



**FoodAuthenticity**

A Virtual Network for Food Authenticity Analysis

**How far have we come since horse-gate;  
global tools available to fight food fraud**

**Selvarani Elahi**

# Agenda

1. 2013 Horsemeat Issue
2. Global Initiatives
3. The Food Authenticity Network
  - What is it?
  - Content
  - Growth
  - The Future



## UK government timeline on horse meat issue

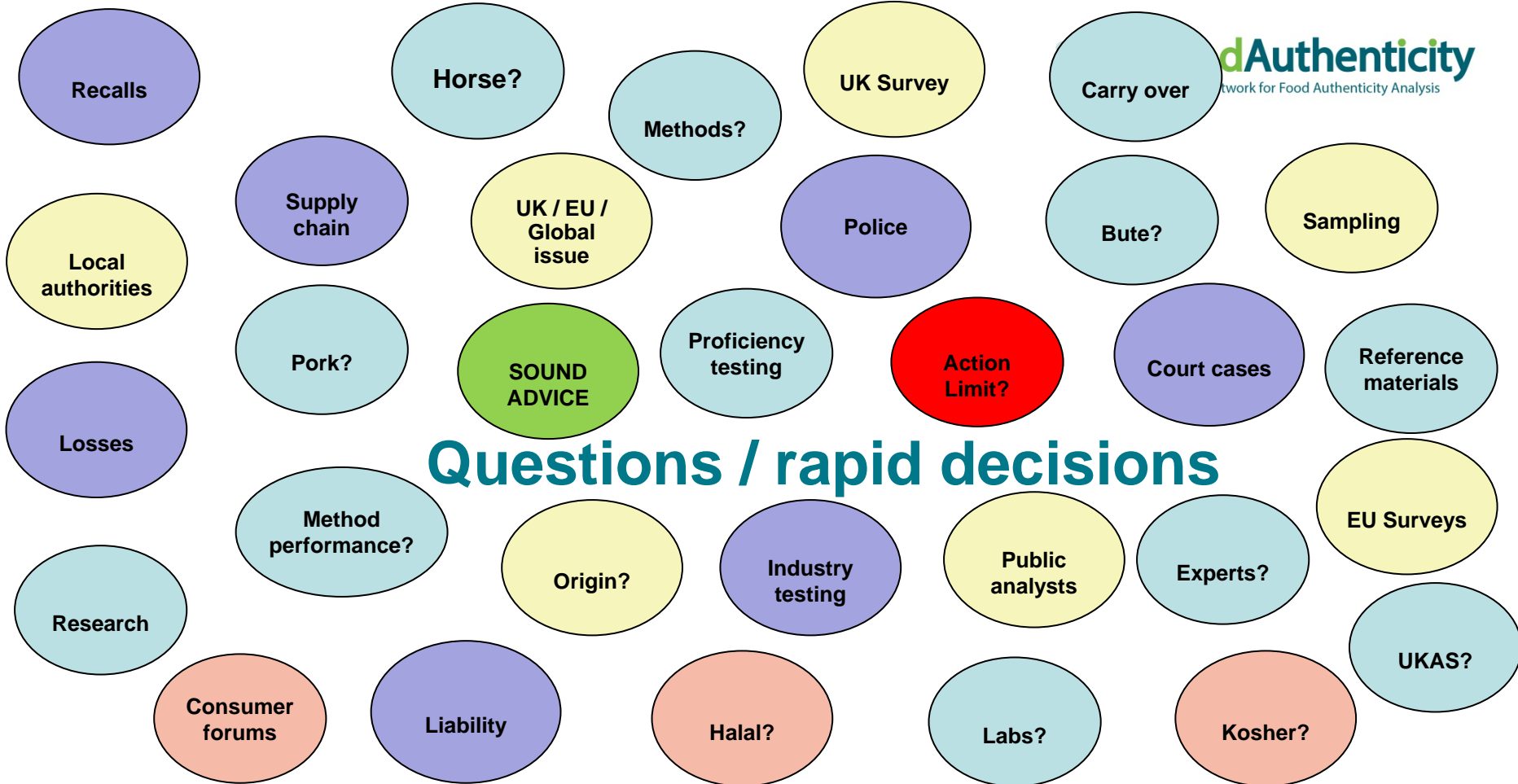
- 2013
- 15 January - Food Safety Authority of Ireland identifies horse and pig DNA
  - 16 January - FSA issues first statement in response to FSAI news
  - 18 January - FSA issues a second update - The results of all burgers tested for bute are found to be negative.
  - 18 January - Chief scientist posts a blog entry: **Making horse sense of contaminated burgers**
  - 24 January - The FSA issues statement on bute in horse meat
  - 25 January - The FSA issues a third update - results from the Dalepak plant
  - 1 February - The FSA issues a statement following Ministry of Justice announcement about non-Halal meat
  - 4 February - FSA and industry agree to publish testing programme
  - 4 February - Horse meat is found in NI cold store
  - 6 February - Meat testing protocol published
  - 7 February - Findus beef lasagne products test positive for horse meat
  - 7 February - The FSA issues an update on the FSA and industry testing programme
  - 8 February - The FSA issues a further statement on horse meat investigation
  - 8 February - Aldi finds horse meat in beef lasagne and spaghetti Bolognese
  - 9 February - The FSA issues a statement on meeting with Defra and food industry representatives
  - 10 February - The FSA issues advice to public institutions
  - 11 February - The FSA issues a statement on horse testing
  - 11 February - Tesco finds horse meat in some Everyday Value Spaghetti Bolognese
  - 12 February - FSA raids meat plant involved in alleged supply of horse meat
  - 14 February - Arrests made at meat plants
  - 14 February - Rangeland Foods withdraws burgers due to horse meat
  - 14 February - Latest bute test results on horse carcasses
  - 15 February - FSA publishes industry test results on beef products
  - 15 February - Update on police investigations into horse meat
  - 19 February - FSA meat testing survey expanded
  - 21 February - Scotland: frozen beef burger contains horse DNA
  - 21 February - Burger company withdraws products
  - 22 February - FSA update on testing of beef products for horse DNA
  - 28 February - Update on EU sampling programme
  - 1 March - Third FSA update on testing of beef products for horse DNA
  - 1 March - The FSA's Chief scientist posts a blog entry: **It's not as simple as in CSI**
  - 5 March - Update to Agency Board meeting
  - 8 March - Update on progress of FSA beef product surveys
  - 8 March - Slaughterhouse suspension lifted
  - 18 March - Cutting plant suspension lifted
  - 22 March - Hungarian horse meat found labelled as 'tinned beef'
  - 26 March - Updated results of FSA UK-wide survey of beef products
  - 9 April - Very low levels of bute found in Asda corned beef product
  - 9 April - Update on Agency's beef product survey
  - 16 April - Results of Europe-wide beef product survey published
  - 17 April - FSA review announced
  - 23 April - Final result from UK-wide beef survey confirmed
  - 4 June - Horse meat review - key findings
  - 13 June - More results of beef product testing published
  - 5 July - Horse meat: final report on FSA response
  - 12 July - FSA action plan issued following Troop report
  - 19 July - Horse DNA detected in meat pie from Latvia
  - 8 October - FSA publishes further beef product test results
  - 31 October - Horse DNA detected in canned beef from Romania
- 2014
- 22 July - FSA publishes industry and European Union testing results
  - 14 April - New European horse meat tests
  - 29 January - FSA publishes further beef product test results
- 2015



