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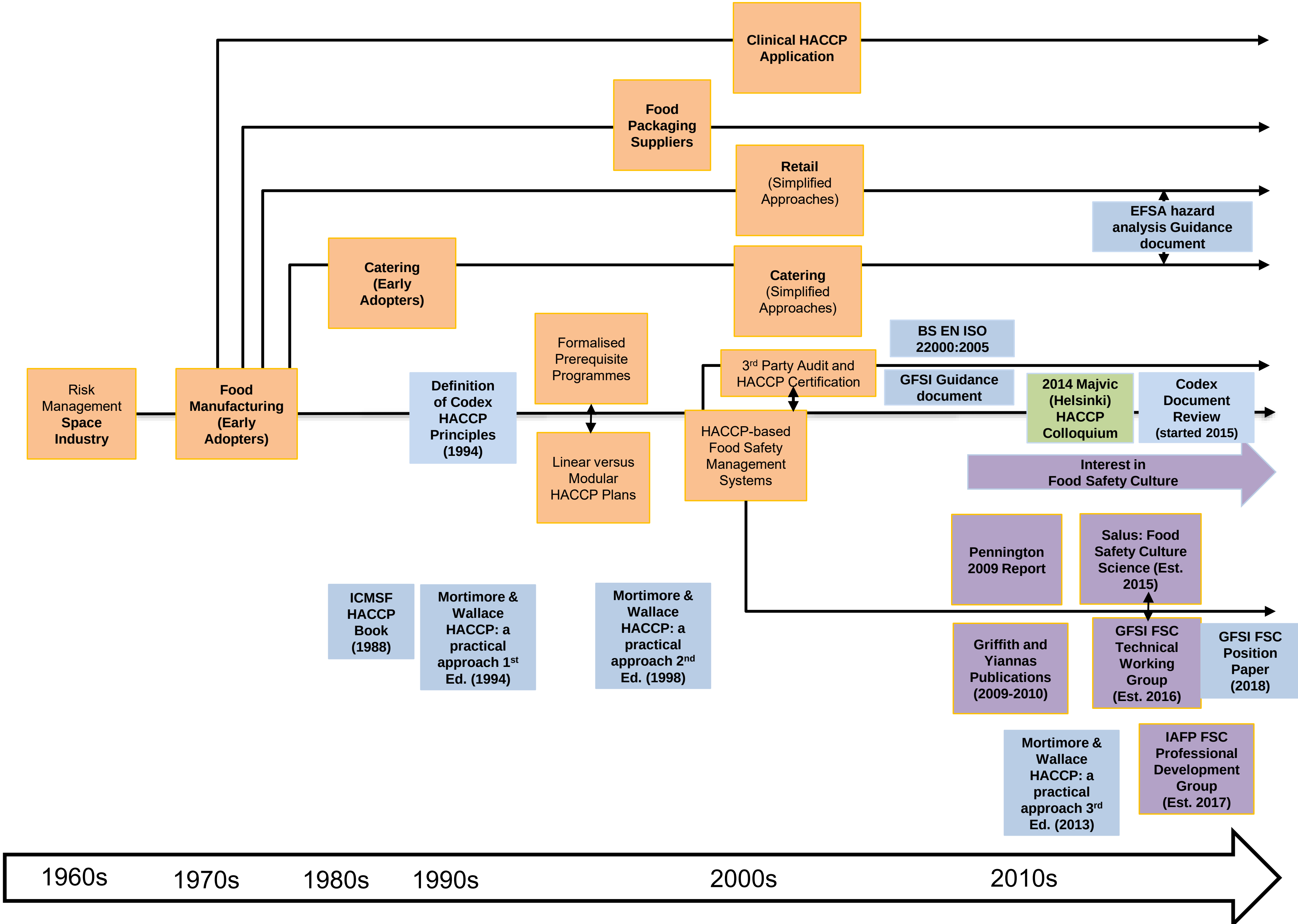
Impact of Food Safety Culture on Food Safety Management Systems

Prof Carol Wallace

Agenda

- Evolution of food safety management systems and emergence of food safety culture
- Evolving understanding of food safety management systems complexity
- A journey to food safety culture via HACCP and food safety research
- Understanding food safety culture
- Measuring and improving food safety culture
- Food safety culture current initiatives and forthcoming guidance

Evolution of HACCP-based FSMS and Food Safety Culture



Risk Management **Space Industry**

Food Manufacturing (Early Adopters)

Catering (Early Adopters)

Food Packaging Suppliers

Clinical HACCP Application

Retail (Simplified Approaches)

Catering (Simplified Approaches)

Definition of Codex HACCP Principles (1994)

Formalised Prerequisite Programmes

Linear versus Modular HACCP Plans

3rd Party Audit and HACCP Certification

HACCP-based Food Safety Management Systems

BS EN ISO 22000:2005

GFSI Guidance document

EFSA hazard analysis Guidance document

2014 Majvic (Helsinki) HACCP Colloquium

Codex Document Review (started 2015)

Interest in Food Safety Culture

ICMSF HACCP Book (1988)

Mortimore & Wallace HACCP: a practical approach 1st Ed. (1994)

Mortimore & Wallace HACCP: a practical approach 2nd Ed. (1998)

Pennington 2009 Report

Salus: Food Safety Culture Science (Est. 2015)

Griffith and Yiannas Publications (2009-2010)

GFSI FSC Technical Working Group (Est. 2016)

