



# The smarter food vision: inclusive, safe, traceable

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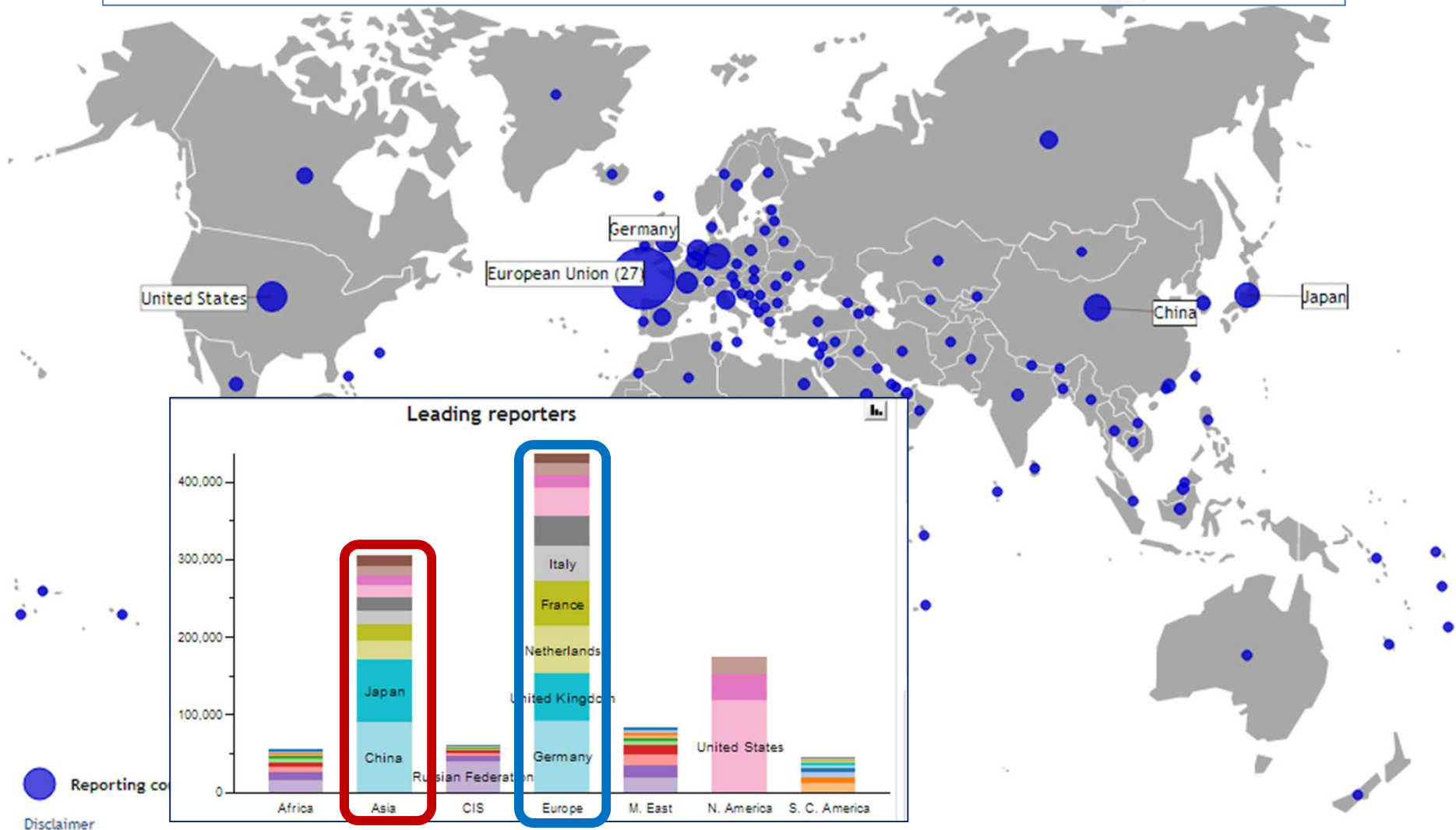
## The agenda

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- The global food trade system
- The example of the European Union
- Information systems
- The vision of smarter food

