

# 2010-2011 progress in networking in GMO analysis and presentation of the '*Compendium of validated reference methods*'



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## CONTENTS

- Update on EU developments related to:
  - **Detection Methods (Compendium + Database)**
  - GMO Proficiency/Comparative Testing
- Update on ‘Enlargement, International Collaboration and Capacity Building’ Project



## **EURL mandate Reg. (EC) 1829/2003**

- **Validation of GMO detection methods as part of the EU GMO approval process**
- **Provision of control samples** (provide laboratories with appropriate tools to carry out necessary controls)
- **Provision of guidance documents** on sampling and testing, method acceptance criteria, method performance criteria

## **EURL mandate Reg. (EC) 882/2004**

- **Provision of reference analytical methods**
- **Organisation of comparative testing** and appropriate follow-up in accordance with internationally accepted protocols
- **Collaboration with laboratories** responsible for analysing feed and food in third countries.


## ENGL and EURL – two European partners in GMO detection

- EURL - the European Union Reference Laboratory for GM Food & Feed
- 1 central lab hosted by the EU Commission JRC
- ENGL – the European Network of GMO Laboratories
- 96 labs hosted by 27 EU Member States (+ 4 non-EU countries)



The EURL and ENGL activities in GMO detection are based on the EU GMO legislation

# EU Harmonisation: more than 60 GMO detection methods validated by the EURL publicly available at <http://gmo-crl.jrc.ec.europa.eu/>



European Commission  
**Joint Research Centre**  
Institute for Health and Consumer Protection

European Commission > JRC > IHCP > EURL-GMFF

## European Union Reference Laboratory *for GM Food & Feed*

Home Legal Basis Guidance Documents Status of Dossiers Contacts

### Status of dossiers

**EURL-GMFF validation process**

The following table lists the EURL-GMFF validation process carried out within the frame of the Regulation (EC) No 1829/2003, providing details on the current status of the validation process.

The following links provide information about additional validation studies conducted by the EURL-GMFF in support to notifications submitted according to Directive 2001/18/EC, about GMO authorised in the EU, notifications submitted according to Directive 2001/18/EC and opinions issued by the European Food Safety Authority (EFSA).

[Detection methods validated in support to notifications submitted under Directive 2001/18/EC](#)

[European Commission information on GM authorizations, legislation and alike](#)

[Information about the notifications submitted in the context of Directive 2001/18/EC](#)

[Opinions of the EFSA Scientific Panel on Genetically Modified Organisms](#)

Last updated 25/05/2010 

Event	Unique identifier	Applicant	Status/Progress	Reports	Validated Method
Bt10 maize	-	-	Validation completed	<a href="#">Validation report</a> Published on: 13/07/2005	<a href="#">Validated method</a> Published on: 13/07/2005
Bt11 sweet maize	SYN-BT011-1	Syngenta Seeds	Validation completed	<a href="#">Validation report</a> Published on: 05/08/2004	<a href="#">Validated method</a> Published on: 05/08/2004
NK603 maize	MON-00603-6	Monsanto Company	Validation completed	<a href="#">Validation report</a> Published on: 10/01/2005 <a href="#">Validation report</a> Published on: 22/01/2005	<a href="#">Validated method</a> Published on: 10/01/2005

## Article 32(1) of Regulation (EC) No 882/2004:

*“the European Union Reference Laboratories for feed and food are responsible, amongst others, for "providing National Reference Laboratories (NRL) with **details of analytical methods**, including reference methods"*

## Concept of “Reference Methods”

- Not strictly defined in EU GMO legislation
- ENGL & EU-RL GMFF criteria:
  - 1: DNA-based detection methods (Recommendation EC/2004/787) - Polymerase Chain Reaction (PCR) based methods
  - 2: Validated through collaborative trial according to the principles of and in compliance with ISO 5725 standard and/or the IUPAC guidelines

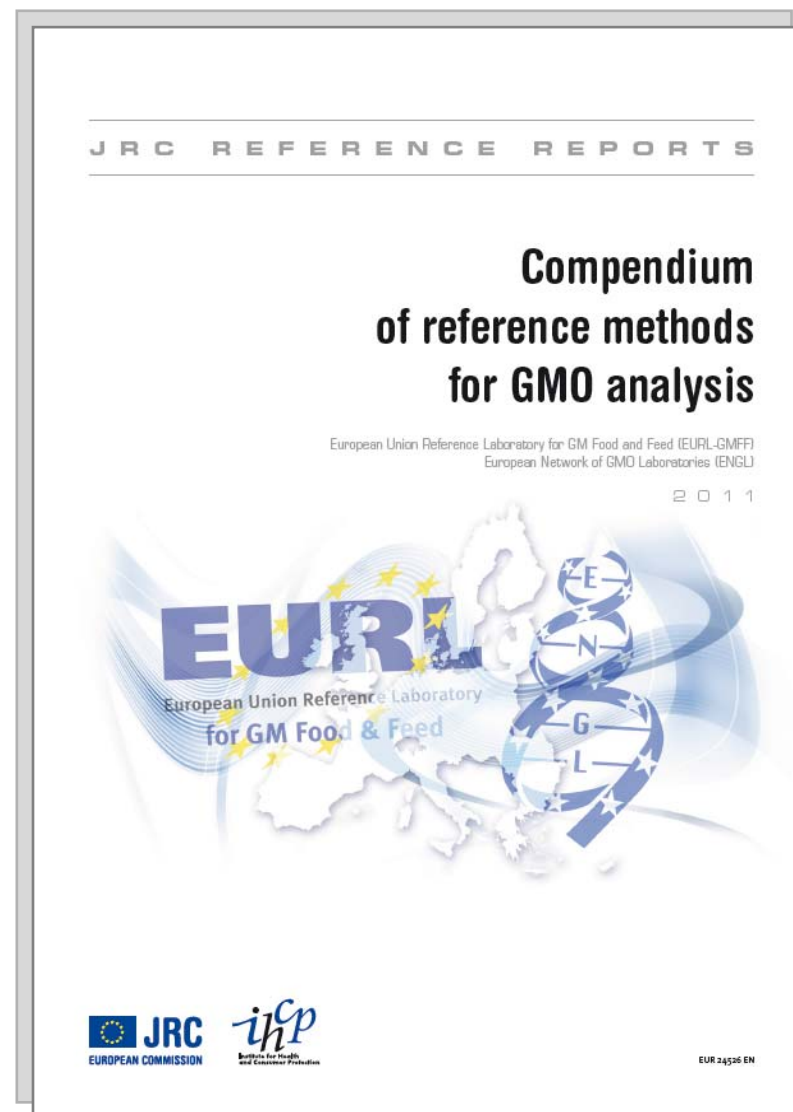
## EU Harmonisation : Compendium of reference methods for GMO analysis

(V1 Nov. 2010; V2 April 2011 publicly available at <http://gmo-crl.jrc.ec.europa.eu/gmomethods>)

### Aim:

Provide an up-to-date reference for all collaborative trial validated methods for the detection of GMO

Collaboration between the EU-RL GMFF & European Network of GMO Laboratories (ENGL)





## **Overall structure of the Compendium:**

Introductory part

Chapter 1: Quantitative GMO detection PCR methods

Chapter 2: Qualitative GMO detection PCR methods

# Quantitative GMO detection PCR Methods:

- Type: Event-specific (EU-RL GMFF), Element- & Taxon-specific methods
- Method Performance Parameters:

Trueness & Bias  
Reproducibility  
Repeatability  
PCR efficiency,  
LOD, LOQ

JRC Compendium of Reference Methods for GMO Analysis

### Quantitative PCR method for detection of maize event Bt11

- GENERAL INFORMATION
 

Target genetic element	Junction region between the intron 6 (IVS6) from maize alcohol dehydrogenase 1 gene (adh1-5) and a synthetic cryIA(b) gene
PCR Assay	Simplex Real Time
Detection Chemistry	TagMan®
Compendium Reference	Q72M/001
- VALIDATION DATA
 

Collaborative trial coordinator	National Food Research Institute of Japan (NFRI)
Test material applied in collaborative trial	maize flour
Materials used for calibration controls	plasmid pMaiz (Tamura Co. Ltd. and Nippon Gene Co.)
Tested GM events	Bt11
Unique Identifier	SYN-BT01-1
Crop Name	Zea mays L.

