

**G-TWYST**

GM PLANTS TWO YEAR SAFETY TESTING

# Interlinkages of G-TwYST with other Research Projects



# Added value from a close cooperation between research projects

A close interlinkage between research projects will:

- Increase the comparability of results
- Expand the data basis for political decisions
- Allow to join forces and share costs
  - Mitigate the occurrence of force majeure
  - Facilitate the exchange of data and material / tissues
  - Facilitate the exchange of knowledge / experiences

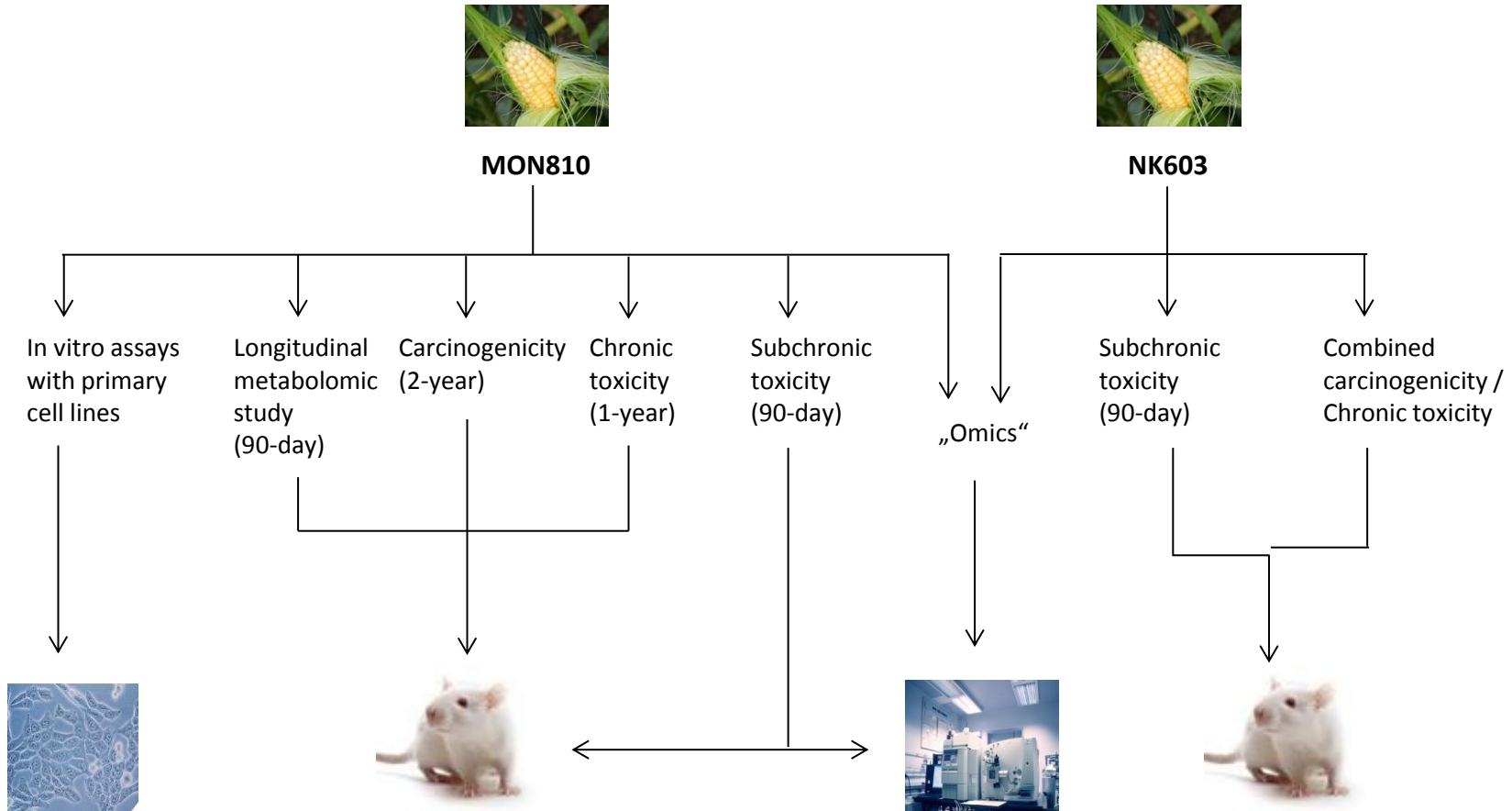
## 1. The EU-funded project GRACE (GMO Risk Assessment and Communication of Evidence)

