

# Wageningen University & Research: Two Partners

Fundamental & Applied research for public & private sector



*"To explore the potential of nature  
to improve the quality of life"*

# WORKSHOP

## REGIONAL DEVELOPMENT STRATEGIES FOR SUSTAINABLE AGRICULTURE, RURAL AND URBAN REGIONS

### **Theme: Agro-Food Chains and Market Outlooks**

13 May 2019, Moscow

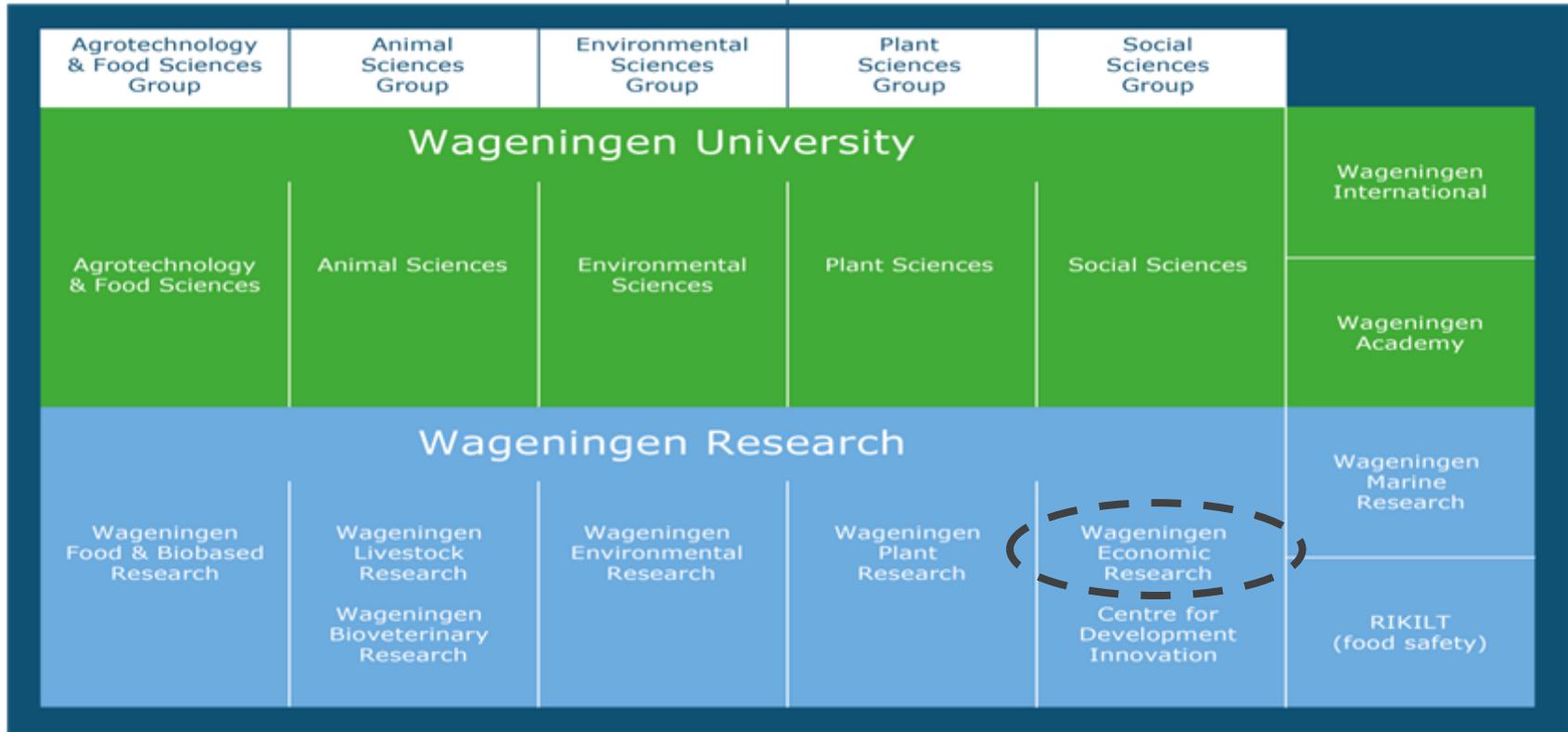
Author: Irina Verweij-Novikova, PhD



# Introduction: Wageningen Economic Research

- Focus Research Areas:
  - International and Dutch markets
  - Data
- Focus Education programmes:  
only applied or within projects & top-sectors
- Collaborations:
  - Business (Public Private Partnerships)
  - Governments (incl. international)

# Wageningen University & Research



Facts

266  
researchers

65% male  
35% female

More than 75  
years of  
experience

40%  
Accepted EU R&D  
proposals in  
societal challenge  
2

Yearly around  
100 references  
in Dutch  
parliament

Turnover'15  
€ 31 mln



# Economic research areas and clients

## Public sector



Ministerie van Landbouw,  
Natuur en Voedselkwaliteit



CGIAR



European  
Commission

BILL & MELINDA  
GATES foundation



the sustainable  
trade initiative

## Research areas

### Market Intelligence

Market Potential & Outlook  
Consumer Behaviour  
Marketing Impact

### Sustainability Management

Impact strategy & Review  
Metrics & Measure  
Monitor & Improve

### Food System Design

Feeding the cities  
Business Services  
Peri-urban Farming

### Circular Sourcing

Risk Management  
Digital Enabling  
Value Chain Design

## Private sector



ONE PLANET. ONE HEALTH



FOOD GROUP



ANIMAL HEALTH



Annually involved in 800 different projects, with socio-economic research in the bio-based economy, water, energy, climate, sustainable food and food security clusters.

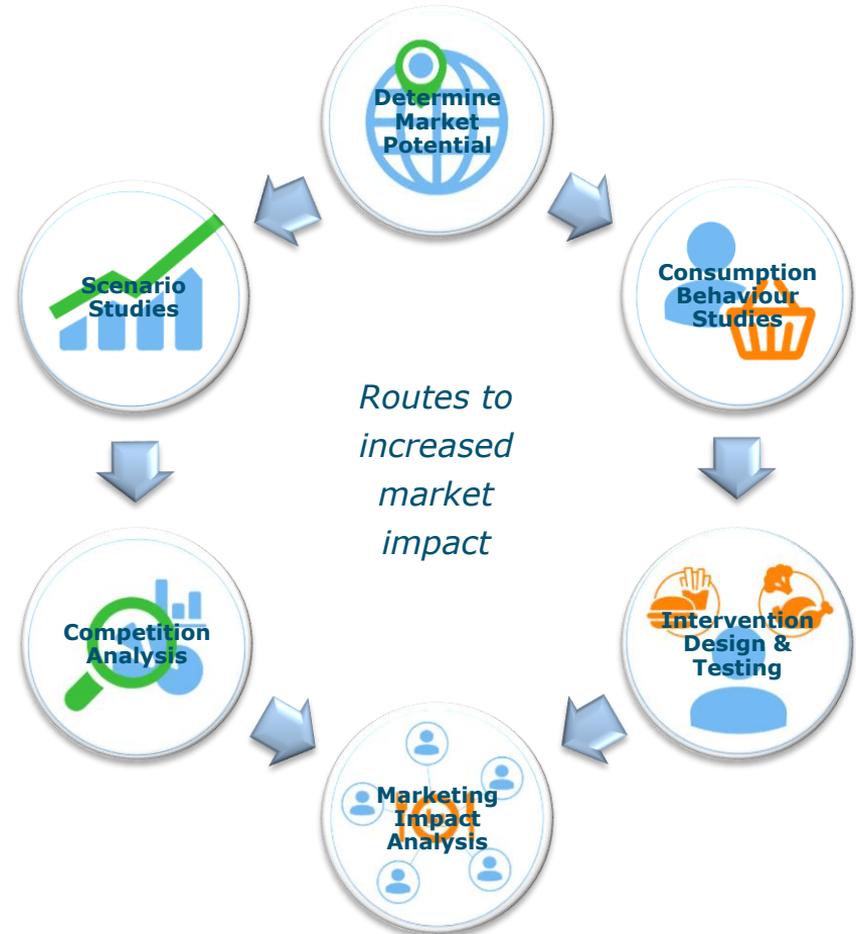
# Market Intelligence in Agri & Food Sector

Market focus:

- Fresh Food Trade
- Out of Home & Retail

...with strong focus on international (year-round) sourcing, perishable logistics and B2C marketing.

[www.wur.eu/marketintelligence](http://www.wur.eu/marketintelligence)



Browser address bar: <https://www.wur.nl/en/Research-Results/Research-Inst>

Page title: Markets and chains - WUR | Market Intelligence - WUR

WAGeningen UNIVERSITY & RESEARCH 100years 1918 — 2018

Navigation: Education & Programmes | Research & Results | Value Creation & Cooperation

Breadcrumbs: Home > Research Institutes > Economic Research > Research topics > Market Intelligence

## Insights in food consumption:

### Personalised Nutrition



We contribute to a society in which every individual will benefit from a personalised sustainable and healthy consumption pattern.

### Behavioural interventions



We achieve specific behavioural change by designing intervention strategies and measuring impact.