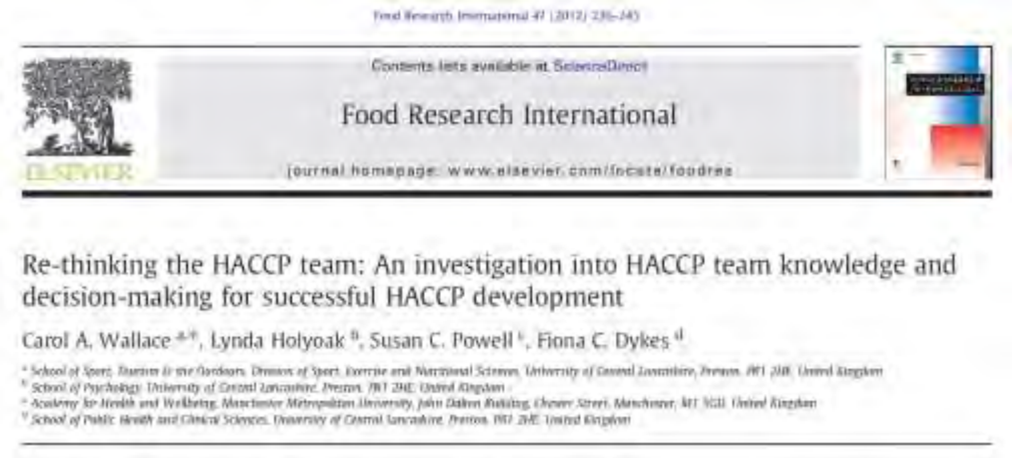
GFSI FSC Position Paper (2018)

Mortimore & Wallace HACCP: a practical approach 3rd Ed. (2013)

IAFP FSC Professional Development Group (Est. 2017)

1960s 1970s 1980s 1990s 2000s 2010s

HACCP Research Perspectives



Food Research International 47 (2012) 236–245

Contents lists available at ScienceDirect

Food Research International

journal homepage: www.elsevier.com/locate/foodres

Re-thinking the HACCP team: An investigation into HACCP team knowledge and decision-making for successful HACCP development

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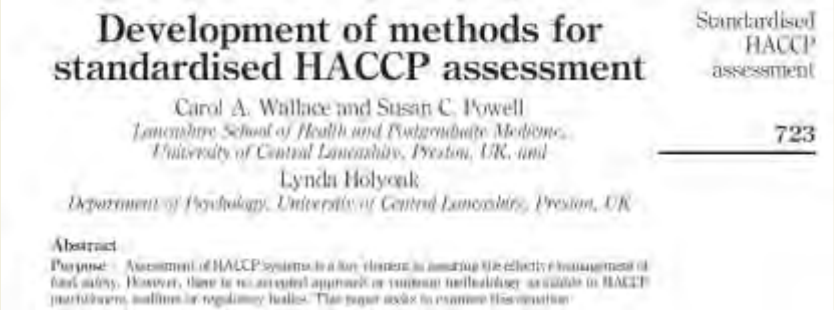


Development of methods for standardised HACCP assessment

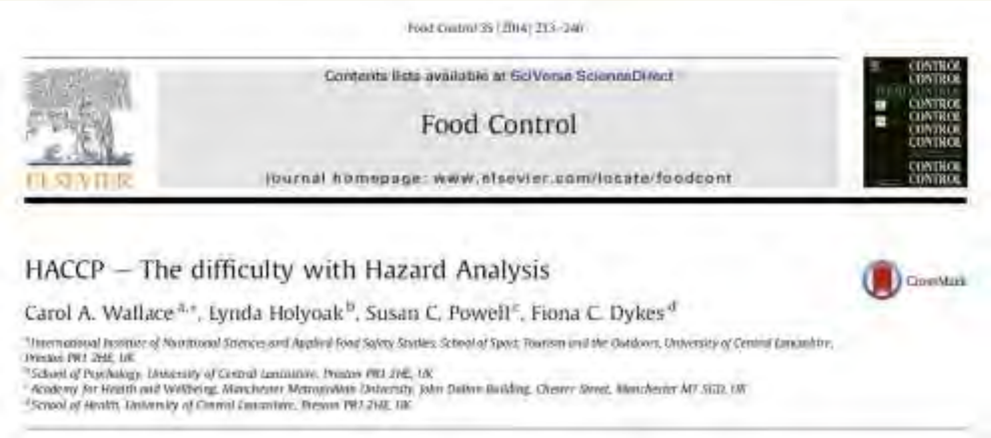
Standardised HACCP assessment

723

Carol A. Wallace and Susan C. Powell
Lancashire School of Health and Postgraduate Medicine, University of Central Lancashire, Preston, UK, and
Lynda Holyoak
Department of Psychology, University of Central Lancashire, Preston, UK

Abstract

Purpose – Assessment of HACCP systems is a key element in ensuring the effective management of food safety. However, there is no accepted approach or common methodology available to HACCP practitioners, auditors or regulatory bodies. This paper seeks to examine this situation



Food Control 35 (2014) 233–240

Contents lists available at SciVerse ScienceDirect

Food Control

journal homepage: www.elsevier.com/locate/foodcont

HACCP – The difficulty with Hazard Analysis

CrossMark

Carol A. Wallace [a,*], Lynda Holyoak [b], Susan C. Powell [c], Fiona C. Dykes [d]

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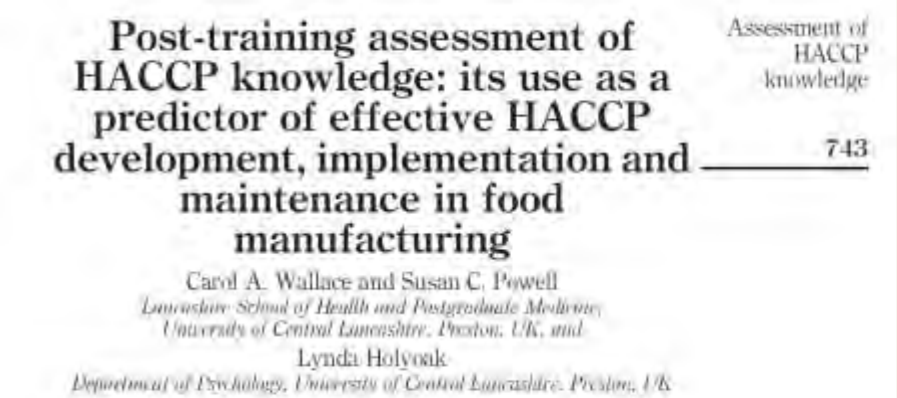

Post-training assessment of HACCP knowledge: its use as a predictor of effective HACCP development, implementation and maintenance in food manufacturing

