Better Training for Safer Food
BTSF

Section 3
HACCP Based Procedures
DG SANCO Guidance Annex 1
The Principles of HACCP

What is a Procedure Based on the HACCP principles? (1)

A proactive hazard management system:

- To enable the FBO to identify and control significant hazards on a permanent basis
- Identification of any steps critical to food safety
- Implementation of effective control procedures at these steps

(EC DG SANCO HACCP Guidance Document)

What is a Procedure Based on the HACCP principles? (2)

- Monitoring of control procedures for effectiveness
- Periodic review of procedures and after any change
- Particularly appropriate for food businesses preparing, manufacturing or processing food.

(EC DG SANCO HACCP Guidance Document)

Procedures based on HACCP principles

This can be achieved by:

- Correct implementation of prerequisite requirements and good hygiene practices
- Using Guides to Good Practice for Food Hygiene
- Application of HACCP principles (possibly in a simplified way)

Or a combination of the above

(EC DG SANCO HACCP Guidance Document)

HACCP Principles

1. Identify potential hazards and measures for their control
2. Determine critical control points (CCPs)
3. Establish critical limits which must be met to ensure each CCP is under control
4. Establish a monitoring system
5. Establish the corrective action to be taken when monitoring indicates that a CCP is not under control
6. Establish verification procedures to confirm that the HACCP system is working effectively
7. Establish documentation for procedures and records

HACCP Logic Sequence

(Based on Codex Alimentarius Food Hygiene Basic Texts)

Select the team

↓

Describe the product

↓

Identify intended use

↓

Flow diagram/define process

↓

Confirm flow diagram

↓

Cont'd

Identify and list potential hazards

Conduct a hazard analysis

Specify control measures

↓

Determine CCPs

↓

Establish critical limits

↓

Establish monitoring system

↓

Establish corrective action plan

↓

Validation, verification *& review*

↓

Establish documentation and records

The Scope of the HACCP Plan

Should be identified

Should describe:

- which segment of the food chain is involved,
- which process of the business
- the general classes of hazards to be addressed (biological, chemical and physical)

Can also be called "Terms of Reference"

(Based on EC DG SANCO HACCP Guidance Document)

Regulation 178/2002 Definitions

Hazard – means a biological, chemical or physical agent in, or a condition of, food or feed with the potential to cause an adverse health effect

Risk – means a function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard

HACCP Team

Should involve all parts of the food business concerned with the product

Needs to include the whole range of specific knowledge and expertise appropriate to the product under consideration.

Where necessary, the team will be assisted by specialists.

(Based on EC DG SANCO HACCP Guidance Document)

