

The importance of Good Hygienic Practices (PRPs)

Society of Dairy Technology Autumn Symposium 2025

5. General Principles of Food Hygiene:

- i. Food safety and suitability should be controlled using a science-based preventive approach, for example, a food hygiene system.
- ii. **Properly applied prerequisite programmes, which include GHPs, should provide the foundation for an effective HACCP system.**
- iii. **Each FBO should be aware and understand hazards associated with their business, and the control measures required to manage these hazards, as appropriate**



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GENERAL PRINCIPLES
OF FOOD HYGIENE
(1969)

5. General Principles of Food Hygiene:

- iv. Depending on the nature of the food, food process, and the potential for adverse health effects, **to control hazards it may be sufficient to apply GHPs**, including, as appropriate, some that require more attention than others, as they have a greater impact on food safety. **When the application of GHPs alone is not sufficient, a combination of GHPs and additional control measures at CCPs should be applied.**



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(1969)

5. General Principles of Food Hygiene:

- v. Control measures that are essential to achieve an acceptable level of food safety should be scientifically **validated**. (CXC 69-2008)
- vi. **The application of control measures should be subject to monitoring, corrective, actions, verification, and documentation**, as appropriate to the nature of the food product and the size of the food business



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(CXC 1-1969)

5. General Principles of Food Hygiene:

- v. Food hygiene systems should be reviewed to determine if modifications are needed.
- vi. Appropriate communication about the food and food process should be maintained among all relevant parties to ensure food safety and suitability across the entire food chain.



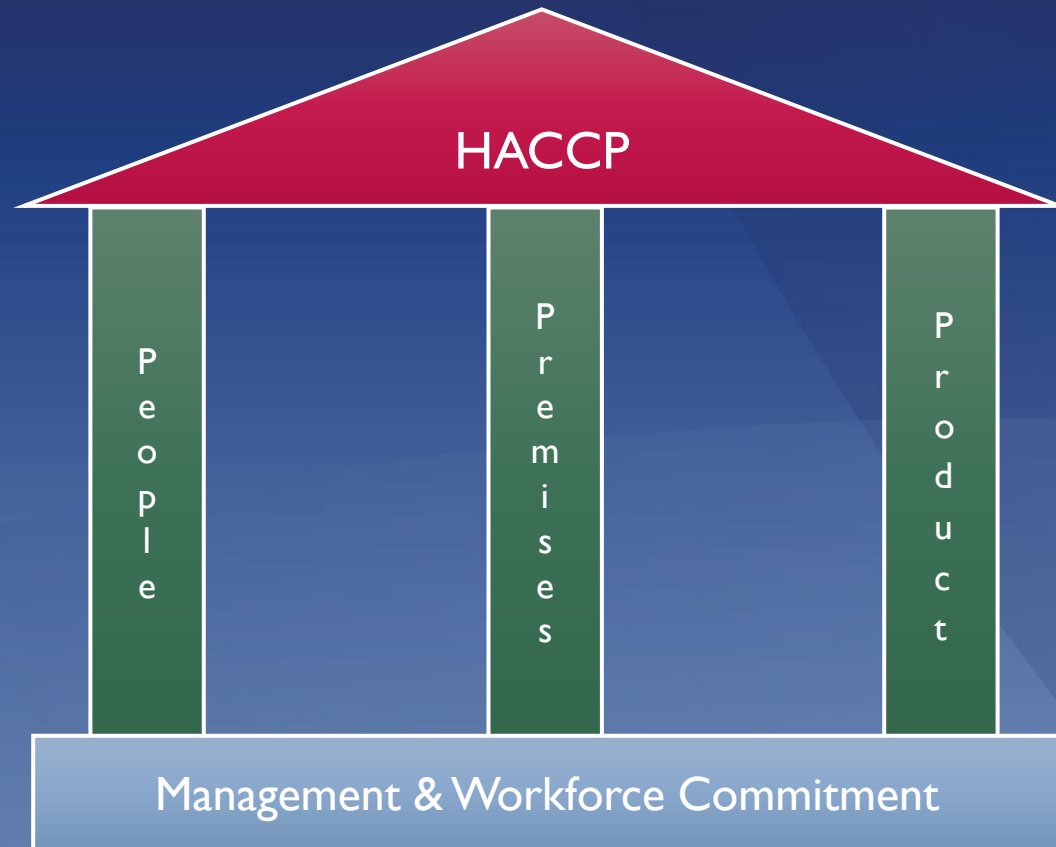
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(1961-1969)





The Essence of Risk Management

Being in control of “what you do” is about being able to answer 3 basic questions:

1. Do we understand what can go wrong?
2. Do we know what our systems are to prevent this happening?
3. Do we have information to assure us they are working effectively?