Assessment of HACCP knowledge

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Carol A. Wallace and Susan C. Powell
Lancashire School of Health and Postgraduate Medicine, University of Central Lancashire, Preston, UK, and
Lynda Holyoak
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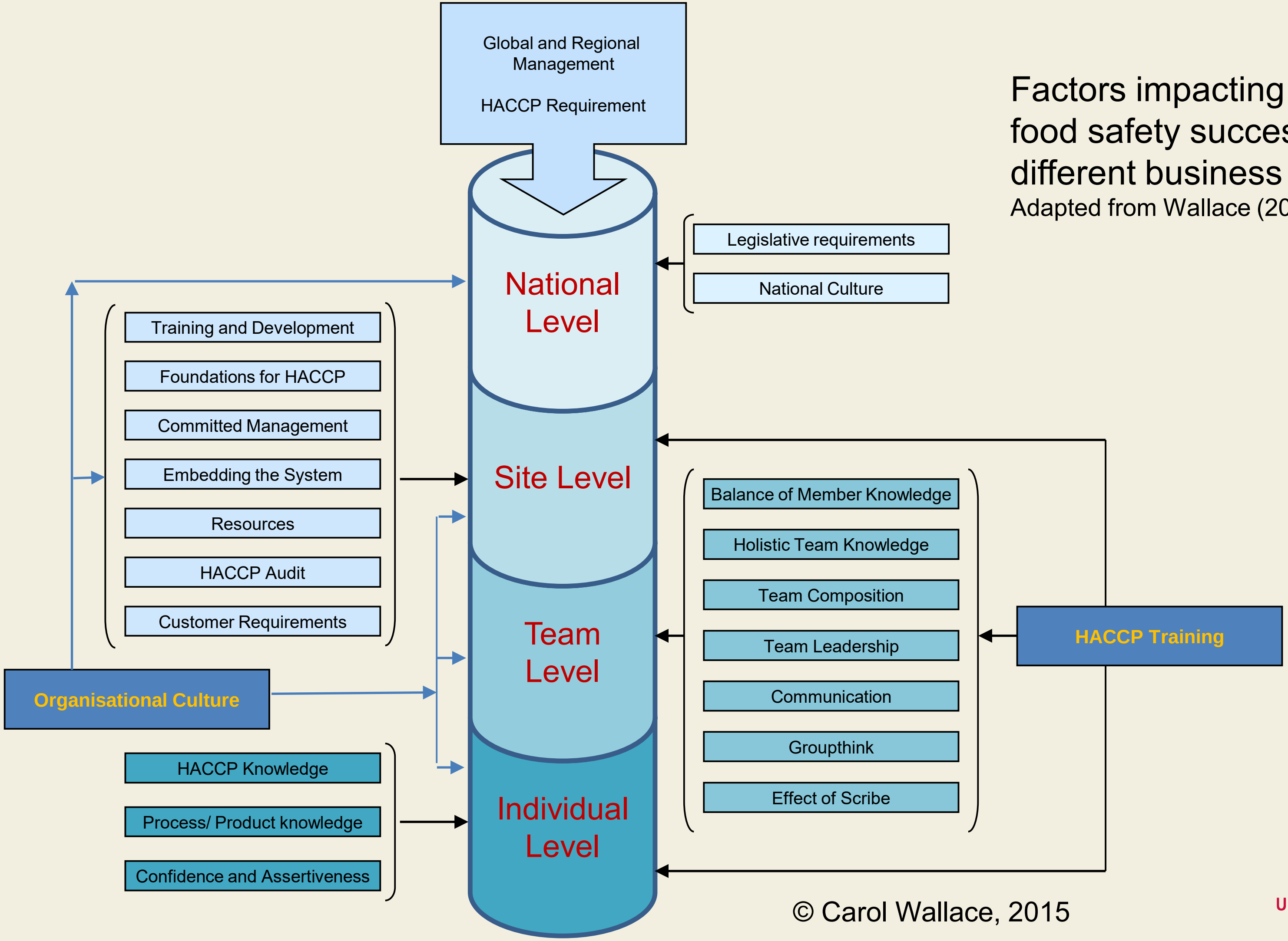
HACCP Research Perspectives – importance of people and culture

Factors impacting HACCP and food safety success at different business levels
Adapted from Wallace (2009)



Global and Regional Management

HACCP Requirement

National Level
- Legislative requirements
- National Culture

Site Level
- Training and Development
- Foundations for HACCP
- Committed Management
- Embedding the System
- Resources
- HACCP Audit
- Customer Requirements

Team Level
- Balance of Member Knowledge
- Holistic Team Knowledge
- Team Composition
- Team Leadership
- Communication
- Groupthink
- Effect of Scribe

Individual Level
- HACCP Knowledge
- Process/ Product knowledge
- Confidence and Assertiveness