## Some simple facts: the origin of food

The global food trade is estimated to be worth about 1.45 trillion USD

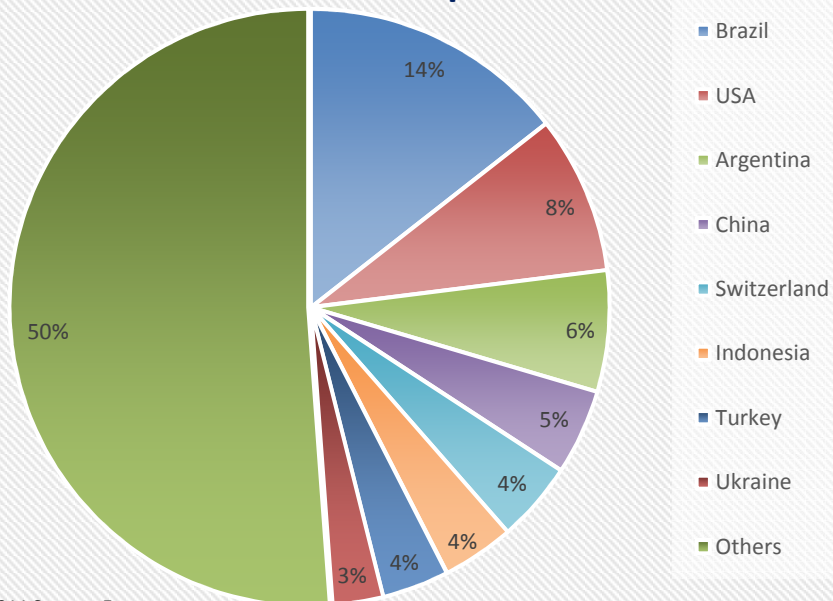


Src: Global Imports of Food, WTO

## The European Union (EU)

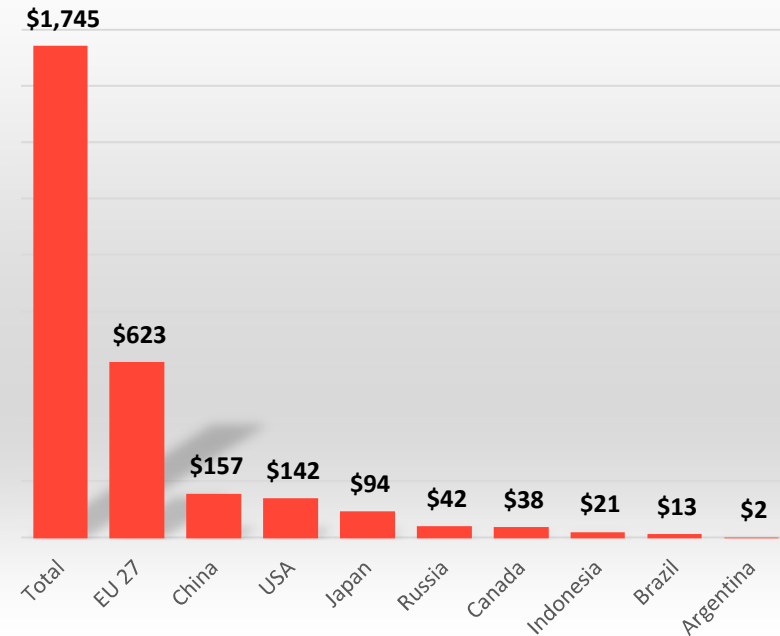
- The world's largest importer and exporter is the European Union
  - 38% of global exports
  - **36% of global imports**
- **Trading with THE WORLD!**