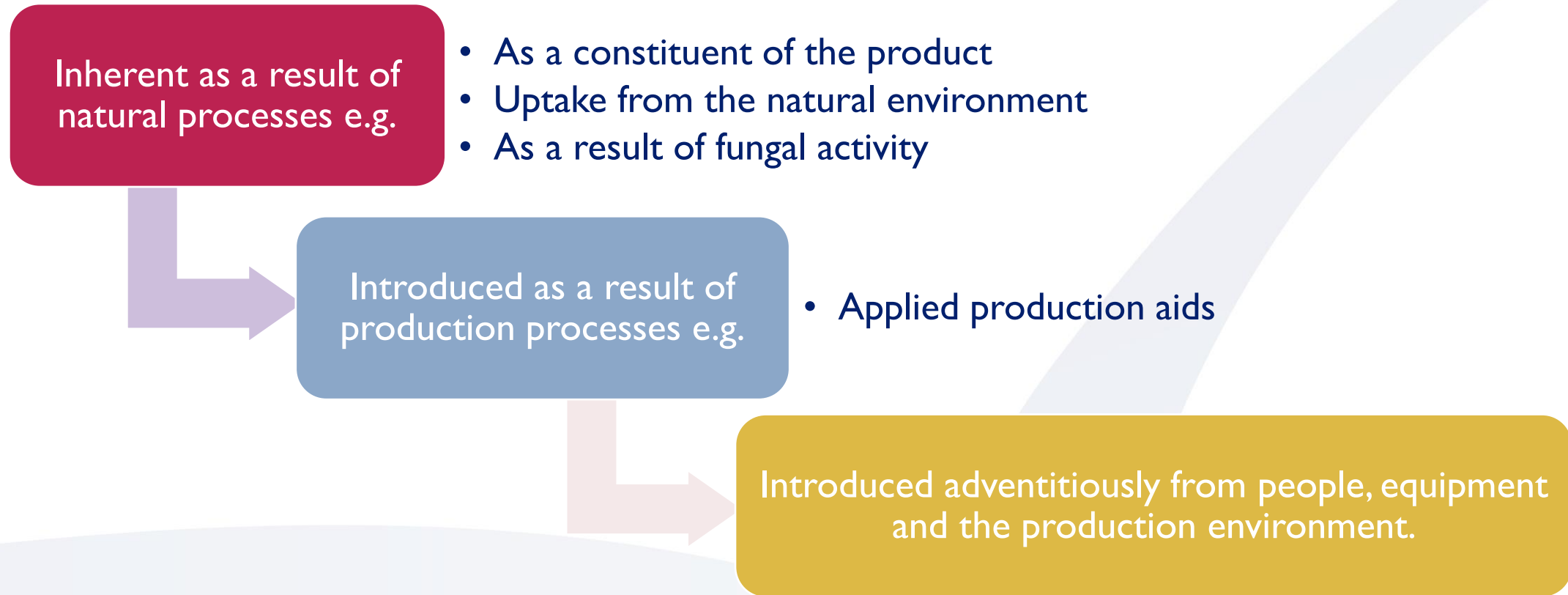
Food Safety Hazard

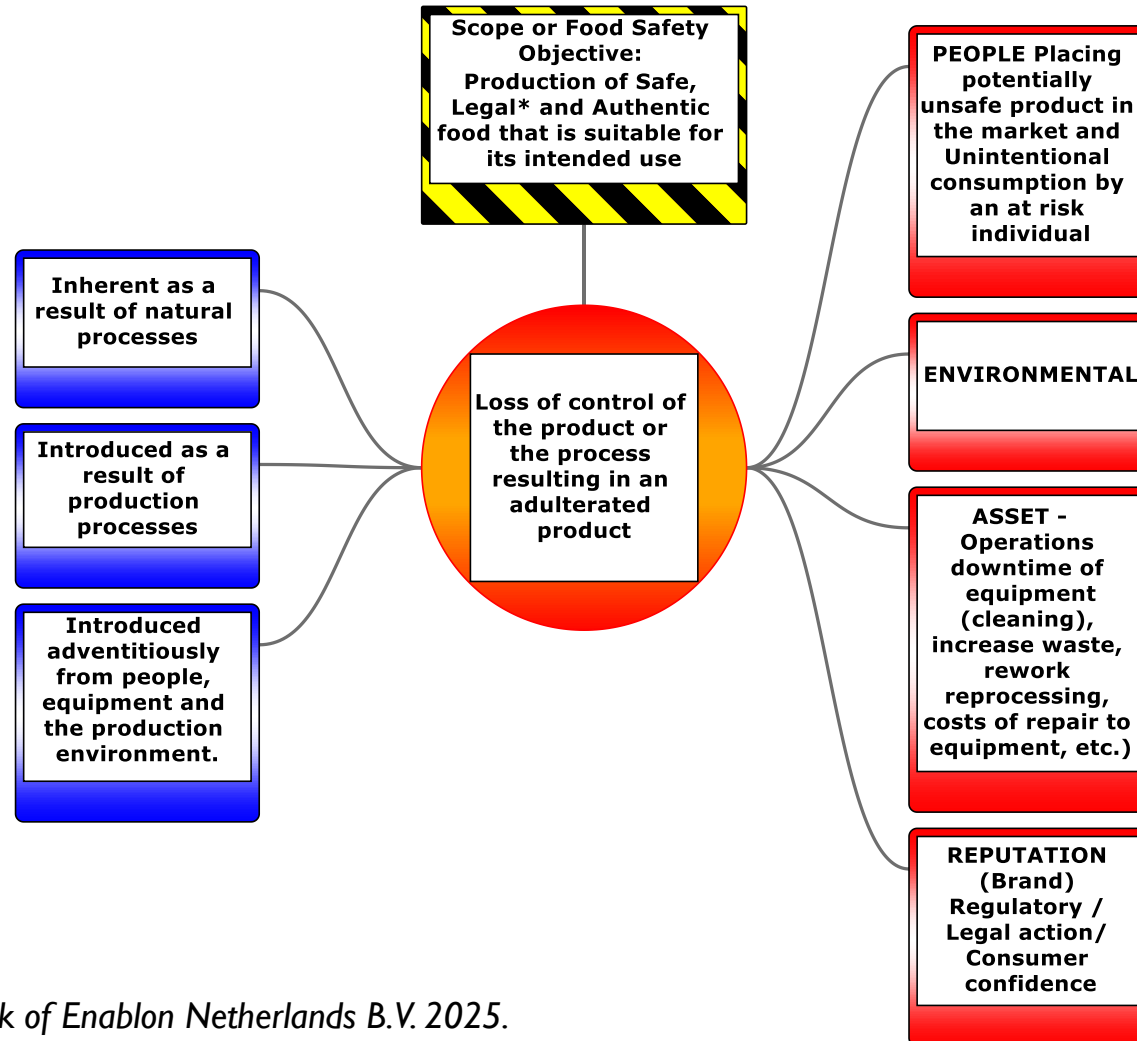
A biological, chemical or physical agent in food with the potential to cause an adverse health effect.

(BSEN ISO22000:2018)

Food Safety Hazards

Hazards in may be:





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The likelihood of occurrence of hazards, **taking into consideration prerequisite programs**, in the absence of additional control;

Probability

Probability		
4	Frequent	it is expected that the food safety hazard will occur in excess of acceptable levels in the absence of additional controls
3	Probable	it is likely the food safety hazard can occur in excess of acceptable levels in the absence of additional controls
2	Possible	the food safety hazard may be present in excess of acceptable in the absence of additional controls
1	Rare	it is very unlikely that the food safety hazard will be present in excess of acceptable levels in the absence of additional controls.

- Hazard significance
- Severity and probability of occurrence

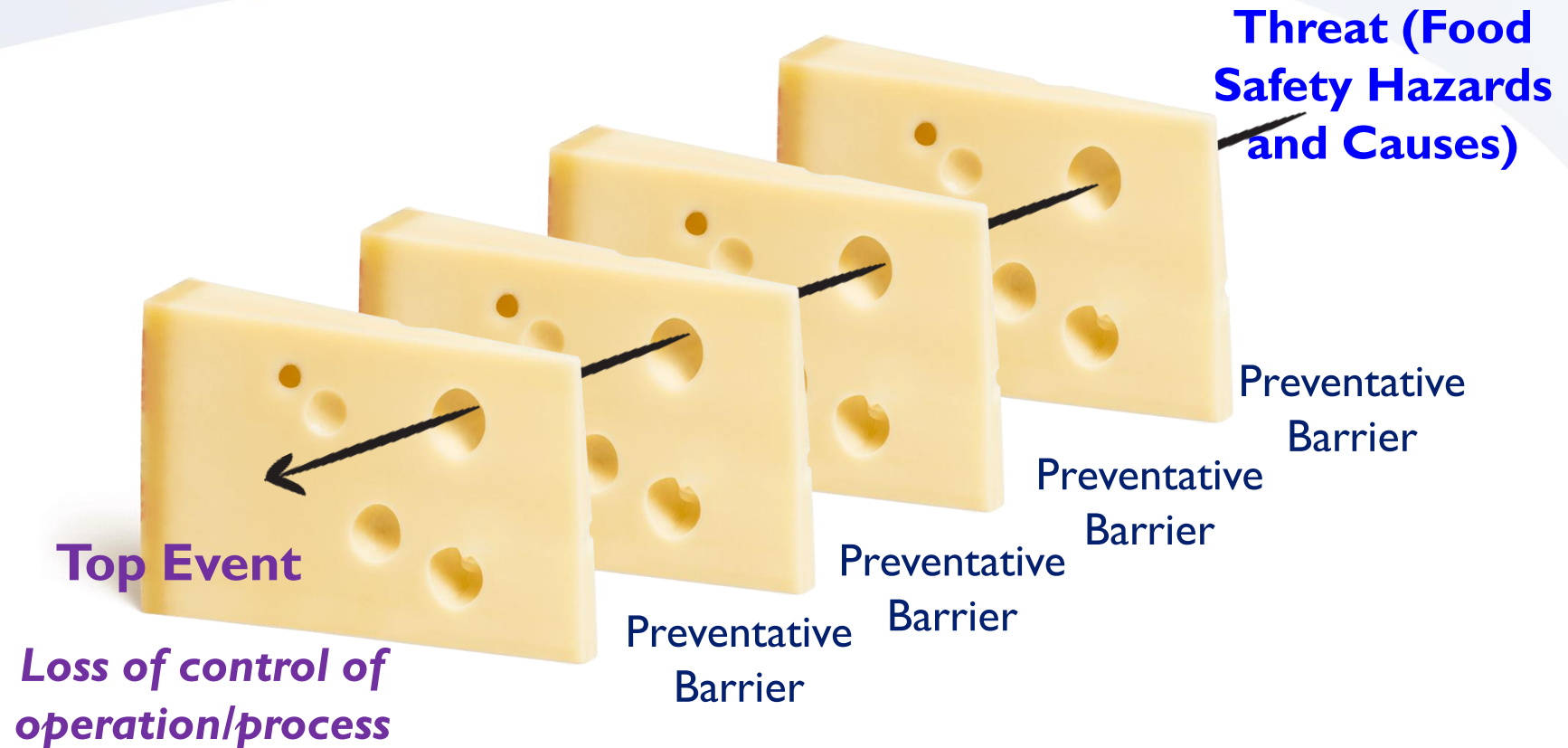
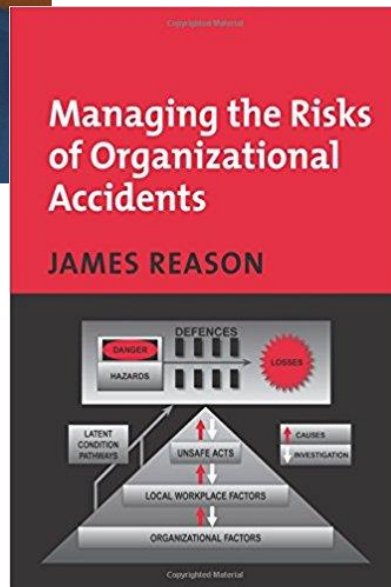
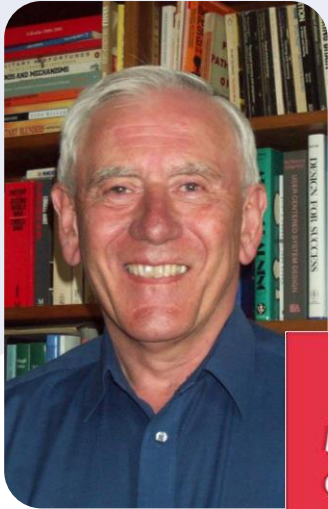