3 months



# Questions / rapid decisions



# Reviews

- Many government reviews
- **Elliot - Objectives**
  - Examine the integrity and assurance of food supply networks
  - Factors impacting consumer confidence in the authenticity of food
  - Make recommendations
- **8 pillars of food integrity**
  1. Consumers first
  2. Zero tolerance
  3. Intelligence gathering
  4. Laboratory services
  5. Audit
  6. Government support
  7. Leadership
  8. Crisis management
- **Government accepted the report & recommendations**

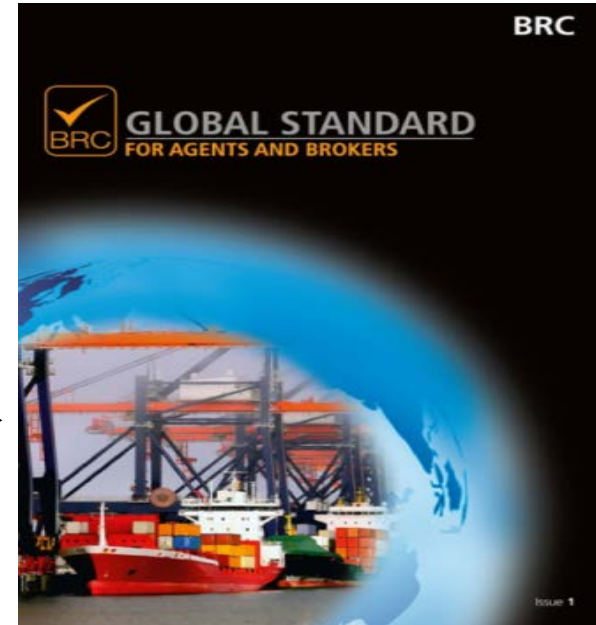


# What has been done since 2013?



# Legislation / policy

1. EU – existing requirement
2. FSMA – new requirements
3. HACCP -Threat / vulnerability assessments
4. Third party certification schemes →
  - Global Food Safety Initiative
  - Core principles: safety, integrity, quality & legality
5. Global consensus on terms
  - Codex, CEN, ISO...



**Elliot review “Traders and brokers should be rigorously audited to agreed standards to detect involvement in fraud and for vulnerability to fraud”**

# Intelligence

- RASFF - the  
– 1979  
– information  
detected in
- EC Food Fra  
– Set-up in re  
– administrati  
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– Coordinated
- EC Food Fra  
– Joint Resea  
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– Food Integ



Head of Food Crime @NFCULondon · May 22

Representatives of five nations united by a shared belief that international, cross sector collaboration best protects consumers from serious fraud in food supply chains. I give you the Global Alliance on Food Crime.

1

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29



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Switzerland,

ss-border impact



# Intelligence gathering

- **Food Industry Intelligence Network (FIIN)**
  - Elliott Review "industry to establish a 'safe haven' to collect, collate, analyse and disseminate information and intelligence"
  - 21 founding industry members
  - Integrity of food supply chains and protect the interests of the consumer
  - Share intelligence with governmental bodies to better understand where risks may sit in the UK Food Industry from food fraud
- **Campden BRI provides technical and administrative support**
  - Curation of anonymised (via legal host) database to collect industry data
  - Analyse data and produce regular reports
  - Manage membership
- **Greater industry transparency**

# UK Food Crime Units



Food Crime - 'Financially motivated dishonesty relating to food production or supply, which is either complex or results in serious detriment to consumers, businesses or the overall public'



Scottish Food Crime and Incidents Unit (SFCIU)

**FOOD CRIME  
CONFIDENTIAL**

Report a food crime  
Call **0207 276 8787**  
or email  
[foodcrime@foodstandards.gsi.gov.uk](mailto:foodcrime@foodstandards.gsi.gov.uk)

[www.food.gov.uk/foodcrime](http://www.food.gov.uk/foodcrime)