Organisational Culture

HACCP Training

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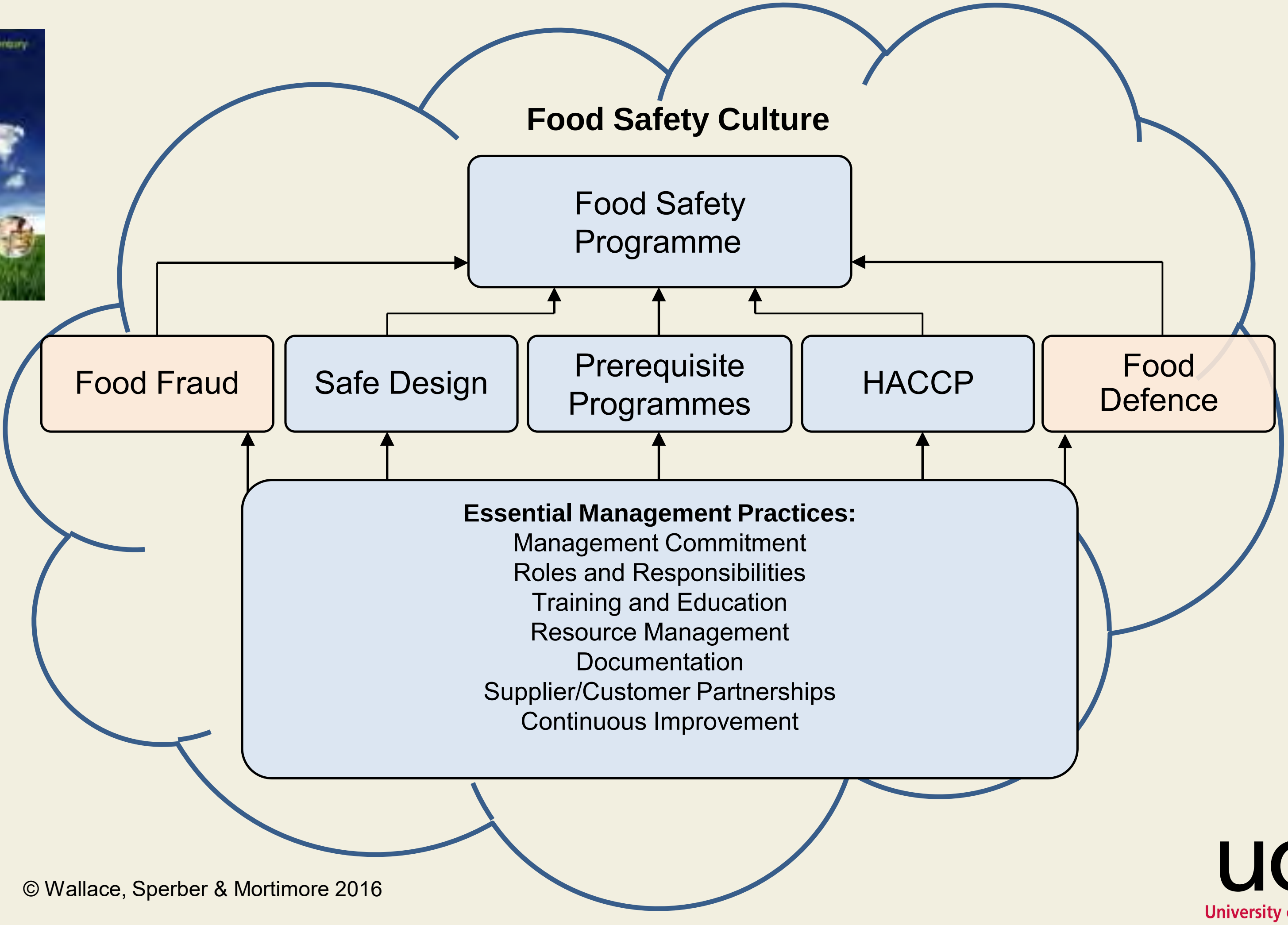
Evolving understanding of Food Safety Management Systems Complexity

Food Safety for the 21st Century


Food Safety Culture

Food Safety Programme

Food Fraud

Safe Design

Prerequisite Programmes

HACCP

Food Defence

Essential Management Practices:
Management Commitment
Roles and Responsibilities
Training and Education
Resource Management
Documentation
Supplier/Customer Partnerships
Continuous Improvement

© Wallace, Sperber & Mortimore 2016

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Food Safety Culture Evolution

- FSC builds on work from:
  - Organisational Culture
  - Organisational Psychology
  - Human Factors research
  - Safety Science
  - Social cognitive science
  - National Culture
- These are very well developed fields in their own right
- FSC needs input from a number of perspectives,
  - not just food safety people but social scientists, psychologists, ethnographers, behavioural specialists
  - Quantitative and qualitative perspectives both important.
- But what actually is Food Safety culture?....

Icebergs, onions and trees!

Metaphors for Food Safety Culture and impact on its assessment

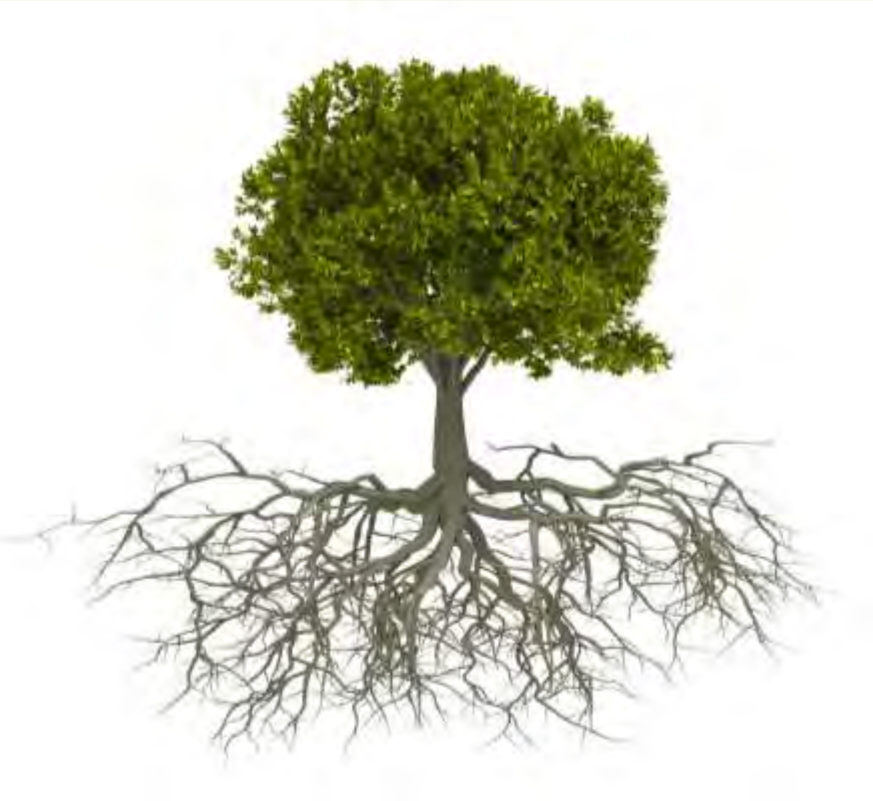
…culture is not visible on the surface

Culture or Climate?

