

# Metodologicas, acreditaciones y Laboratorio de referencia

Reference laboratories; cornerstones for residue analyses

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# INOFOOD

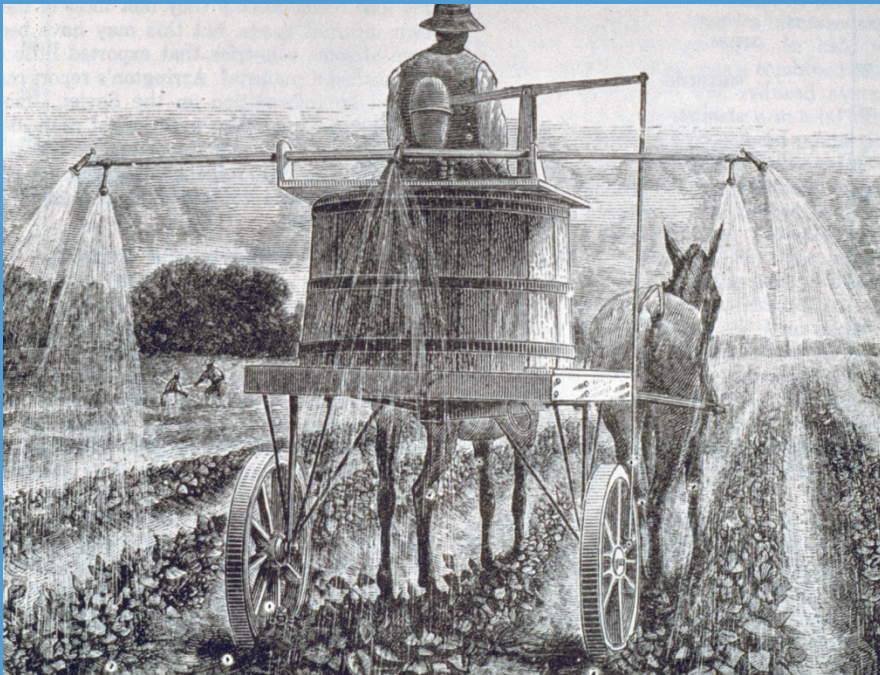
**2015** 5 y 6 de octubre  
Casa Piedra, Santiago de Chile



