



# Ensuring measurement quality during food crises

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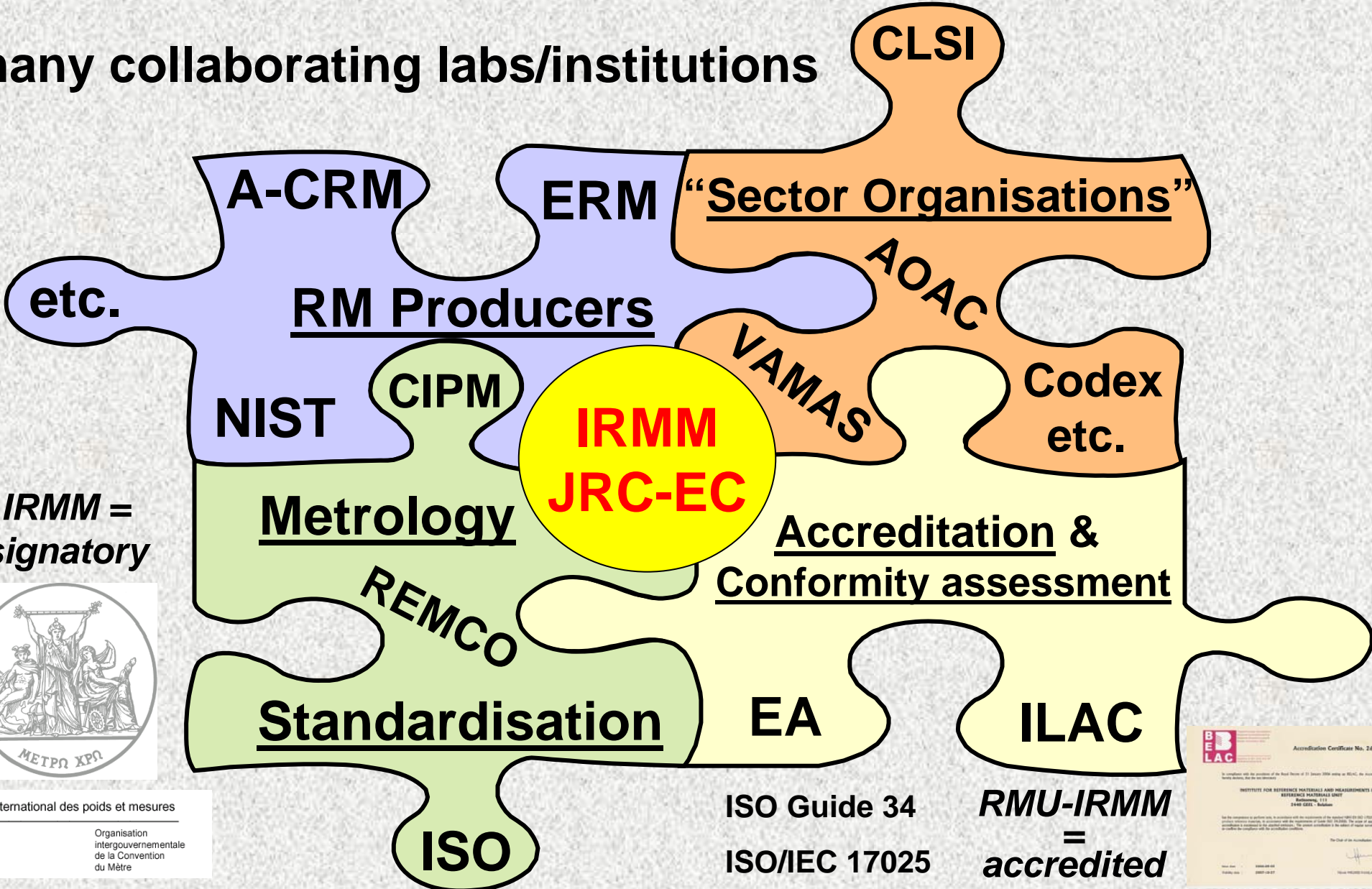
- **Introduction**
  - IRMM
  - Food crisis: how it should be
- **Potential actions**
  - Advice
  - Compilation of information
  - Intercomparisons
  - Method development and validation
  - Production of (certified) reference materials
- **Summary**



**The mission of the IRMM is to promote  
a common and reliable  
European measurement system  
in support of EU policies.**

**Confidence in Measurements®**

many collaborating labs/institutions



*IRMM = signatory*



Comité international des poids et mesures  
Bureau international des poids et mesures  
Organisation intergouvernementale de la Convention du Mètre



- **Nothing new**
- **Made easier by trade (producers often unknown)**
- **Scale increased by trade**
- **Perceived urgency increased by media**

**What can be done?**

- **Assessment** of the problem
  - What is the problem? ← measurements
  - How widespread is the problem (time and place)? ← measurements
- **Immediate corrections**
  - Take certain products out of circulation ← measurements
- **Preventive actions**
  - Prevent re-occurrence of the problem ← measurements
  - Legislation, guidelines etc.

