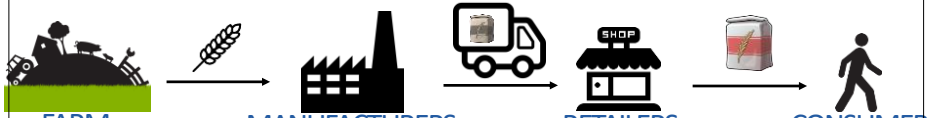
# European Metrology Network on Food Safety

EURAMET

Andrea Mario Rossi INRiM
and Maguelonne Chambon LNE

The EU's food safety strategy covers not only the safety of food for human consumption, but also animal feed, animal health and welfare, and plant health. This strategy is designed to ensure that food is traceable as it moves from the farm to the fork, even when crossing international borders

## Food Chain




## Rationale

### Need for global metrological infrastructure

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- Global trade, globalized industry, world wide travelling of people require to monitor the food safety by reliable, traceable and comparable measurements
- Of high economic and societal interest
- Taking away Technical Barriers to Trade
- Securing good quality of life
- In compliance with WTO TBT and SPS Agreements and other regional and national regulations
- Non-reliable and non-comparable measurement and test results means non-acceptance by the consignee
- A not internationally recognized national measurement system leads to technical barriers to trade by non-compliance with technical and sanitary/phytosanitary requirements

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## Demanding Metrological Traceability

Several (regulatory) driving forces

- Trade requirements WTO TBT and WTO SPS
- Compliance with regulations (a.o. in-vitro diagnostics, food safety, pollution control)
- Labeling (vitamins, amino and sorbic acids, fat, GMO's, caffeine, additives, pigments)
- Tariff classification/customs (butter fat, sugars, caffeine, fat in milk, protein in meat)
- EU TRACE project (origin of food products)
- EU REACH legislation
- ESFRI METROFOOD
- Accreditation and certification
- Avoidance of market distortions in a single market
- International trade agreements (WTO and bilateral)

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## Food safety measurements

- Regular reports of food exports refused by importing countries due to not acceptance of test reports or due to differences in test results
  - honey and beef from Argentine
  - wine and fish from Chile
  - fish from Kenya, Tanzania, Uganda, Norway
  - medicines, dietary supplements from China
  - GMO modified products: soya, rice from USA
  - chicken from Thailand
  - etc. The CIPM MRA is essential, assuring reliable comparability and traceability

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## Activities and Actors

### Metrological issues to be solved

- Understanding of the potency of available methods (answer to the question: how far and how long does the light shine?)
- Development of new measurement technologies Commutability of CRM's
- Availability of sufficient and right CRMs
- Linking PT schemes to the CCQM comparisons
- Desirable deliverables by the NMIs and other designated institutes

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### Co-authors

LNE, INRiM, EIM, PTB, UME, DFM…
BAM, JSI,…
NMISA, NMI, NIST, INMETRO…
CCQM
IMEKO

### Stakeholder

Metrofood RI
EFSA
Food safethy authorities
Industries

## Outputs

### Chemical measurements

- Bio technology and micro biology (genomics, proteomics, metabolomics, etc.). DNA and RNA, proteins, cells, GMOs
- Certified Reference Materials (enormous lack of)
- NMIs to develop more "chemical calibration capabilities" for assigning values to natural samples from customers (industries, PT providers, testing laboratories)

Further issues to be addressed:

- development of new (primary and other higher order) techniques and methods needed
- high purity reference materials needed, purity analysis
- very low concentration levels

## CCQM support to the Food sector

- Pesticide residues in fruit products (juices)
- Butyric acid in milk (marker for milk fat content; customs tariff issue)
- Growth hormones in meat
- Antibiotics and trace contaminants in fish
- Vitamins and Minerals (A, E, Folates in baby food and dietary supplements)
- Proximates in milk products (product standards) (still under consideration)
- Dietary supplements (green tea)
- Nitrates, nitrites (Inorganic Analysis)
- Humidity and micro-biological issues, etc.

Robert Kaarls, Accreditation and Quality Assurance 2004, Volume 9, Issue 9, pp 530–532

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## IMPACT
### Objective of Food safety of EMN

- Permitting governments to maintain appropriate sanitary and phytosanitary protection, reduces possible arbitrariness of decisions and encourages consistent decision-making
- Measures to ensure food safety and to protect the health of animals and plants should be based as far as possible on the analysis and assessment of objective and accurate scientific data.
- Promote the development of CMCs on food
- Certifying the measures database to guarantee the data reliability
- The EMN under the umbrella of Euramet able to converse to other food infrastructures and regulatory bodies and address and resolve meteorological issues

## Establishing a european network of credible, reliable, recognized dissemination of traceability

- Top level cooperating under the Metre Convention
  - NMI's and other designated institutes
- Second level of accredited calibration laboratories and CRM producers under the ILAC Arrangement
  - traceable to NMI's and other designated institutes under the CIPM MRA
  - able to assign values to "in-house" reference materials
  - delivering Certified Reference Materials
- Third level of "field" laboratories

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