Product Description/ Intended Use

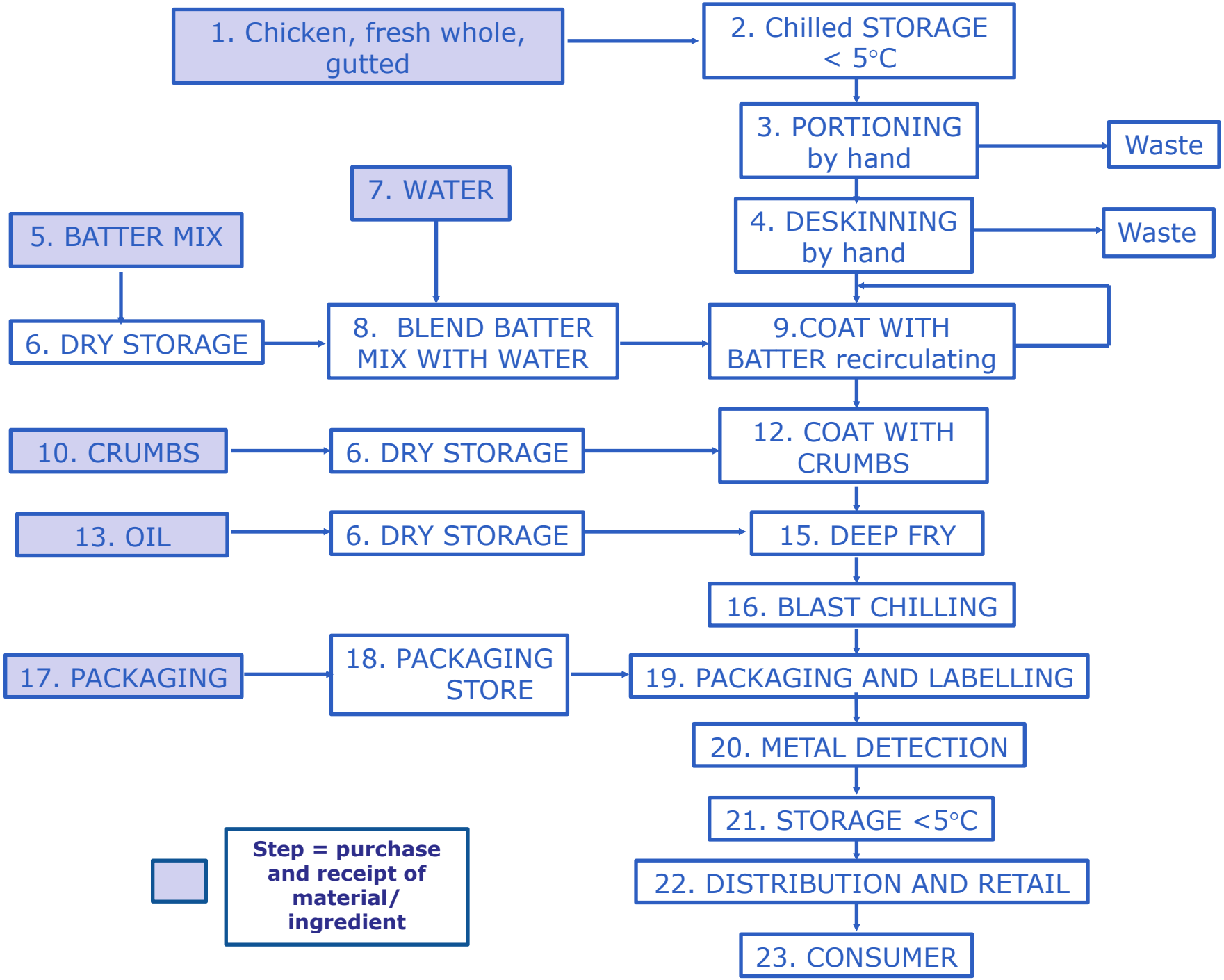
(Based on EC DG SANCO HACCP Guidance Document)

Prepare a full description of the product, including relevant safety information:

- Composition
- Structure and physico-chemical characteristics
- Processing
- Packaging
- Storage/distribution conditions
- Required shelf-life
- Instructions for use
- Any microbiological or chemical criteria
- Intended use and consumer target group

Flow Diagram

- Defines all operational steps in sequence
- Raw material intake to, at least, product despatch
- Include, delays, return loops or product reworking
- Correct for all operational times/shifts
- Confirmed as correct by team during operating hours
- Supplementary information may also be required:
  - site plan, equipment layout, technical parameters of operations, segregation of clean/dirty or high/low risk areas/site
  - product/staff/material flows


1. Chicken, fresh whole, gutted
2. Chilled STORAGE < 5°C
3. PORTIONING by hand
Waste
4. DESKINNING by hand
Waste
7. WATER
5. BATTER MIX
6. DRY STORAGE
8. BLEND BATTER MIX WITH WATER
9.COAT WITH BATTER recirculating
10. CRUMBS
6. DRY STORAGE
12. COAT WITH CRUMBS
13. OIL
6. DRY STORAGE
15. DEEP FRY
16. BLAST CHILLING
17. PACKAGING
18. PACKAGING STORE
19. PACKAGING AND LABELLING
20. METAL DETECTION
21. STORAGE <5°C
22. DISTRIBUTION AND RETAIL
23. CONSUMER
Step = purchase and receipt of material/ ingredient

Principle 1

- List all hazards that may be reasonably expected to occur at each process step
- Conduct a hazard analysis
- Consider and describe the measures which will eliminate, prevent or reduce hazards: i.e. control measures

How to Develop the List of Hazards?