Collaborative Trial Description

All participants tested 12 blind samples designed as 6 pairs of blind duplicates including 0%, 0.1%, 0.5%, 1%, 5% and 10% of maize powder derived from the GM maize line and blank 0% GMO samples. The participants extracted the DNA from the samples and performed a quantitative analysis using the species-specific and GM-line specific method. Appropriate dilutions of the extracted DNA were measured in triplicates in the same analytical run.

LOD Relative	0.1%	LOD Absolute	20 HGE
LOQ Relative	0.5%	LOQ Absolute	20 HGE

Values determined in the collaborative trial

Test Level (%)	0.05%	0.05%	1.0%	5.0%	10%
Mean Value (%)	0.09%	0.55%	1.3%	6.5%	12%
RSD (%)	22%	24%	39%	14%	10%
RSD <sub>0</sub> (%)	18%	18%	19%	13%	12%
Blank %	-0.0%	2.0%	1%	22%	21%

Chapter 4 - Quantitative PCR detection PCR methods

JRC Compendium of Reference Methods for GMO Analysis

	GMO Target	Taxon Target
Mean Slope	not reported	not reported
Mean PCR Efficiency %	not reported	not reported
Mean R <sup>2</sup>	not reported	not reported

Comment  
The absolute LOD and LOQ values were not determined in this collaborative trial.

- REFERENCES
 

Y. Shindo, H. Kuribara, T. Matsuo, S. Futo, C. Sawada, J. Shono, H. Akiyama, Y. Goda, M. Toyoi and A. Hino. (2002) "Validation of Real-Time PCR Analyses for Line-Specific Quantification of Genetically Modified Maize and Soybean Using New Reference Molecules" Journal of AOAC International Vol. 85, No. 5, p. 1119-1126

ISO/IDIS 21570:2009. Foodstuffs—Methods of analysis for the detection of genetically modified organisms and derived products—Quantitative nucleic acid based methods
- PRIMERS AND PROBES SEQUENCES
 

GM-target(s)	
Primer Forward	5'-AAAAGATCAAGAGACCC-3'
Target element	PS 4
Primer Reverse	5'-GATGCTCTCTCCAGACBCT-3'
Target element	cryIA(b)
Amplifier length	137 bp
Probe	5'-TAM-GGACATGGACAGACCAACATCA-TAMRA-3'
Target element	DNA sequence within the junction region
Taxon-target(s)	
Primer Forward	5'-CTCCCAATCTTTCATCTGC-3'
Target element	ZS50B
Primer Reverse	5'-TCGATTTCTCTCTTGGTACAGG-3'
Target element	ZS50B
Amplifier length	151 bp
Probe	5'-TAMAGCAAGATGAGAGGCTGATGCA-TAMRA-3'
Target element	maize starch synthase IIb (ZS50B) gene
Plasmid Standard	Yes
Plasmid Standard Name	plasmid pMaiz

Chapter 4 - Quantitative PCR detection PCR methods

JRC Compendium of Reference Methods for GMO Analysis

### 5. PCR REACTIONS SETUP

GM-target(s) and Taxon-target(s)

Reagent	Final Concentration	Reagent	Final Concentration
TagMan® Universal PCR Master Mix	1x	TagMan® Universal PCR Master Mix	1x
Primer Fw	0.50 µmol/L	Primer Fw	0.50 µmol/L
Primer Rev	0.50 µmol/L	Primer Rev	0.50 µmol/L
Probe	0.20 µmol/L	Probe	0.20 µmol/L
Template DNA	5.0 ng	Template DNA	50 ng
Final Volume	25 µL	Final Volume	25 µL

### 6. AMPLIFICATION CONDITIONS

GM-target(s) and Taxon-target(s)

Stage	Temperature	Time	No Cycles
Decontamination (UNG)	50°C	120"	1
Activation/Initial Denaturation	95°C	400"	1
Denaturation	95°C	30"	
Annealing & Extension	59°C	60"	
Denaturing, Annealing & Extension			40

Chapter 4 - Quantitative PCR detection PCR methods

# Qualitative GMO detection PCR Methods (screening)

- Type: Element-, Construct-, Event-, & Taxon-specific methods
- Method Performance Parameters:

False positive/negative results  
LOD

# ve results

JRC Compendium of Reference Methods for GMO Analysis

## PCR method for detection of Cauliflower Mosaic Virus 35S promoter

### 1. GENERAL INFORMATION

Target genetic element	Cauliflower Mosaic Virus 35S promoter (CaMV)
PCR Assay	Single
Detection Chemistry	Agarose gel electrophoresis
Compendium Reference	SC/ELE/005

### 2. VALIDATION DATA

Collaborative trial coordinator	German Federal Institute for Health Protection and Veterinary Medicine (IfgV)
Test material applied in collaborative trial	Tomato pulp
Materials used for calibration/controls	Transgenic and control lines provided by Zeneca
Tested GM events	
Event Name	Tomato Nema 284F
Unique Identifier	Not applicable
Crop Name	Solanum lycopersicum L.

#### Collaborative Trial Description

In this trial, participants received 10 samples of tomato pulp derived from the non-transgenic Tomato Nema 284F. Additionally one positive and one negative control were provided. The isolated DNA was tested using the endogenous polygalacturonase (PG) gene as a positive control of the genetic modification, five samples were tested with the primer pair 35S-3/35S the CaMV P-35S promoter. All PCR products were subsequently characterized by restriction.

#### Method Performance

LOD Relative	not reported	LOD Absolute	not reported
LOQ Relative	not reported	LOQ Absolute	not reported

#### Values determined in the collaborative trial

False positive (%)	0%
False negative (%)	0%

JRC Compendium of Reference Methods for GMO Analysis

Test Limit (%)	0%	100%
Specificity %	100%	-
Sensitivity %	-	100%

#### Comment

The LOD value has not been determined for this collaborative trial.