# Our daily food



# Must be safe food .....



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# Contaminants and Residues



Natural Toxines

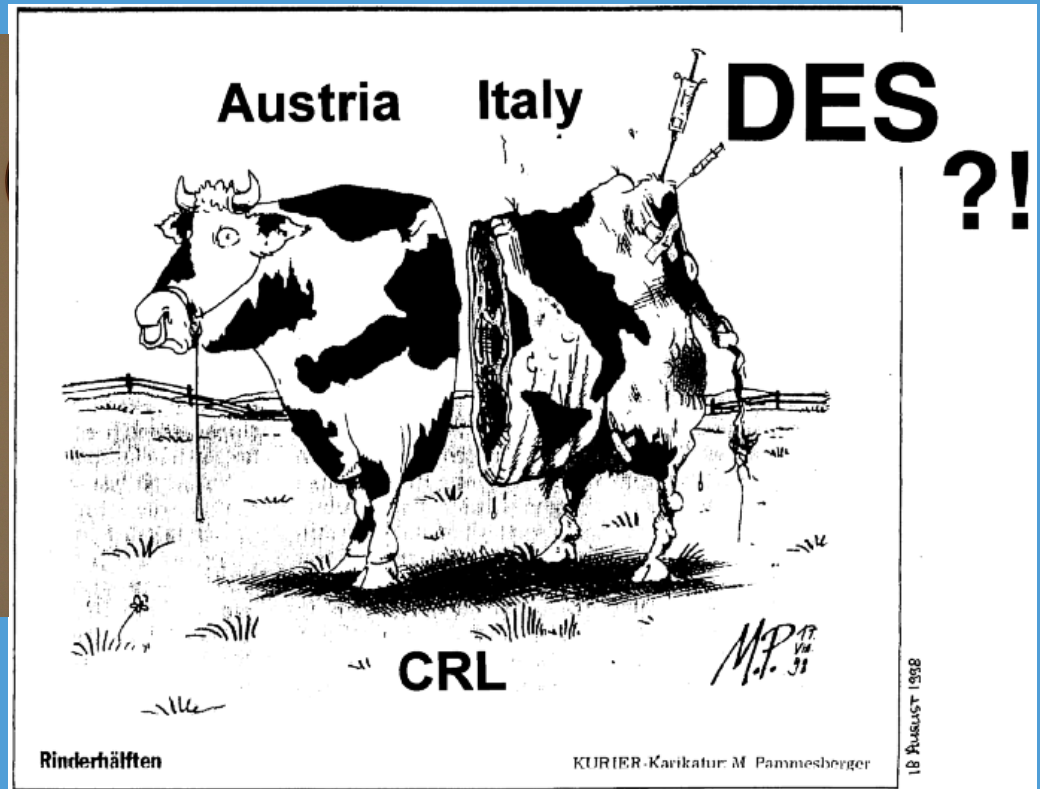


Veterinary Drugs



Industrial & Process  
Contaminants

# Problems with hormonal growth promoters (DES) initiated the “European Food Safety System” in the 1980’s



# Legislation is the responsibility of the European Commission



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**REGULATION (EC) No 178/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 28 January 2002**

**laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety**

- Producers are responsible for food safety
- Precautionary principle
- ...

# Risk assessment is the responsibility of the new European Food Safety Authority (EFSA)

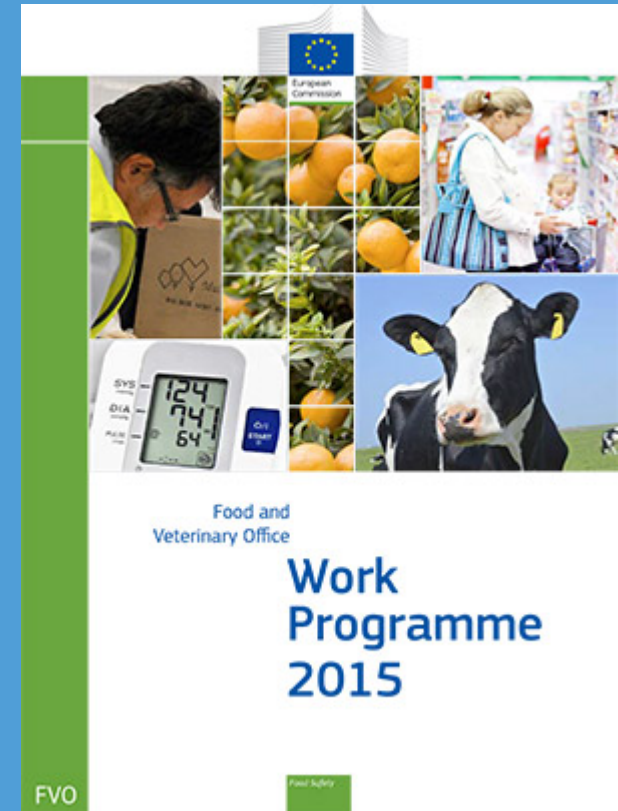


Parma, Italy

Translation of the risk assessment into admissions, limits, MRLs, ... is risk management and done by the EC, not by EFSA



# Supervision of National Residue Control by EU's Food & Veterinary Office (FVO)



Grange, Ireland

Last reports on Chile are from 2013

[http://ec.europa.eu/food/food\\_veterinary\\_office/index\\_en.htm](http://ec.europa.eu/food/food_veterinary_office/index_en.htm)

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# Official control in the EU (882/2004): starting point for the laboratories

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- Laboratories involved in the analysis of official samples should work in accordance with internationally approved procedures or criteria based performance standards and use methods of analysis that have as far as possible been validated.

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  - *Article 17 of regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.*

## Métodos analíticos buenas

# Official control in the EU (882/2004): starting point for the laboratories

- The designation of Community and national reference laboratories should contribute to a high quality and uniformity of analytical results. This objective can be achieved by activities such as the application of validated analytical methods, ensuring that reference materials are available, the organisation of comparative testing and the training of staff from laboratories.
  - *Article 18 of regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.*

## Red de laboratorios

# Cornerstones for Residue Control

Analytical methods, based on Performance criteria

Quality Assurance Systems and Accreditation

The right analytical methods (analyte-matrix) and technical guidelines published.