Knowledge and experience

Literature review

Process examination

Brain storming

Tools

- Mind mapping
- Ishikawa

Conducting Hazard Analysis (1)

Consideration of :

- Likely occurrence of hazards and severity of their adverse health effects
- Qualitative and/or quantitative evaluation of the presence of hazards
- Survival or multiplication of pathogens and unacceptable chemicals

Conducting Hazard Analysis (2)

Cont'd

- Production or persistence of toxins or undesirable products of microbial metabolism, chemicals, physical agents or allergens
- Contamination/recontamination
- Cause or source of the hazard

(Based on EC DG SANCO HACCP Guidance Document)

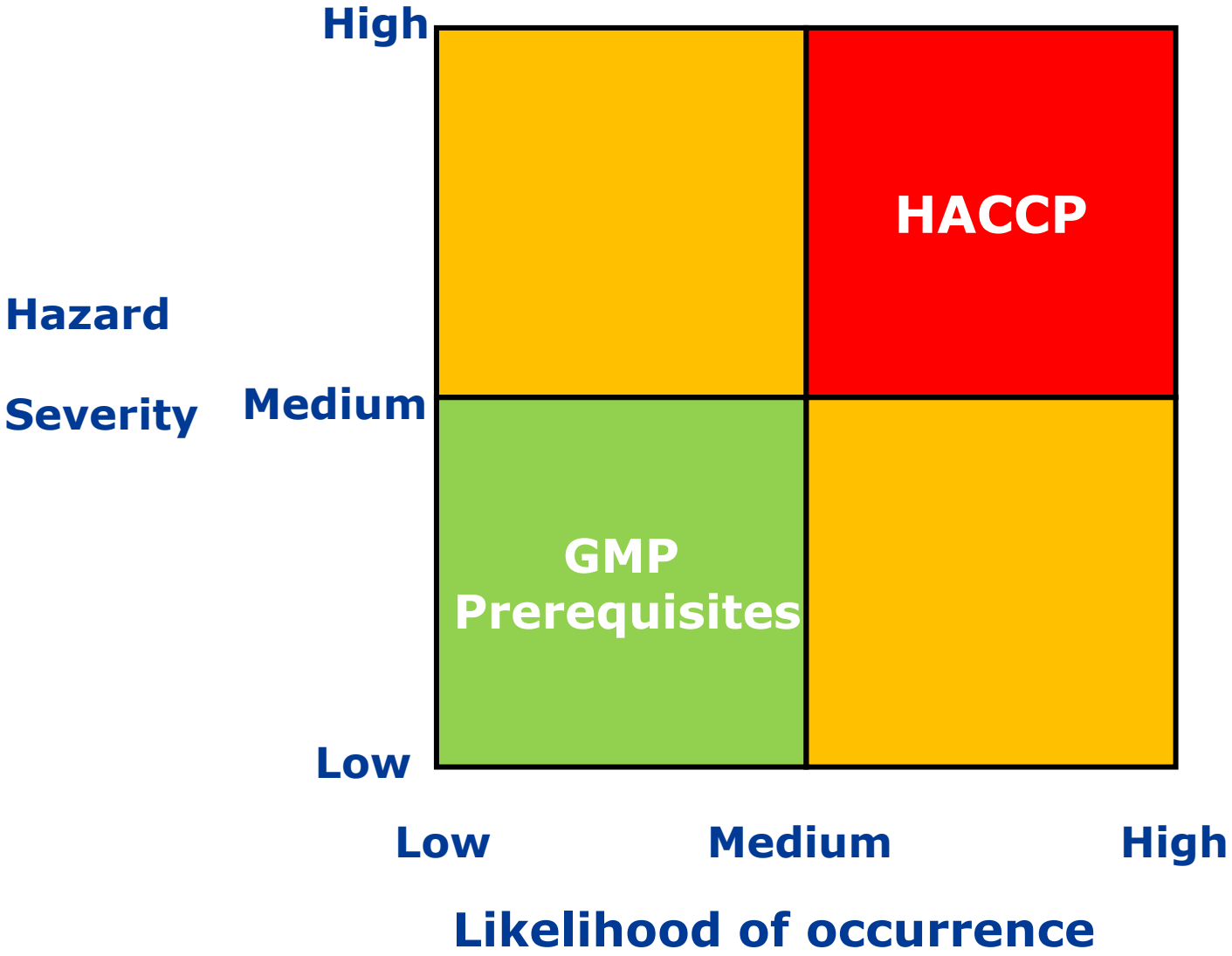
Significant Hazards

Significant hazards are those that are of such a nature that their elimination or reduction to acceptable levels is essential to the production of safe food.