**Scottish  
Food Crime  
Hotline**

**0800 028 7926**

IN PARTNERSHIP WITH  **CRIMESTOPPERS™**



# Prosecutions



- The Spanish Guardia Civil & Europol arrested 65 people
- Dutch businessman related to the 2013 Irish case of the beef burgers containing horse meat

# Laboratory services

## Defra's Original Aims

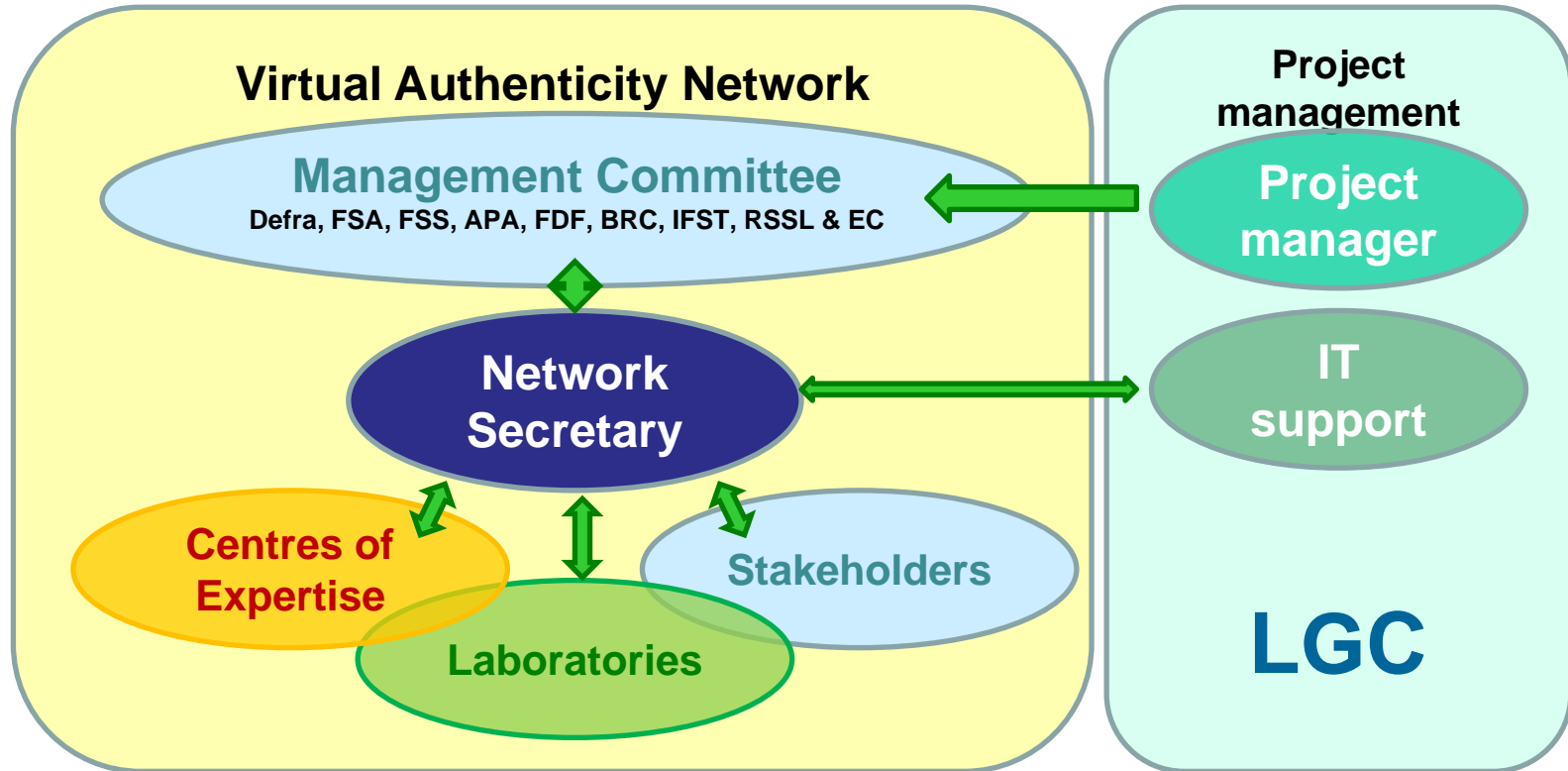
- Act as a **trusted source of curated information** on food authenticity testing.
- Help **bring together** those organisations involved in the various authenticity testing disciplines in a more coordinated way and provide them with an opportunity to interact and **exchange knowledge on food fraud testing**.
- Act as the **key mechanism for the dissemination** of technical information on food authenticity and to support the transfer of knowledge help raise awareness of these methods and assist with their take up through promotion of knowledge transfer activities.
- Be an **open forum for knowledge exchange**, discussion of “fit for purpose” methods and promotion of best measurement practice in food authenticity analysis.
- Help **facilitate the advancement of new scientific approaches** and techniques through **discussion and co-operation** to help demonstrate the **UK's potential as a world leader in food authenticity**.