### 3. REFERENCES

Collection of Official Methods under Article 35 of the German Federal Foods Act (1998). Food 00.00-31. Beuth, Berlin Köln

### 4. PRIMERS AND PROBES SEQUENCES

#### GM-target(s)

Primer Forward	5'-GCTCTAGAAATGCGTCA-3'
Target element	CaMV P. 35S
Primer Reverse	5'-GAGTGGGATTTGTGCGTCA-3'
Target element	CaMV P. 35S
Amplification length	395 bp
Target element	CaMV 35S promoter

#### Taxon-target(s)

Primer Forward	5'-GGATCCTGAAAGGATCAGT-3'
Target element	PG
Primer Reverse	5'-CGTTGGTGCATCCCTGCATGG-3'
Target element	PG
Amplification length	384 bp (end) & 180 bp (start)
Target element	polygalacturonase (PG) gene

### 5. PCR REACTIONS SETUP

GM-target(s)	Final Concentration	Taxon-target(s)	Final Concentration
Reagent		Reagent	
Double-distilled sterile water	8	Double-distilled sterile water	8
AmpliTaq Gold® DNA Polymerase	2.0 U	AmpliTaq Gold® DNA Polymerase	2.0 U
PCR Buffer (ox. with MgCl <sub>2</sub> )	1x	PCR Buffer (ox. with MgCl <sub>2</sub> )	1x
dNTPs (dATP, dCTP, dGTP, dTTP)	50 µmol/L each	dNTPs (dATP, dCTP, dGTP, dTTP)	50 µmol/L each
Primer Fw	0.40 µmol/L	Primer Fw	0.40 µmol/L
Primer Rev	0.40 µmol/L	Primer Rev	0.40 µmol/L
Template DNA	10-50 ng	Template DNA	10-50 ng
Final Volume	50 µL	Final Volume	50 µL

### 6. AMPLIFICATION CONDITIONS

Stage	GM-target(s)			Taxon-target(s)		
	Temperature	Time	No Cycles	Temperature	Time	No Cycles
Activation/Initial Denaturation	95°C	600"	1	94°C	600"	1
Denaturation	95°C	30"		94°C	30"	
Annealing	54°C	40"		60°C	60"	
Extension	72°C	40"		72°C	60"	
Denaturing, Annealing & Extension			35			35
Final Extension	72°C	180"	1	72°C	360"	1

170 | Chapter 3 - Qualitative GMO detection PCR methods

Chapter 3 - Qualitative GMO detection PCR methods

172 | Chapter 3 - Qualitative GMO detection PCR methods

# GMO detection PCR Methods:

## **Chapter 1: Quantitative GMO detection PCR methods (48)**

*Maize quantitative PCR methods (20)*

*Soybean quantitative PCR methods (9)*

*Cotton quantitative PCR methods(8)*

*Oilseed rape quantitative PCR methods (4)*

*Potato quantitative PCR methods (1)*

*Rice quantitative PCR methods (1)*

*Sugar beet quantitative PCR methods (1)*

*Element- and Taxon-specific quantitative PCR methods (4)*

## **Chapter 2: Qualitative GMO detection PCR methods (31)**

*Element-specific qualitative PCR methods (15)*

*Construct-specific qualitative PCR methods (8)*

*Event-specific qualitative PCR methods (2)*

*Taxon-specific qualitative PCR methods (6)*

## **Compendium distribution:**

- V1 Official presentation: 10 November 2010
- V2 Update: April 2011 Edition
- Compendium booklet distribution
- Compendium document available as PDF file
- WWW-Compendium Dbase (Web application) + iPad app

## **& future roadmap:**

- Yearly update
- Guidelines to method acceptance criteria
- Other types of methods (protein, arrays, DNA extraction...)

## WWW-Compendium Dbase (Web application)

- **GMOMETHODS database**  
publicly available at  
<http://gmo-crl.jrc.ec.europa.eu/gmomethods/>
- All info + methods retained in the Compendium
- Search functions at various levels  
(event, target, crop ...)
- Open access

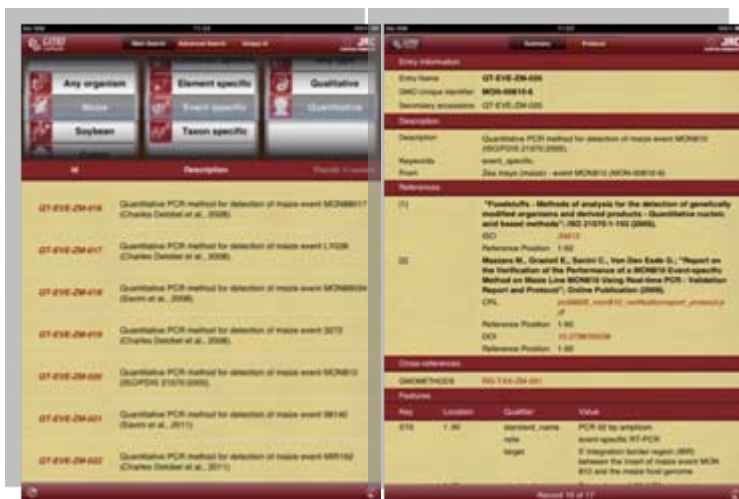
# GMOMETHODS: EU Database of Reference Methods for GMO Analysis

<http://gmo-crl.jrc.ec.europa.eu/gmomethods/>



## GMOMethods app for iPad released on 20-12-2011

<http://itunes.apple.com/us/app/gmomethods/id481988894?mt=8>



## CONTENTS

- Update on EU developments related to:
  - Detection Methods (Compendium + Database)
  - **GMO Proficiency/Comparative Testing**
- Update on ‘Enlargement, International Collaboration and Capacity Building’ Project



# Comparative Testing

## General definition:

‘evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons’

Standard ISO/IEC 17043:2010(E) (Ed1 from 01-02-2010)

Scope: very broad (quantitative, qualitative, sequential, simultaneous, single occasion, continuous scheme...)

# Comparative Testing

- Comparative Testing (CT) is a quality tool which measures the outputs of a laboratory
- CT is complementary to other quality assurance tools which are concerned with inputs such as use of CRMs, implementation of a formal Quality System, etc.
- CT is concerned with a laboratory routine methods with routine sample types (*Laboratories are encouraged to use their own methods and procedures to reflect the handling of real samples as closely as possible*)
- CT is educational - there should be no “pass” or “fail”

## EURL Comparative/Proficiency Testing Programme

- **EURL GMFF mandate** to organise proficiency testing (also called comparative testing) under Reg. EC (No) 882/2004
- **Two rounds per year**
- **Participants:** European laboratories (National Reference Laboratories and ENGL members) + invited participants from third countries
- **First three rounds (2010 – mid-2011) :** one GM event per round + two test materials representing different GM levels
- **From fourth round (CT-02/11) onwards:** mixtures of GM events. Combination of qualitative and quantitative PCR

## Comparative Testing round JRC-EURL-GMFF-CT-02/11

- Two test items containing different GM percentages
- List of 10 GM maize events: 3272, Bt11, Bt176, DAS59122, GA21, MIR604, MON 810, MON 863, NK603, TC 1507
- **Qualitative PCR**
- Detection of certain GM event → **Quantitative PCR** to quantify content
- **Shipment:** 24 October 2011
- **Deadline submission results:** 9 December 2011
- **155 laboratories invited**
- **107 registered laboratories**
- **4 African participants:** South-Africa, Botswana, Kenya