Residue Analyses

Accreditation bodies and Metrology Institutes

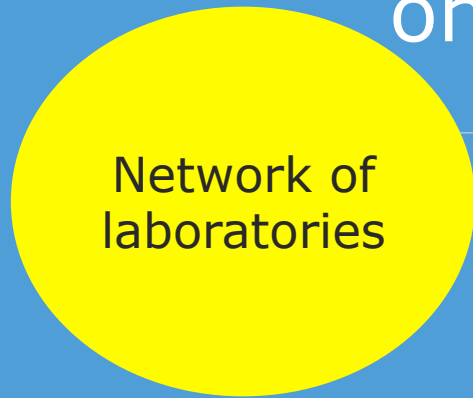
Network of laboratories



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# EU food safety monitoring system is based on a network of laboratories



EU-Reference Laboratories (EURLs)

1 for each task  
(34)



National Reference Laboratories (NRLs)

1 for each task  
( 28x34 )



Official Laboratories (OLs)



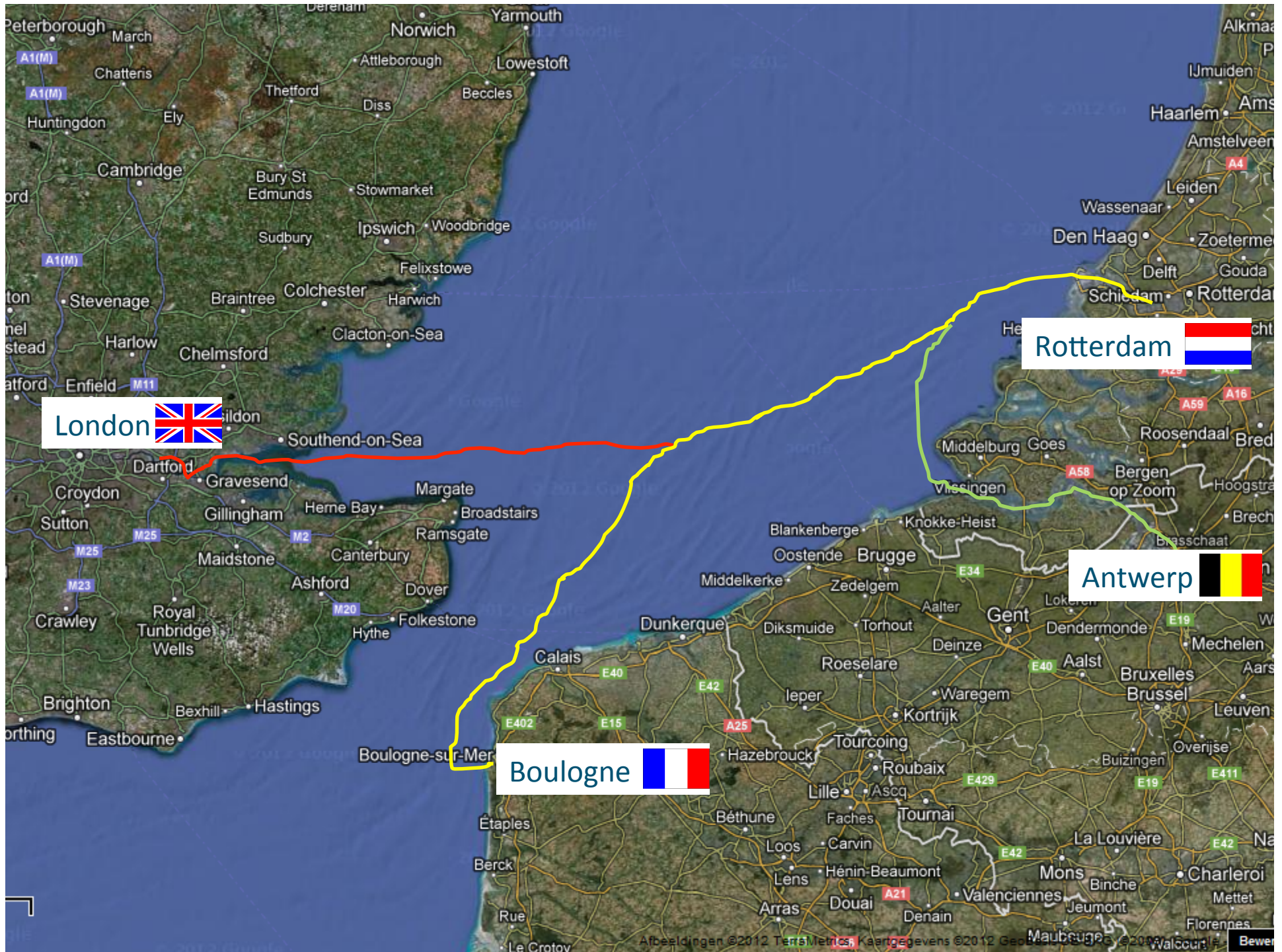
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# Reference tasks