# The Food Authenticity Network

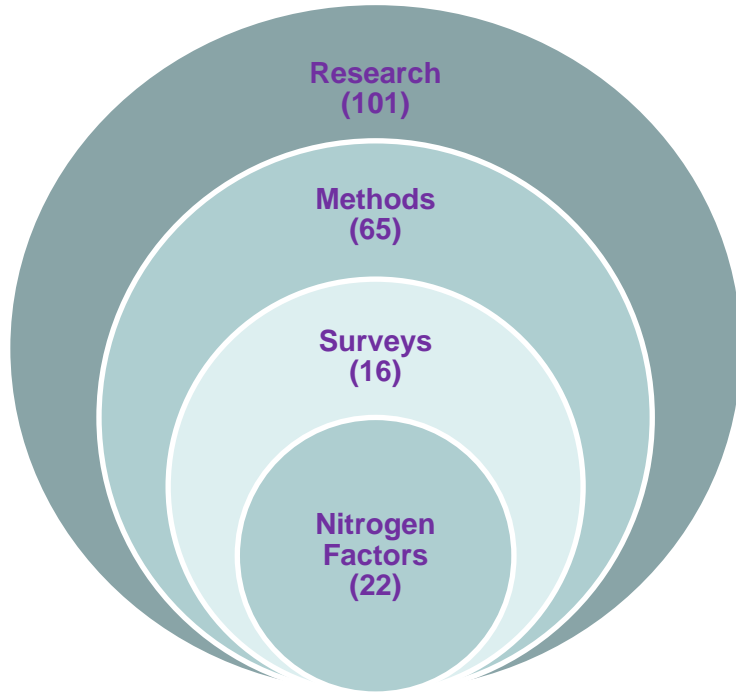
- Free and open access
- Interactive website based on an open-source content management system, with:
  - public and private areas based on member login
  - Forum capability
  - Webinar and online meeting facilities can be added
- Network platform - Ning
- Website: <http://www.foodauthenticity.uk/>
- Piloted
- Launched July 2015



# Independent governance



# Trusted source of curated information



Linked documents library:

## Training

### e-Seminars

Quantitation of Equine DNA   DNA Extraction   DNA Sequencing

**Two more in development**

This is the first in a series of e-seminars which have been designed to disseminate best measurement practice guidance on the application of DNA-based methods for food authenticity testing, has been uploaded to the Food Authenticity Website.

The e-seminar was produced by LGC with funding from Defra, as a direct result of a series of successful Defra Knowledge Transfer events held at LGC in previous years. The purpose of these e-seminars is to provide access to the information first presented at Defra/LGC Knowledge Transfer events for stakeholders who could not attend the original event, and to provide the opportunity to those that did attend to refresh their knowledge and expertise in the area.

This first e-seminar, entitled **"The application of real-time PCR for food authenticity testing inclusive of the quantitation of Equine DNA"**, summarises information provided by a Knowledge Transfer event originally developed and delivered at LGC in September 2015 with Defra funding. The e-seminar describes the scope, purpose and application of the Defra/LGC Standard Operating Procedure for a real-time PCR approach for the quantitation of horse DNA (See the [project report here](#)), as well as providing guidance and advice on the application of real-time PCR in food authenticity testing in general, with a focus on availability of methods and reference materials.

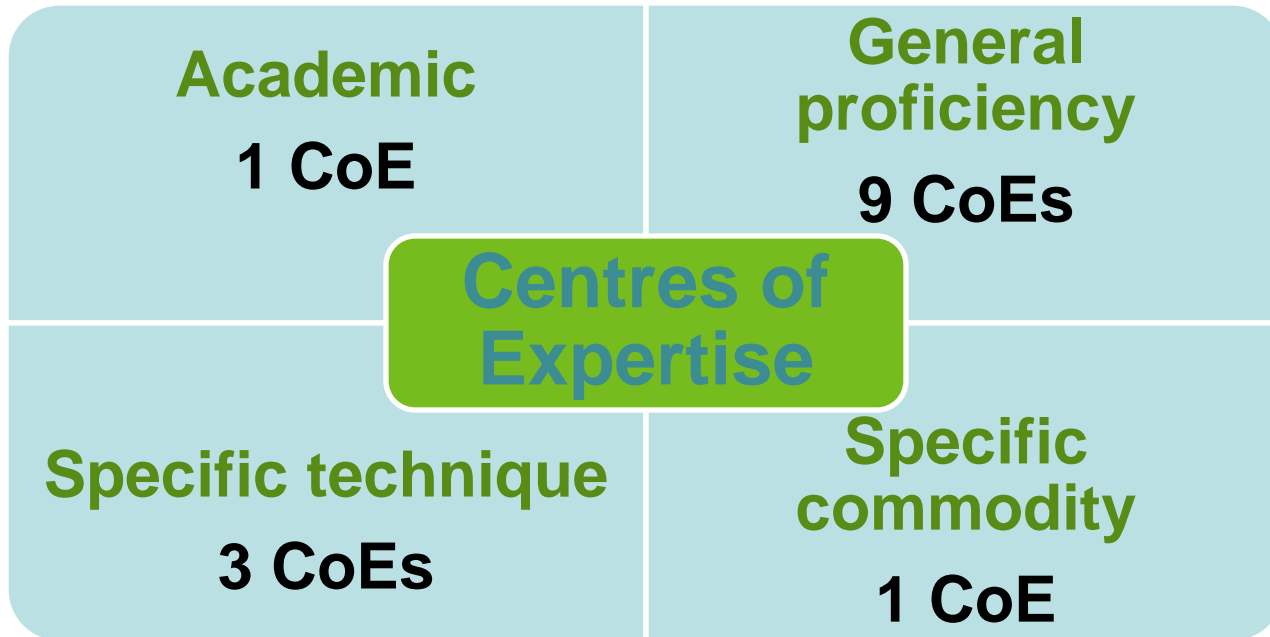
The lead scientist responsible for the e-seminar, Malcolm Burns (LGC), states that "The e-seminar should be of interest to anyone involved in the application of molecular biology approaches for quality, authenticity and adulteration testing of food and feed materials. In particular, the e-seminar will be of relevance to those involved in the using real-time PCR for the trace detection of food ingredients.