### Consumer insights

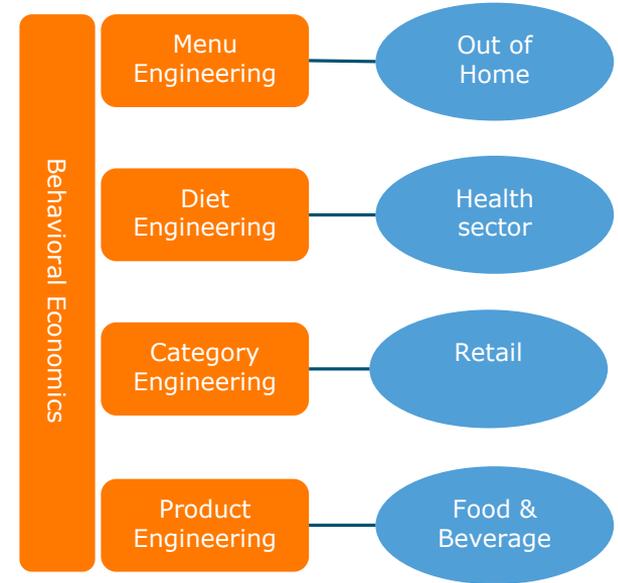
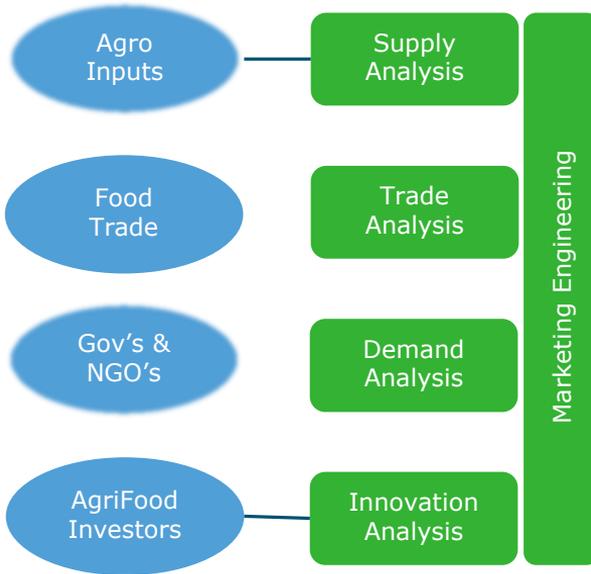


We deliver insights into the purchasing behaviour and dietary patterns of consumers, both individually and collectively, and in specific contexts.

Footer: <https://www.wur.nl/en/About-Wageningen/100years.htm>

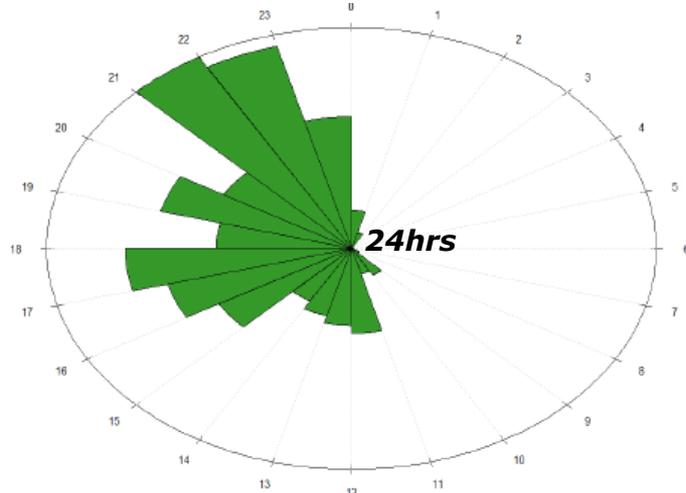
[www.wur.eu/marketintelligence](http://www.wur.eu/marketintelligence)

# Market Impact overview



# Food profiler & shifting consumption

**Food Profiler:**  
Track consumption patterns



*It also tracks gender & age of consumers,  
and motive of consumption*

**What interventions and trends  
are shifting consumption?**



**How will the consumer respond?  
Consequences for the supply chain?**

We track food consumption, and assess the consequences of trends and interventions

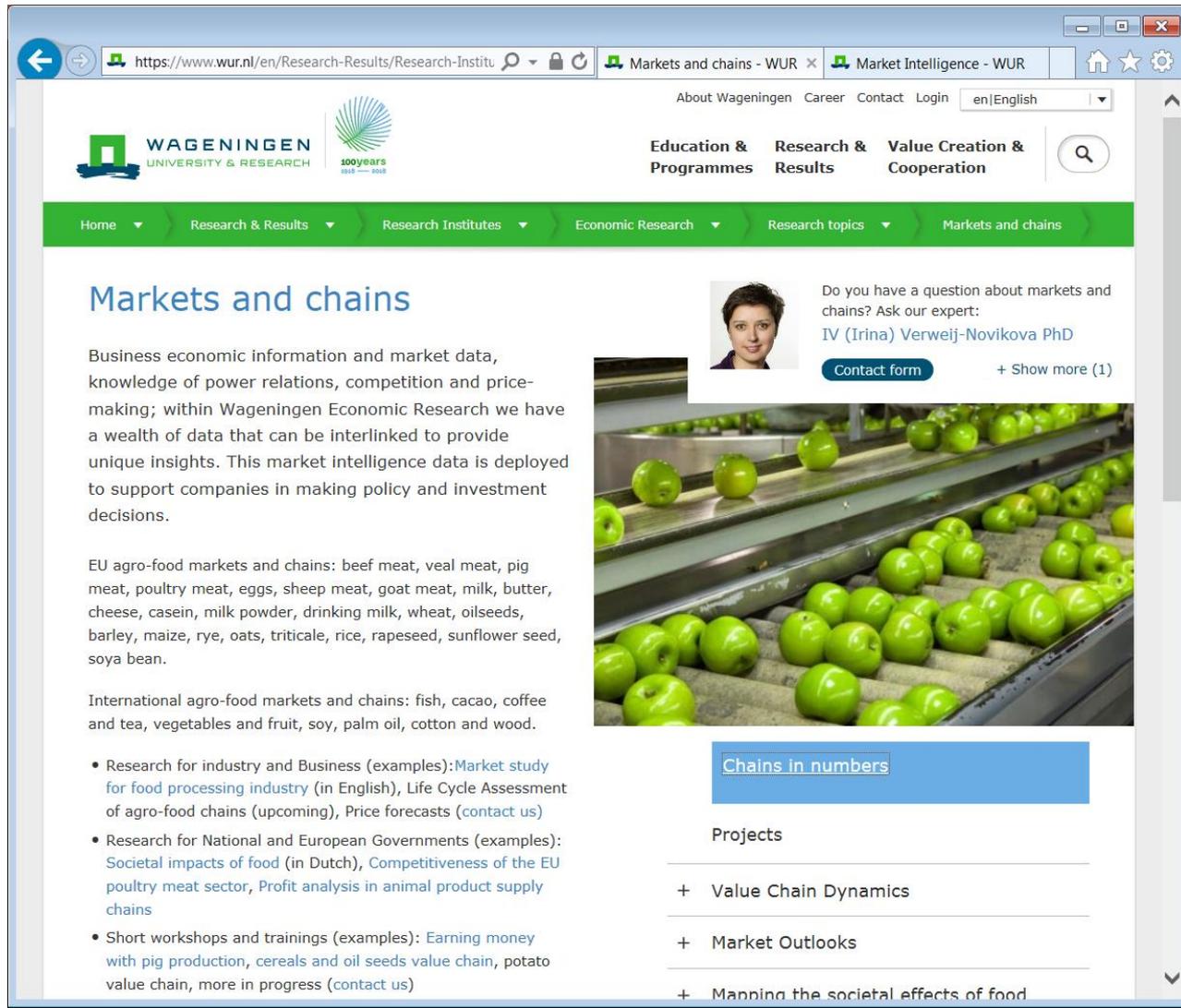
# Virtual supermarket



-Data

-Research for industry  
business

-Applied knowledge  
workshops



https://www.wur.nl/en/Research-Results/Research-Institu

Markets and chains - WUR | Market Intelligence - WUR

About Wageningen Career Contact Login en|English

WAGENINGEN UNIVERSITY & RESEARCH 100years 1918 — 2018

Education & Programmes | Research & Results | Value Creation & Cooperation

Home | Research & Results | Research Institutes | Economic Research | Research topics | Markets and chains

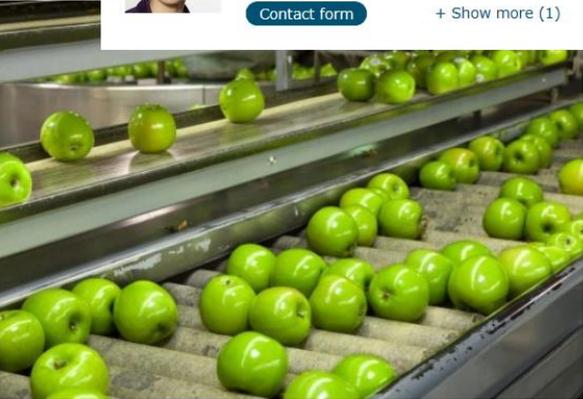
## Markets and chains

Business economic information and market data, knowledge of power relations, competition and price-making; within Wageningen Economic Research we have a wealth of data that can be interlinked to provide unique insights. This market intelligence data is deployed to support companies in making policy and investment decisions.

