

# Real-time Food Safety Compliance

By QAssurance

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**van hall  
larenstein**  
university of applied sciences

# George Miedema

## Study

- BSc. Food technology 2015 – 2020
  - Food Safety and Health Major
- MSc. Digital Business Innovation 2020 - 2022

## Work

- QAssurance 2020 – Now
  - Food Safety Consultant 2020 - 2022
  - iMIS Platform Manager 2022 - Now

## During VHL

### *Internships*

- Merieux Nutrisciences
- Trabocca / Tradin Organic
- FACT VHL

### *Association*

- Arbori Cultura member



# Introduction

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1. Food Transparency
2. Real-time Food Management
3. Real-time Compliance



# Introduction

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1. **Food Transparency**
2. Real-time Food Management
3. Real-time Compliance



# Real-time Food Management

## Yearly Dynamics:

- 2000 quality requirements
- 100 suppliers
- 100 customers
- 100 employees
- 400 legal changes



# Legislation: HACCP

- Hazard Analysis
- Overview pathogens, chemical hazards
  - Pathogens
  - Mycotoxines
  - Biotoxines
  - Virusses, rickets and prions
  - Parasites & Pest
  - Chemical & Fysical
  - Zoonoses & Toxines

- Hazard Analysis
  - Raw material hazards
  - Process hazards
  - HACCP team
  - Decision tree
  - Control measures



# Legislation: EU examples

- 2002-178 General Food Law
- 2005-2073 Microbiological criteria
- 2005-396 Residues of pest control chemicals
- 2006-1881 Contamination of food
- 2006-1924 Food claims
- 2008-1333 Additives
- 2008-1334 Aromas
- 2011-1169 Consumer food information



# Legislation: National Guidelines

- Guide Lines in Holland, to deal with sampling
  - Information sheet 64
  - Information sheet 65
  - Information sheet 85
- Food Safety Authority Information
  - Food Allergy
  - Bioterrorism
  - PVC packaging contaminants
  - Paralytic shellfish poisoning (PSP)
  - Toxoplasma gondii
  - Zoönoses



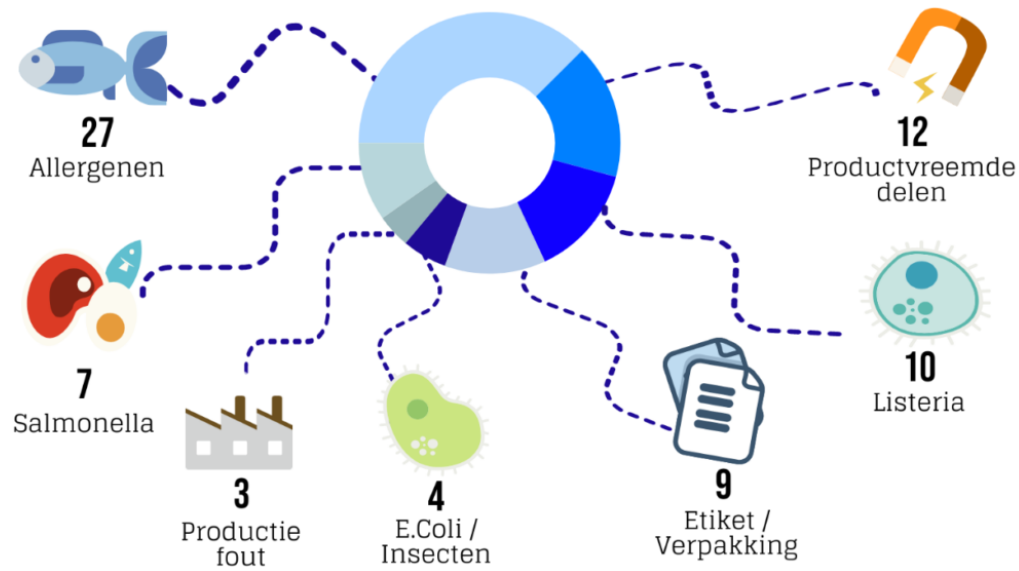


# Legislation: Recall

- 2002-178 General Food Law
- Article 19: by order of the food safety authority
- Buro of risk analysis
- Decision tree for recall
- Issuemanagement
- RASFF - Food and Feed Safety Alerts



# Legislation: Recall (VMT overview 2019)



## 1. Tracing

- Properly recording the current method of tracing all normal products as well as any biological flow.
- Describe any missing trace actions in more detail and record them in additional records.
- Method of tracing closed weekly: demonstrably correct.

## 2. Additives

- Raw materials, Recipes, End products up to date
- 2 E-number analysis on this product portfolio
- Keep E-number analysis up to date



### 3. Microbiology

- Check microbiological plan for legislation.
- Check microbiological plan last year for compliance.
- Carefully implement current year microbiological plan.

### 4. Listeria

- Demonstrable compliance with info sheet 85 regarding Listeria.
- Analysis of current product portfolio in which FSSP must be substantiated with, among others, why Challenge tests have or have not been carried out.
- Describe the Listeria approach that demonstrably meets the legal requirements.