- Major goal:

Increase the transparency and traceability of information dealing with potential risks and benefits associated with the deliberate release of genetically modified plants (GMPs) and their products by

- Providing a systematic and structured quality assessment of existing evidence following a harmonized framework
- Identifying knowledge gaps regarding impacts of GMPs
- Testing designs and identifying scientific values and limits of rat feeding trials and *in vitro* studies with whole food/feed
- Providing an open-access database and a central access point of reviewed studies and further data relevant to GMP impact assessment

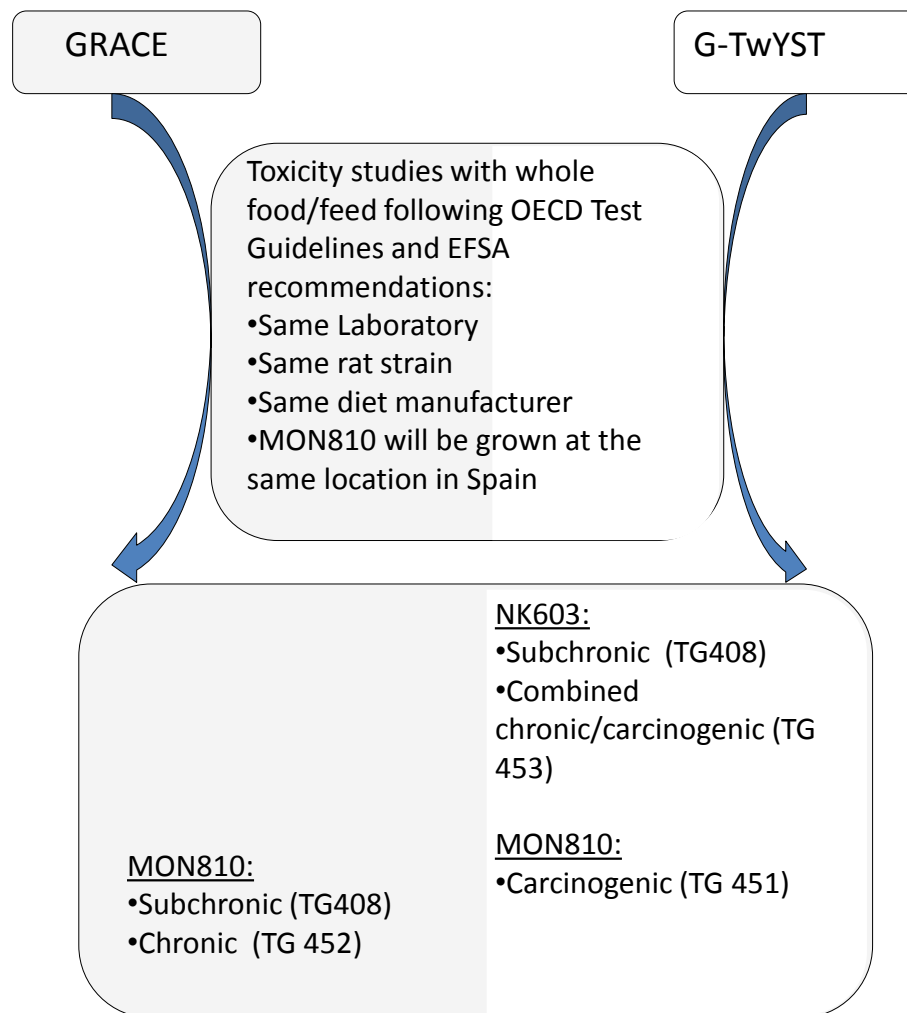
# The G-TwYST - GRACE cooperation: Summary feeding trials