Tools are available to assist teams in determining significance e.g.:

- Score system
- Quadrant graph

Hazard Analysis – Quadrant Graph



Hazard Analysis- Scoring System

Hazard	Severity (S)	Likelihood (L)	Significance (SxL)
Presence of glass fragments in glass jar from supplier	2	2	4
Introduction of wood splinters from damaged pallets into empty glass jars during storage	1	2	2
Introduction of pathogens (e.g *Staphylococcus aureus*) due to post process contamination of wet jars	2	3	6

Hazard Analysis - Logic Table

Definite			
Probable			
Possible			
Likelihood / Severity	Negligible	Major	Critical

Control Measures

Actions and activities that can be used to prevent or eliminate food safety hazards or reduce their impact or occurrence to acceptable levels

(Based on EC DG SANCO HACCP Guidance Document)

Assessing Principle 1

Look for evidence that:

- Preparatory stages have been carried out effectively
- All potential hazards associated with each process step have been listed and defined
- Hazard analysis has been carried out effectively (i.e. hazards clearly defined and risk assessed)
- Lists of actions/activities have been identified that will prevent, eliminate or reduce hazards to acceptable levels (i.e. control measures)

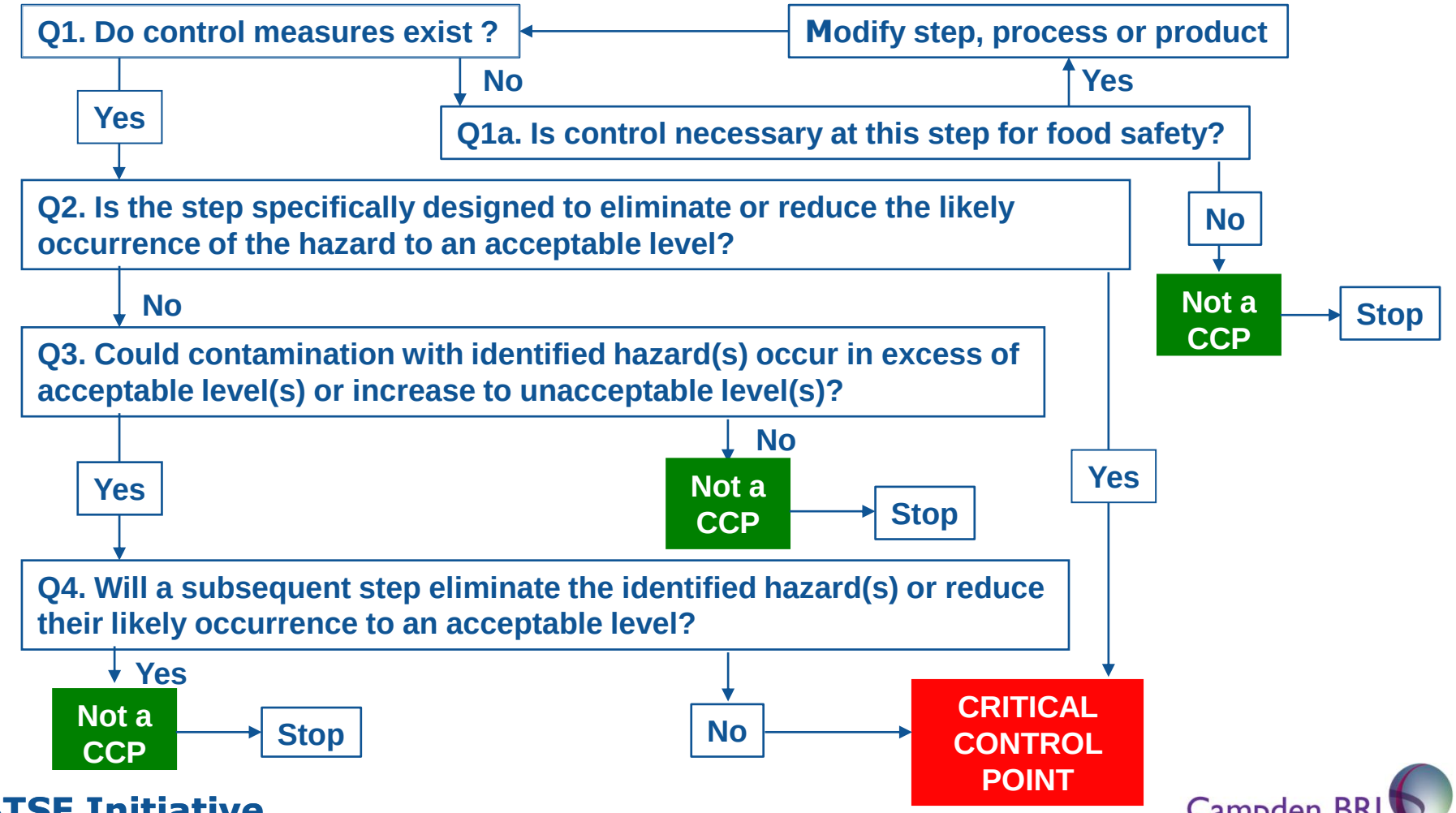
Principle 2: Critical Control Point

A step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level

- Use professional judgement
- Logical approach e.g. Decision tree

(Based on EC DG SANCO HACCP Guidance Document)

DG SANCO Decision Tree



Assessing Principle 2

Look for evidence of:

- Professional judgement
  - Team skills and knowledge
- Logical approach
  - Was a decision tree used
  - Which tree
  - Was it used correctly
- Appropriate CCPs identified.

Principle 3: Critical Limits

Establish critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards.

- Correspond to the extreme values acceptable with regard to product safety.
- Target levels are more stringent levels that can be used to ensure that critical limits are met.
- A deviation is a failure to meet a critical limit

(Based on EC DG SANCO HACCP Guidance Document)

How to Establish Critical Limits?

Surveys

Regulations/codes of practice/guidelines

Experimentation

Specialist knowledge

Must be associated with a measurable/observable factor and be based on the control.

Assessing Principle 3

Look for evidence that critical limits:

- Are measurable /observable
- Are appropriate (able to control the hazard)
- Are set on the control measure
- Have been derived from appropriate sources e.g. Regulations, codes of practice, industry guides, experimentation
- Appropriate targets have been set where relevant.

Principle 4: Monitoring

A programme of observations or measurements performed at each CCP to ensure compliance with specified critical limits

Observations or measurements must be able to detect loss of control at critical points in time for corrective actions to be taken