This e-seminar can be viewed on LGC's YouTube channel at <https://youtu.be/grf4tZQOArM>

[www.documents.foodauthenticity.uk/](http://www.documents.foodauthenticity.uk/)

FoodIntegrity Knowledge Base

# CoEs announced December 2015



**Direct access to named experts by authenticity area of expertise**

# Food Fraud Mitigation Added

## Food Fraud Mitigation

**Overview** | Services | Guidance | Reports

As well as the loss of consumer confidence in the food supply and economic disadvantage to the consumer, food fraud costs the global food industry an estimated US \$40 billion annually.

Food fraud is an age old problem that reoccurs periodically in the food supply chains and is unlikely to be irradiated completely. Since the 2013 global issue of the fraudulent replacement of horsemeat in beef products, there is world-wide consensus that as well as being better at detecting food fraud, more needs to be done to prevent food fraud from happening in the first place.

A number of organisations have published a variety of different initiatives aimed at preventing food fraud. For convenience, information from some of the global initiatives has been grouped into the following categories:

1. Services
2. Food fraud mitigation guides
3. Food fraud reports

These can be found under other tabs on this page.

# Reports

1. Thinking like a food fraudster – overview
2. Thinking like a food fraudster – “Attack
3. Thinking like a food fraudster – Defence Strategies
4. How do you use intelligence to defend against food fraud?
5. Michigan State University Food Fraud Initiative Report – Applying Enterprise Risk Management to Food Fraud Prevention
6. European Commission's monthly report on food fraud and authenticity

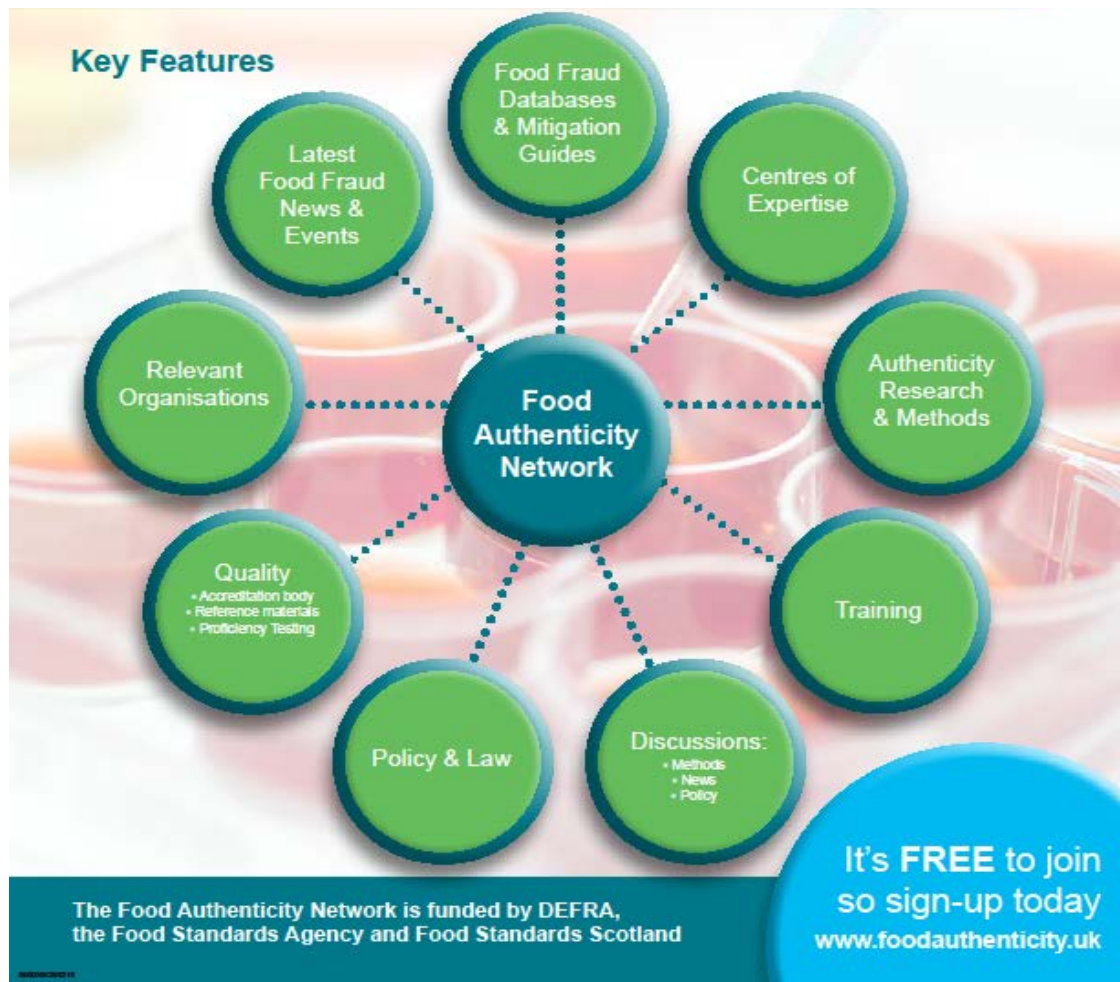
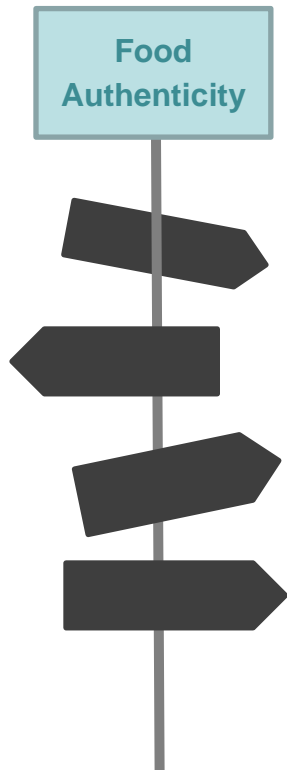