## Reliable measurements require

- Well functioning **equipment**

- IQ, OQ, PQ

← calibrators (CRMs)

- Validated **methods**

- Demonstrated to work in principle

← CRMs, PT

- Demonstrated to work at this occasion

← CRMs, PT, QCMs

- Trained **operators**

- Method authorisation

← CRMs, PT

## Help to regulators and authorities in

- What is the issue?
- What can be measured?
- What makes sense to be measured?

- **Very fast reaction** possible
- Saves effort of labs to look for methods themselves
- Can suggest the **more reliable** methods
- Example: melamine 2007/2008
  - Problem: unsuitable method (Kjeldahl-N) for the determination of protein in milk
  - Detection rather than quantification necessary
  - Compilation of methods by WHO International Food Safety Authorities Network (INFOSAN)
  - Proficiency test by IRMM later
  - <https://irmm.jrc.ec.europa.eu/CRLFAMethods/search.do>

- **Very fast**
- **Similar CRMs often available**
  - Also methods often have wider scope
- **Materials immediately available**
  - Reliable values (no longer consensus value)
  - Fewer traceability issues
- **Example: Mycotoxin factsheet**

[http://irmm.jrc.ec.europa.eu/html/CRLs/crl\\_mycotoxins/index.htm](http://irmm.jrc.ec.europa.eu/html/CRLs/crl_mycotoxins/index.htm)

- **Relatively fast**
  - Less demanding on stability
  - Smaller amount of samples needed
  - Easier characterisation (often consensus value)
  - Less reliable characterisation (often consensus value)
- Perfect **adaptation** to the **matrix in question** possible
- **Infrequent** event
  - IRMM: [https://irmm.jrc.ec.europa.eu/html/interlaboratory\\_comparisons/index.htm](https://irmm.jrc.ec.europa.eu/html/interlaboratory_comparisons/index.htm)
  - EPTIS database <http://www.eptis.bam.de/en/index.htm>
- **Example: Sunflower oil from Ukraine**

- **Medium term solution**
  - Development plus (usually) intercomparison
  - Even longer if standard method
- **Solution to emerging problems**
  - Can solve issue of **ill-defined measurand**
  - Can create new problems by defining a new measurand (melamine!)
- **Example:**
  - ISO 11053:2009: Vegetable fat in chocolate
  - Submitted to ISO in 2007, standard released in 2009

- **Relatively slow**
  - Production takes 2-3 years
- **Reliable measurements** required
  - Available in emerging crises?
- **Resource intensive**
  - **perfectly suited for long-lasting issues**
  - value for money for the taxpayer for a crisis?
- **Sustainable** for a long term
  - Material is constantly available for checking performance
- **Most reliable** option
  - Reliable assigned value, stable, homogeneous

	Information	PTs	Method development	Dedicated CRMs
Speed of reaction	very fast	1-2 months	months to years	2-3 years
Position in analytical process	planning	QA of final result	implemen- tation	QA of final result
What is demonstrated or achieved	faster start-up	"result as good as the others"	in theory: "same result as others"	"result correct"
Sustainability	easily updatable	infrequent	long-term	long-term

- **Advice:** Interservice Consultations; informal advice to EC colleagues
- **Compilation** of information: EU-RLs for Food and Feed additives, PAHs, mycotoxins and heavy metals
- **Method development and validations:** EU-RLs; CEN-activities
- **Intercomparisons:** IMEP-program (independently assigned values); CRL-activities
- **CRMs:** 2008-2009: **66 new CRMs** released, of which **29 food-related**

- Food crises are **nothing new**
- **Mix of activities required** to support food safety
  - Activities differ in impact and time required for implementation
  - Activities differ in time required for implementation
- **IRMM contributes to all of these activities**