## 5. STEC

- 5A Using the product portfolio, analyze which raw products to be consumed can have STEC as a problem.
- 5B Conform STEC to NVWA policy and guarantee these products regarding STEC
- 5C Info sheet 64 of NVWA considered for STEC

## 6. EDP audit

- 6A Administrations may be taken without any reason / suspicion

**NVWA legt half miljoen euro boete op aan bedrijf voor niet meewerken aan terugroepactie mogelijk besmet varkensvlees**

De Nederlandse Voedsel- en Warenautoriteit (NVWA) heeft een vleesverwerkingsbedrijf een boete opgelegd van ruim EUR 500.000. Het bedrijf heeft in 2018, ondanks aandringen van de NVWA, onvoldoende maatregelen getroffen om varkensvlees dat mogelijk besmet was met Salmonella Goldcoast uit de handel te nemen. Daarnaast heeft de vleesverwerker zijn afnemers verzocht instructies van de NVWA om producten uit de handel te halen, te negeren.



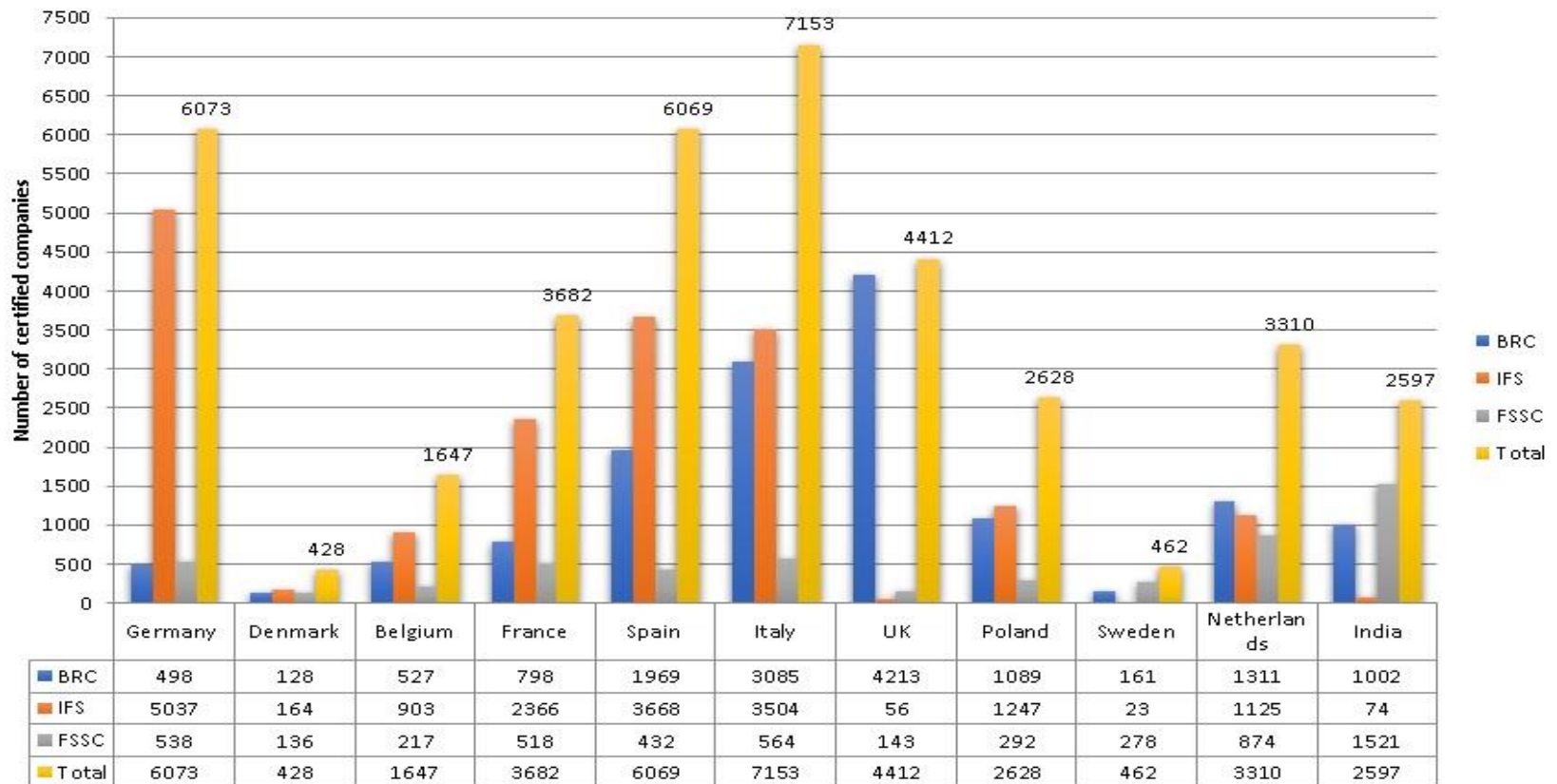
# Quality Standards

- Food Quality
  - BRC
  - IFS
  - FSSC22000
  - SQF
  - Dutch HACCP
  - Quality claims like HALAL, UTZ, Rainforest Alliance, Organic
- Environment, ISO14001
- Health, ISO18001
- Social Responsibility
  - Social Development Goals