# Services

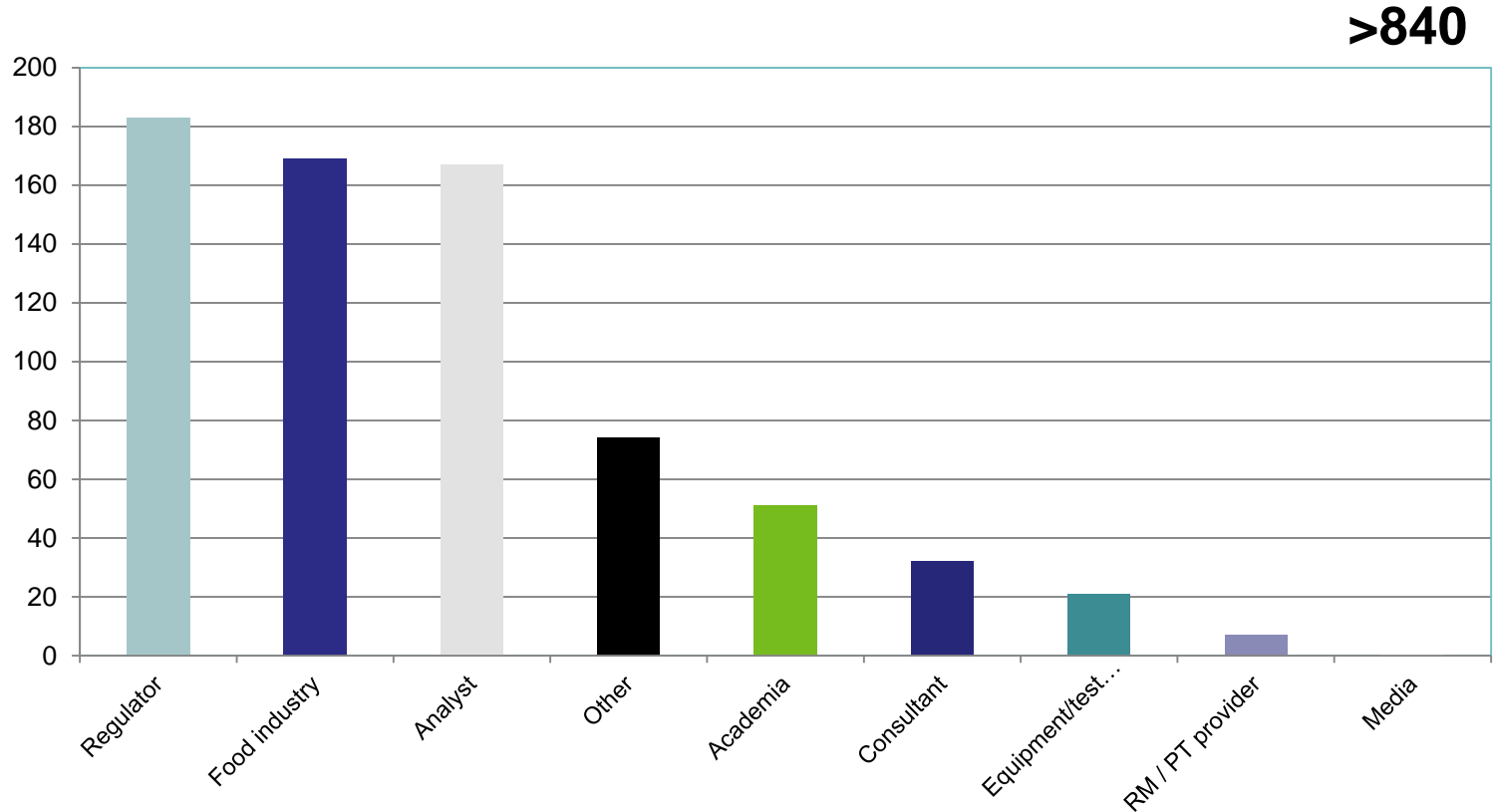
1. Horizon Scan - Food Integrity Horizon Scanning
2. USP Food Fraud Database Version 2.0
3. Food Industry Intelligence Network (FIIN)
4. The Food Protection and Defense Institute's Economically Motivated Adulteration Databases
5. The Food Protection and Defense Institute's World Factbook of Food
6. PwC and SSAFE food fraud vulnerability assessment tool
7. Food Integrity Knowledge Base – EC JRC