EU agro-food markets and chains: beef meat, veal meat, pig meat, poultry meat, eggs, sheep meat, goat meat, milk, butter, cheese, casein, milk powder, drinking milk, wheat, oilseeds, barley, maize, rye, oats, triticale, rice, rapeseed, sunflower seed, soya bean.

International agro-food markets and chains: fish, cacao, coffee and tea, vegetables and fruit, soy, palm oil, cotton and wood.

Do you have a question about markets and chains? Ask our expert:  
IV (Irina) Verweij-Novikova PhD  
[Contact form](#) + Show more (1)



### Chains in numbers

#### Projects

- + Value Chain Dynamics
- + Market Outlooks
- + Mapping the societal effects of food

WAGENINGEN UNIVERSITY & RESEARCH 100years 1918 — 2018

Browser address bar: <https://www.wur.nl/en/Research-Results/Research-Institut>

Page title: Markets and chains - WUR

Page tabs: Market Intelligence - WUR

Navigation: Home, Research Institutes, Economic Research, Research topics, Market Intelligence

## Spotting market opportunities:

### Market outlooks



We analyse market scenarios by combining quantitative modelling and qualitative research, determining future trends.

### Global Detector



We detect and geographically visualise potential investment and trade opportunities around the world, using our unique production and demand modelling tool.

### Marketing Impact Analysis



We increase the impact of marketing and sales in agrifood based on quantitative analyses, resulting in reshaped price tactics and trade promotions.

100years 1918 — 2018

## Global Detector

If you are exploring opportunities of expanding your business to promising locations in other countries, the information that you are looking for is often hard to find and difficult to understand. We can help you to get the data and map it in a convenient way.

The Global Detector is a unique modelling tool, that visualises specific investment trade opportunities around the world. It is developed by Wageningen Economic Research and based on open data sources, our data science and a deep worldwide agrifood knowledge. The result is your own map, whether it be on a global (10x10km) or regional (2.5x2.5km) scale, that tells you where there is trade potential.

For a range of product groups, Wageningen Economic Research has a base model available. This base model might already shed light on your particular question. In many cases however, you will want to make the base model very specific for your own product and business situation. Among the questions we targeted, were the potential of cut flower, avocado and Tilapia production and the detection of metropolitan land use options.

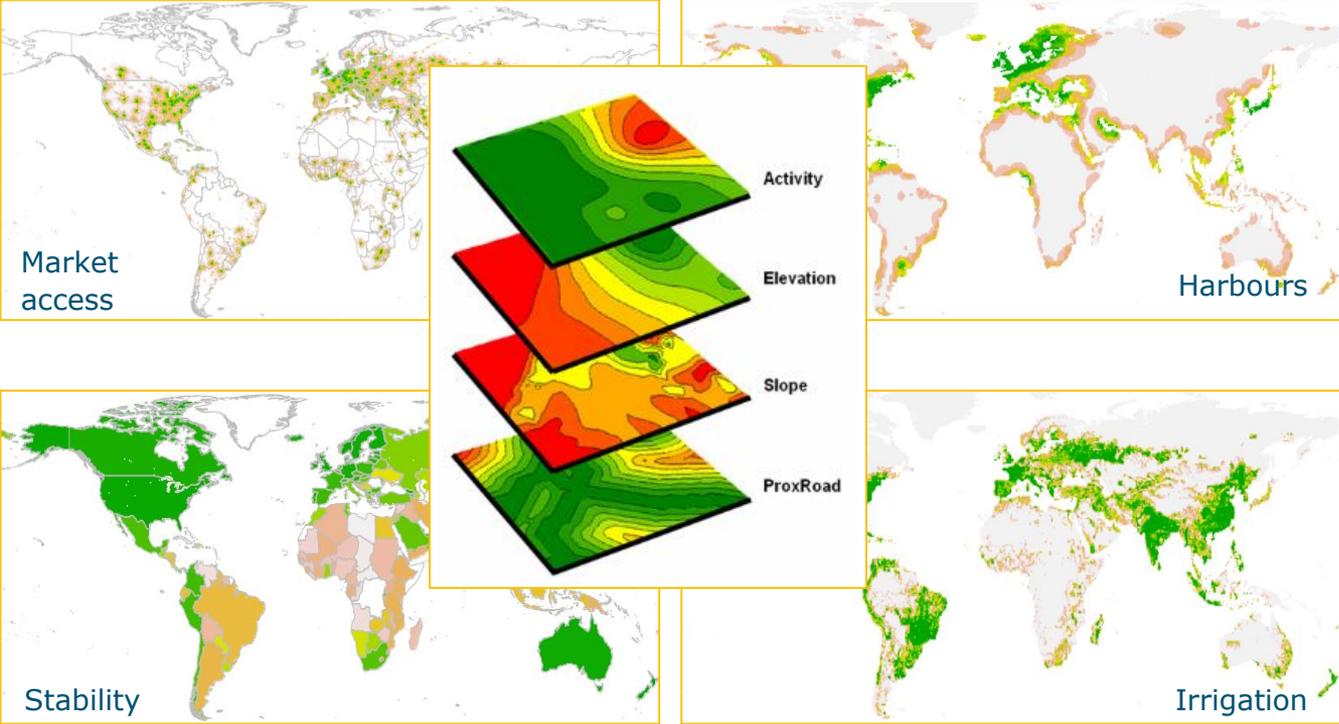


[Contact us to get your Global Detector](#)

### Read more about Global Detector:

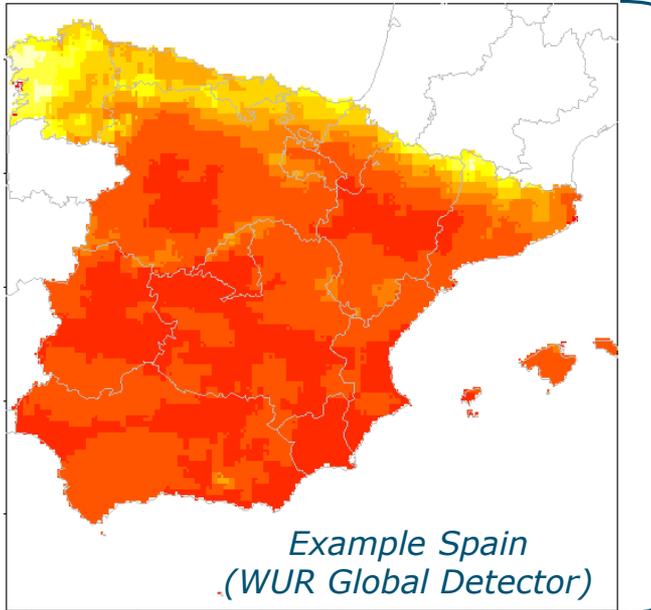
 [Global Detector factsheet \(616,77 kb\)](#)

# Global Detector: visualization of open data



# Global Detector to assess risks & opportunities

Risk severe drought (red),  
(based on driest 10% of yrs)



Complemented with (historical) info of:

Crop production

Soil health

Productivity

Irrigation infrastructure

...

Global Detector could run climate scenarios to examine effects on farm production

## Market outlooks

Reliable information about current and future developments is essential for your strategic decisions. Our studies make combined use of our in-depth expertise in agrofood supply chains and markets and our databases and models. We are involved in the preparation of global market forecasts for milk, meat, grain and oil seeds. Our estimates contribute to the provision of insights into developments in major food markets.



### Examples of market outlooks:

- > Widespread availability of oilseeds contributes to low feed prices
- > Increase in Dutch production and export of beef and downward trend in per capita consumption of pork
- > Slow recovery in milk prices and environmental constraints inhibit milk production down in Netherlands
- > Good harvests create downward pressure on prices

Contact us for market outlooks for your organisation

### Read more about market outlooks:

- > [Implications of a UK exit from the EU for British agriculture](#)
- > [Brexit and Trade-agreements](#)