No specific actions, hazards managed by PRPs until the next review

May need additional questions to determine if it is PRP or OPRP

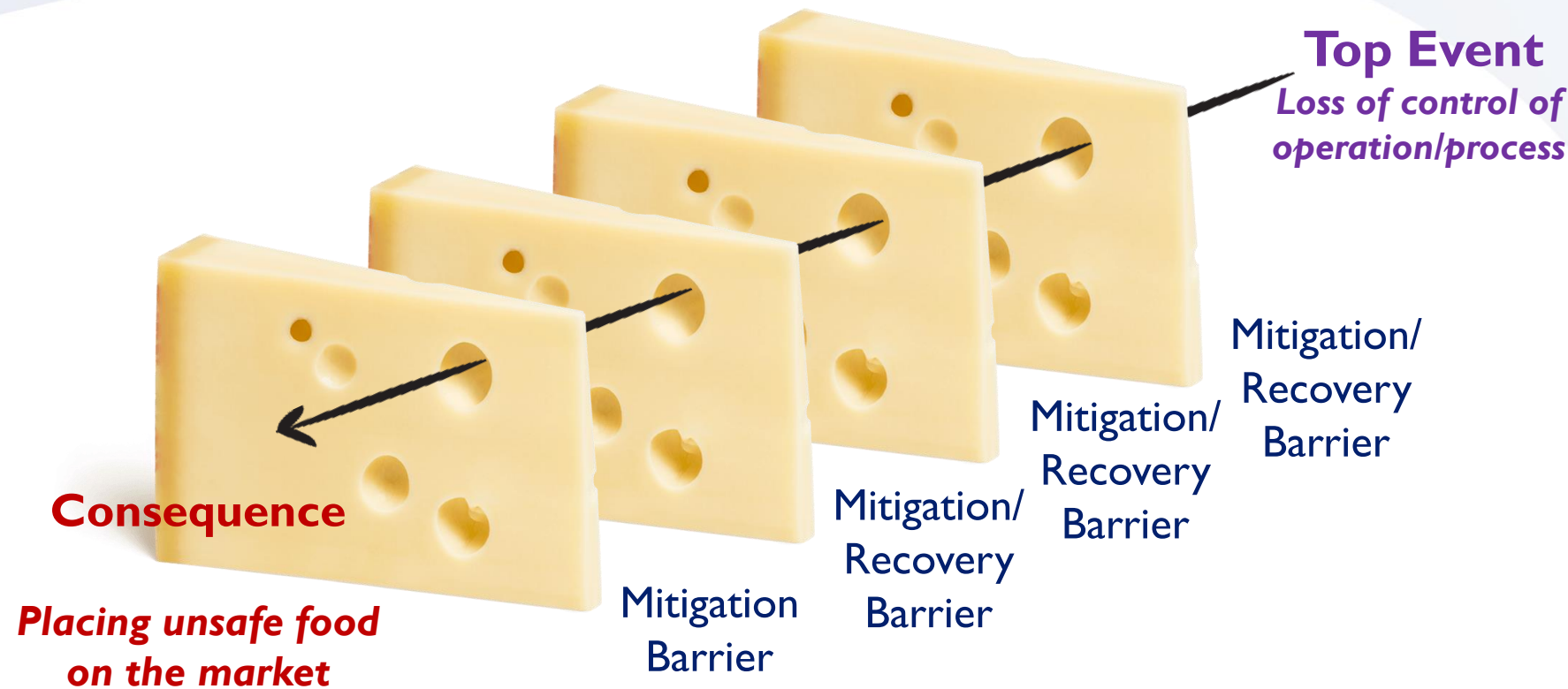
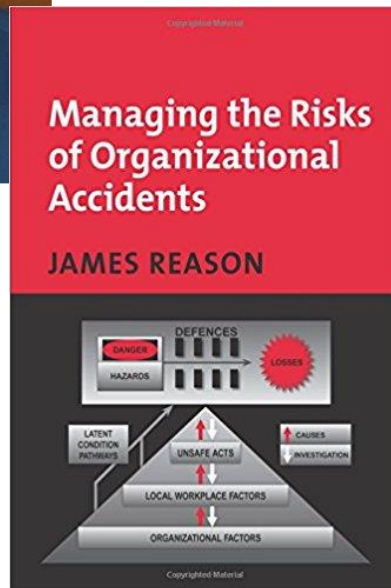
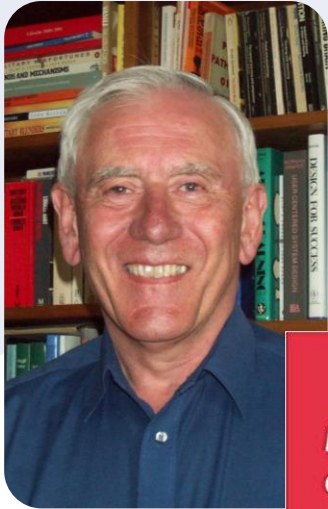
Significant hazard - potentially controlled by CCP(?) or if no measurable critical limit exists this may be OPRP (e.g. Controlling an allergen)

James Reason: Barrier Management Swiss Cheese Model



Not a catastrophic event

James Reason: Barrier Management Swiss Cheese Model



Control Measures (Barriers)

Action

is typically

Associated with the product
(at a process step)

Eliminate or reduce pre-existing
contaminants

Activity

is typically

Associated with the process
(site wide)

Preventative, e.g. the introduction
of contaminants

Mitigation e.g. Quarantine,
traceability

Preparedness e.g. recall, crisis
management

What is a valid barrier?

Effective

- **Prevention barrier** is effective if it is capable on its own of preventing a threat developing into the top event
- **Mitigation barrier** is effective if it is capable of completely mitigating the consequences or reducing its severity

Independent

- A barrier is independent if it has no common failure modes with other barriers

Auditable

- A barrier is auditable if there is a means to check that it works / delivers its functionality on demand
- Barriers can have performance standards for their functionality

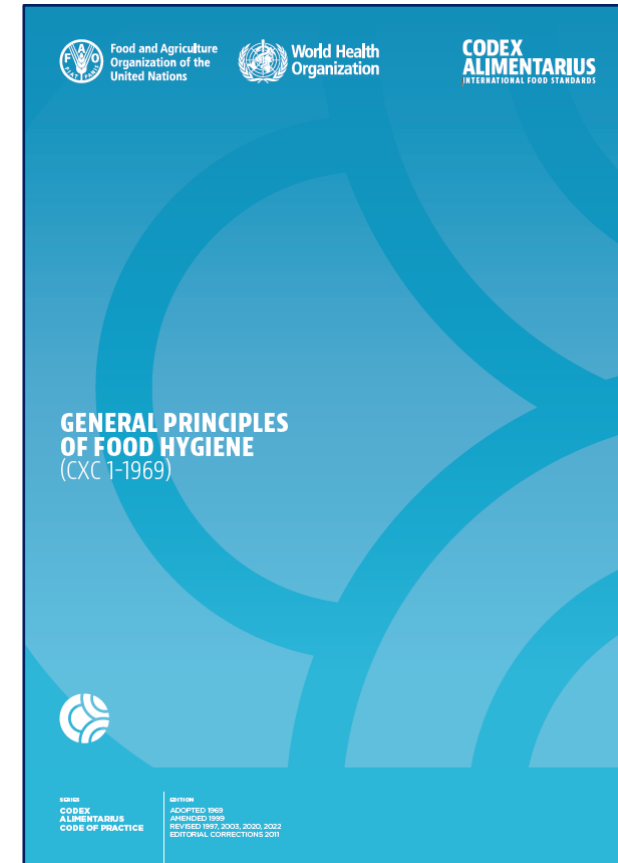
The General Principles of Food Hygiene

The application of GHPs alone is sufficient to manage some or all of the hazards.

All GHPs are important but some have a greater impact on food safety ...based on safety concerns with the food, greater attention may be needed.