## General Comparative Testing Procedure

**Step 1 Dispatch** Test materials are dispatched to participating laboratories

**Step 2 Analysis** Participants analyse test materials and report results and methods

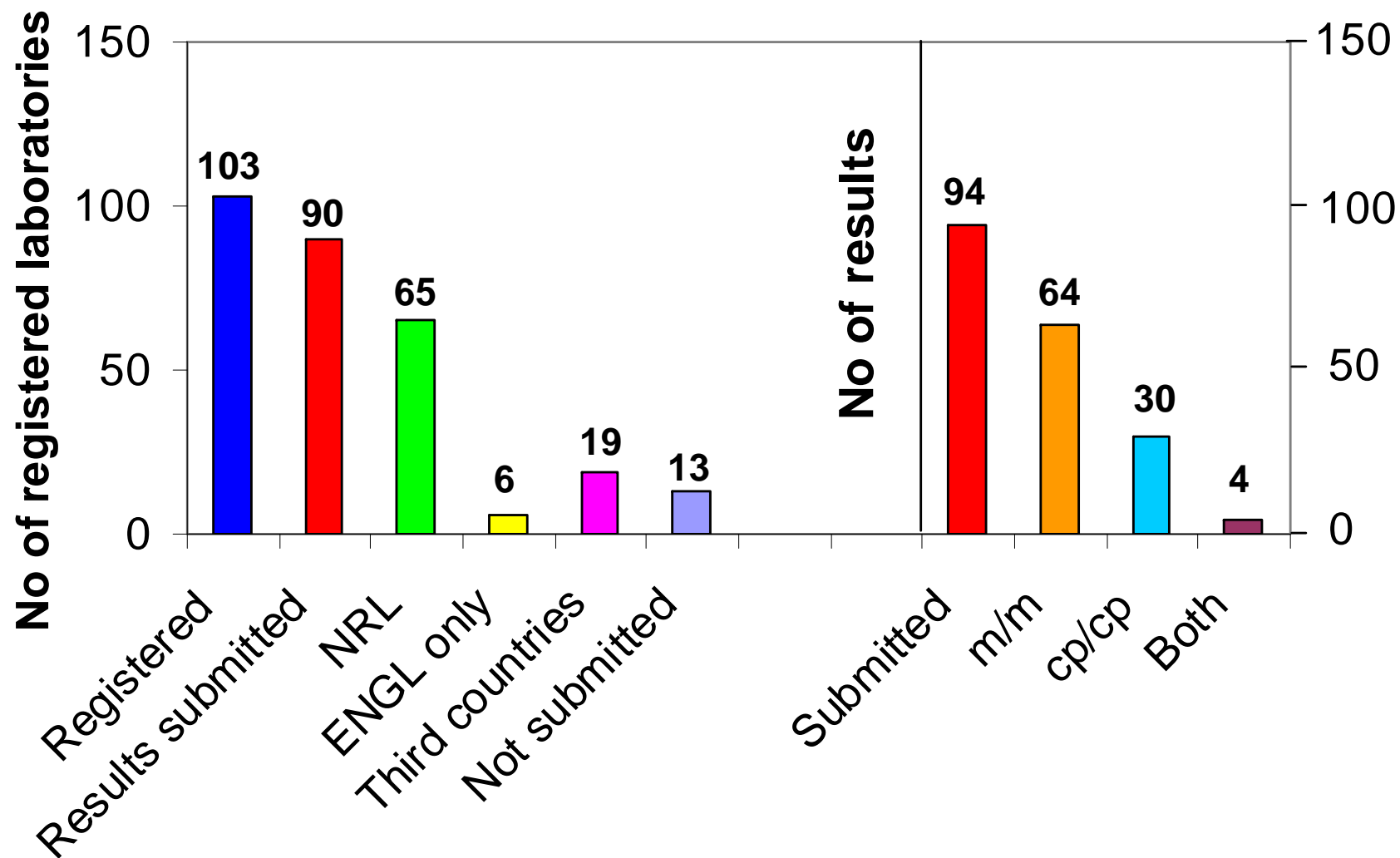
**Step 3 Statistics** A statistical analysis of results is performed and a z-score is awarded to the laboratory

z-scores between -2 and +2 are satisfactory

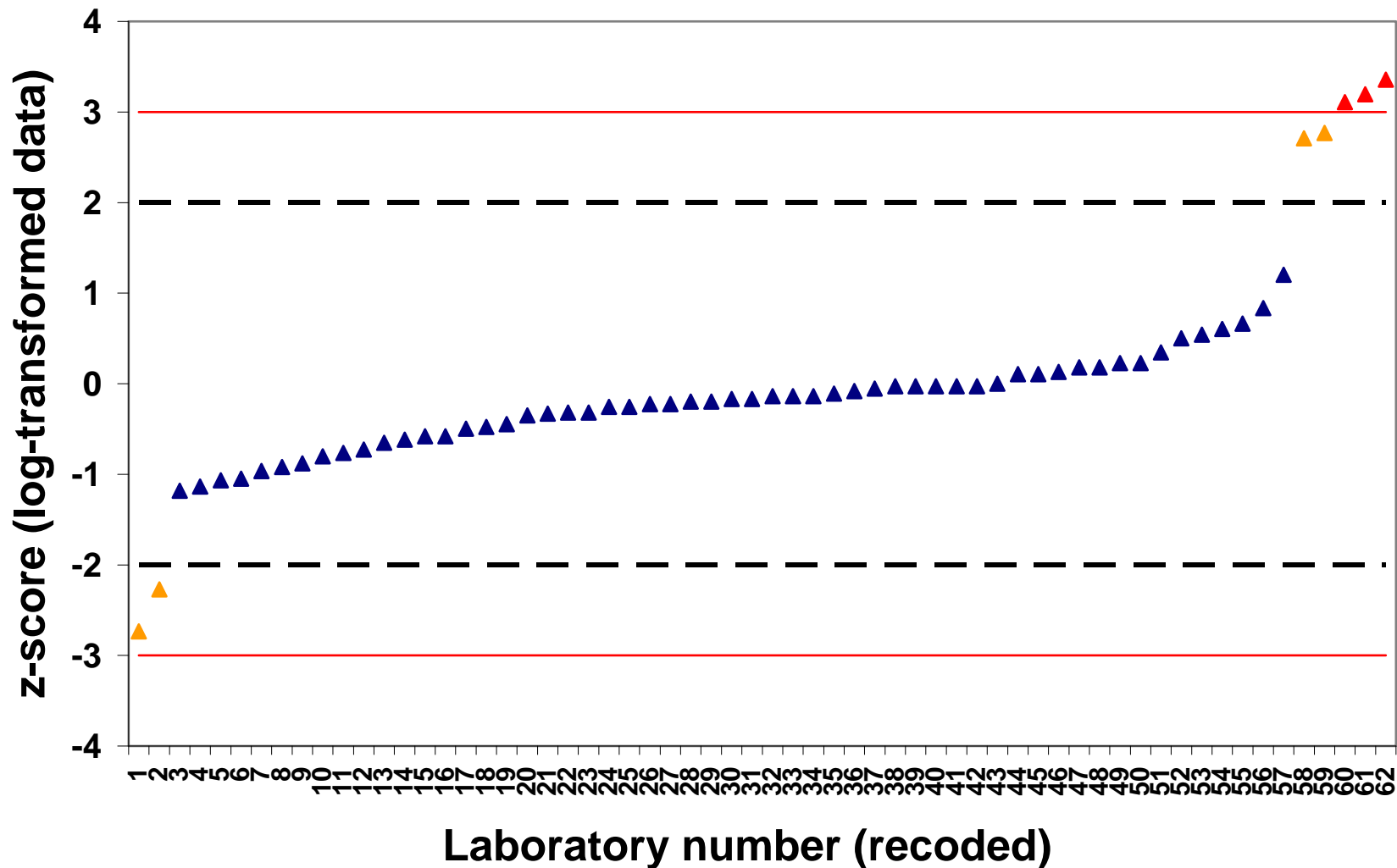
z-scores <-3 and >+3 are unsatisfactory

z-scores between -2 and -3 or +2 and +3 might signal problems, but could also be caused by chance variation

**Step 4 Report** a *confidential* report is made available to participants. The report identifies the performance of the laboratory and the *anonymous* performances of other laboratories in the test for comparison. The report also contains details of the test material preparation and methods used by participant laboratories.