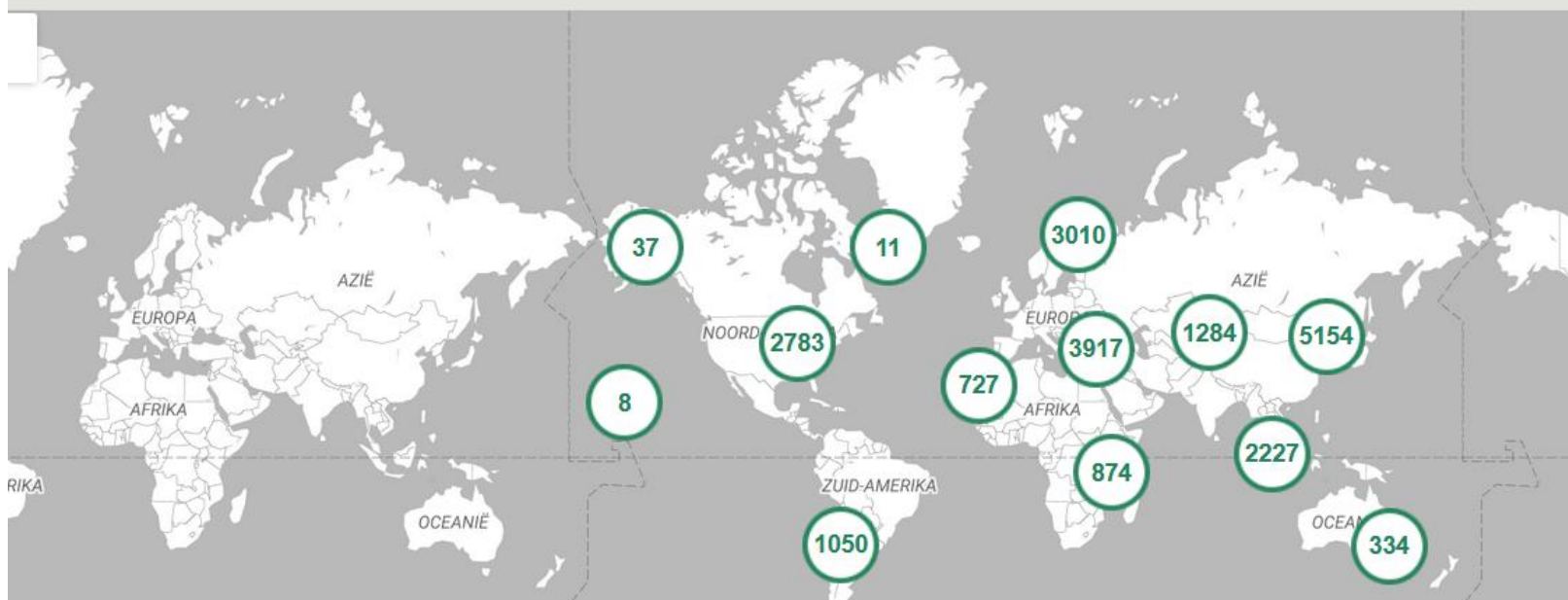
# Quality Standards

Overview of countries certified in food safety



# FSCC 22000

Found **23768** Certified Organizations





# Quality Standards

- Food Production parameters
  - Product
  - Proces
  - Person
  - Production facility
- Food Defense
- Food Fraud
- Not only production: also trade
  - HACCP of the whole supply chain



# What should you pay attention to?

- Do not forget Appendix FSSC, including services
- Knock Outs at IFS
- Fundamentals at BRC
- Management board expectation:
  - 80% of audit results dependent on the auditor
  - Focus with QA on a working system AND do not use the standard as an improvement tool.
  - BRC and IFS are often a settlement instrument, make sure that everything is correct on the days of the audit and that open action points that are standard related are also resolved.
  - Enough QA managers and advisors can wrongly do something else after an undesired score.



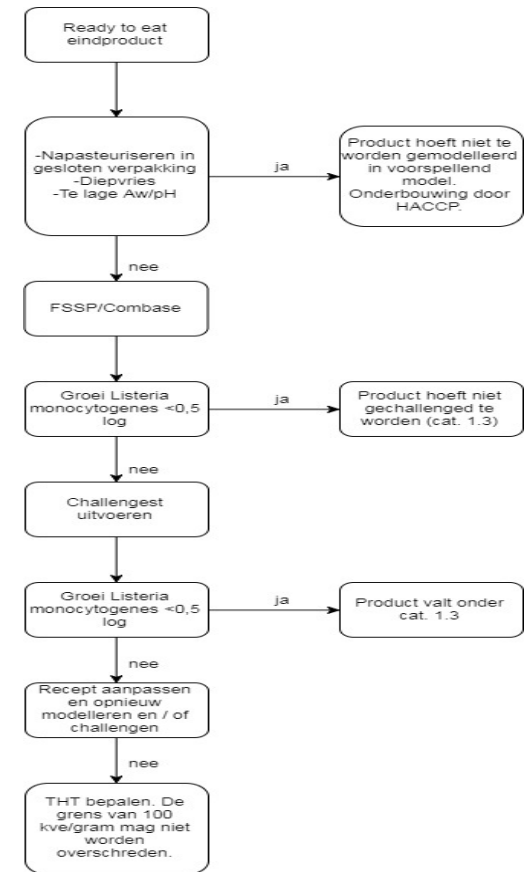
# Food Factory

- Food Production parameters
  - Product: product assurance & development
  - Process : Cleaning and disinfection
  - Person: screening for diseases and hygienic working
  - Production area
- Food Defense
- Food Fraud
- Evidence Based practice:  
Evidence: everything done for food safety
- Make sure all data is stored in the company! Code microbiology so that you don't fall victim to external errors.
- Plant Based chilled // ready to heat