Source of EU food imports in %



2011 Source: Eurostat

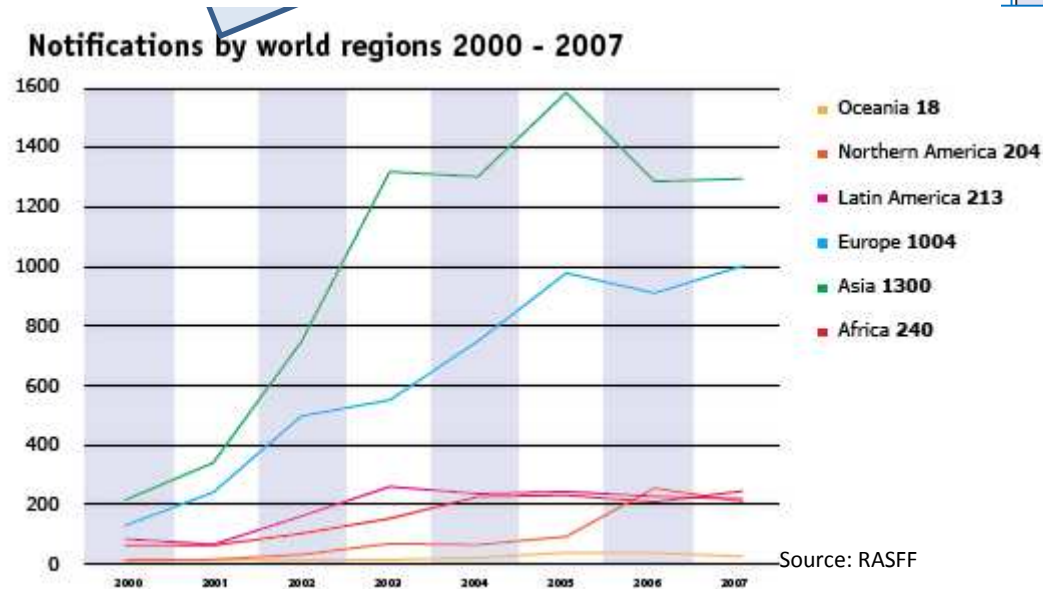
Global food imports in billion USD



- Which led to the General Food Law EC 178/2002 – ***Traceability was required from 01 January 2005***

## And sometimes things go wrong

- Food is a sensitive commodity!
- Countries monitor food and reject and report suspect food
- Products will be withdrawn or recalled if necessary – even on suspicion (*“The Precautionary Principle”*)



**Notifications by country of origin of the product**

COUNTRY	Number		COUNTRY	Number		COUNTRY	Number		COUNTRY	Number	
CHINA	352	↑	BANGLADESH	15	↓	GAMBIA	4	↑	GREENLAND	1	↑
TURKEY	293	↑	SENEGAL	15	↑	F.Y.R.O.F. MACEDONIA,	4	↓	GUINEA	1	=
THE UNITED STATES	191	↓	RUSSIAN FEDERATION	15	↓	MEXICO	4	↓	HAITI	1	↓
SPAIN	177	↑	AUSTRALIA	14	↓	SAUDI ARABIA	4	↑	ICELAND	1	↓
IRAN	133	↓	LATVIA	14	↓	SEYCHELLES	4	↓	JORDAN	1	↓
GERMANY	122	↑	THE PHILIPPINES	13	↓	GEORGIA	3	↓	MACAO	1	↓
INDIA	113	↑	CANADA	12	↓	KENYA	3	↓	MONACO	1	↓
FRANCE	109	↑	CYPRUS	12	↑	REPUBLIC OF KOREA	3	↓	SAN MARINO	1	↓
THAILAND	92	↑	IRELAND	11	↓	MALTA	3	↑	YEMEN	1	↓
POLAND	77	↑	PANAMA	11	↑	MAURITIUS	3	↑	ZIMBABWE	1	=
ITALY	75	↓	AUSTRIA	10	↓	REPUBLIC OF MOLDOVA	3	↓			
BRAZIL	58	↓	IVORY COAST	10	↓	MOZAMBIQUE	3	↑			
THE NETHERLANDS	52	↑	NICARAGUA	10	↓	ROMANIA	3	↓			
UNITED KINGDOM	52	↓	PORTUGAL	10	↓	SLOVENIA	3	↓	AZERBAIJAN		↓
CHINA (HONG KONG)	50	↑	SINGAPORE	10	↑	ALGERIA	2	↑	AFGHANISTAN		↓
NIGERIA	49	↑	SWEDEN	10	↑	BOLIVIA	2	↑	BENIN		↓
AFRICA	48	↓	SWITZERLAND	10	↑	CAMEROON	2	↓	CAMBODIA		↓
AFRICA	45	↓	SYRIA	10	↓	ETHIOPIA	2	=	COMOROS		↓
AFRICA	40	↑	JAPAN	9	↑	FIJI	2	↓	CONGO		↓
AFRICA	40	↑	SOUTH AFRICA	8	↑	GABON	2	↓	EL SALVADOR		↓
AFRICA	35	↑	ECUADOR	7	↓	JAMAICA	2	↓	ERITREA		↓
AFRICA	34	↑	NAMIBIA	7	↑	MALAWI	2	↓	GRENADA		↓
AFRICA	32	↑	ANGOLA	6	↑	MYANMAR	2	↑	HONDURAS		↓
AFRICA	31	↑	BULGARIA	6	↓	NEW ZEALAND	2	↓	KOSOVO (UNSCR1244)		↓
AFRICA	31	↓	COLOMBIA	6	↓	CHAD	2	↓	KUWAIT		↓
AFRICA	27	↑	COSTA RICA	6	↑	PARAGUAY	2	↓	LUXEMBOURG		↓
AFRICA	26	↓	LITHUANIA	6	↓	SERRA LEONE	2	=	MADAGASCAR		↓
AFRICA	24	↑	SURINAME	6	↑	SUDAN	2	↓	THE MALDIVES		↓
AFRICA	23	↑	URUGUAY	6	↑	UGANDA	2	↑	HONGKONG		↓
AFRICA	22	↑	CROATIA	5	↓	UZBEKISTAN	2	↓	REUNION		↓
AFRICA	22	↓	ISRAEL	5	↓	ALBANIA	1	=	SERBIA AND MONTENEGRO		↓
AFRICA	21	↑	KAZAKHSTAN	5	↑	ARMENIA	1	↓	TOGO		↓
AFRICA	19	↑	NORWAY	5	↓	BOSNIA AND HERZEGOVINA	1	=	TONGA		↓
AFRICA	18	↑	SERBIA	5	↑	CAPE VERDE	1	↓	UNITED ARAB EMIRATES		↓
AFRICA	17	↑	TAIWAN	5	=	CUBA	1	=	VENEZUELA		↓
AFRICA	16	↑	TANZANIA	5	↑	ESTONIA	1	↓	YEMEN		↓
AFRICA	16	↑	DOMINICAN REPUBLIC	4	=	FINLAND	1	↓	ZAMBIA	5	↓