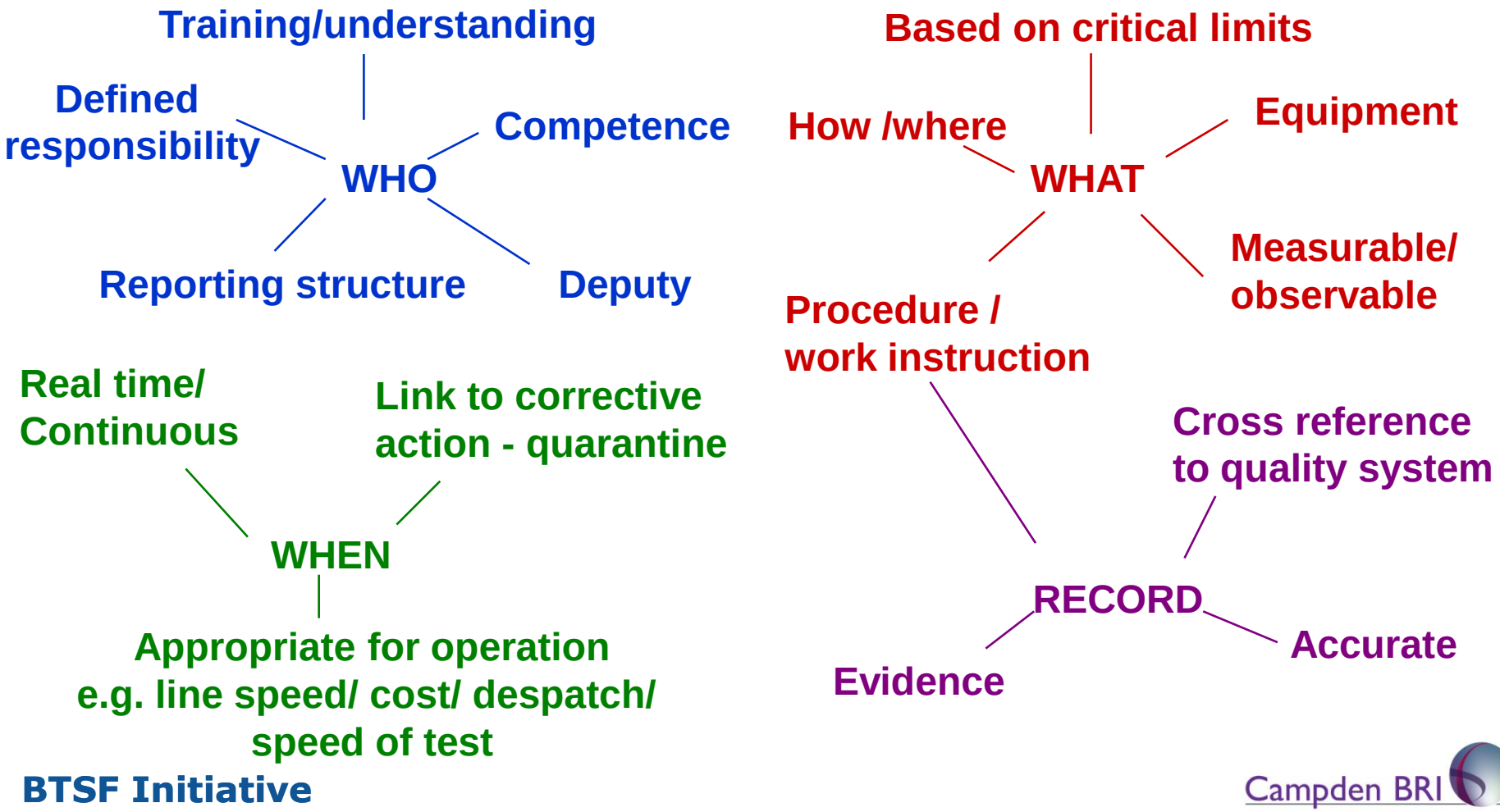
(Based on EC DG SANCO HACCP Guidance Document)

Monitoring Records

Records associated with monitoring CCPs must be signed by the person(s) doing the monitoring and when records are verified, by a responsible reviewing official(s) of the company

(Based on EC DG SANCO HACCP Guidance Document)

Assessing Principle 4



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Principle 5: Corrective Action

Establish corrective actions when monitoring indicates that the critical control point is not under control.

- Planned in advance
- Followed when there is a deviation from the critical limit or a trend towards loss of control

(Based on EC DG SANCO HACCP Guidance Document)