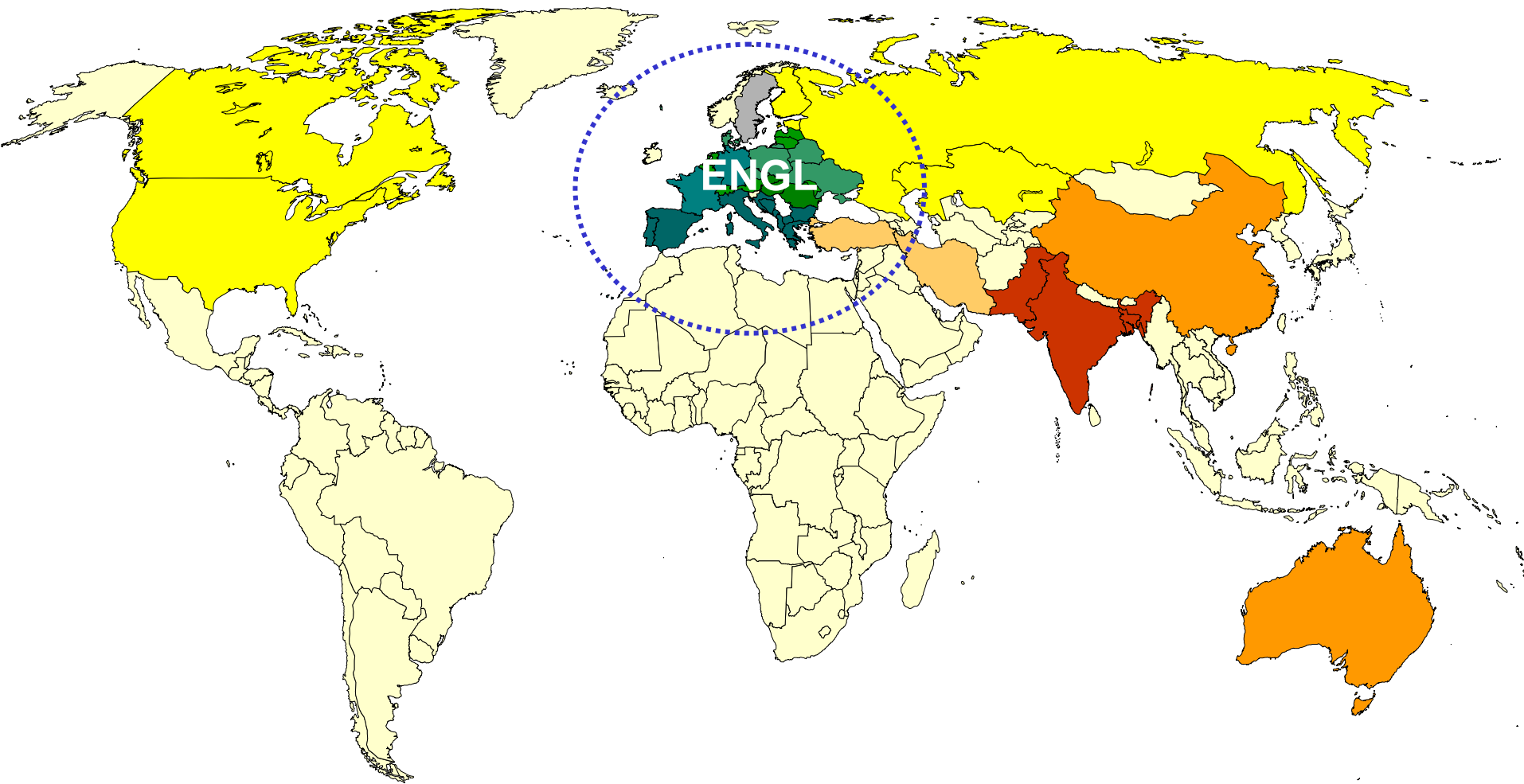
## GM Mass fraction Level 1



## CONTENTS

- Update on EU developments related to:
  - Detection Methods (Compendium + Database)
  - GMO Proficiency/Comparative Testing
- **Update on ‘Enlargement, International Collaboration and Capacity Building’ Project**






# ‘Enlargement, International Collaboration and Capacity Building’ Project


## Project Aim

- To share the networking experience and the advantages derived from the implementation of the ENGL in the EU
- To support the establishment of regional networks outside the EU
- To help building capacity by providing training to enforcement laboratories

## Developed through:

- Networking workshops
- Support toward the establishment of regional networks
- Regional training courses
- Dedicated web page

Legal notice 

 European Commission  
**Joint Research Centre**  
Institute for Health and Consumer Protection

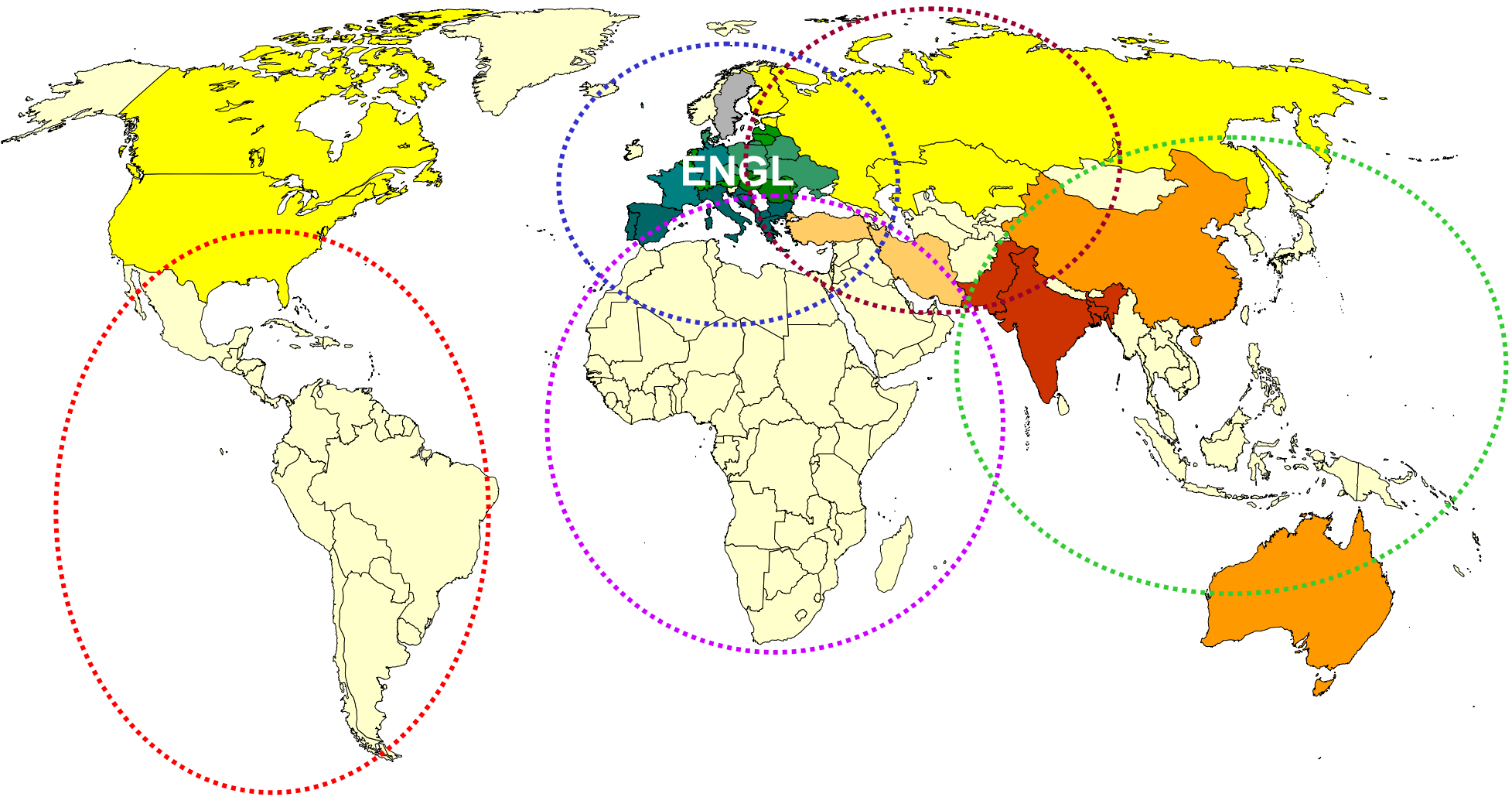
European commission > JRC > IHCP > MBG Unit > Capacity Building

## Enlargement, International Collaboration & Capacity Building



The Molecular Biology and Genomics Unit of the Institute for Health and Consumer Protection (European Commission, Joint Research Centre) plays a leading role in the area of analysis of food, feed and environmental samples for the presence of genetically modified organisms (GMOs).