Where GHPs may **not be sufficient** to ensure food safety and when there are **significant hazards** identified through hazard analysis as not being controlled by GHPs, they should be addressed in the HACCP plan.

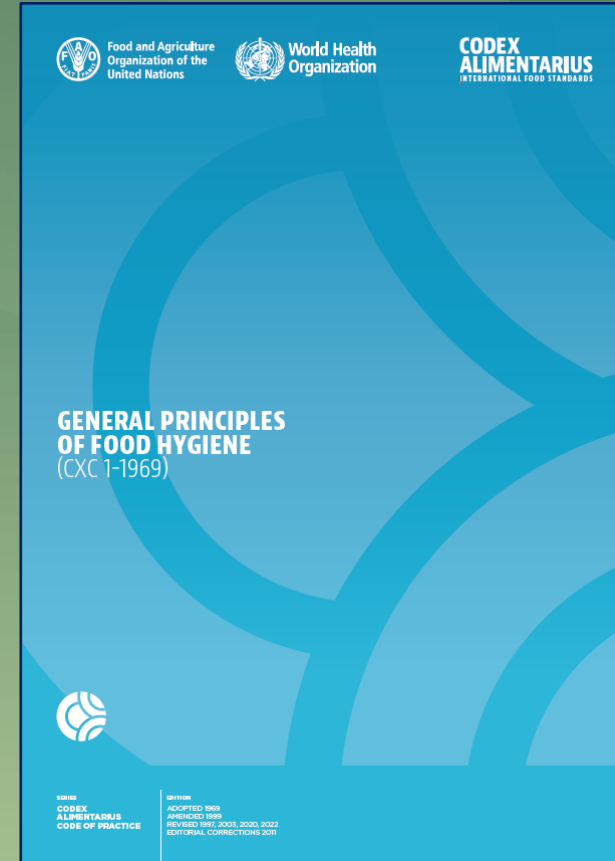
(CAC General Principles of Food Hygiene, 2023)



Good Hygienic Practice

Fundamental measures and conditions applied at any step within the food chain to provide safe and suitable food.”

(CAC General Principles of Food Hygiene, 2023)



Food Safety Management is a combination of:

Preventive controls – synonymous with prerequisite programmes (PRPs);

Preparedness or mitigation programmes: traceability, control of non-conforming products, rework, recall, crisis management etc.;

Hazard analysis plan and control points – synonymous with critical control points (CCPs) and **Enhanced PRPs (EPRPs)**;

Assurance activities: auditing and chemical residue testing – synonymous with monitoring and verification.

Good Hygienic Practices

Section 8

Primary Production

Section 9

Establishment

Design and Facilities

Section 10

Training and Competence

Section 11

Establishment,
Maintenance,
Cleaning & Disinfection
& Pest Control

Section 12

Personnel Hygiene

Section 13

Control of operation (preparatory stages)

Section 14

Product information and
Consumer Awareness

Section 15

Transportation.

Section 8 Primary Production

Those steps in the food chain up to and including storage and, where appropriate, transport of outputs of farming. This would include growing crops, raising fish and animals, and the harvesting of plants, animals or animal products from a farm or their natural habitat.

(CAC General Principles of Food Hygiene, 2023)

Prerequisites

Programmes including Good Hygiene Practices, Good Agricultural Practices and Good Manufacturing Practices as well as other practices and procedures such as training and traceability, that establish the basic environmental and operating conditions that set the foundation for implementation of a HACCP system.

(CAC General Principles of Food Hygiene, 2023)

Section 13 Control of Operations

13.1 Description of the products & process

13.1.1 Product description

13.1.2 Process description

13.1.3 Consideration of the effectiveness of GHPs

13.1.4 Monitoring and Corrective action

13.1.5 Verification.



Section 13 Control of Operations

13.2 Key aspects of GHP

Some key aspects of GHPs such as those described in Section 7.2.1 and 7.2.2, could be considered as control measures applied at CCPs in the HACCP system

Time and Temperature Regulation

Comprehending product formulation and processing is essential for ensuring food safety.

Grasping process control is vital to avert microbiological, chemical, and physical contamination.

Management of Allergens

Assess raw materials and packaging.