# Food Factory: What to organize?

- Make sure everyone knows the location of:
  - HACCP study
  - Management reports
  - Listeria and additives overview
- Train relevant colleagues in
  - The management system
  - HACCP
  - Internal auditing
  - Location information sources
  - Traceability
  - ERP system and Backups
- Use a separate system for consumer & chain information



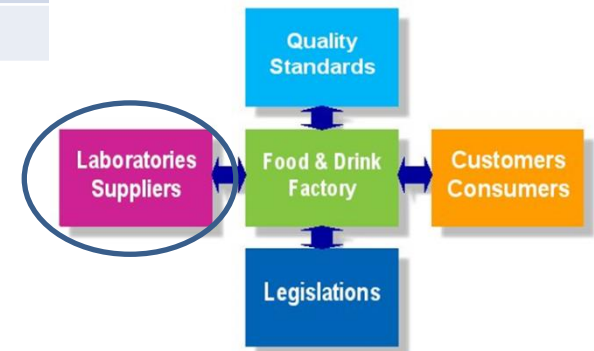
# Food Factory

- Purchase agreements
- Supplier audit & assessments
- Certificates of analysis
- Process samples
- Primary chain: management of
  - Agriculture: MRLs en pathogens
  - Meat: o.a. animal diseases (oie-database) and pathogens
- Production: control measures for
  - Food Production
  - Food Defense
  - Food Fraud



# Food Factory

Market	Company	Taken over
Cleaning products	Ecolab	CIDLINES
Pest control	Rentokil	SGS Sanitec
Advice / Research	Merieux	KTBA
	Normec	Labs, BK, N&S, KA
ERP systems	French IT company	Schouw Computerization
Cold stores	American VC	Diverse cold stores



# Customer & Consumer

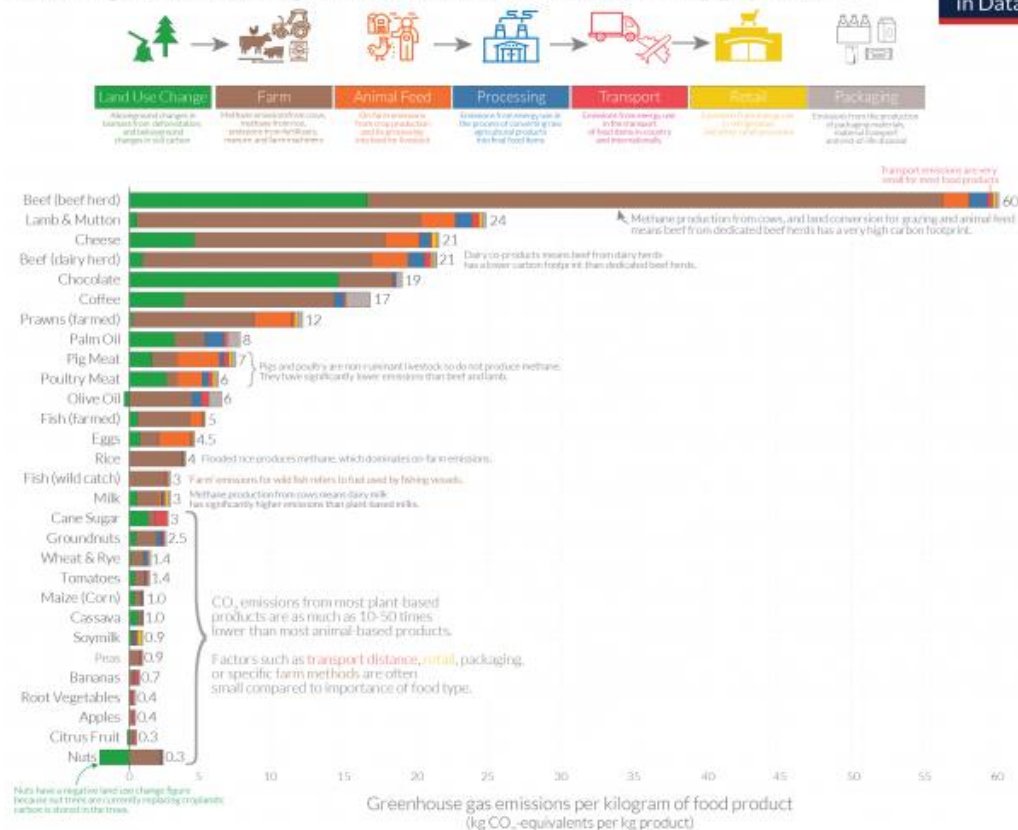
- Product Integrity
- Declaration of ingredients
- Nutritional values
- Origin
- Claims
- Allergens
- Produced where, which checks?
  - Food Production
  - Food Defense
  - Food Fraud



# Customer & Consumer: also impact

## Food: greenhouse gas emissions across the supply chain

Our World  
in Data



Note: Greenhouse gas emissions are given as global average values based on data across 38,700 commercially viable farms in 119 countries.  
 Data source: Basso and Herrero (2018), Reducing food's environmental impacts through producers and consumers. Science. Images sourced from the Houn Project.  
 OurWorldinData.org - Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.