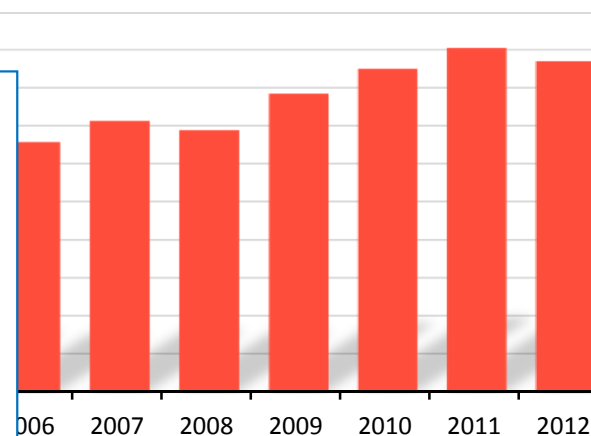
# Has food safety improved over time?

## Total RASFF alerts 2004-2010

Source: RASFF

us foodborne and waterborne diseases, 2005 (1) Source:

	EU-25		Member States	
	Confirmed	Incidence	Highest	Incidence
	cases (units)	rate	incidence	rate
		(per	rate	(per
		100 000		100 000
		inhab.)		inhab.)
Botulism	147	0.0	LT	0.2
Brucellosis	1 428	0.3	PT	1.4
Campylobacteriosis	197 802	45.0	CZ	296.2
Cholera (2)	34	0.0	BE	0.1
Cryptosporidiosis	7 960	2.8	IE	13.8
Echinococcosis	336	0.1	LT	0.4
Giardiasis	14 637	5.2	EE	24.3



### Questions:

- Has the General Food Law improved food safety?
- Has increased traceability resulted in safer food?
- Do consumers feel safe and capable of making well-informed decisions?

*If not, why not?*

## The agenda

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- The global food trade system
- The example of the European Union
- Information systems
- The vision of smarter food

## Information is not equal information

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### Paper-based systems

- Easy to implement
- The format stays the same
- Not scalable; limited by physical capacity
- Cannot be re-used
- Filed in a specific location – might be difficult to access when needed
- Cannot build information chains
- *For example: A national library*

### Electronic systems



## Information is not equal information

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### Electronic systems

- Need technical ability & capacity
- Can be compatibility issues
- More scalable; can be automated
- Easy to copy and exchange data
- Can be easily accessible
- Can build an information chain
- *For example: Internet applications*

## Information is not equal information

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- **Might be inaccessible**
- **Cannot build information chains**

### Electronic systems

- Need technical ability & capacity
- Can be compatibility issues
- More scalable; can be automated
- Easy to copy and exchange data

- **Can be easily accessible**
- **Can build an information chain**

# smarter food



70% of food globally is produced by smallholders, most of whom are outside the global food chain.