# Guides

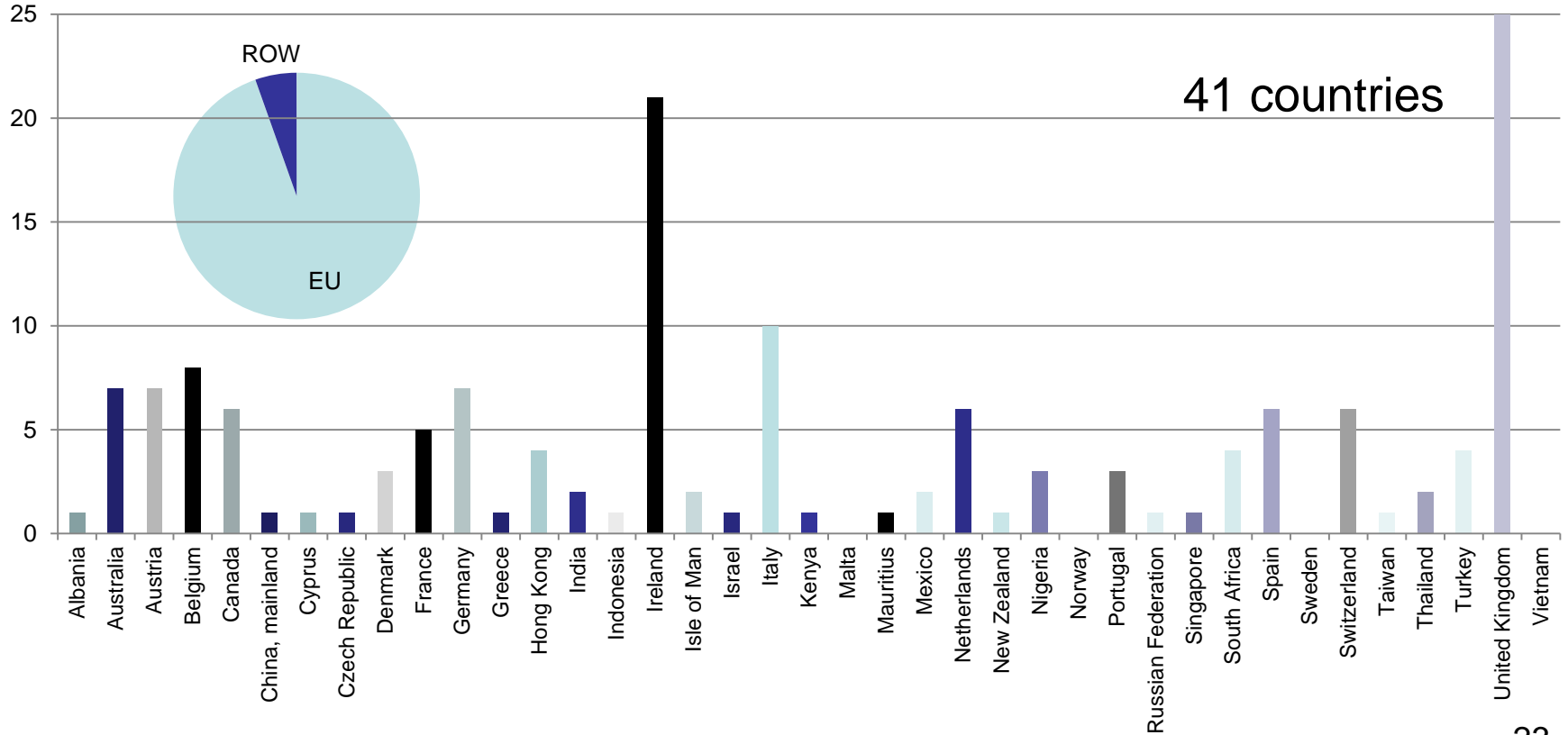
1. Premium lab's guide to preventing food fraud
2. USP Food Fraud Mitigation Guidance
3. CIEH Counter Fraud Good Practice Guide for Food and Drink Businesses
4. Food Supply Chain Vulnerability: A Ti whitepaper in partnership with RQA Group
5. Guidance on Authenticity of Herbs and Spices: Industry best practice on assessing and protecting culinary dried herbs and spices
6. Guide to working in partnership with the UK National Food Crime Unit
7. PAS 96:2014, Guide to protecting and defending food and drink from deliberate attack
8. FDF Food Authenticity Guide 2014



# Members by Category



# Members by country







Tweets 523 Following 376 Followers 1,184 Likes 338

Follow

Food Authenticity @FAAuthenticity

Tweets Tweets & replies Media

Food Authenticity Retweeted

New to Twitter?

Sign up now to get your own

Google Page rank 1 for search on 'food authenticity'

authenticity testing.

Virtual Network

foodauthenticity.uk

Joined August 2015



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Food Integrity @FoodIntegrityEU

Food Fraud Group @foodfraudUK

Head of Food Crime @NFCULondon

John Spink @FoodFraud

Karen Constable @karenconstable4

# The Future – what's next?



# Is it enough?

- Significant progress since 2013
- Food fraud commonly reported since 1800's
- Eradication? Need continued efforts
- Reports show consumers expect >transparency from the food industry
- NFCU - £5M granted for investigations
- Global standardisation efforts - Codex, CEN, ISO...
- Supply chain integrity – Blockchain?
- **Need for global approach**



EFSA report, April 2018: Emerging food safety issues: what do consumers want to know?

 Crowe Clark Whitehill  
A Member of Crowe Horwath International

Food and drink fraud  
What consumers expect

January 2018



Audit / Tax / Advisory

Smart decisions. Lasting value.