# Customer & Consumer: Transparency needs

- NVWA: not priority
- Retailers will want to do their best with private labels
- Media is focused on it

## Tomatenpuree is pijnlijk goedkoop

**Pureeblikjes** Gepureerde tomaat voor 18 cent? Het kan. Maar de herkomst van het spul is vaak niet te achterhalen. En er zijn veel aanwijzingen dat de arbeidsomstandigheden bij de productie slecht zijn.

Hoe het zo goedkoop kan? Op bijna elk blikje staat iets vermeld als 'geproduceerd in Italië'. Maar wie het spoor verder volgt, komt op een heel andere plek: Xinjiang, in het westen van China. De regio waar de Oeigoerse minderheid woont.



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# Real-time Food Management:



## Yearly Dynamics:

- ✓ 2000 quality requirements
- ✓ 100 suppliers
- ✓ 100 customers
- ✓ 100 employees
- ✓ 400 legal changes
- ✓ Real-time management of
  - Specifications
  - Quality activity
  - Traceability
  - Assessment



# 4 Focus Areas



- 1.Specifications
- 2.Quality activities
- 3.Traceability
- 4.Assessment



# 4 Focus Areas

## QUALITY HOLISTICS



### PLAN

Risk Assessment  
Blue Print  
Operational Framework  
Yearly Plan

### DO

Document Generator  
Training  
Supportive Material  
Track and Trace

### CHECK AND ACT

Quality Database  
Quality Cockpit  
Standard Reports

### COMMUNICATE

Newsletter  
[www.iMISQA.com](http://www.iMISQA.com)  
SpecCheck  
Quality Information Centre  
Web-based ordering

			Specifications	Quality Activity Monitoring	Traceability	Assessment
QUALITY STANDARDS			CERTIFICATION MANAGEMENT			
EFQM INK ISO9001:2000 ISO17025	SQF Eurepgap GMP Animal Feed AIB	HACCP BRC IFS EFSIS	real time standard requirements	Operational Framework	Test	Risk  Quality Standard evidence based practice
ACCREDITATIONAL BODIES		CERTIFICATIONAL BODIES		DEMAND RELATIONSHIP MANAGEMENT (SRM)		
CUSTOMERS		CONSUMERS		product, process requirements	Information Centre Demand Quality Information Centre (DQIC)	Products Specifications  Customer Satisfaction  Consumer Needs
Retail Organisations Food Service Wholesalers and Trade Food Manufacturers Out of Home Outlets Hospitals		Habits, Attitudes Preferences Allergens Quality Needs Information Needs		BUSINESS PERFORMANCE MANAGEMENT (BPM)		
FOOD AND DRINK FACTORY			process, product and people requirements	Training, Support, Procedures, Quality Documents, Quality Database	Ingredients, Semi-products	Business System
FOOD & DRINK MANAGEMENT			SUPPLY RELATIONSHIP MANAGEMENT (SRM)			
LABORATORIES	PRODUCT SUPPLIERS	SERVICE SUPPLIERS	process, product and people requirements	Supply Quality Information Centre (SQIC)	Raw materials Specifications	Suppliers
Microbiological Analytical	Raw materials Equipment Packaging Machines	Cleaning and Hygiene Pest Control Measurements Cooling Systems	LEGISLATION MANAGEMENT			
GOVERNMENT CONTROL BODIES			legal requirements	legal requirements: - people - products - process - building	Informed	Risks  Legal evidence based practice
Global International National Where appropriate			LEGISLATIONS			



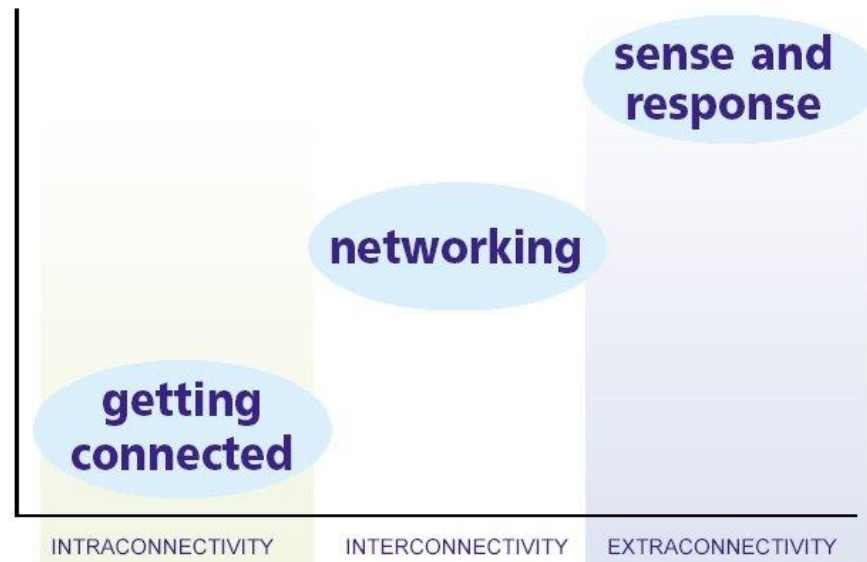
# Real-time Food management: How do you want to be organised?