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- Food microbiology (Salmonella, E. coli, Listeria, Campylobacter, Staphylococci, bivalve molluscs, parasites, TSE, antimicrobial resistance)
- Chemical residues (environmental and processing residues, heavy metals, agrochemicals, animal drugs, antibiotics, growth promoters, natural toxins)
- Milk and milk products, animal proteins, feed additives, GMOs, water content in poultry meat
- Food contact materials
- Alternatives for animal testing
- Possible new tasks: allergens, plant toxins, nano particles



London 

Rotterdam 

Antwerp 

Boulogne 



# Quality assurance of laboratories

- Accreditation: ISO 17025
- Proficiency testing



Capability ('driving license')

- More is possible:
  - Check for the applicability of the methods used
  - PT in difficult food/feed matrices
  - Use of blind samples/Reanalysis of normal samples
  - Unannounced visits/audits

# Responsibilities of National Reference Laboratories (LNR)

- Coordination and exchange of knowledge with and between Official Laboratories
- Quality Assurance of Official Laboratories
- Harmonization of methods used
- If not available organize relevant PT
- Scientific and technical assistance to the National Competent Authorities

The LNR are assisted by international reference laboratories

# Could a system like this work in Chile as well?



# LNR project

- Partners:

- ACHIPIA,
- Wageningen UR/Chile,
- RIVM (NL State Institute of Public Health; EURL/NRL)
- RIKILT Wageningen UR (EURL/NRL)

- Contractor: ACHIPIA (Michel Leporati)

- Project leader: Leen van Ginkel, RIKILT Wageningen UR

- Finance: CORFO

# Responsibilities of the Ministries

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- Establish a coordinated national food safety policy.
- Designate a coordinating authority responsible for the system of National Reference Laboratories.
- Establish a financial base.
- Establish a legal basis.
- Jointly approve the appointment of LNRs by the coordinating authority