# The G-TwYST - GRACE cooperation: Comparability and complementarity

Comparability

Complementarity



## 2. The French project GMO90+ (funded by the Ministry of Ecology and Sustainable Development)

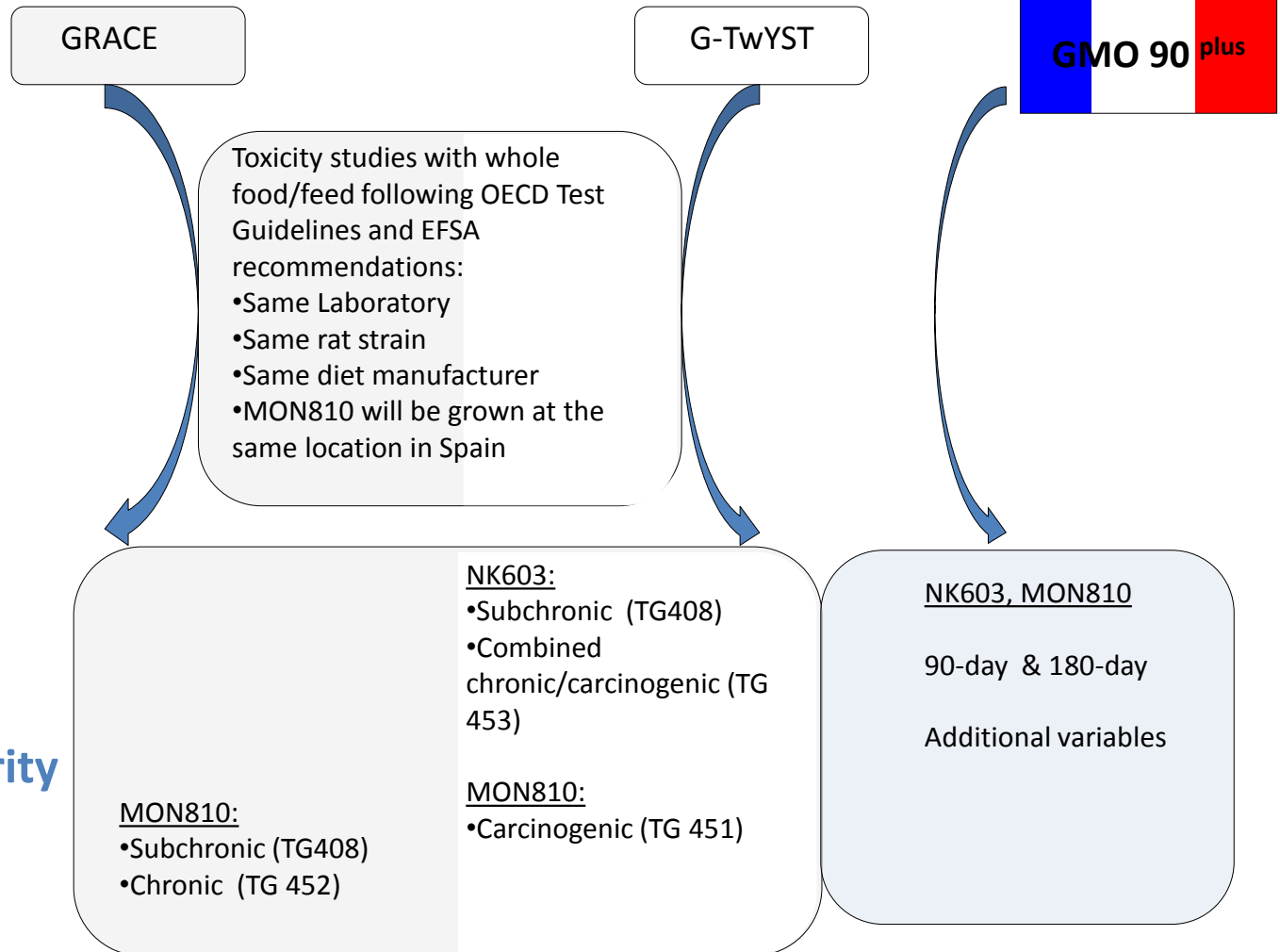
- Major goal:  
Investigate whether feeding rats with genetically modified MON810 or NK603 maize may relate to biomarkers of effects by
  - Performance of repeated-dose oral toxicity studies with a duration of 3 to 6 months with:
    - blood and urine sampling (T0-T90-T120-T180) to determine biochemical parameters and metabolomic profiles
    - transcriptome and micro RNA determination from gut and liver (T90-T180)
  - Identification of biomarkers by high-throughput (omics) techniques in conjunction with pathophysiological analysis mainly centered on the gut, liver, kidney and reproductive apparatus

# The G-TwYST - GMO90+ cooperation

- Cost sharing:
  - Planting, harvest and shipment of NK603 (NK603 was grown at two different locations in North America in order to mitigate force majeure)
  - Analysis of maize material
- Use of the same rat strain
- Use of the same maize material (NK603, MON810)
- Exchange of blood, urine, kidney and liver samples:
  - GMO90+ will perform omics and analytical analysis on blood/urine samples and on liver/kidney extracts from G-TwYST rats being fed with GM corn for 1 and 2 years
- Pablo Steinberg is a member of the scientific council of GMO90+