Here we present the international activities related to capacity building and training and we provide regular updates on workshops, training sessions and conferences we organise that aim to increase expertise and to foster international collaboration and harmonisation.



## Roadmap 2009 - 2012

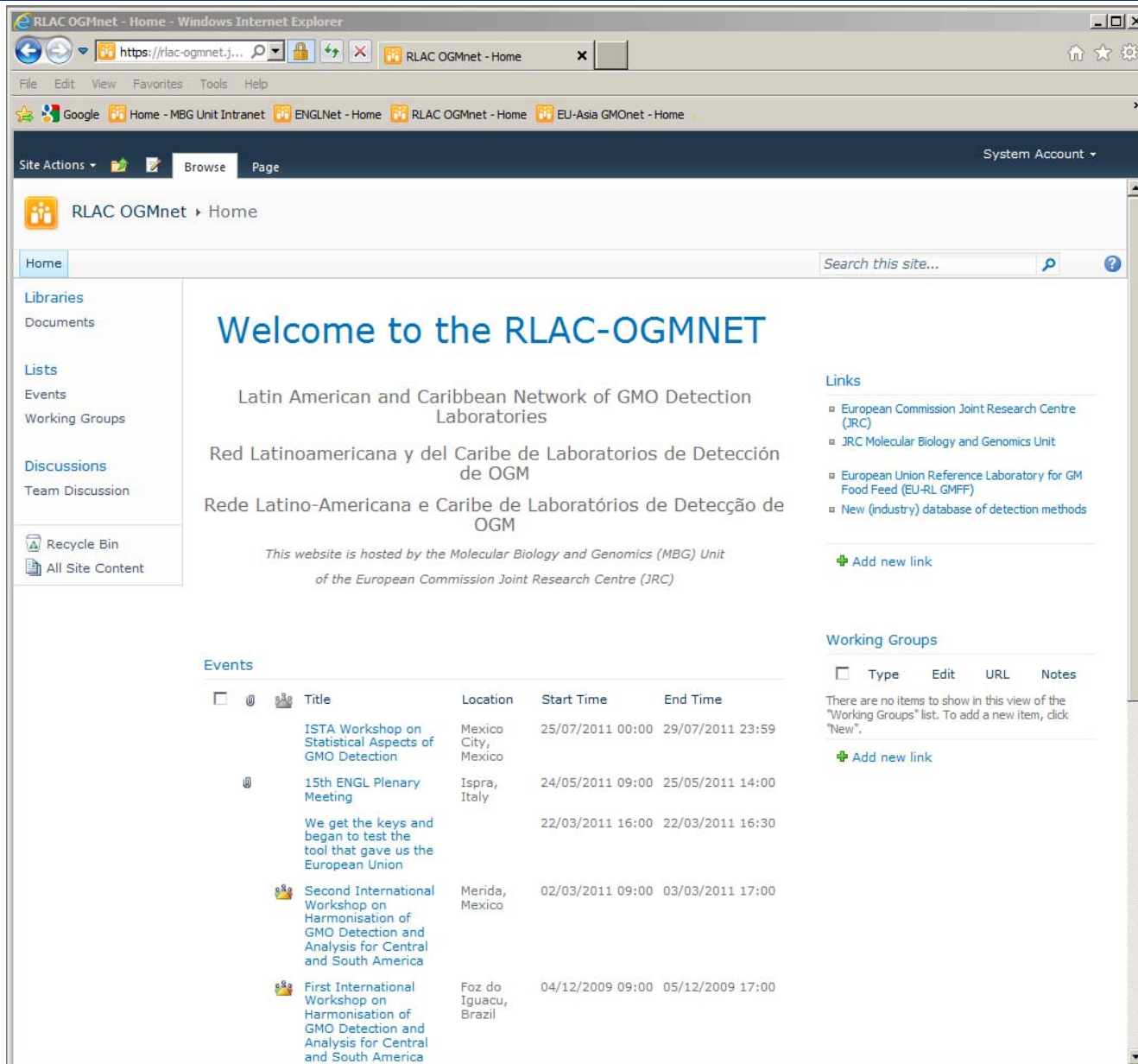
### Latin America

- Cuba, October 2009 - Training Course for Central & South American Countries
- Brazil, 3 - 4 December 2009 - Regional Networking Workshops for Central & South American Countries
- Ispra, 8 - 12 November 2010 - Study Tour on GMO Analysis for Central & South American Countries
- Mexico, 2 – 3 March 2011 - 2<sup>nd</sup> Regional Networking Workshop for Central & South American Countries
- Colombia, June 2012 - 3<sup>rd</sup> Regional Networking Meeting for Central & South American Countries



## Latin America

- Connection among Laboratories within the region
- Intense Exchange of information
- Participation to comparative testing rounds
- Red Latino Americana de laboratorios de detección de OGM
- RLAC-OGMNET



The screenshot shows the RLAC-OGMNET website in a Windows Internet Explorer browser window. The address bar shows the URL <https://rlac-ogmnet.jrc.it/>. The website has a dark blue header with the title "RLAC OGMnet - Home" and a "System Account" dropdown. Below the header, there is a "Site Actions" menu with options like "Browse" and "Page". The main content area is titled "Welcome to the RLAC-OGMNET" and features a large heading "Latin American and Caribbean Network of GMO Detection Laboratories". Below this, there are two lines of text in Spanish and Portuguese: "Red Latinoamericana y del Caribe de Laboratorios de Detección de OGM" and "Rede Latino-Americana e Caribe de Laboratórios de Detecção de OGM". A note states: "This website is hosted by the Molecular Biology and Genomics (MBG) Unit of the European Commission Joint Research Centre (JRC)". On the left side, there is a sidebar with links to "Libraries", "Documents", "Lists", "Events", "Working Groups", "Discussions", "Team Discussion", "Recycle Bin", and "All Site Content". On the right side, there is a "Links" section with a list of links: "European Commission Joint Research Centre (JRC)", "JRC Molecular Biology and Genomics Unit", "European Union Reference Laboratory for GM Food Feed (EU-RL GMFF)", and "New (industry) database of detection methods". Below the links is an "Add new link" button. There is also a "Working Groups" section with a table showing no items. At the bottom, there is an "Events" section with a table listing several events.