**Knowing something is going to happen**

**Knowing why something happens**

**Knowing something happens**

**Knowing something has happened**



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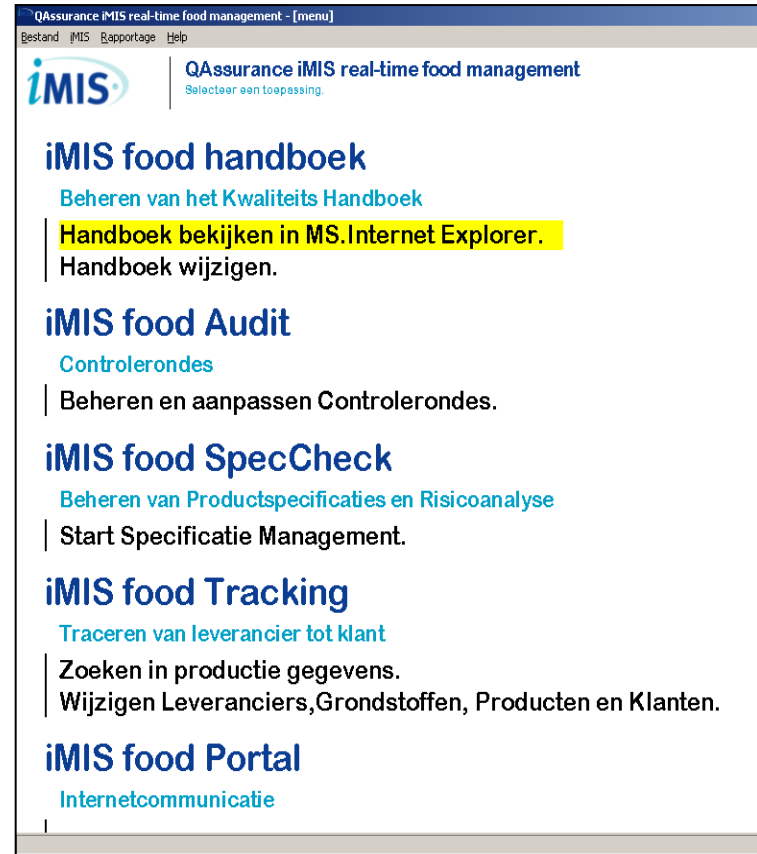




# Food Production (status 2022)

- Quality Activities:
  - Food Handbook
- Specifications
  - Food SpecCheck
- Traceability
  - Food Tracking
- Assessment
  - Food Audit
  - And monitoring of;
    - Hazards
    - Legislations
    - Standards

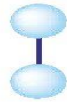
2022->: CONNECT, AI & Blockchain



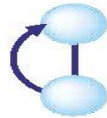
# Real-time Compliance: Connectivity needed



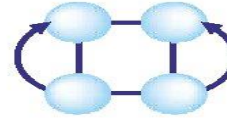
Activity



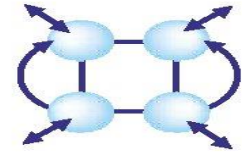
Process



Svstem



Chain



Holistic

Getting  
Connected

Networking

Sense &  
Response



# Real-time Compliance

- Dashboards: real-time compliance
  - Food Production
  - Food Defense
  - Food Fraud