Comparability

Complementarity





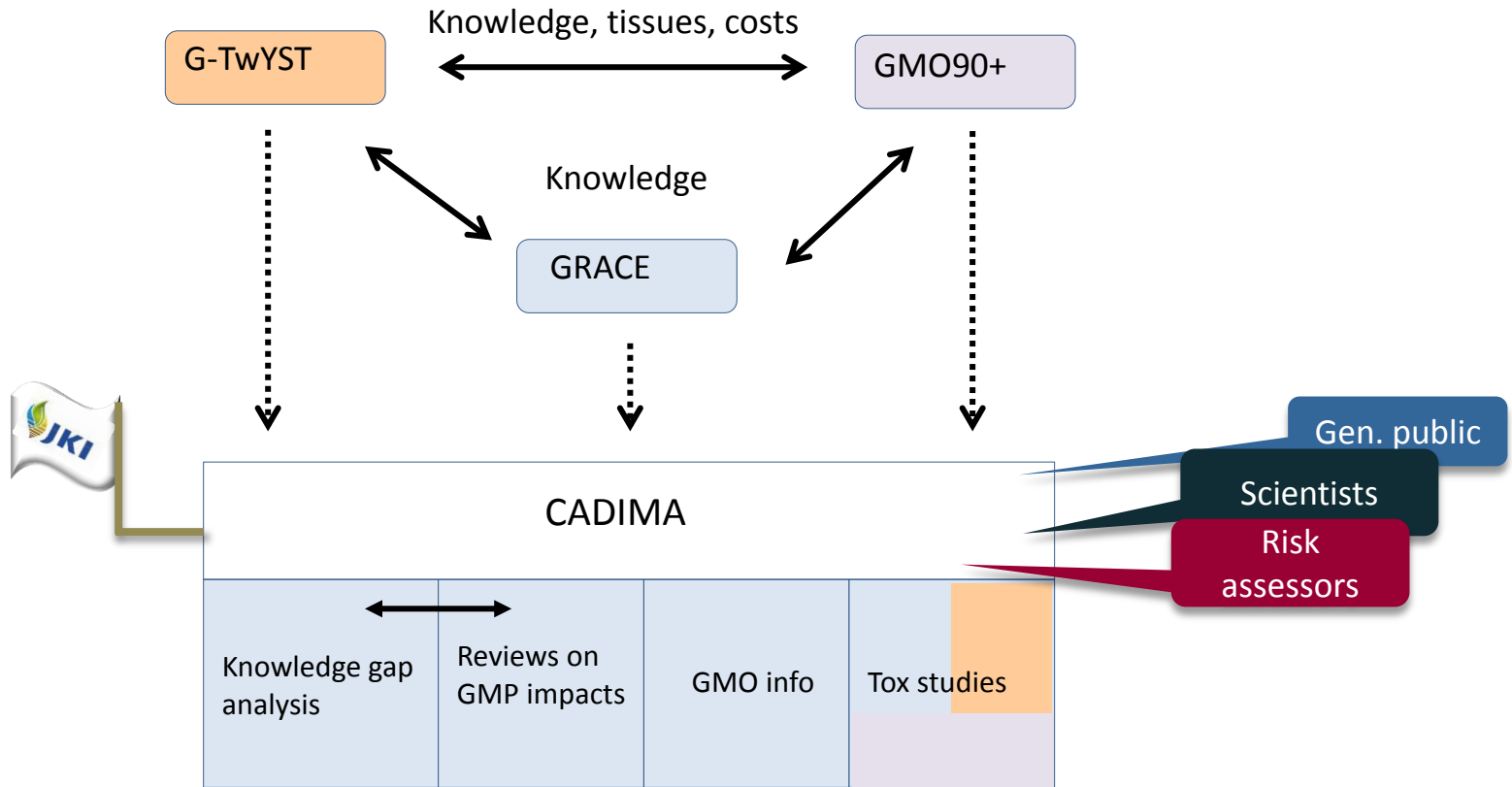
# Requirements: Data dissemination

- Common dissemination will support synergistic effects between research projects
- Open access provision of results following the projects' transparency obligations