Events	Title	Location	Start Time	End Time
	ISTA Workshop on Statistical Aspects of GMO Detection	Mexico City, Mexico	25/07/2011 00:00	29/07/2011 23:59
	15th ENGL Plenary Meeting	Ispra, Italy	24/05/2011 09:00	25/05/2011 14:00
	We get the keys and began to test the tool that gave us the European Union		22/03/2011 16:00	22/03/2011 16:30
	Second International Workshop on Harmonisation of GMO Detection and Analysis for Central and South America	Merida, Mexico	02/03/2011 09:00	03/03/2011 17:00
	First International Workshop on Harmonisation of GMO Detection and Analysis for Central and South America	Foz do Iguacu, Brazil	04/12/2009 09:00	05/12/2009 17:00

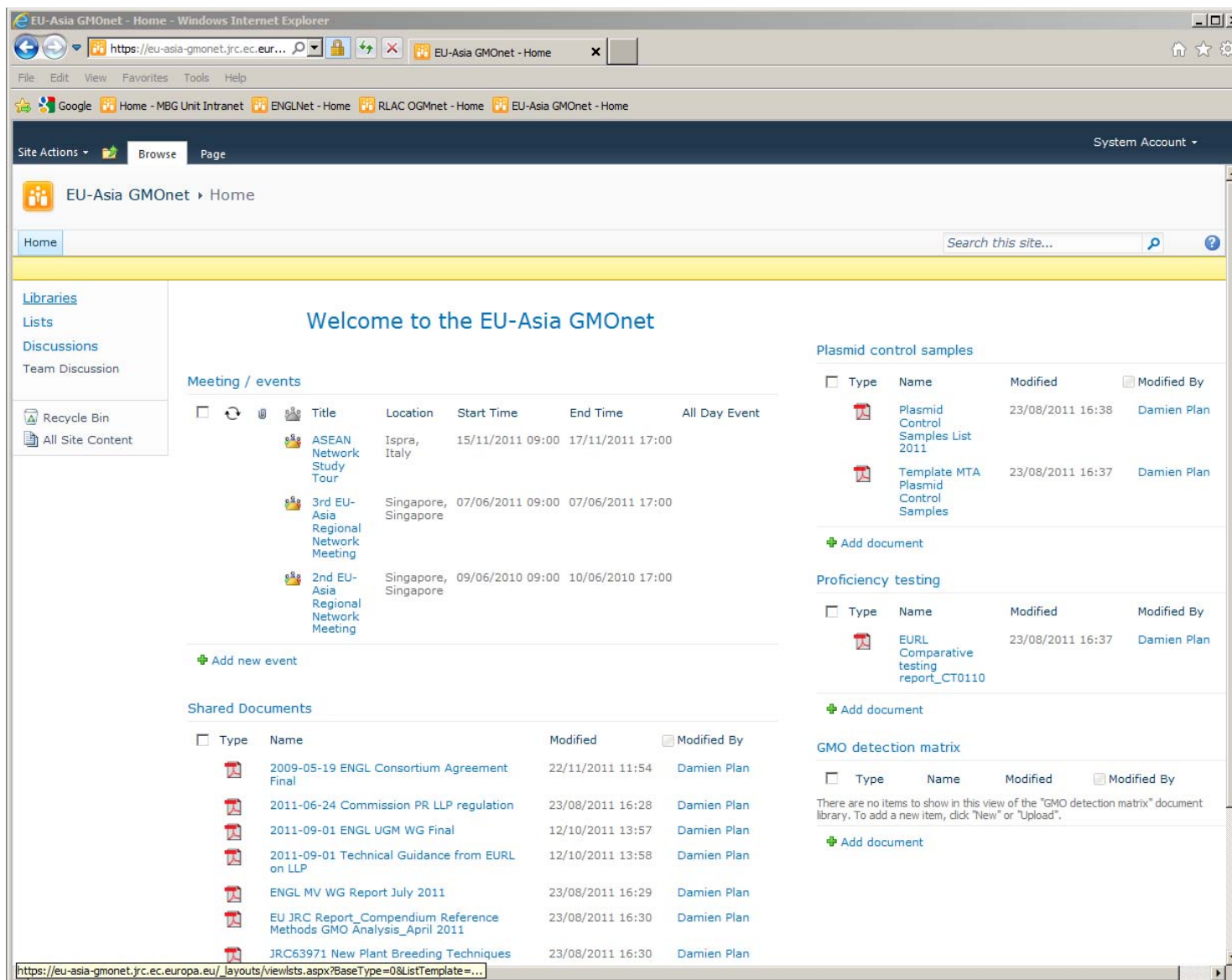
## Roadmap 2009 - 2012

### Asia

- Malaysia, 16 -17 June 2009 - Regional Networking Workshop for Asian Countries
- Malaysia, 15 -19 June 2009 - Training Course for Asian Countries (EC BTSF Initiative)
- Singapore, 7-8 June 2010 - 2<sup>nd</sup> Regional Networking Workshop for Asian Countries
- Singapore, June 2011 – 3<sup>rd</sup> Regional Networking Workshop for Asian Countries
- Ispra, 15 - 17 November 2011 - ASEAN Study Tour on GMO Analysis
- Philippines 21 - 25 May 2012 – 4<sup>th</sup> Regional Networking Workshop for Asian Countries including Training Course on ISO17025

## Asia

- Connection among Labs within the region
- Collaboration between existing ASEAN Network and other Asian countries
- Intense Exchange of information
- Participation to comparative testing rounds
- MoU
- EU-Asia GMONet



The screenshot shows the EU-Asia GMONet website interface. The browser window title is "EU-Asia GMONet - Home - Windows Internet Explorer". The address bar shows the URL "https://eu-asia-gmonet.jrc.ec.europa.eu/". The page has a navigation bar with "Site Actions", "Browse", and "Page" tabs. The main content area is titled "Welcome to the EU-Asia GMONet".

**Meeting / events**

Title	Location	Start Time	End Time	All Day Event
ASEAN Network Study Tour	Ispra, Italy	15/11/2011 09:00	17/11/2011 17:00	
3rd EU-Asia Regional Network Meeting	Singapore, Singapore	07/06/2011 09:00	07/06/2011 17:00	
2nd EU-Asia Regional Network Meeting	Singapore, Singapore	09/06/2010 09:00	10/06/2010 17:00	

[Add new event](#)

**Shared Documents**

Type	Name	Modified	Modified By
	2009-05-19 ENGL Consortium Agreement Final	22/11/2011 11:54	Damien Plan
	2011-06-24 Commission PR LLP regulation	23/08/2011 16:28	Damien Plan
	2011-09-01 ENGL UGM WG Final	12/10/2011 13:57	Damien Plan
	2011-09-01 Technical Guidance from EURL on LLP	12/10/2011 13:58	Damien Plan
	ENGL MV WG Report July 2011	23/08/2011 16:29	Damien Plan
	EU JRC Report_Compndium Reference Methods GMO Analysis_April 2011	23/08/2011 16:30	Damien Plan
	JRC63971 New Plant Breeding Techniques	23/08/2011 16:30	Damien Plan

[Add document](#)

**Plasmid control samples**

Type	Name	Modified	Modified By
	Plasmid Control Samples List 2011	23/08/2011 16:38	Damien Plan
	Template MTA Plasmid Control Samples	23/08/2011 16:37	Damien Plan

[Add document](#)

**Proficiency testing**

Type	Name	Modified	Modified By
	EURL Comparative testing report_CT0110	23/08/2011 16:37	Damien Plan

[Add document](#)

**GMO detection matrix**

Type	Name	Modified	Modified By
There are no items to show in this view of the "GMO detection matrix" document library. To add a new item, click "New" or "Upload".			

[Add document](#)

The browser window shows the URL "https://eu-asia-gmonet.jrc.ec.europa.eu/\_layouts/viewlists.aspx?BaseType=0&ListTemplate=..." in the address bar.