CONFERENCES AND WORKSHOPS ORGANIZED  
BY THE JRC

## Medium-term outlook for the EU agricultural commodity market

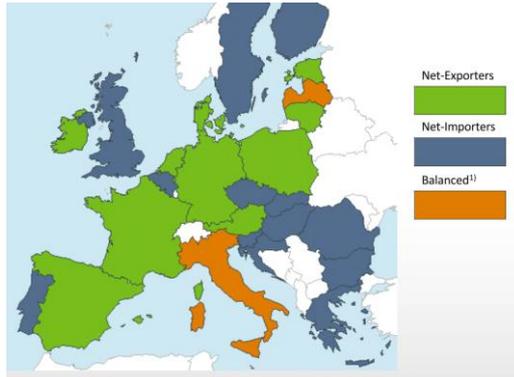
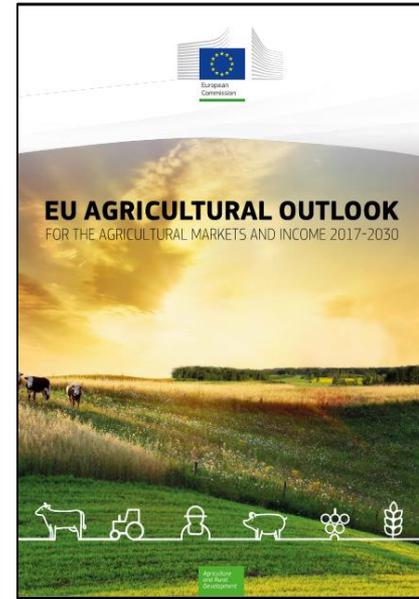
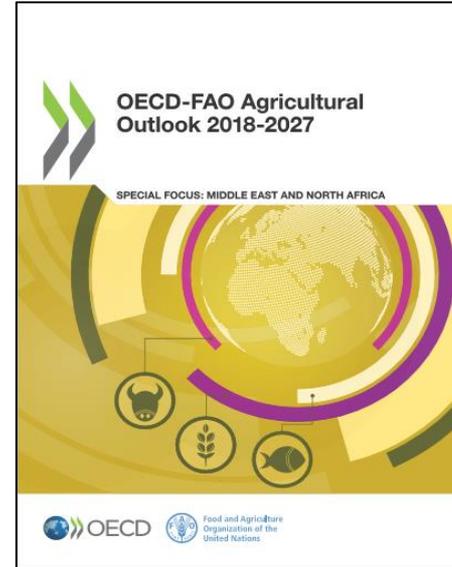
*Proceedings of the October  
2015 workshop*

Tévécia Ronzon, Fabien Santini,  
Sergio René Araujo Enciso, Thomas Fellmann,  
Ignacio Perez Dominguez

2015



Market Outlooks are available for free from EU website for all commodities, but only at aggregated levels of EU28 (or EU13, EU15)



Why WECR and not OECD?  
forecasts available for each  
country of the EU28; tailored  
scenario's

# Countries & Time-series

- Countries: 28 countries of the EU (Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK)
- Countries ++: Ukraine, Russia, Kazakhstan, Turkey
- Years: 2000 – 2013 (14 points, historical), 2014-2025 (12 points, forecast) => 26 observations
- Indicators : available for each year (26) x country (28++) x commodity (40++)

- Model
- Commodities
- **Countries**
- Indicators
- Time period
- Driving factors
- Model documentation

Countries in the model:  
 28 countries of the EU (Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta,

AT	BE	DE	DK	ES	FR
FI	GR	IT	IE	NL	PT
SE	VK	BG	CZ	EE	HU
LT	LV	PL	RO	SI	SK
HR	MK	TR	RU	UA	KZ

# Sectors: commodities

- **Meat:** beef meat, veal meat, pig meat, poultry meat
- **Pig sector:** pig meat
- **Poultry:** poultry meat, eggs
- **Sheep & Goat:** sheep meat, goat meat
- **Dairy:** drinking milk, butter, cheese, casein, skimmed milk powder, whole milk powder, cream
- **Cereals:** soft wheat, durum wheat, barley, maize, rye, oats, triticale, rice, other grains
- **Oil seeds:** rapeseeds, sunflower seeds, soya bean, rapeseed oil, sunflower seed oil, soya oil, rapeseed meal, sunflower meal, soya meal
- **Horticulture (in progress):** tomato, apples
- **Acquaculture:** Cephalopods, Crustaceans, Demersal Fish, Freshwater Fish, Other Marine Fish, Other Molluscs, Pelagic Fish and Plaice Fish

# Indicators (example for soft wheat) Country x Year

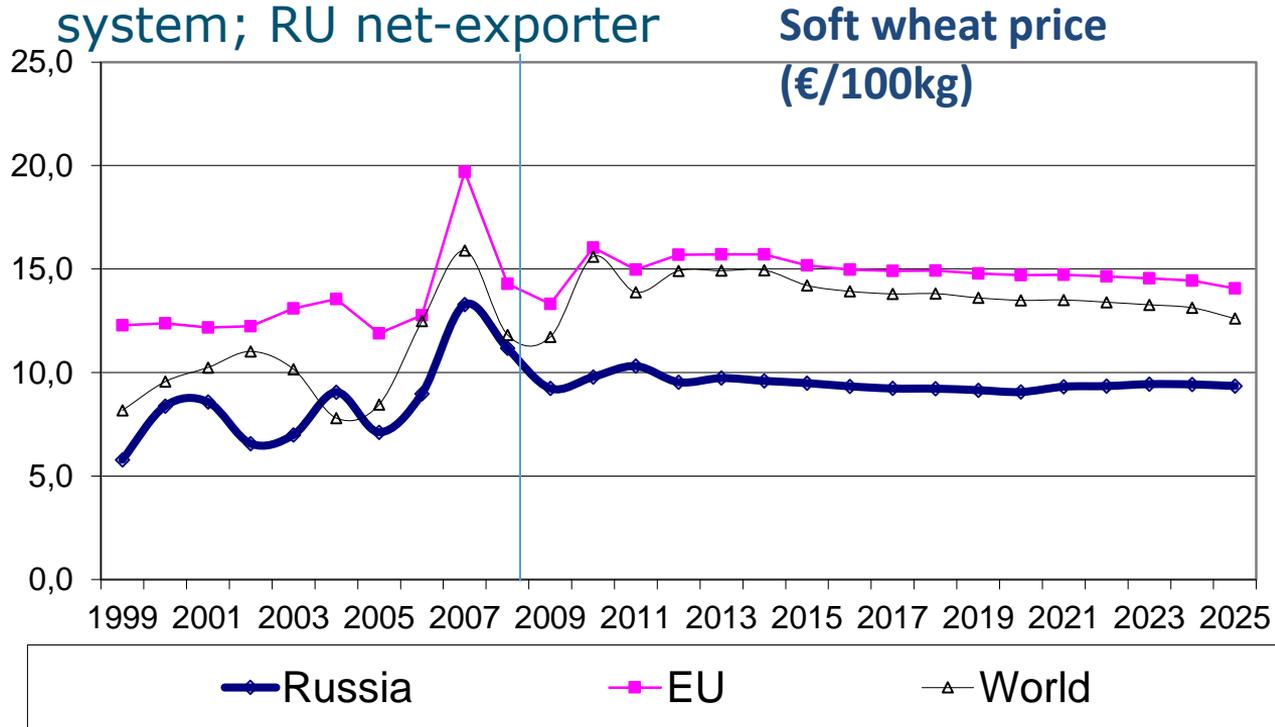
- Macroeconomic (country-specific): Population growth 2015-2025 (% per year), Real GDP per capita growth (UNIT), GDP deflator (UNIT), Exchange rate NC/EURO (UNIT), Exchange rate (EUR/USD)
- Other country-specific: Usable agricultural area (ha), population (mln persons), income per person (euro)
- Indicators (commodity-specific): Soft wheat price (euro/100 kg), Production (mln ton), area (ha), yield (UNIT), Consumption soft wheat total (mln ton), Consumption soft wheat for food (mln ton), Consumption soft wheat for feed (mln ton), Consumption soft wheat for processing (mln ton), Consumption soft wheat for bio-energy (mln ton), consumption soft wheat for food per capita (kg), Net exports (mln ton), Ending stocks (mln ton) , Stocks to use ratio (mln ton), EU28total for each indicator, EU28average for each indicator.

# RU baseline outlook

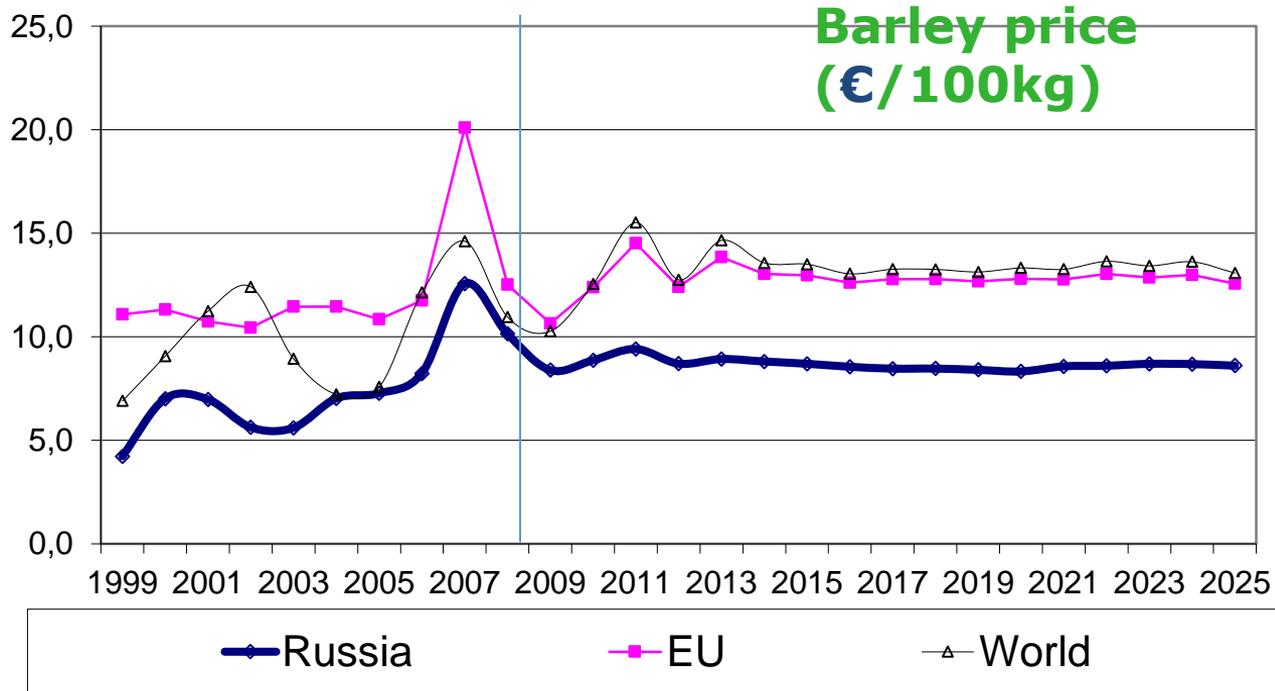
e.g. Grains and oilseeds

- Outdated results

Soft wheat: RU price is lower than world and EU price mostly due to trade tariffs and intervention system; RU net-exporter