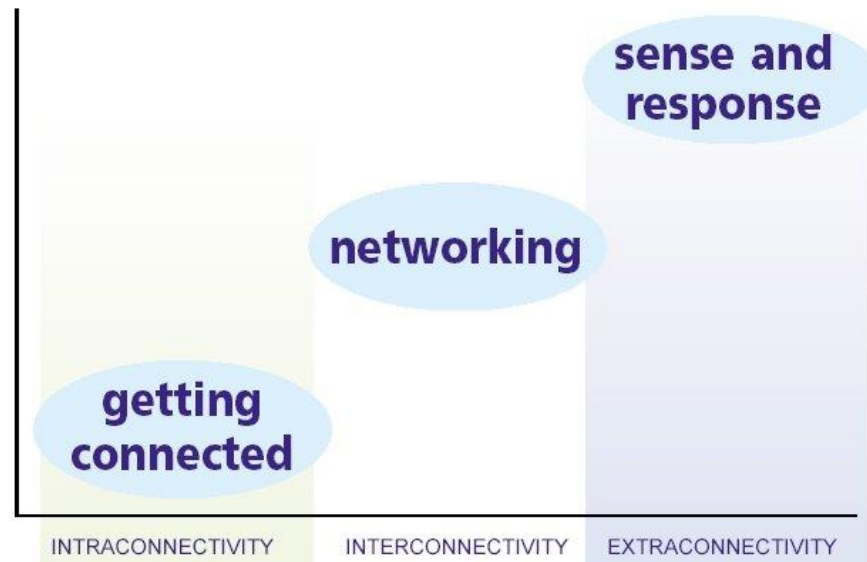
# Real-time Compliance

**Knowing something is going to happen**

**Knowing why something happens**

**Knowing something happens**

**Knowing something has happened**



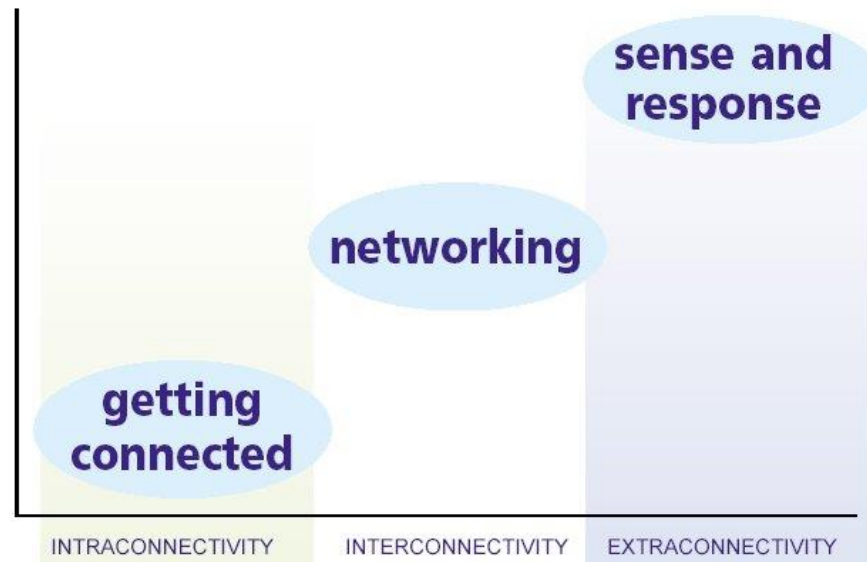
# Real-time Compliance

**Knowing something is going to happen**

**Knowing why something happens**

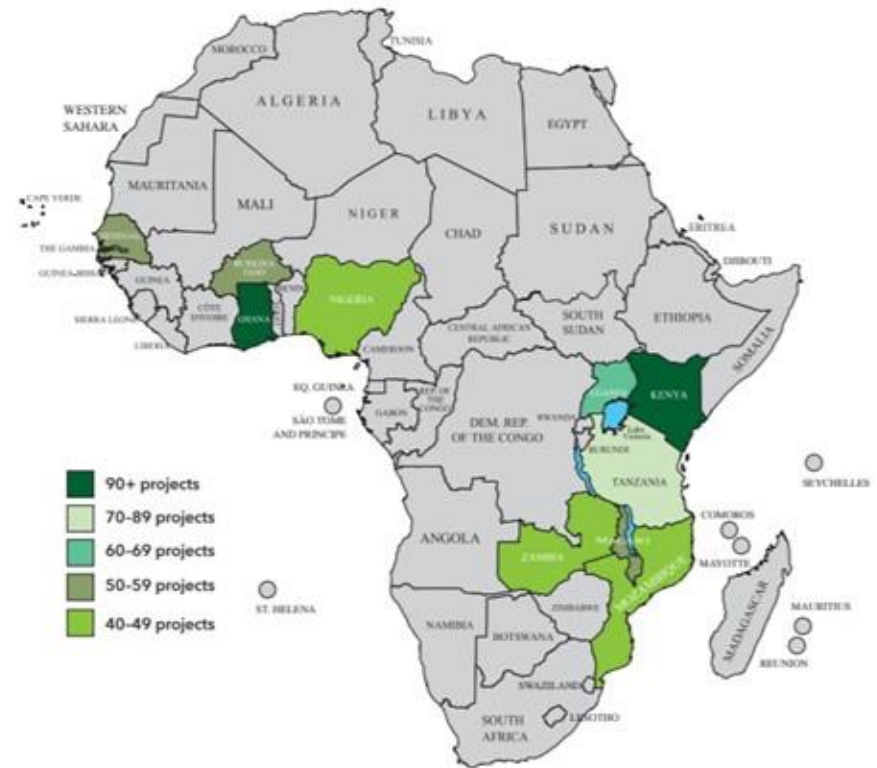
**Knowing something happens**

**Knowing something has happened**



# Future

- Real-time Compliance is the future
- Certification is just a yearly system validation
- Africa can become the Global Food Supplier
- Using Real-time Compliance and Real-time monitoring from for Trust and Transparency



# Future

- iMIS Food Global can be used by Multinationals to increase local production in emerging countries, so that the local Food Value Chain and local prosperity are improved.
- In addition, ethical issues can be monitored, and CO2 is reduced by less waste and transport of goods. This data can eventually be made available to the consumer, leading to trust and intimacy.



