabolism in livestock – transfer to animal products?

Example 4: New limits for chlorate in milk

INFORMATION

- 2015 EFSA Opinion (TDI exceeded water+food)
- 2020 EC MRLs for foods incl. dairy products, fresh produce and products from farmed terrestrial animals
- NZ: Limits for some dairy products (1 July 2022)

ACTION: More information, pan-sector research?

- Studies in water/wash water, chemistry, alternatives
- Pan-sector survey, incl. horticulture
- Research needs clarified (NZFSSRC Dairy Taskforce)

Welcome to Issue 8. ERIS is now into the second year of this two-year pilot project. The focus is on upskilling and continuous improvement. We are starting to think about what a long-term system could look like and how it may be funded.

Introducing Anne-Marie Arts
Managing Director,
The AgriChain Centre

ERIS Role: Action Forum member representing United Fresh.

Anne-Marie's work revolves around post-harvest fresh produce quality and safety. United Fresh is a pan-sector peak industry body and Anne-Marie serves as their representative in NZFSSRC activities. United Fresh funded ERIS to help build industry resilience. A benefit of ERIS is the structured scanning, identifying both



product specific and pan-industry issues (e.g. chlorates). In addition, the resulting industry dialogue is lifting the profile of foodborne illness risk beyond compliance.

It's been one year, how did we go? February 2022 marked the end of the first year for ERIS and it was time for a review. As for any horizon scanning system, there needed to be a process to evaluate the system's effectiveness. This meant we needed to have performance metrics that aligned with our purpose.

a year in numbers



We put quantitative metrics in place to help us understand the scale of the effort, ensuring these captured the two parts of ERIS: 'intelligence gathering' and 'actions taken' (see left).

The qualitative evaluation provided better insight into what was going well and where change was needed. The Coordinators and the Action Forum answered questions about information sources, the risks identified, whether there was enough support for actions, how we managed and communicated information and how we interacted with other organisations. There were twelve recommendations to take forward into year two.

Looking at risks and taking opportunities. Alpha-gal syndrome is a type of allergic reaction to animal products that is initially caused by tick bites. More commonly known as 'red meat allergy', people can become sensitised to a sugar (alpha-gal) found in red meat when bitten by a tick that has recently fed on a cow. People with this syndrome can become sensitive to a range of animal products. In the medical world, alpha-gal also causes human hosts to reject pig organs received through transplants. In response, a US company has genetically modified pigs to create alpha-gal-free organs suitable for transplanting into humans. Taking an opportunity, this company has now entered into the food scene, making alpha-gal-free bacon, ham and pork products available to those with alpha-gal syndrome (currently at no cost). See [Atlantic article A Tick Bite Made Them Allergic to Meat](#)

The NZFSSRC member organisations funding ERIS are:



Communications

<https://www.nzfssrc.org.nz/our-work/eris>

- Meetings (reports)
- Monthly brief