Section 13 Control of Operations

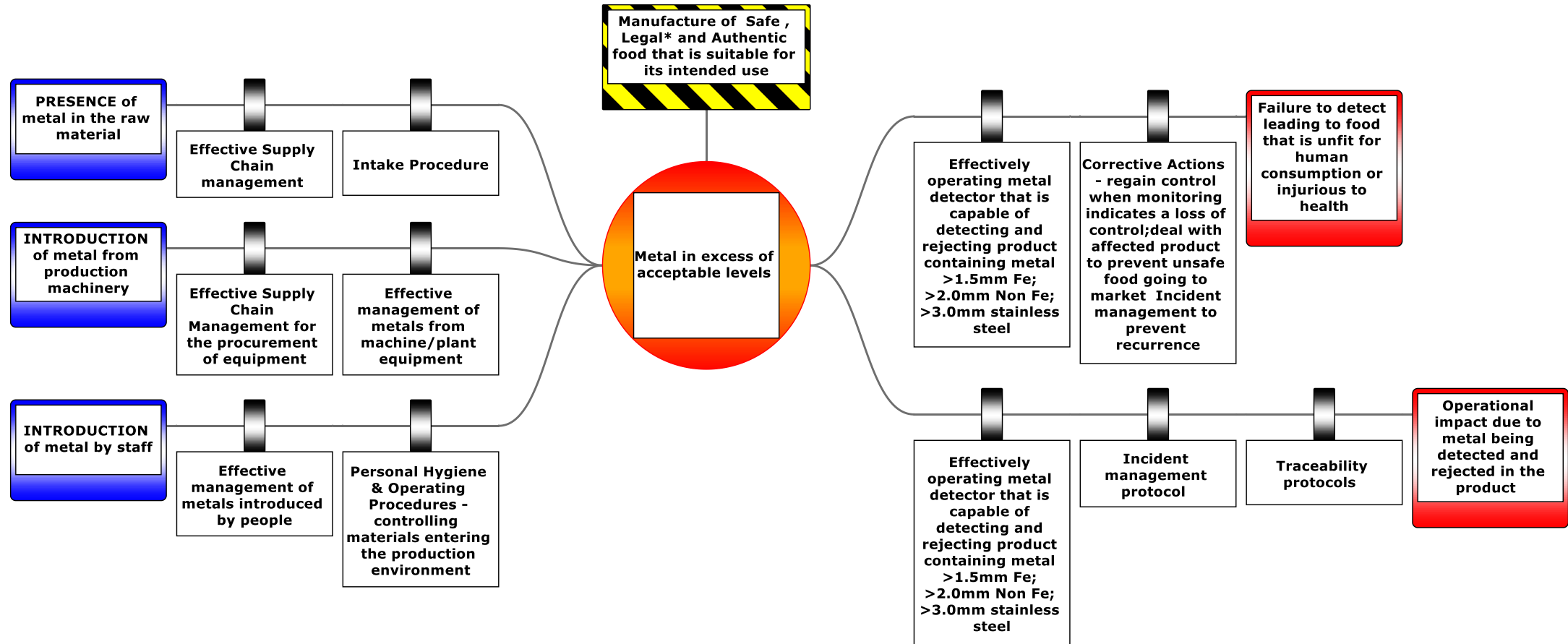
13.3 Water

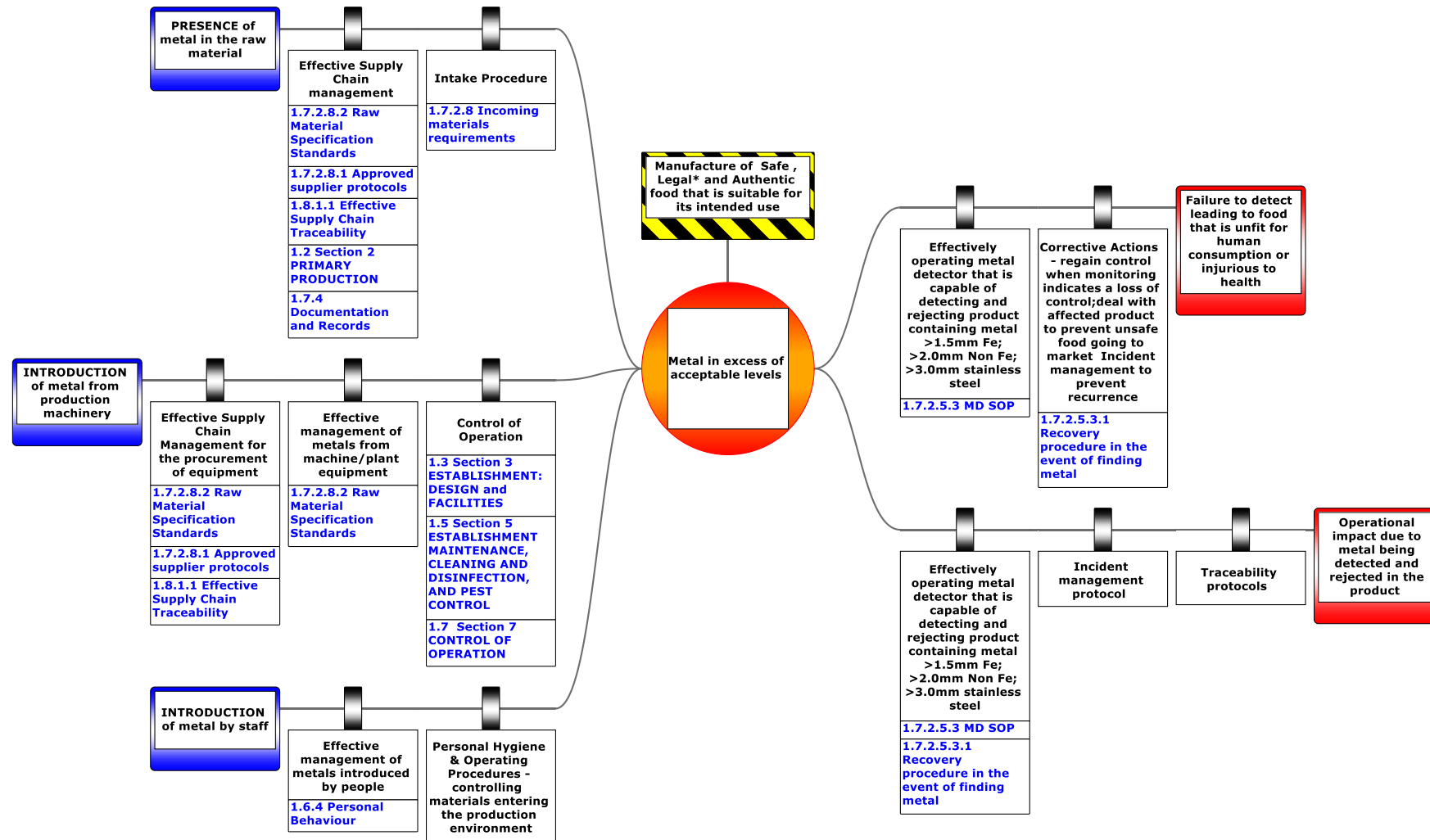
- **Water use and reuse**

13.4 Documentation and Records

13.5 Recall Procedures







Example B Prerequisite Table					
Pre-requisite Programme	Hazards	Control Activities	Monitoring Activities	Corrective Actions	Documentation & Records
PRP 8 Glass Management	Introduction of glass from environmental glass; lighting and people	Glass policy. Hard plastic light covers. Glass breakage Procedure. Pre-start up checks.	Glass & hard plastic audits are carried out every week by trained internal auditor	Glass breakage procedure: Stop production in the local area. Quarantine-affected product. Clear away all glass Member of food safety team to hand area back to production and deal with product.	Glass management policy; Glass breakage procedure; Glass & hard plastic audit register; Non-conformance record.
PRP 9 Temperature Control	Increase of pathogenic microorganisms due to time and temperature abuse,	Temperature-controlled storage areas: Chilled - $\leq 5^{\circ}\text{C}$ Frozen - $\leq 18^{\circ}\text{C}$ Stock rotation	Continuous monitoring using data loggers with an automatic alarm system. Manual temperature checks using a calibrated handheld temperature probe during weekly GMP audit.	Stop additional products being stored and transfer any products to an effective storage area. Quarantine affected product and test core temperatures. The food safety team leader or deputy should choose appropriate actions for materials. Engineers to be called.	Continuous data loggers; GMP Audit weekly audit report sheet; Non-conforming good record. Calibration records

Example B Prerequisite Table					
Pre-requisite Programme	Hazards	Control Activities	Monitoring Activities	Corrective Actions	Verification
PRP 14 Allergen Management	Presence of undeclared allergens from the supply chain	Supplier assurance activities-including agreed raw material specifications Raw material allergen profile Intake protocol	Ongoing supplier performance Raw material intake checks Routine label checking and sign off	Reject order and return to supplier Waste Management –disposal of adulterated product Incident investigation and analysis into deviations from site procedures and pre-set standards. Nominated individual to choose appropriate actions for materials.	Weekly GMP audits Raw material sampling Competency testing
	Introduction of undeclared allergens from cross contact	Validated Cleaning procedures Hygienically design of equipment Production scheduling Pre-start up checks Protective clothing (inc. Laundry) Housekeeping – Clean as you go Dedicated cleaning equipment Handwashing Dedicated Storage Zoning	Production records Cleaning records Observation	Stop production. Isolate and test products produced since last good check. Waste Management –disposal of adulterated product Incident investigation and analysis into deviations from site procedures and pre-set standards. Nominated individual to choose appropriate actions for materials. Reclean.	Weekly GMP audits Finish product analytical testing Cleaning record sign off Competency testing Environmental monitoring
	Incorrect allergen information on product labels Incorrect label on product	Label Design and procurement protocol Intake protocol Product labelling procedures Storage of labels	Label mass balance Ongoing supplier performance Production records Routine label checking and sign off	Stop production. Isolate and test products produced since last good check. Waste Management –disposal of adulterated product Incident investigation and analysis into deviations from site procedures and pre-set standards. Nominated individual to choose appropriate actions for materials. Relabel.	Weekly GMP audits Finish product label checks Competency testing Environmental monitoring

Criticality of barriers

Critical Control Measures

Effectiveness to prevent reduce or eliminate

Impact of failure of control measure - failure will lead to loss of process control

EC Commission Notice (2022C 355/01)

Capacity to detect and correct deviation	Severity and likelihood of deviation			
		Low	Moderate	High
	High	GHP	EPRP	CCP
	Low	GHP	EPRP	Review the process or OPRP if possible



Enhanced Prerequisites

Prerequisite programmes that are essential to control specific food safety hazards determined during hazard analysis, as their failure has a more significant impact on food safety.

It may also be determined when evaluating or categorising control measures for significant food safety hazards that the control measure cannot be monitored in a timely manner to allow corrective actions to be carried out effectively or that it would be difficult to set a validated, measurable, and observable critical limit.



Validate

- noun

make or declare legally valid; confirm the validity of (an act, contract, deed etc), legalize.

Lend force or validity to; confirm; ratify; substantiate / computing – examine (data etc) for incorrectness or bias; confirm or test the suitability of (a system, program etc).