Current state of Food Safety in Nigeria

Current state of Food Safety in Nigeria

[Read more](#)



Food safety projects in Africa

Food safety projects in Africa

[Read more](#)



Food Safety in Africa

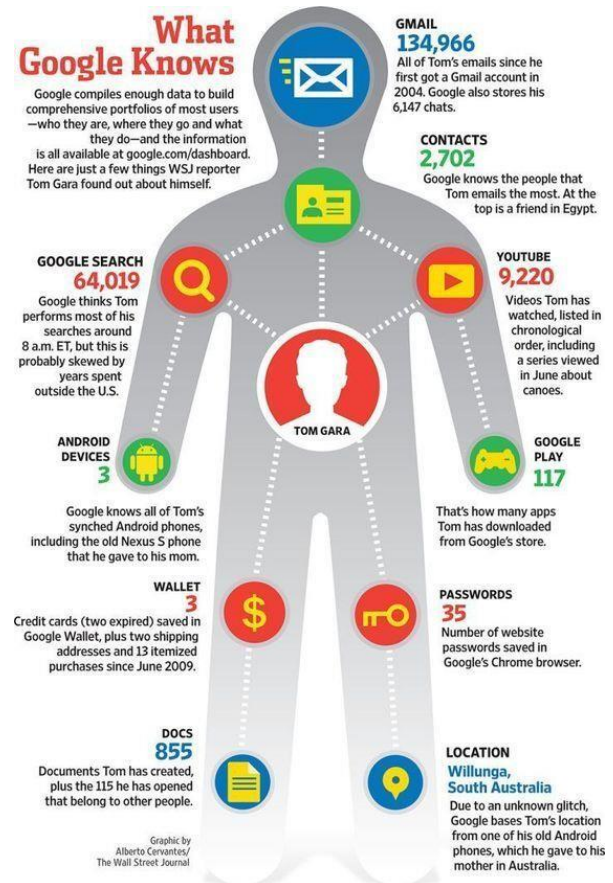
Food Safety in Africa

[Read more](#)



# Future

- iMIS Food Global
  - Compliance Portal
  - AI and Blockchain
  - Food Security
  - Real-time Food Safety
- 
- Europe
  - Africa
  - Asia
  - USA

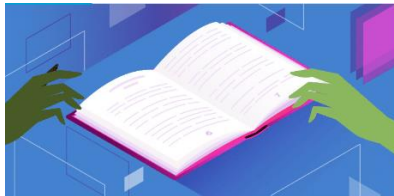




# QAssurance

## Join our Food Safety Platform

Real-time compliance with all food safety requirements, legislation  
& certification?



### iMIS Food Handbook

**Handbook for food safety management**

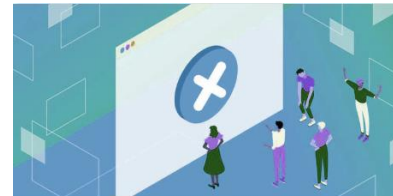
iMIS Food contains a management system for the quality manual. The manual system contains the company information, procedures regarding food safety.



### iMIS Food Tracking

**Traceability**

iMIS Food Tracking keeps track of which customer each end product is delivered to. Tracking from raw material to customer is done at the touch of a button.



### iMIS Food Helpdesk

**Food Safety**

The iMIS Food Helpdesk is specialised in food safety. With the iMIS Food system, the management has real-time insight into the Food Safety situation of his company.



### iMIS Food Updates

**Knowledge and Software**

QAssurance takes care of both the software and content updates of iMIS Food. These updates are implemented as iMIS Food Updates. To ensure that this process runs professionally..



# QAssurance

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& certification?



### iMIS Food Portal

**A Central Food Chain**

With iMIS Food Portal, all iMIS Food systems are centrally accessible in the chain. With iMIS Food Portal, the different parts are accessible for everyone in the chain.



### iMIS Food Audit

**Management System**

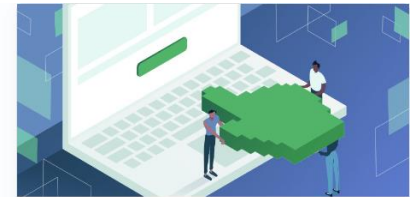
iMIS Food contains a management system for control rounds and incident reporting that can be coordinated with existing systems.



### iMIS Food SpecCheck

**Specifications and labeling**

With the specification management system, a company has all the specifications of the finished product under control. The system provides a complete management system from raw material to label on the end product.



### iMIS Food Intranet

**Company Integration**

With the iMIS Food intranet, all iMIS Food systems are centrally accessible. Because all systems are standardized, information can easily be shared between people and systems.



# QAssurance

Join our

## Food Safety Platform

Real-time compliance with all food safety requirements, legislation & certification?

- <https://www.qassurance.com/news-updates-food-safety-company-partnership/>
- <https://www.qassurance.com/information-overview-knowledge-base/>
- <https://www.qassurance.com/faq-frequently-asked-questions/>



# Qassurance : Food Security Program

## iMIS Food Security Program for emerging countries

Join the Food Security Program to boost Food Safety and local prosperity in emerging countries.

- <https://www.qassurance.com/projects-food-security-program-imis-food/>
- <https://wur.yuja.com/V/Video?v=197237&node=839714&a=1558909286&autoplay=1>