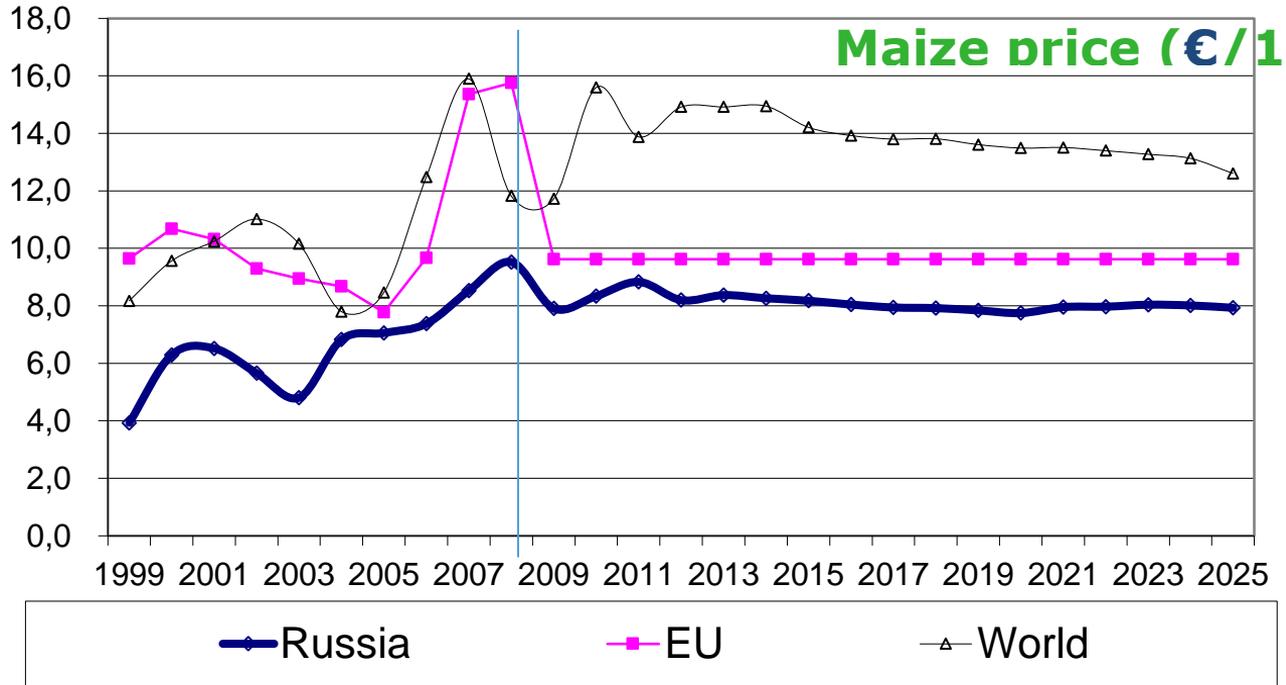


Barley: RU price below world and EU price;  
RU net-exporter



Oats: RU price below to world and EU price;

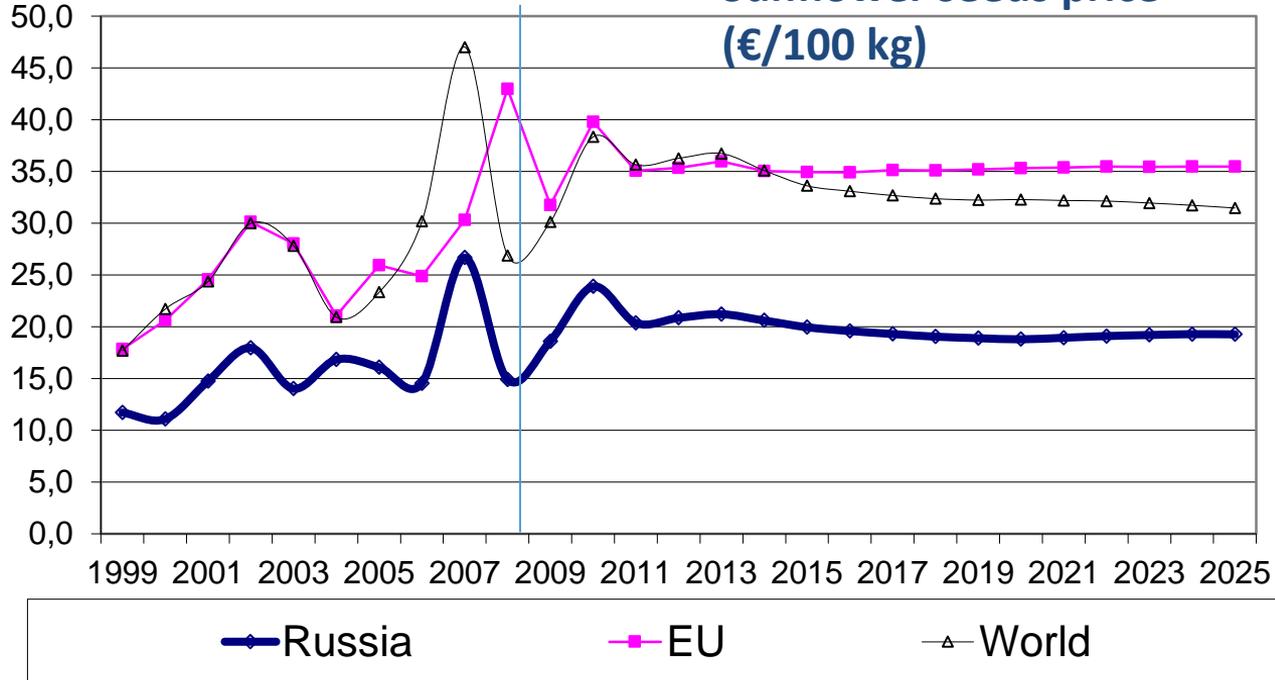
RU net-exporter

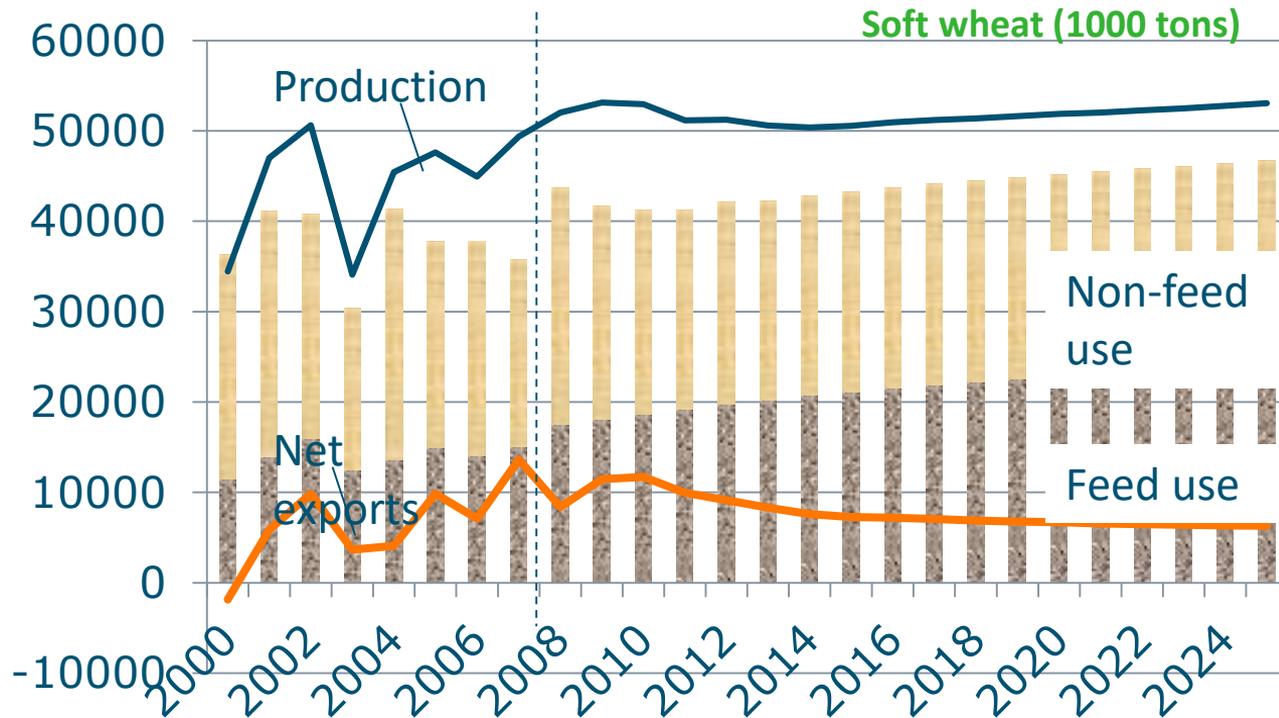


# Sunflower seeds: RU price below world and EU price;

RU self-sufficient

Sunflower seeds price  
(€/100 kg)