# Tasks of the reference laboratories

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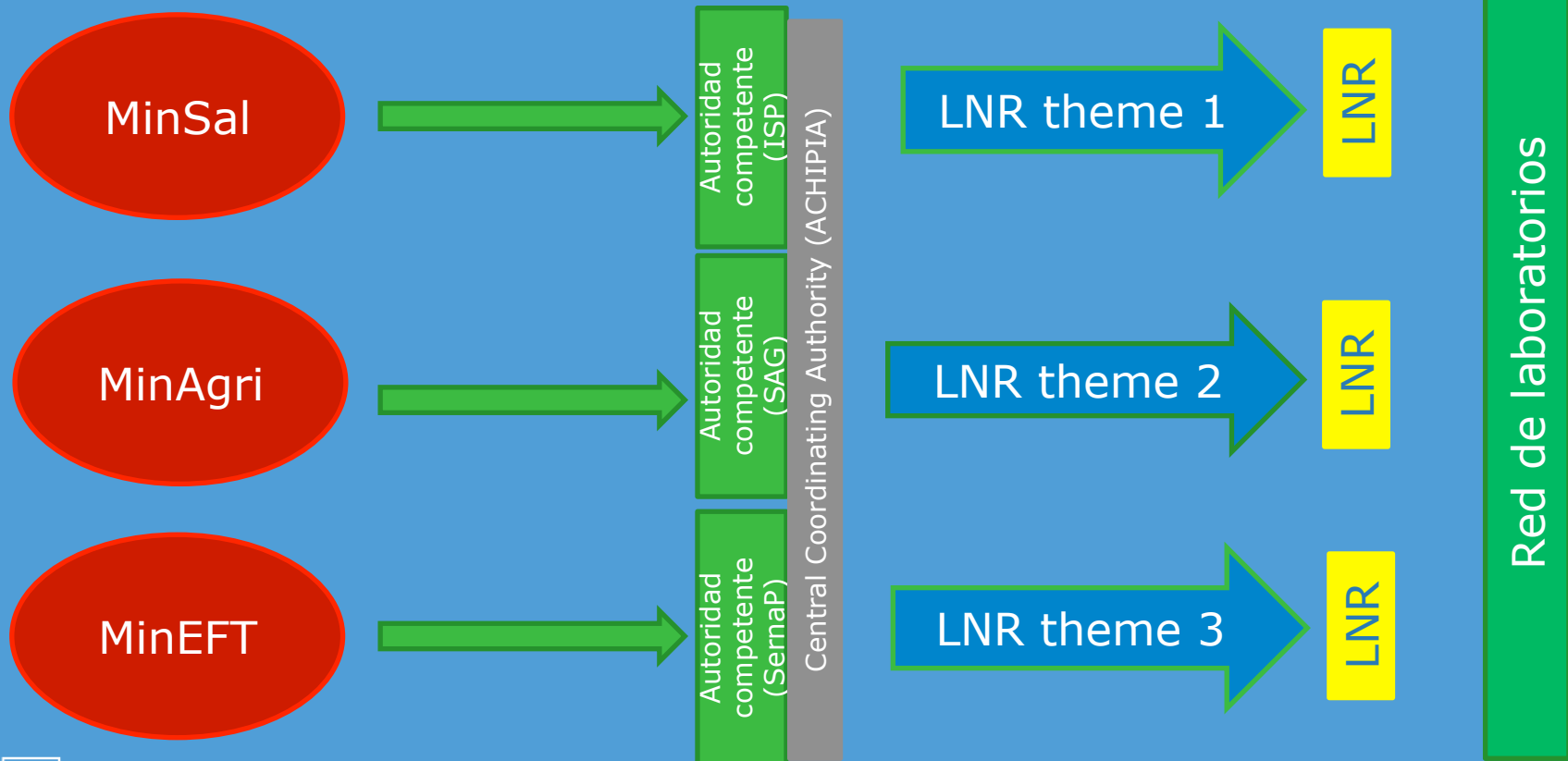
- To provide adequate analytical methods to official laboratories (both public and private).
- To provide assistance in support of quality assurance; organize interlaboratory testing and provide reference materials.
- To provide technical assistance to the competent authorities and laboratories.
- To encourage the exchange of information
- To perform arbitration and analysis when necessary
- To ensure that regional laboratories obtain the necessary knowledge: technical, legal and regulatory.

# Necessary conditions for a reference laboratory

- Be an expert in the field
- Have experience with all the required techniques.
- Have experience in performing the required tests.
- Be fully accredited.
- Have the ability to organize interlaboratory tests.
- Perform the work in a transparent way to both official laboratories, the public and the authorities.
- Be financially supported for these tasks

# Design of a single national laboratory reference system for Chile

## Role of the competent authorities





## Six priority topics LNRs prioritarios

Microbiology

Natural toxins and  
marine biotoxins

Veterinary drugs  
growth promoters

Dioxins and PCB,  
PAH

Heavy metals

Pesticides,  
organofosfor  
organoclor  
compounds



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# Results of the first LNR project

- Design has been made and approved by all ministries
- First priority LNR have been selected
- Three LNR have been further trained:
  - ISP: Salmonella
  - SAG: Pesticides in plant products
  - UChile FAVET: marine toxins

# Seven reasons for establishing National reference laboratories.

- Improved research and method development.
- Expertise in case of a food safety incidents/crises.
- Technical support for official laboratories.
- Efficient use of (financial) resources.
- Expert contact point for international reference laboratories.
- Clear responsibilities of coordinating authorities, reference laboratories and official laboratories
- Increased transparency for external stakeholders (e.g. Inspection bodies and industry)



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→ Improved assurance of the safety of food for Chilean consumers and export purposes.

# Conclusions

- In Europe, the development of the laboratory network system started in the 1990. A recent evaluation concluded that it is still the most cost effective way of setting up a control system on food safety
- Supervision of private laboratories is discussed
- The current Chilean laboratory infrastructure is a good basis for a NRL/OL system: 3 have been trained
- Several potential reference laboratories have already established international cooperation