A simplified model

Climate

Culture



Behaviour and Artefacts

Espoused values

Basic underlying assumptions

Food Safety Culture Evolving Definitions

- Griffith, 2010 – FSC = '*The aggregation of the prevailing, relatively constant, learned, shared attitudes, values and beliefs contributing to the hygiene behaviours used within a particular food handling environment*'
- Schein, 2004 – Organisational Culture = *A pattern of shared basic assumptions that was learned by a group as it solved its problems. The group found these assumptions to work well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to these problems'*
- Jespersen et al, 2016 – FSC = *'the interlinking of three theoretical perspectives: organisational culture, food science and social cognitive science.'*
- GFSI TWG, 2018 – FSC = Food Safety Culture: *Shared values, norms, and beliefs that affect mindset and behaviours towards food safety across/in/throughout an organisation.*

This latter definition builds on previous work and definitions in the literature, in particular the definitions of Griffith et al. (2010) and Schein (2004). Shared values, norms and beliefs generally seen as a learned pattern of conditions that are taught to new members when they join a group.

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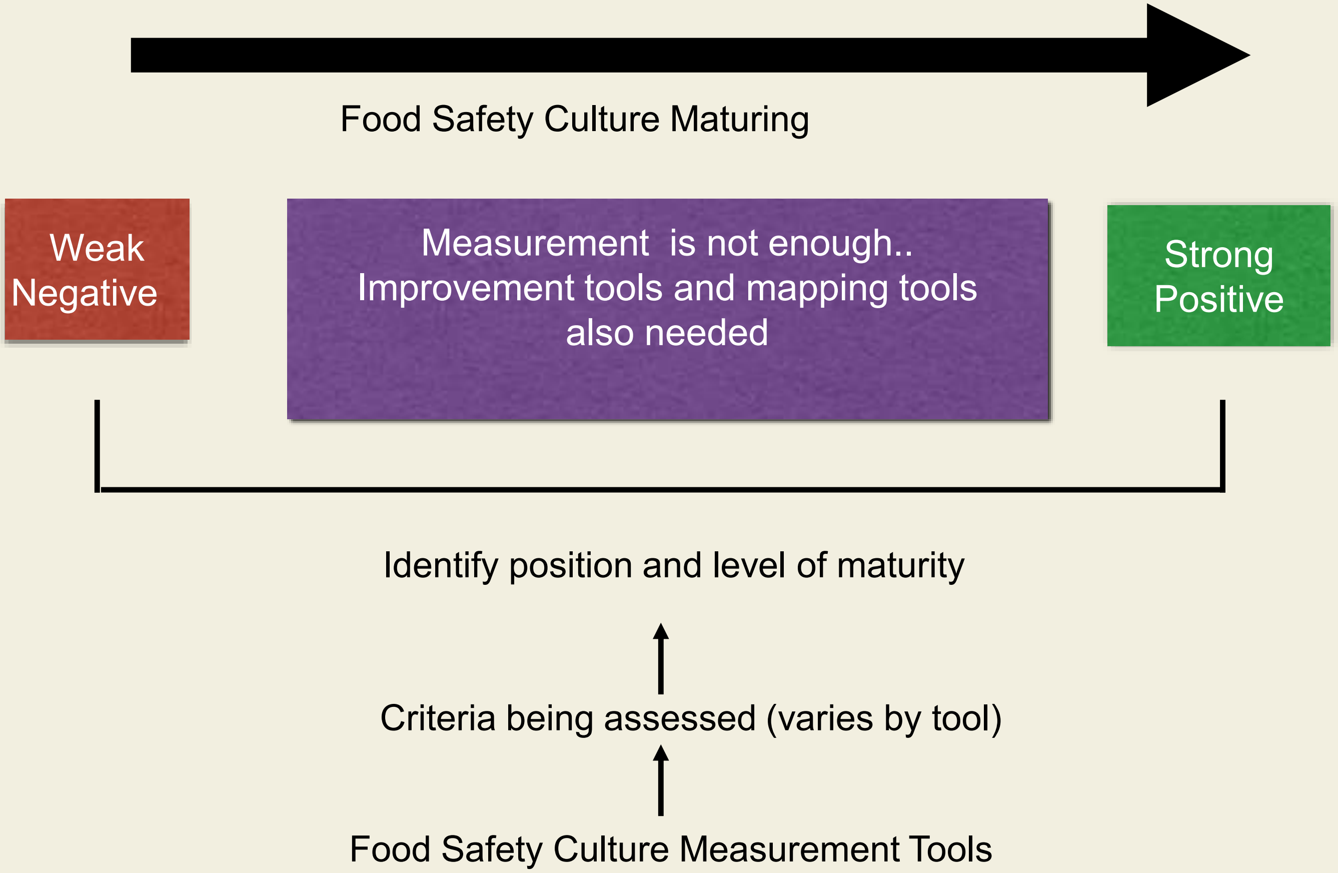
Food Safety Culture - A continuum



Food Safety Culture Maturing

Weak
Negative

Measurement is not enough..
Improvement tools and mapping tools also needed

Strong
Positive

Identify position and level of maturity

Criteria being assessed (varies by tool)

Food Safety Culture Measurement Tools

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Breaking down and measuring FSC

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Comparative analysis of existing food safety culture evaluation systems

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ABSTRACT

The purpose of the research was firstly, to analyze existing culture evaluation systems for commonalities and differences in research quality, applied validation strategies, and content. Secondly, to suggest a simple structure of food safety cultural dimensions to help unify the culture evaluation field. To achieve these goals, a comparison of eight culture evaluation models applied to varying degrees in the food industry was conducted. The systems were found to vary significantly in applied validation strategies but through deductive, textual data analysis, five dimensions were identified that cover elements present in all the models. Transparency is needed when using applied research methodologies to continually increase quality and trustworthiness of culture research in the food safety domain and this field would benefit from both further commonality of approach to validation strategy and structure and adoption of an overarching structural framework.