## Roadmap 2009 - 2012

### EU neighbourhood + Middle East/North Africa (MENA)

- Turkey, 27 - 28 April 2009 - Enlargement/Networking Workshop for new MS, Candidate Countries, Potential Candidate Countries and Territories, Countries incl. in the European Neighbourhood Policy
- Turkey, 12-16 April 2010 - Training Course for new MS, Candidate Countries, Potential Candidate Countries and Territories, Countries incl. in the European Neighbourhood Policy
- Croatia, 27-28 September 2010 - 2<sup>nd</sup> Enlargement/Networking Workshop for new MS, Candidate Countries, Potential Candidate Countries and Territories, Countries incl. in the European Neighbourhood Policy
- Jordan, 22 – 24 April 2012 - 1<sup>st</sup> International Workshop on Harmonisation of GMO Detection and Analysis in MENA

## Roadmap 2009 - 2012

### Africa

- Tunisia, 18-22 September 2006 – *Training course on the analysis of food and feed samples for Maghreb region*
- South Africa, 28-29 October 2010 – 1<sup>st</sup> Regional Networking Workshop for African Countries
- South Africa, 7- 8 February 2012 – 2<sup>nd</sup> Regional Networking Workshop for African Countries
- ... ..



## Enlargement, International Collaboration & Capacity Building

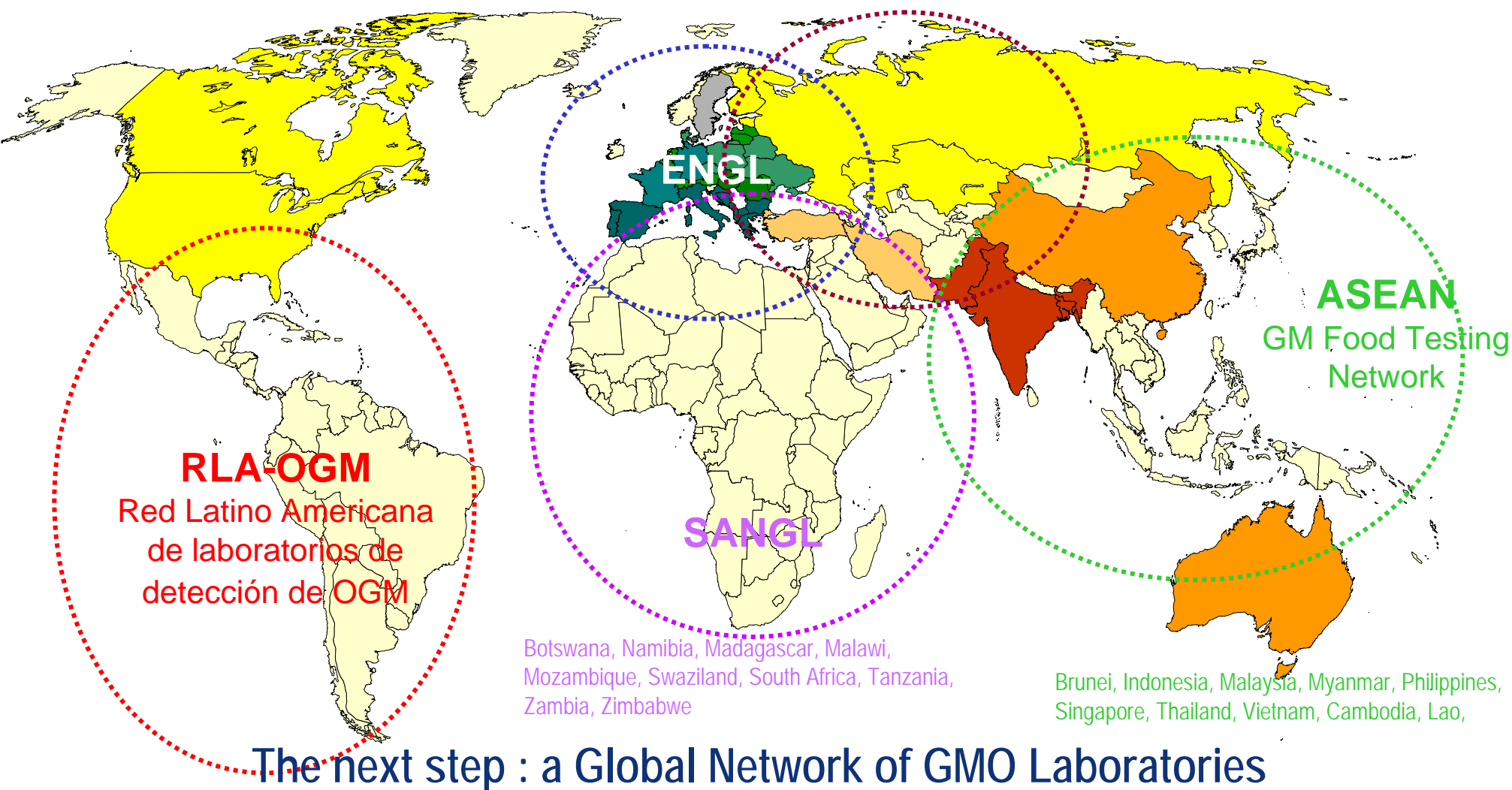
### International Workshop on Harmonisation of GMO Detection and Analysis

Organised by  
European Commission Joint Research Centre (JRC)  
in collaboration with  
Directorate General for Health and Consumers  
(DG SANCO)  
under the 'Better Training for Safer Food' Programme

**White River (South Africa)**  
**28-29 October 2010**

### AGENDA





## Roadmap 2009 - 2012

### Global GMO Networking Forum (GGNF)

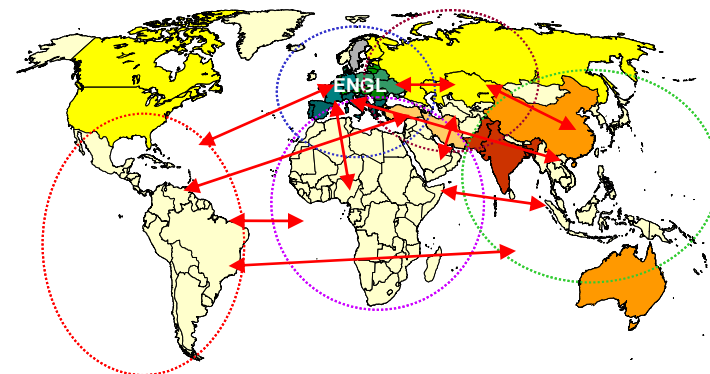
**Date:** 16-17 October 2012

**Location:** Brussels (EC Buildings)

**General Objective:** to "network the GMO networks"

**Participants:** approx 100 delegates from all regions including representatives from

- EU Commission
- Regional Networks
- International Organisations
- Individual Countries



## Roadmap 2009 - 2012

### Global GMO Networking Forum (GGNF)

#### Format:

2-days workshops

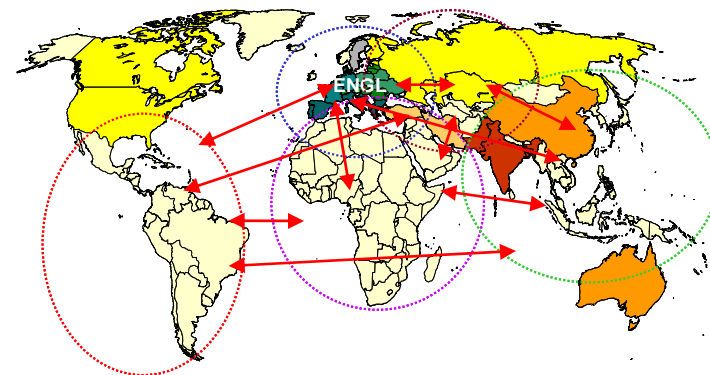
#### Draft agenda topics:

1<sup>st</sup> day – Focus on policy and networking

2<sup>nd</sup> day – Focus on technical topics  
and "next steps"

#### Your task:

give us your suggestions (e.g. on key topics)  
and your expectations







**Thank you for your attention!**