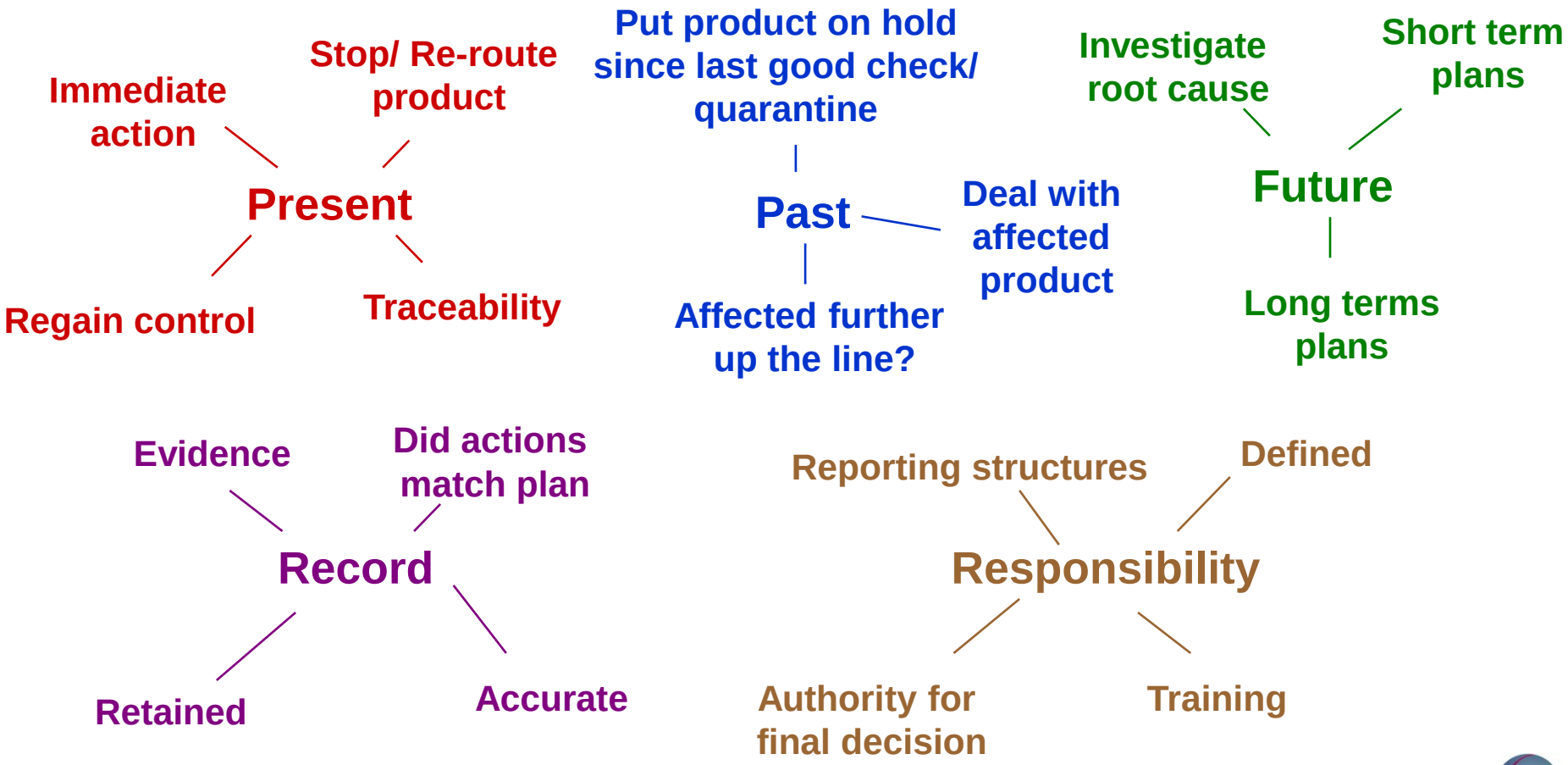
Corrective Action Records

Corrective actions should include a written record of measures taken indicating all relevant information, for example:

- date
- time
- type of action
- persons taking the action
- subsequent verification check

(Based on EC DG SANCO HACCP Guidance Document)

Assessing Principle 5



BTSF Initiative

Campden BRI
food and drink innovation

Principle 7: Documentation

Efficient and accurate record keeping is essential to the application of a HACCP system. HACCP procedures should be documented.

Documentation and record keeping should be appropriate to the nature and size of the operation and sufficient to assist the business to verify that the HACCP controls are in place and being maintained.

(Based on EC DG SANCO HACCP Guidance Document)

Typical content of a HACCP Plan (1)

Terms of reference/scope of the study

Team details

Product/process details

Intended use

Flow Diagram

Hazard analysis and controls

Critical control points (with an indication of how they were determined)

Typical content of a HACCP Plan (2)

Critical limits

Monitoring activities

Corrective actions

Authority for disposition

Records

Verification activities

Amendments

Examples of HACCP Documentation

HACCP plan

Policy statement

Procedures/work instruction

Control/monitoring records

Corrective action records

Verification activity records

HACCP team meetings

Typical documentation problems

Filled in advance
Not accurate / truthful!
Wrong issue
Transposed (to keep it neat!)
Not right limits as per HACCP plan
Not signed off
Verified when not signed off
Corrections
Illegible
Perfect answers!
Missing
Computer records access?