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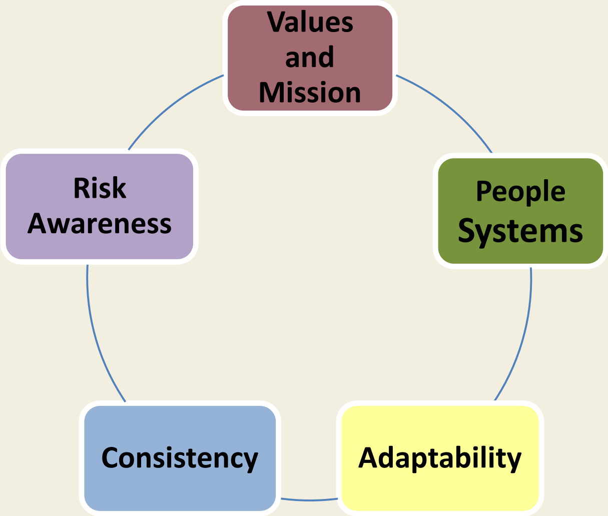


Values and Mission

People Systems

Adaptability

Consistency

Risk Awareness

Food Control

Measurement of food safety culture using survey and maturity profiling tools

Lone Jespersen, Mansel Griffiths, Tanya Maclaurin, Benjamin Chapman, Carol A. Wallace

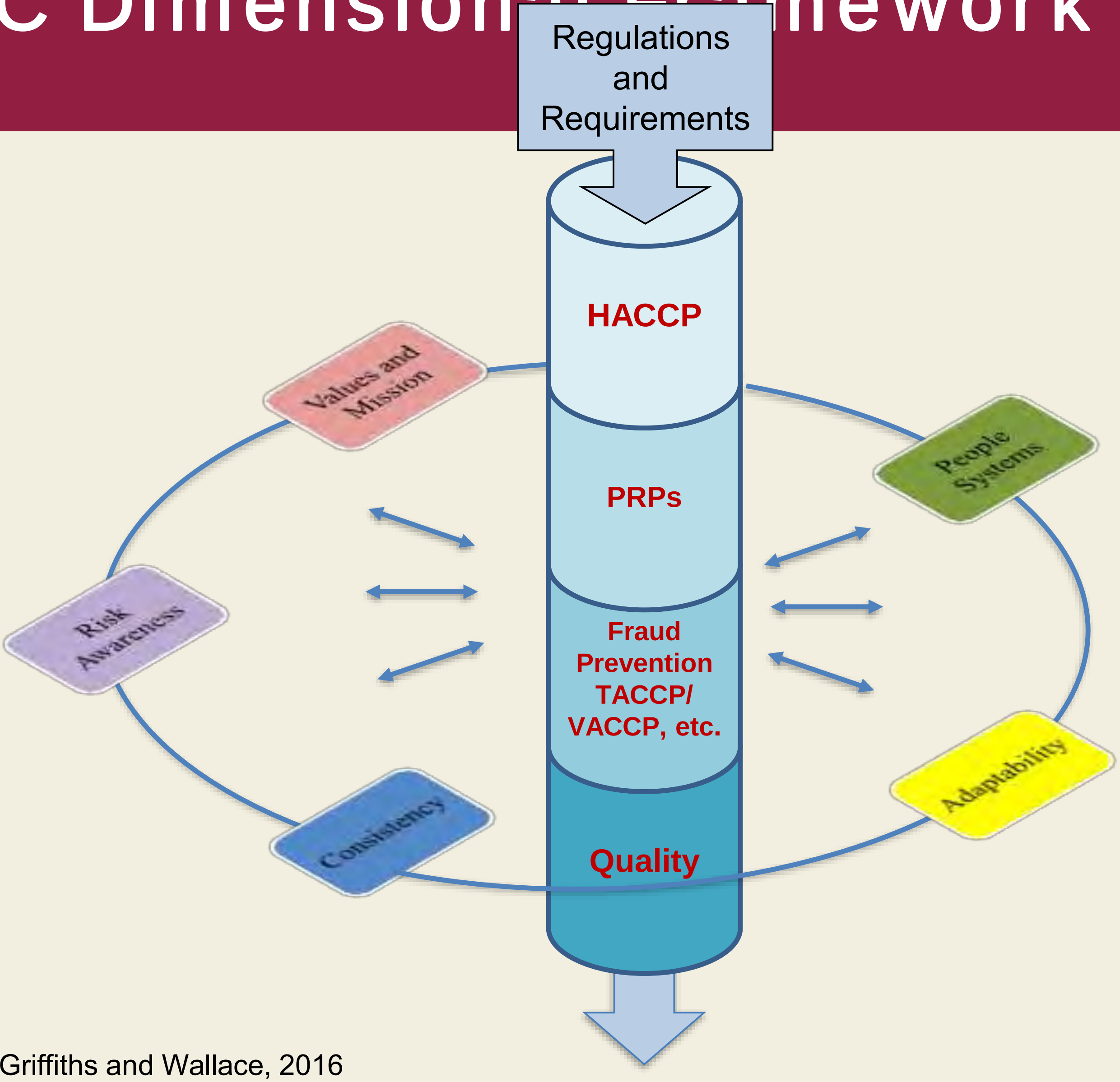
Food Research International

Triangulation and the importance of establishing valid methods for food safety culture evaluation

Lone Jespersen, Carol A. Wallace

University of Central Lancashire

FSC Dimensional Framework


Regulations and Requirements
HACCP
PRPs
Fraud Prevention TACCP/ VACCP, etc.
Quality
Values and Mission
People Systems
Risk Awareness
Consistency
Adaptability