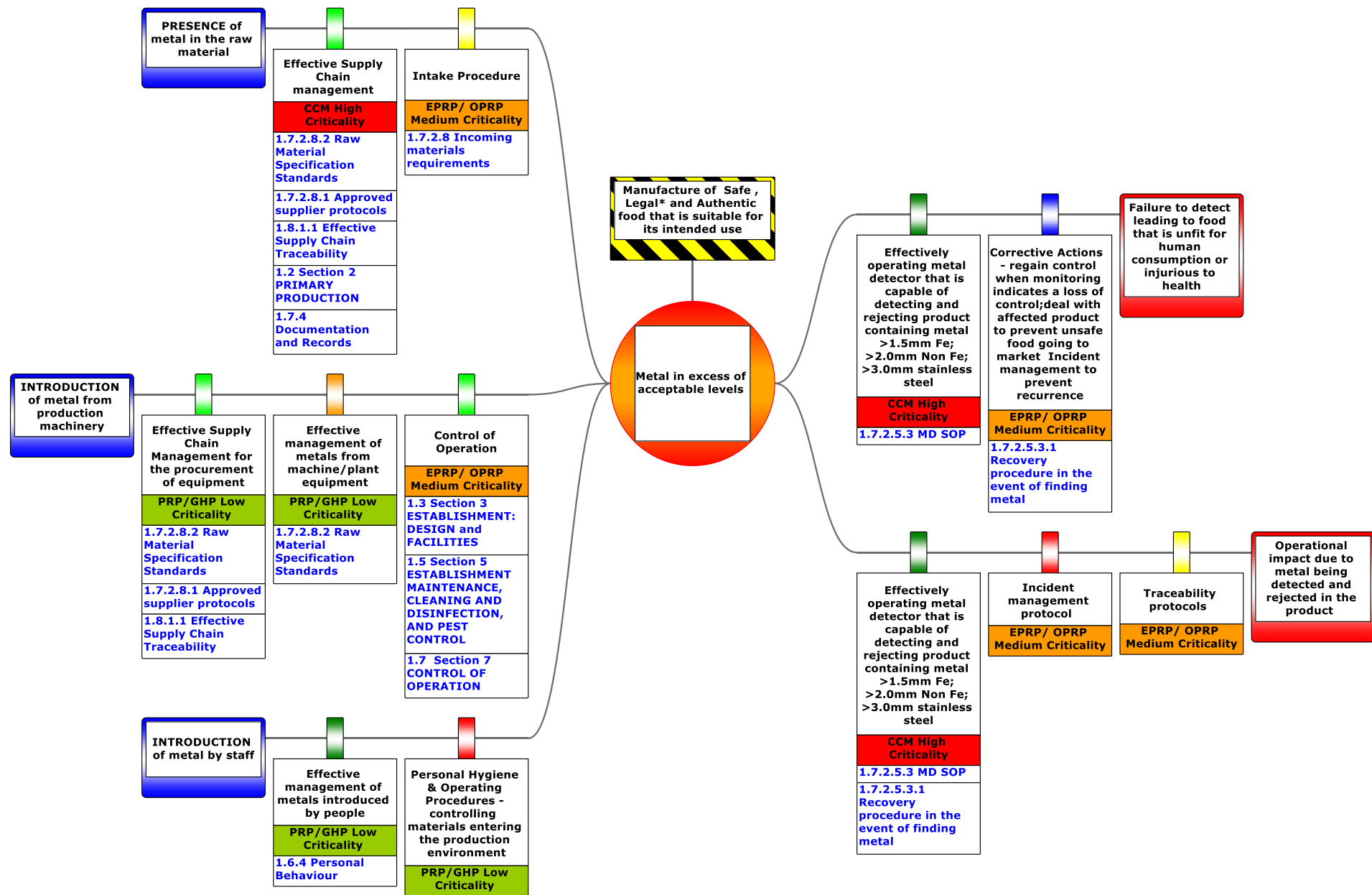
Shorter Oxford English Dictionary on historical principles. 6th edition OUP, 2007



substantiate

to provide information or evidence to prove that something is true.

(OED)



Review

Verification should include a comprehensive review (e.g. reanalysis or an audit) of the HACCP system, periodically as appropriate or when changes occur to confirm the efficacy of all elements of the HACCP system.

(CAC General Principles of Food Hygiene, 2023)



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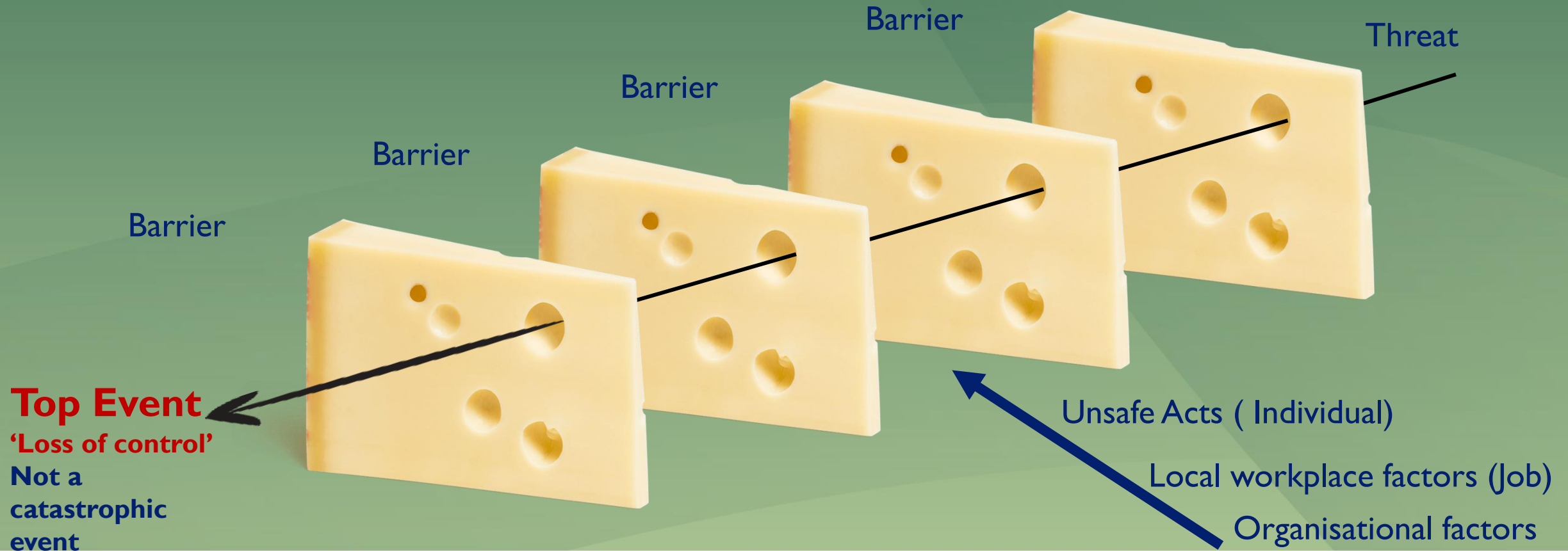


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Barrier Thinking – Swiss Cheese Model



Human Factors

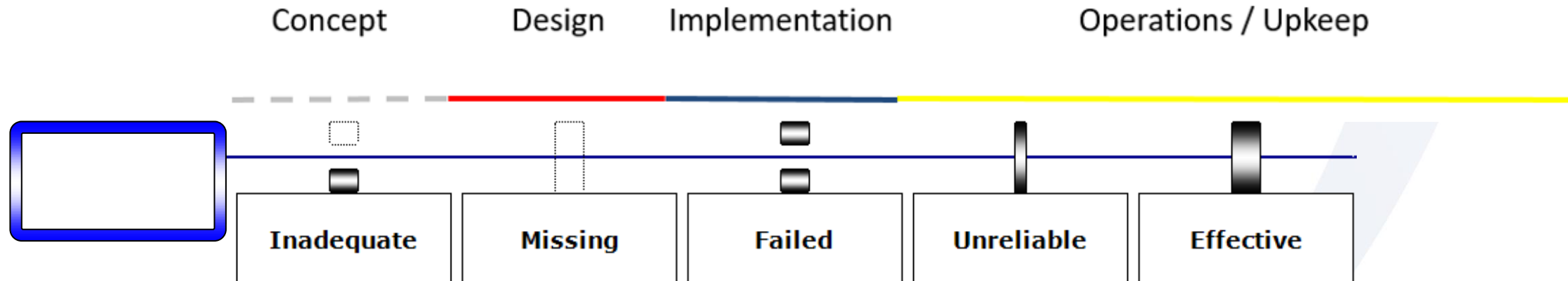


Human Factors – Dirty Dozen

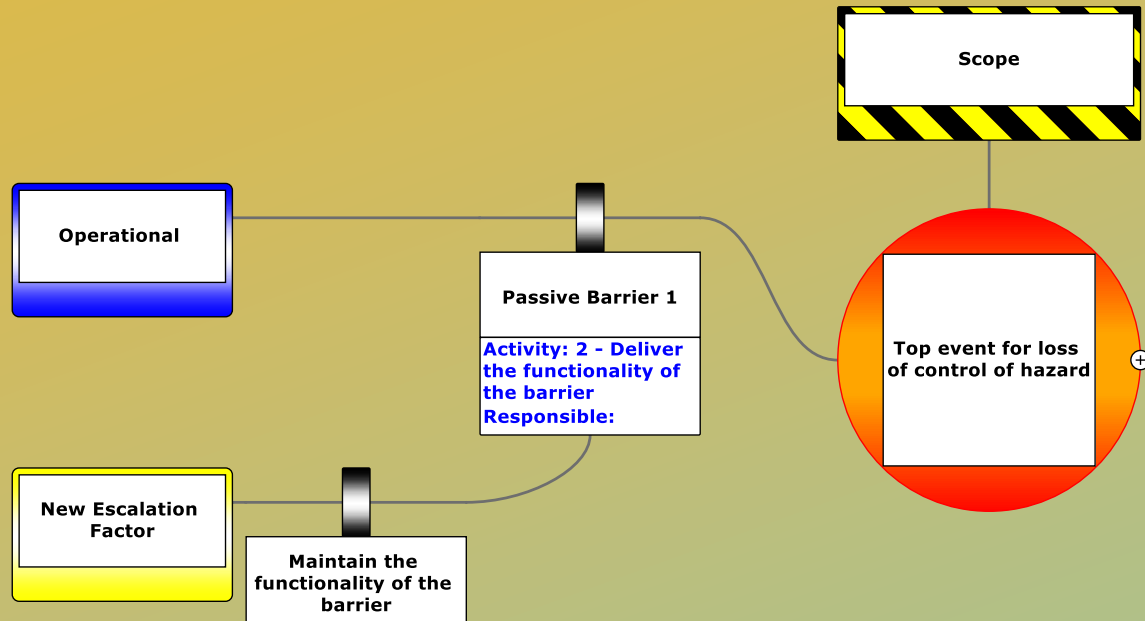
1. Lack of communication
2. Distraction
3. Lack of resources
4. Stress
5. Complacency
6. Lack of teamwork