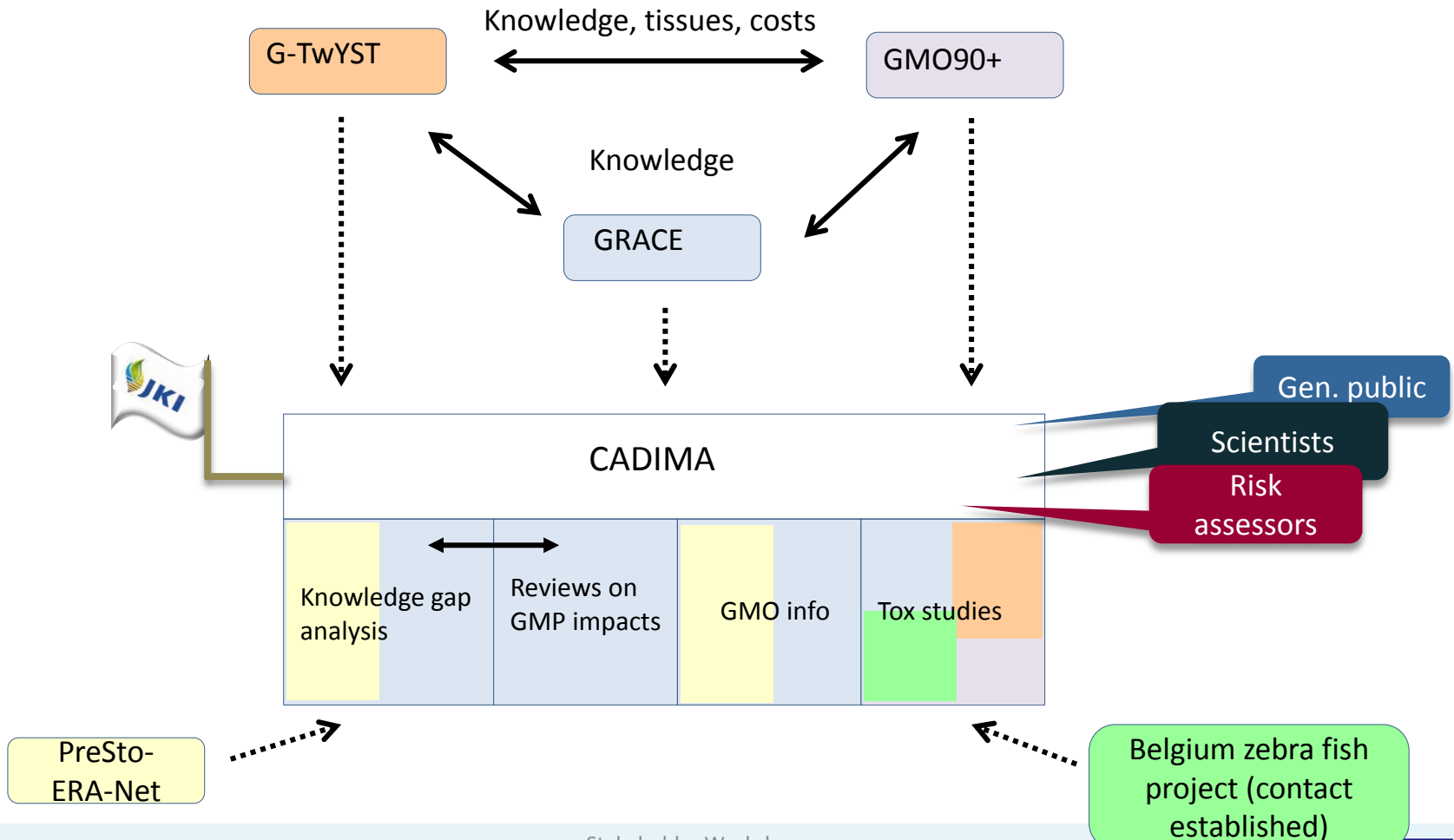
CADIMA – Central Access Database for the Impact Assessment of Crop Genetic Improvement Technologies – will:

- Provide a central access point for relevant information and data regarding the impact/risk assessment of GM crops
  - ⇒ Hosts and disseminates all the data gathered and generated in the course of the projects
  - ⇒ Data will be freely accessible
- Permanently established at JKI

# CADIMA supports synergy between research projects



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# Transparent and tailored scientific discussion

Facilitating a transparent and tailored scientific discussion about the added value of animal feeding trials as well as in vitro and in silico approaches with whole food/feed for the risk assessment of genetically modified plants

Arch Toxicol DOI 10.1007/s00204-014-1375-7

“We, the coordinators of the projects GRACE, G-TwYST and GMO90+ (...) agreed on a coordinated publication strategy to increase the transparency of our studies and - in addition to the stakeholder involvement activities in our own projects - to invite stakeholders to discuss the data generated by our projects in the frame of a scientific debate in an open-access journal.”

Thank you for your attention