Jespersen, Griffiths and Wallace, 2016

Current initiatives in Food Safety Culture

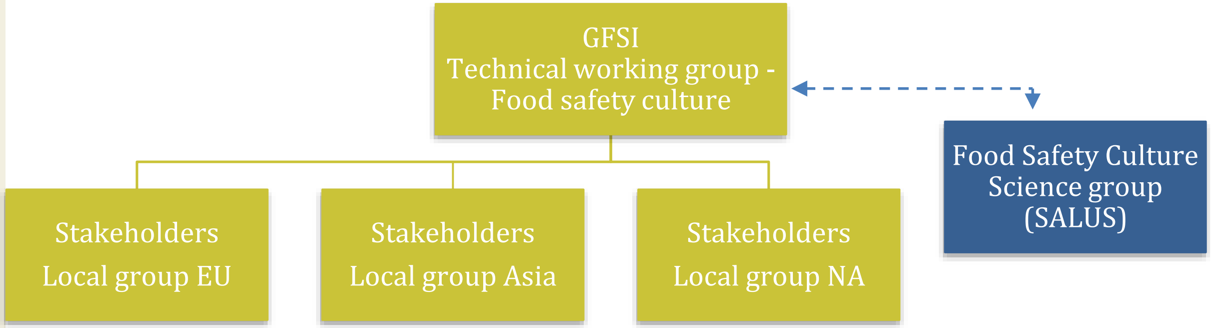
Research	Industry Guidance	Industry Debate
SALUS The Food Safety Culture Science Group	GFSi Global Food Safety Initiative	International Association for Food Protection
 Research ongoing to fill the gaps.	Technical Working Group in Food Safety Culture established 2016 Position Paper published 2018	Professional Development Group in Food Safety Culture established July 2017

Food Safety Culture Science Group (SALUS)

- International Group of Academics from 11 Universities, 1 Industry RA
- Consultants linked with research institutes (Consultant/Academics)
- Multiple perspectives
  - Food safety, systems theory, psychology, human factors, team behaviour, leadership, decision-making, measurement tool development, etc.
- Chaired by Prof Carol Wallace, UCLan; meet twice per year (since 2015)
- Mission to provide consensus on FSC based on science and give rigour to the field

GFSI Food Safety Culture Technical Working Group (TWG)

- Aim: *to provide guidance and requirements around food safety culture.*
- Consists of practitioner technical experts from retailers, manufacturers, food service operators, service providers, standard owners, certification bodies, and industry associations.



GFSI
Technical working group -
Food safety culture

Stakeholders
Local group EU

Stakeholders
Local group Asia

Stakeholders
Local group NA

Food Safety Culture
Science group
(SALUS)

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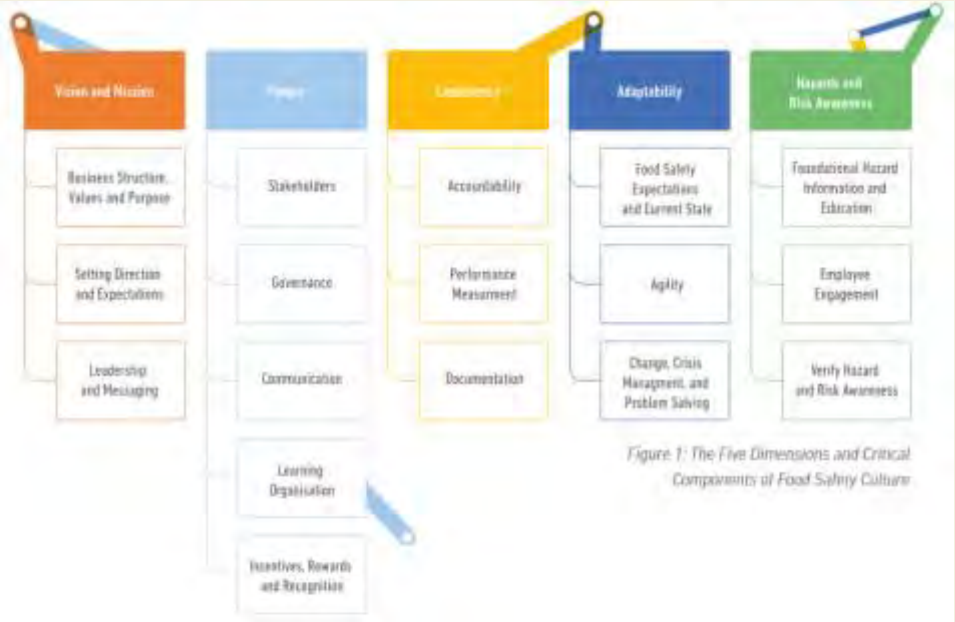
GFSI Food Safety Culture Position Paper

A CULTURE OF FOOD SAFETY

A POSITION PAPER FROM THE GLOBAL FOOD SAFETY INITIATIVE (GFSI)



Vision and Mission
- Business Structure, Values and Purpose
- Setting Direction and Expectations
- Leadership and Messaging

People
- Stakeholders
- Governance
- Communication
- Learning Organisation
- Incentives, Rewards and Recognition

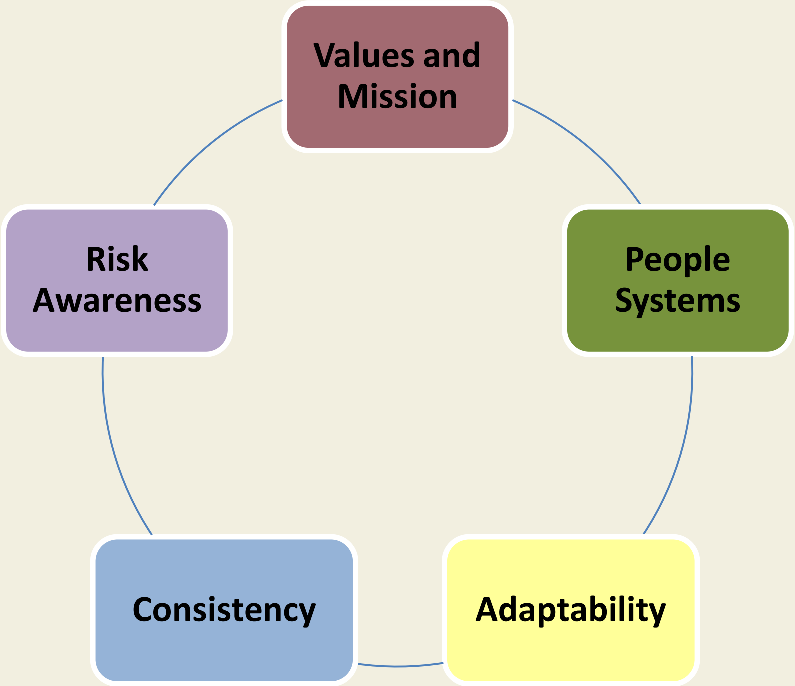
Consistency
- Accountability
- Performance Measurement
- Documentation