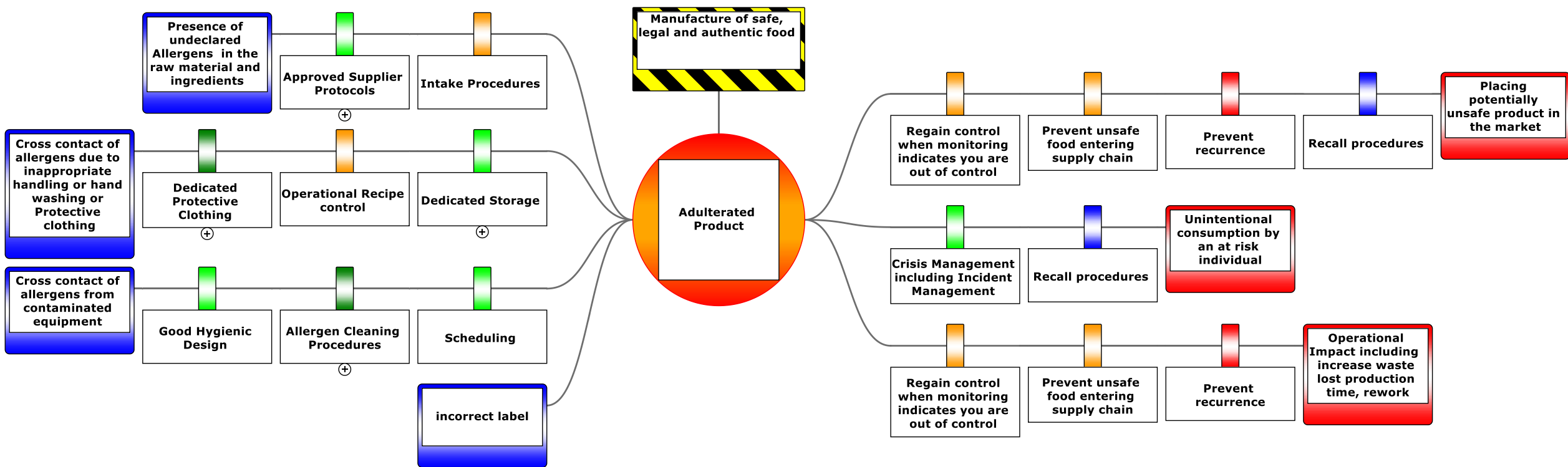
7. Pressure
8. Lack of awareness
9. Lack of knowledge
10. Fatigue
11. Lack of assertiveness
12. Norms

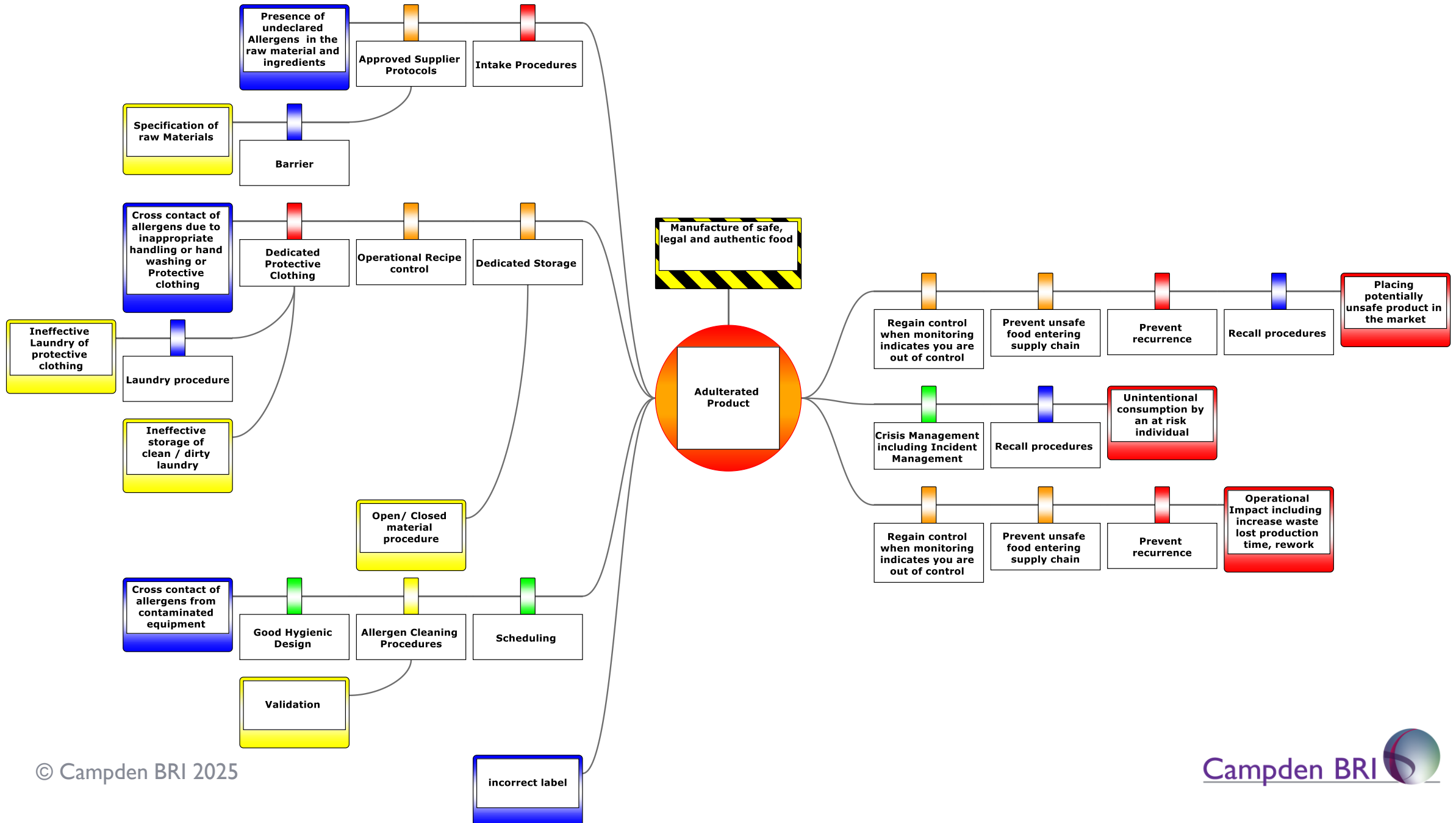
Barrier lifecycle & state (function perspective)