- Model
- Sectors
- Countries
- Indicators
- Time period
- Assumptions
- **Model documentation**

## JRC report

### Commodity Charts

#### Dairy products

Pig and Pig meat

Poultry

Sheep and Sheep meat

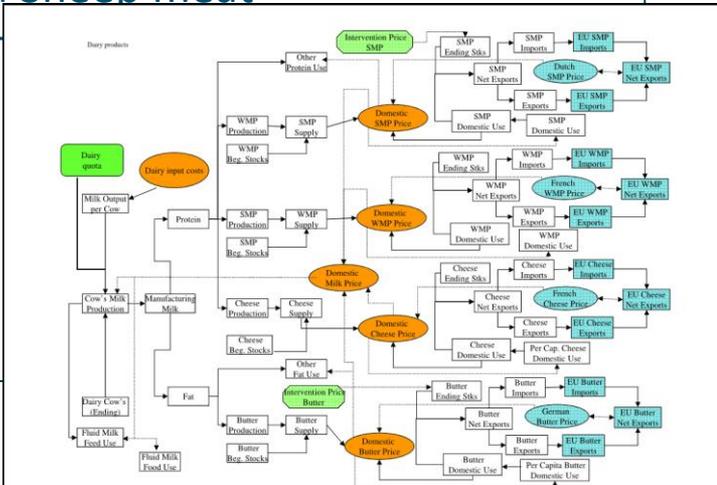
Soft wheat

Barley

Rapeseed

Sugar

Potatoes





## Market Outlooks

Base your business strategic decisions on our market insights

*"We provide facts to support your strategic gut feeling"*



### *In need of a better understanding of current agricultural markets and EU policies*

Reliable information about current and future developments is essential for your strategic decisions. What should the Dutch agriculture expect in the future? We can explain why and how the coming 10 years the Dutch sector will have to prove its position on the EU market under the growing environmental regulations and growing competition from the neighbours. We know a lot about the Dutch markets but also about all EU Member states. How often did your Market Intelligence unit try to find the reliable data on market trends, on changes in the EU policy? We have the data and stay in close contact with the policy-makers and can bring you the story on market developments, among which the impact of Brexit.

### *You receive data-based insights on market developments 2018-2028*

Our solid modelling approach already gained recognition at the European Commission and the Dutch government. We use the same assumptions as does the DG-Agri regarding the world markets and the EU policies in the EU Agricultural Outlook for Markets and Income 2018-2030 (released 7 December 2018). Our results provide further details on each EU country that are not available through the DG-Agri.

The model that we engage is primarily designed for (trade) policy scenarios into 2028, where the following (trade) policy measures are taken into account: direct support per agricultural products (support prices or input subsidies), intervention prices, import tariffs, import tariff rates, export quotas.

### *Quick scan or customised in-depth analysis to help you determining your strategy*

You will receive data and explanation of our quick-scan analysis of the markets that interest you. We start with a session at your location with our sector specialists to provide you our story and respond to your questions. At the spot we are able to identify what type of analysis you should be looking for and will tell what it takes to get there.

### Key features

**Excel:** Immediate insights in volumes, prices of traded commodities for the situation of no shocks in the currently followed policies (Business as usual scenario, 2018-2030)

**Board meeting:** Immediate insights by our sector specialists in a working session with the Board of your company. Sector specialists: arable, dairy, poultry, pig, fish.

• **Light modelling:** Tailored to your company scenarios by changing e.g. exchange rate assumptions (1.13€/dollar in 2021); changing oil prices (\$80 per barrel in 2025)

• **Advanced modelling:** Tailored to your company scenarios for any changes in for example trade and policy measures for selected commodities and countries.

### Commodities:

beef meat, veal meat, pig meat, poultry meat, eggs, sheep meat, goat meat, drinking milk, butter, cheese, casein, skimmed milk powder, whole milk powder, cream, sugar, beef, sugar, soft wheat, durum wheat, barley, maize, rye, oats, triticale, rice, other grains, rapeseeds, sunflower seeds, soya bean, rapeseed oil, sunflower seed oil, soya oil, rapeseed meal, sunflower meal, soya meal, tomato, apples, potatoes, fish (8 types).

"What to do if the commodities my company is interested in are not on the list?" - In this case we engage our econometric data specialists and modellers to identify the relationships for your specific wishes. This is only possible on the basis of a 3-month project.

### Why choose Wageningen Economic Research

- Refreshing insights
- Domain & sector knowledge
- Interactive & integrated approach
- Internationally leading
- One-stop shop

### Contact us

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# Team AGMEMOD

- Roel Jongeneel
- Myrna van Leeuwen



JRC SCIENTIFIC AND POLICY REPORTS

## The agri-food sector in Russia: Current situation and market outlook until 2025

Extension of the AGMEMOD  
model towards Russia

Authors:  
Guna Salputra, Myrna van Leeuwen,  
Petra Salamon, Thomas Fellmann,  
Martin Banse and Oliver von Ledebur

Editors:  
Thomas Fellmann, Olexandr Nekhay and  
Robert M'barek

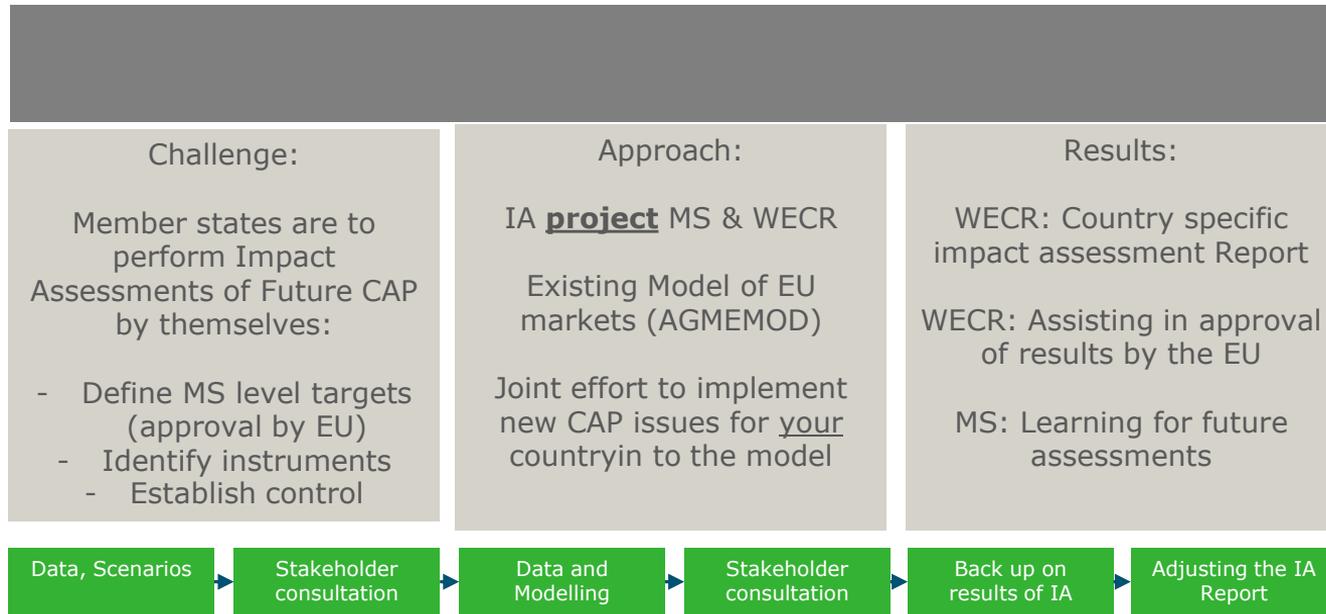
2013



# Further reading (links)

- [Implications of a UK exit from the EU for British agriculture](#)
- [Brexit and Trade-agreements](#)
  
- [Increase in Dutch production and export of beef and downward trend in per capita consumption of pork](#)
- [Widespread availability of oilseeds contributes to low feed prices](#)
- [Slow recovery in milk prices and environmental constraints inhibit milk production down in Netherlands](#)
- [Good harvests create downward pressure on prices](#)

# Supporting Member States in negotiations with the EU on Future CAP (Common Agricultural Policy)



# 2 ideas

Market Outlooks : Policy Analysis Instrument (also used by the EU)

- interesting for research units / government

Life Cycle Assessment



# Life Cycle Assessment

- <https://www.wur.nl/en/Research-Results/Research-Institutes/Economic-Research/Research-topics-1/Improving-sustainability-1/Life-cycle-assessment.htm>

The screenshot shows the Wageningen University & Research website. The page title is "Life cycle assessment". The breadcrumb trail is: Home > Economic Research > Research topics > Improving sustainability > Life cycle assessment. The main content includes a definition of LCA, its objectives, and a table of examples. A sidebar on the right features a profile for RJK (Roel) Helmes MSc and a "Contact form" button. Below the table, there is a "More information:" section with a link to "Other tools for sustainability management" and a "Read more" button next to a "Improve sustainability in the Agri & Food chain" section.