Adaptability
- Food Safety Expectations and Current State
- Agility
- Change, Crisis Management, and Problem Solving

Hazards and Risk Awareness
- Foundational Hazard Information and Education
- Employee Engagement
- Verify Hazard and Risk Awareness

Figure 1: The Five Dimensions and Critical Components of Food Safety Culture

FSC Dimensional Framework



Values and Mission

People Systems

Adaptability

Consistency

Risk Awareness

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IAFP Food Safety Culture PDG

- **Mission Statement:** To provide an international forum to advance food safety culture science and best practices
- The group will work to advance food safety culture as a science and not a slogan by reviewing existing content on the topic and publishing in scientific journals, engaging members, communicating best practices, and learning from other industries/disciplines
- Symposia proposals and work plans ongoing
- Next meeting July 2019, Louisville, Kentucky

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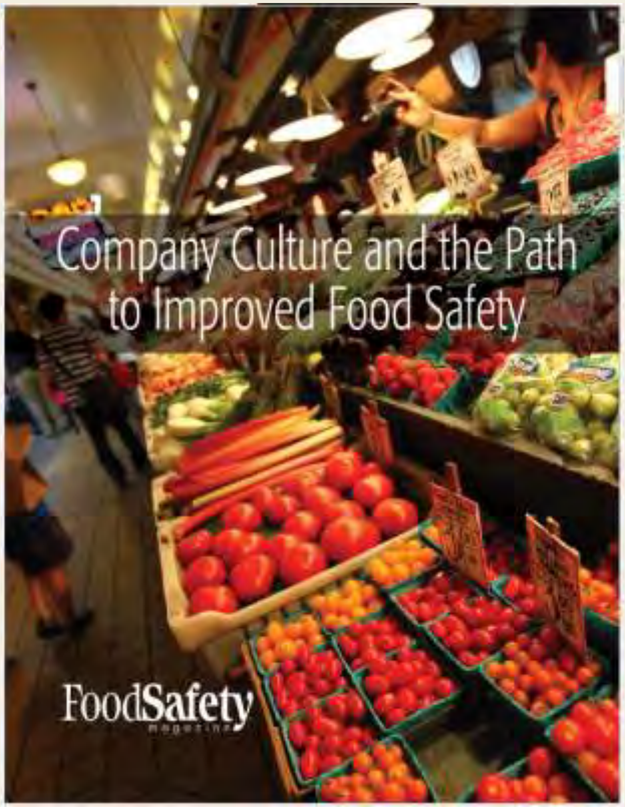
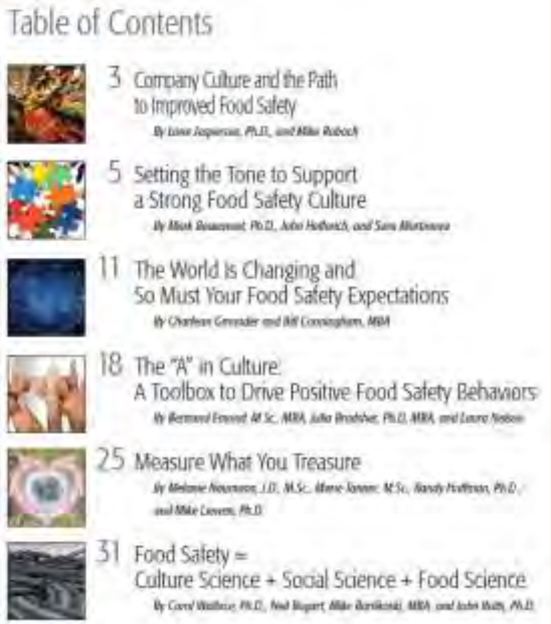
Other Guidelines and Standards

- Codex HACCP Revisions
  - Currently ongoing and at step 3 of Codex document process
  - Food safety culture features in the draft
    - Cultivating and enabling a strong food safety culture
    - Commitment to providing safe food and encouraging appropriate food safety behaviours
- BRC Global Standard for Food Safety Issue 8
  - New clause on food safety culture

Other Recent Publications…..

Special Edition of Food Safety Magazine


Company Culture and the Path to Improved Food Safety
FoodSafety
magazine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31 Food Safety = Culture Science + Social Science + Food Science

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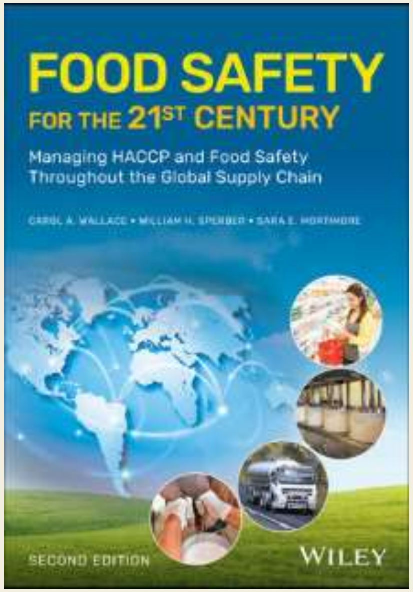
FOOD SAFETY
FOR THE 21ST CENTURY
Managing HACCP and Food Safety Throughout the Global Supply Chain
CAROL A. WALLACE • WILLIAM H. SPERBER • SARA E. MORTIMORE
SECOND EDITION
WILEY

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Impact of Food Safety Culture on Food Safety Management Systems

- Understanding Food Safety Culture better will help us to strengthen food safety management systems
  BUT
- Will require a toolkit of options depending on existing state, e.g.
  - Team building approaches and people development
  - Application of behavioural theories and interventions
  - Application of systems theories and interventions
  - Clarification of vision and strategy and linking to what leaders actually do and say
  - Provision of necessary resources, structures, systems and equipment to enable an effective culture.
- Will require research and sharing of best practices
- Still a lot of questions to be answered….

Thank you……. Questions?

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HACCP
HACCP

SALUS

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