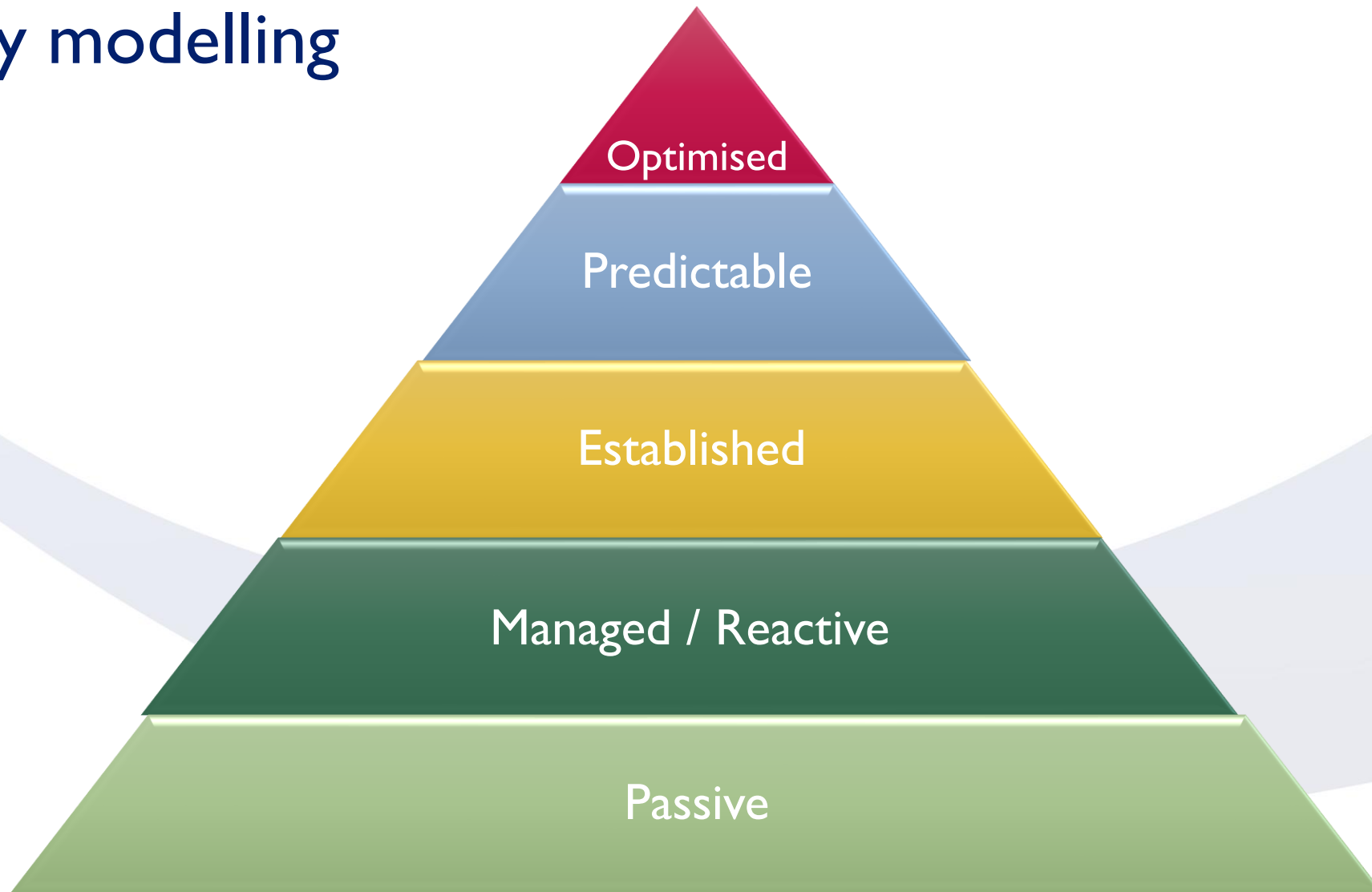
Degradation of barriers







Maturity modelling



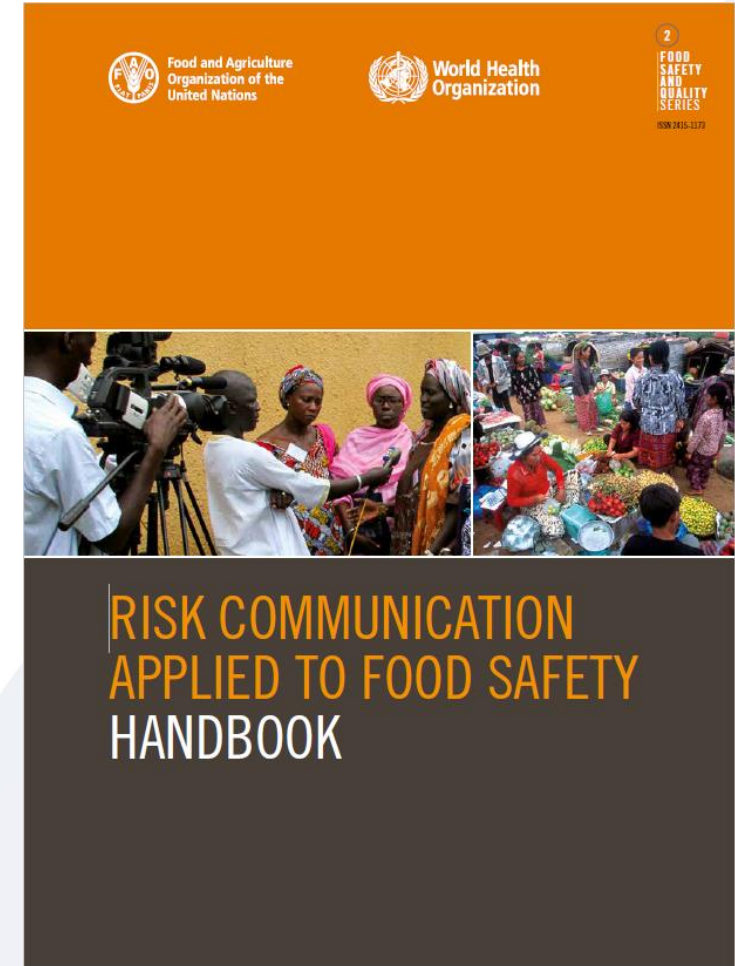
Filho, A.P.G. and Waterson, P. (2018) Maturity models and safety culture. A critical review. Safety Science, 105, 192-211.

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Food Safety Risk Communication

Effective food safety risk communication is defined as the *exchange of information and opinions* among people about the risks and risk-related factors associated with food safety hazards and risks.

- Based on trust
- Clear and timely fashion
- Honest



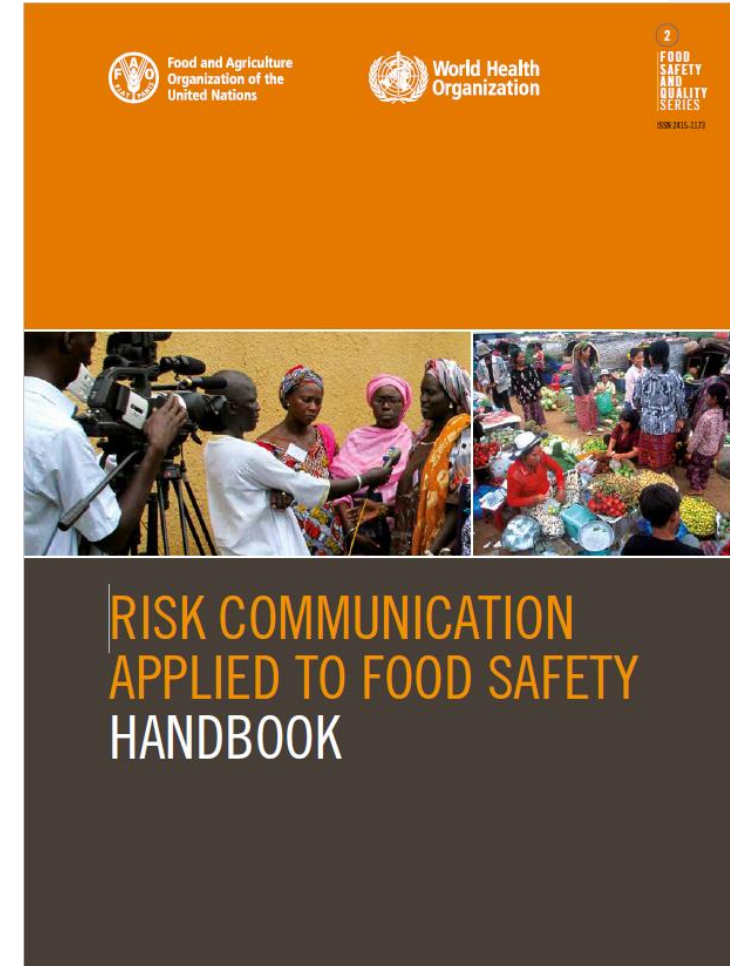
Risk Perception

Risk perception reflects the stakeholder's needs, issues, knowledge, belief and values. ISO 31000:2018

The judgement that people make about the characteristics, likelihood and severity of a specific risk

Factors include:

- Choice – voluntary or forced
- Controllability
- Delay effect of consequences
- Natural v Manmade
- Familiarity - Habitual nature or new .





Thank you

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