***Information technology is used to integrate small-holders into international supply chains.***

## How electronic traceability can help

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### inclusive

### smarter food

Smallholders are not part of global supply chains . . .

- Lack of good practice and human capacity
- Lack of acceptable food production standards
- Lack of understanding of global trade requirements and mechanics

Global buyers may resist products coming from smallholders

- Increased sourcing effort, increased certification effort and increased brand risk

*Information technology, supporting e-traceability, can provide a platform for training, keep track of food safety measures, connect buyers to sellers and assist with global trade mechanics.*

# smarter food



Food must be safe to produce and safe to eat.

***Safe food uses information technology to improve controls over the environmental and social impact of its production, as well record evidence that assures that it is safe to eat.***

## How electronic traceability can help

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### safe

### smarter food

Food must be safe to produce and safe to eat.

Food safety is a basic right for citizens.

Governments have a mandate to ensure food safety for consumers as well as for trade.

Nevertheless, food borne diseases have major impact on public health and the public economy.

Roughly one-third of food produced for human consumption, about 1.3 billion tonnes per year, gets lost or wasted globally.

*Information technology can help to optimise the supply chain and raise alerts if there is a break in the cold chain or if products exceed their shelf life.*

# smarter food



Consumers want to make informed choices about the food they buy - for various reasons.

***Traceable food is food for which information is recorded about its elaboration and journey to market. Consumers can access the information and eat in accordance to their needs.***

### traceable

### smarter food

Food is an essential part of our life, our health and our beliefs. Consumers want to live a life according to their convictions, their religious rules and their lifestyle.

Consumers with food-related health issues wish to select supermarket products that are suitable. Muslims want to know if gelatine-based products are Halal. Fish-lovers want to be sure that the fish they are eating is sustainable.

*E-traceability and information technology can ensure that a food product adheres to certain standards and give detailed information to those who want or need it, thereby assisting consumers to buy responsibly.*



# smarter food

## **inclusive**

Information technology helps integrate smallholders into international supply chains.

## **safe**

Safe food uses information technology to improve controls over the environmental and social impact of its production, as well as record evidence that it is safe to eat.

## **traceable**

Traceable food is food for which information is recorded about its elaboration and journey to market. Consumers can access such information and eat in accordance to their needs.

## Challenges to implementing the smarter food vision

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- Considerations include
  - **Governance**: who owns the system, who owns the data, who gets access for what purpose
  - **Smallholder integration**: smallholders produce up to 70% of the world's food, however many have no access to advanced technology and illiteracy is still an issue
  - **Standardisation**: of food information to be recorded, location and product identifiers and data exchange protocols
- Success stories
  - **Governance**: public private partnership in Norway; SA fruit exports
  - **Smallholder integration**: mixed paper-electronic traceability in Vietnam; Egyptian Etrace
  - **Standardisation**: EPCIS & the TraceFood framework; SA fruit exports

## Main benefits when achieving the smarter food vision

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Implementing the vision can bring significant benefits:

- Improved market access for the industry
  - *Better offering / Increased trust of business partners*
  - *This is particularly important for smallholders*
- Better supply chain efficiency
  - *Improved sourcing / Better control / Less waste*
- Decrease of food safety problems
  - *Improved public health and safety*
  - *Fewer incidences and alerts in exports*

## Steps to start implementing the vision

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1. Establish a committed industry-government partnership
2. Choose a good case study
  - *A good candidate food item: high value, linked to fraud*
3. Make a sufficiently large proof of concept
  - *Perform cost-benefit analysis to build a business case*
4. Build the necessary legislative and regulative framework
  - *A mix of incentives and disincentives is likely to work best*
5. Secure mix of public and private funds for infrastructure
  - *A mix of incentives and disincentives*
6. Deploy the system sector by sector
  - *Measure gains to win buy-in from industry associations*

## The agenda

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# Thank you for your attention!

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