## Life cycle assessment

Life cycle assessment (LCA) is considered as the most important technique to get insight into the environmental impact related to the production, consumption and end-of-life of a product. It is used intensively by many companies, governmental institutes and NGO's in all sectors and around the world.

### Objectives for using LCA

The objectives for using LCA are diverse: from hotspot analysis to public communication of the environmental performance of a company's product. LCA enables identification of which environmental topics are most relevant for each product and identification of trade-offs between different environmental impacts. Some examples:

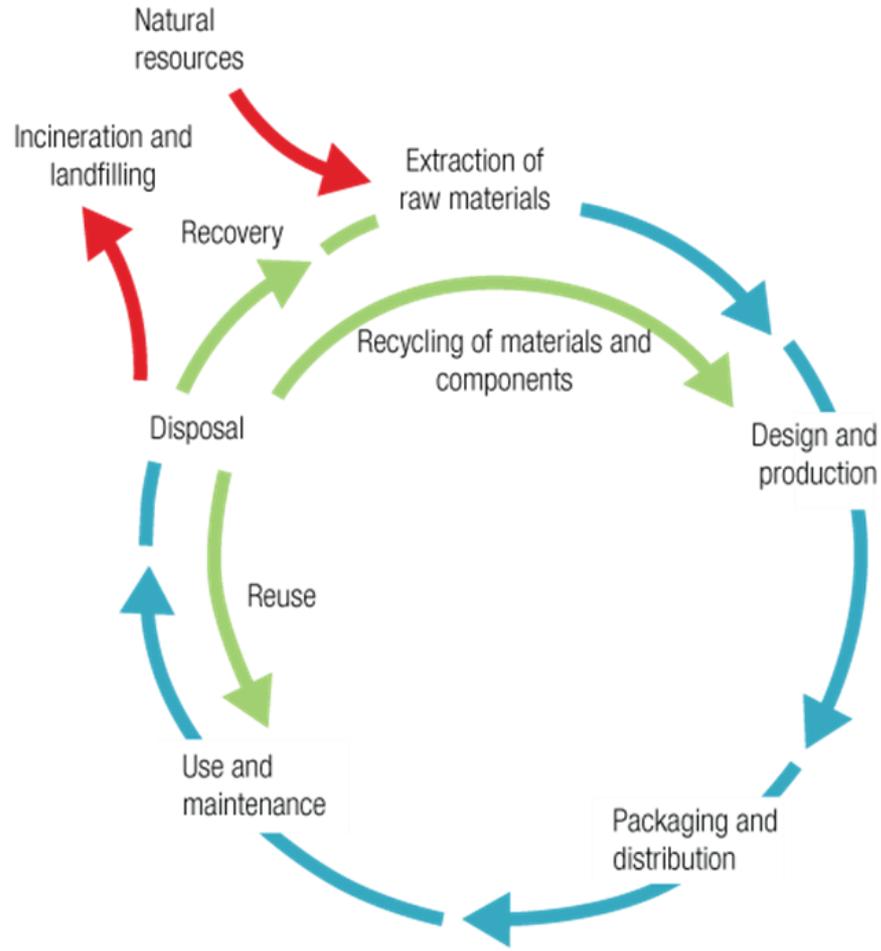
Objective	Example
To get insight into which are the most important sources of environmental impact (hotspot analysis)	How much does transport, packaging and agrochemicals contribute to the total environmental impact? Which are the most relevant environmental issues?
To identify improvement opportunities	Which sources of impact can be influenced? E.g. changing the feed composition, better manure management, alternative packaging, longer product durability, etc
To analyse the impact of possible measures	What is the effect of changing feed composition on the contribution of feed production and on emissions at the livestock farm to the total impact? Are there trade-offs? E.g. when using more packaging and/or cooling to prevent losses.
To monitor	Annual monitoring of the impacts of

Do you have a question about LCA? Ask our experts:  
RJK (Roel) Helmes MSc  
[Contact form](#)

More information:  
Other tools for sustainability management

Improve sustainability in the Agri & Food chain  
We can help you with your next step!  
[Read more](#)

# Life cycle assessment



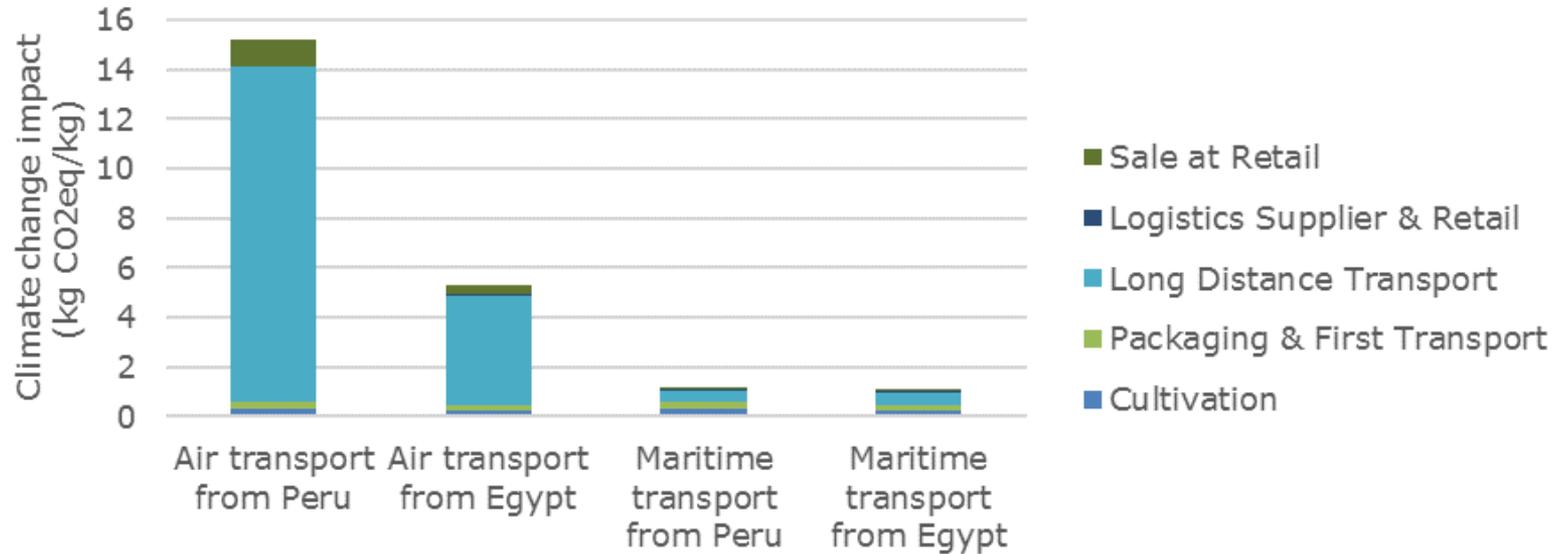
## Table grapes: Data collection and modelling

- *Data was collected from growers in Egypt, Italy and Peru and information about the supply chain was gathered from an importing company in the Netherlands. Various scenarios were defined based on literature, an expert workshop and input from the growers and importing company (Table 1).*

Stage	Peruvian farm	Egyptian farm	Italian farm
Cultivation	Low efficiency	Medium efficiency	High efficiency
Packaging	Punnets or loose		
Transport	Maritime or air	Maritime/road or air	Road or maritime
Distribution/retail	With or without cooling (punnets or loose, resp.)		
Consumption	Reduced or average losses (punnets or loose, resp.)		
End-of-life	Dutch average disposal		