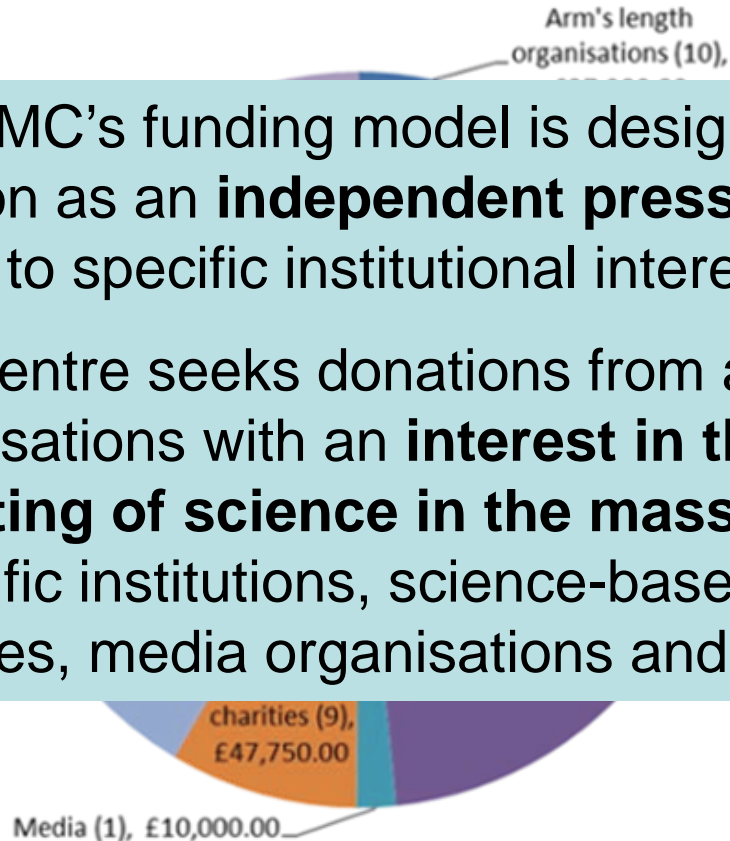
# THE VISION

## Global Food Authenticity Network



# SMC Model

- The SMC's funding model is designed to reflect its position as an **independent press office** that is not linked to specific institutional interests.
- The Centre seeks donations from a wide variety of organisations with an **interest in the accurate reporting of science in the mass media**, including scientific institutions, science-based companies, charities, media organisations and government.



# Why is funding required?

- 2015 – 2017:
  - Defra
- 2017 – 2018:
  - Defra
  - Food Standards Scotland
  - Food Standards Agency
- 2018 – onwards:
  - Transition to an industry led model

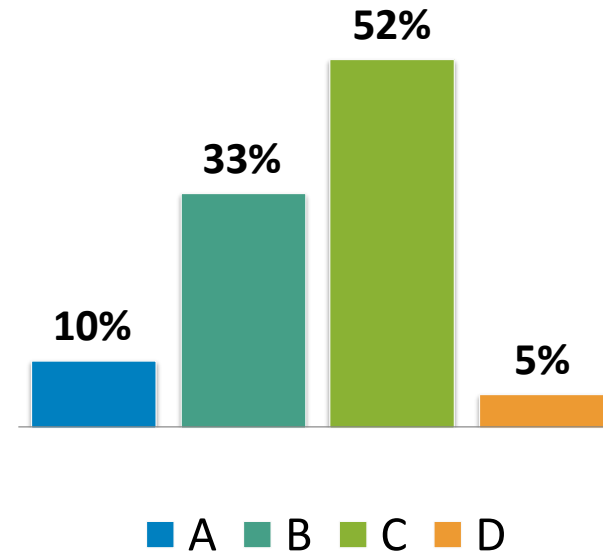


# How much funding is required?

Response by attendees of Preventing Food Fraud Conference in February 2018:

**What do you think is the annual cost of maintaining the Food Authenticity Network?**

- A. Under £100k
- B. Under £500k
- C. Under £1m
- D. Under £2m

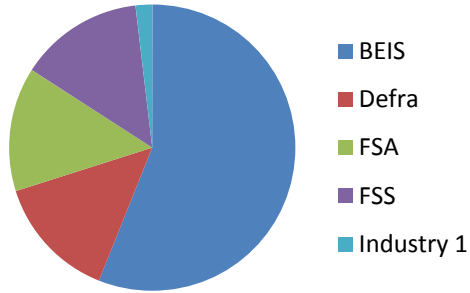




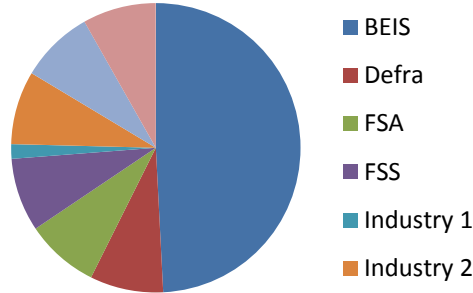
# Growth Plans

- £30K - maintain Network

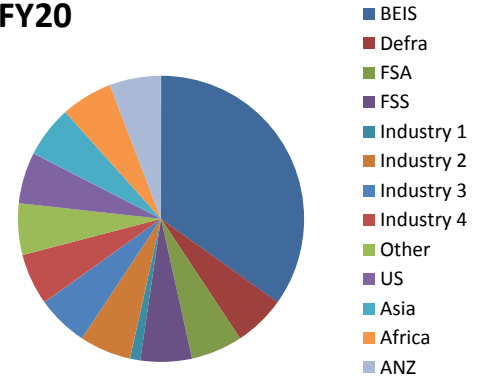
FY18



FY19



FY20



- Annual caps (based on SMC model) for industry:
  - Maximum: £5K
  - Minimum: £1K

# Why should the Network be supported?



# Why should the Network be supported?

- Ensure continued operation of a free open access resource for all - level playing field
- UK model can be easily adapted to include other regions
- Help build capability and capacity in countries
- Help improve society by fighting food fraud globally
  - lead to more secure food supply chains
  - increased consumer trust in the food they buy

# What will supporters get?

- State that they support the Food Authenticity Network (CSR)
- Use logo on their website and marketing material



- Supporters can be listed on Network website

# Next Steps

- Funding to maintain Network until March 2021 ✓
- International growth:
  - METROFOOD-RI: European Infrastructure project
  - IFAAO: The International Food Authenticity Assurance Organization
  - Codex member countries
  - Industry
- [www.foodauthenticity.uk](http://www.foodauthenticity.uk) - Join & Contribute
- [www.twitter.com/fauthenticity](https://www.twitter.com/fauthenticity) - Follow us
- Support - Selvarani.Elahi@lgcgroup.com

# Acknowledgements

- **Funders**

- Defra
- FSA
- FSS
- BEIS

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- Mark Woolfe
- Steve Ellison
- Felicia Golden
- Management Committee