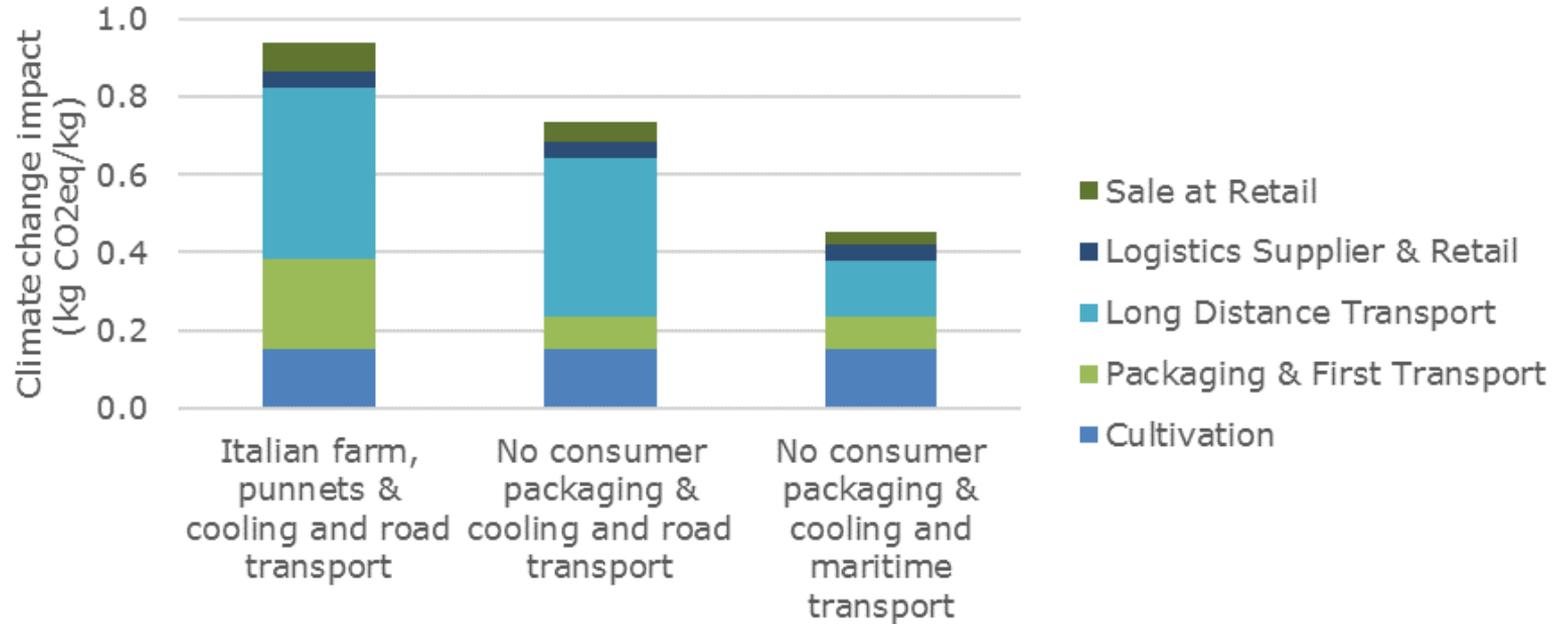
- *Table 1: Description of the table grapes cases and scenarios*

# Table Grapes: kg CO2 eq per kg for 4 scenarios



*Figure 2: climate change impact of table grapes transported by air or sea/ocean*

# Comparing *Italian farm with different packaging/cooling and transport scenarios*



# Methodolgy PEF

The screenshot shows a web browser window displaying the European Commission's website. The URL is <http://ec.europa.eu/environment/eussc>. The page features the European Commission logo and the word "ENVIRONMENT" in large blue letters. Below the header, there is a navigation menu with options: Home, About us, Policies, Funding, Legal compliance, and News. The main content area is titled "What environmental impacts does PEF consider?" and includes a list of 15 environmental impacts covered by the PEF method. The impacts listed are: CLIMATE CHANGE, OZONE DEPLETION, HUMAN TOXICITY – CANCER EFFECTS, HUMAN TOXICITY – NON-CANCER EFFECTS, ECO-TOXICITY – FRESHWATER AQUATIC, and PARTICULATE MATTER/RESPIRATORY INORGANICS. A sidebar on the left contains a menu with items like "Single Market for Green Products", "Environmental Footprint pilot phase", "Environmental Footprint transition phase", "Events", "Communicating to consumers", "Product Environmental Footprint information", "How do tests work?", "What is Product Environmental Footprint?", "Environmental impacts", "Frequently Asked Questions", and "Questions and Answers".

European Commission

ENVIRONMENT

European Commission > Environment > Sustainable Development > Single Market for Green Products

Home About us Policies Funding Legal compliance News

Single Market for Green Products

Environmental Footprint pilot phase

Environmental Footprint transition phase

Events

Communicating to consumers

Product Environmental Footprint information

How do tests work?

What is Product Environmental Footprint?

Environmental impacts

Frequently Asked Questions

Questions and Answers

What environmental impacts does PEF consider?

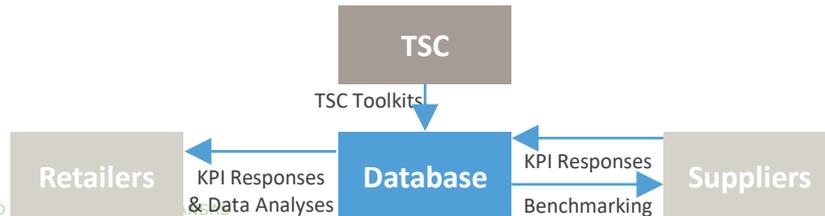
The Product Environmental Footprint (PEF) method covers 15 environmental impacts:

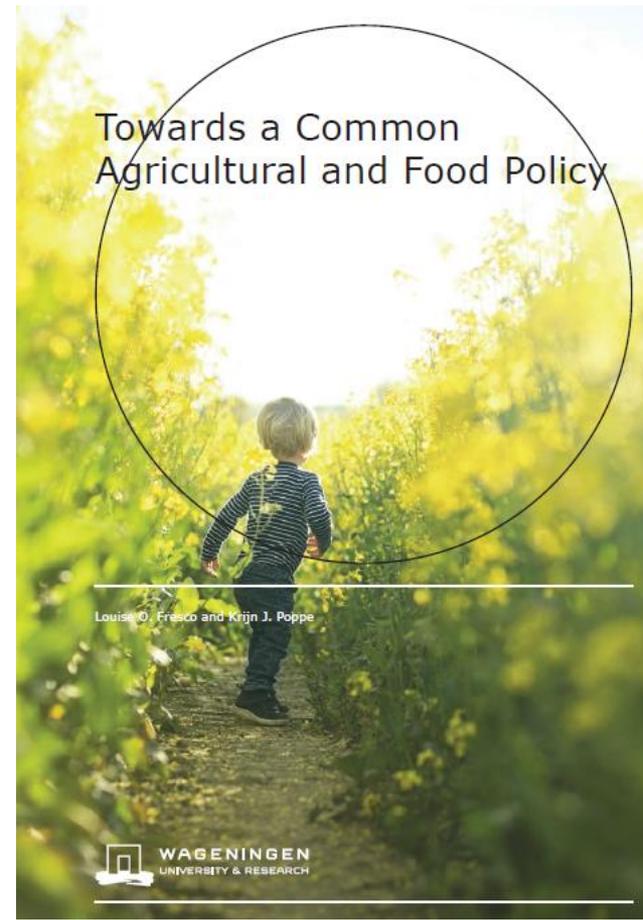
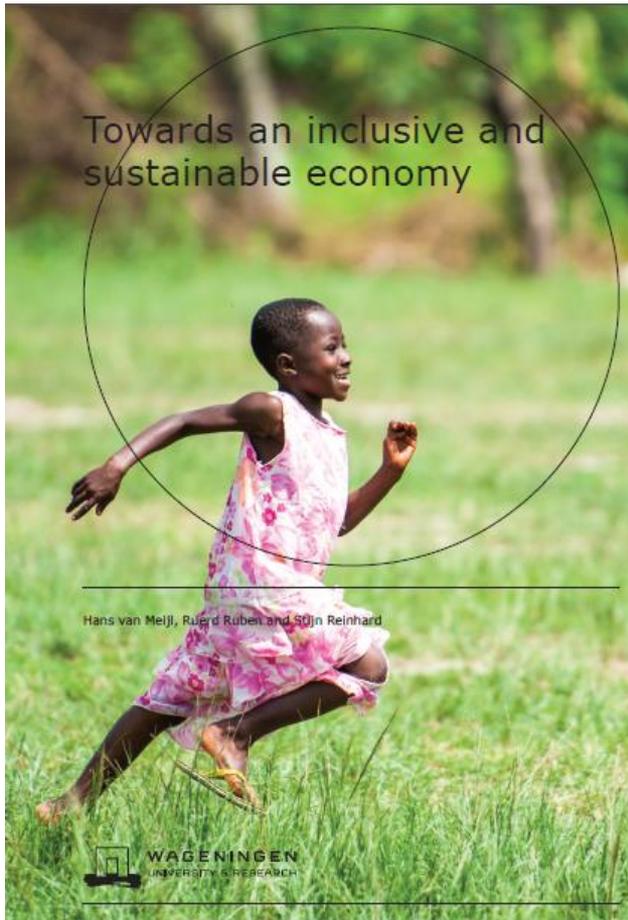
- CLIMATE CHANGE
- OZONE DEPLETION
- HUMAN TOXICITY – CANCER EFFECTS
- HUMAN TOXICITY – NON-CANCER EFFECTS
- ECO-TOXICITY – FRESHWATER AQUATIC
- PARTICULATE MATTER/RESPIRATORY INORGANICS

# The TSC approach



- Global multi-stakeholder non-profit organization
- Nearly **100** company and NGO **members**
- **Practical** and **science-based** measurement and reporting systems
- **One stop shop solution** with toolkits for all (128) consumer product categories: Hotspots, improvement opportunities and 10-15 Indicators
- Integral: **Full life cycle, all sustainability themes** and **global**
- Stimulating **innovation and continuous improvement**
- **Minimize cost** by alignment with leading initiatives and scale





# More info?



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