

# Cooperative Innovative Farming

LAGF 09 / 24 / 2014

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CEO at ZLTO

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# Outline

1. Organisation and context
2. Vision: 'Cooperative Innovative Farming'
3. Smart-farming: experience, results and challenges
4. The Netherlands, a Living Lab
5. Invitation to cooperate



# Organisation and context



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# ZLTO: our region



## Agri & food

Nutricia  
Sligro  
Heineken  
Jumbo supermarkten  
Heijmans  
Masterfoods  
Vion  
HAS Hogeschool  
Friesland Campina  
Essent  
Unilever  
...



## Hightech

ASML  
Philips  
Brainport Region  
Eindhoven University of Technology  
Royal DSM  
NXP  
Océ  
DAF Trucks  
VDL groep  
Vanderlande Industries  
Fei Company  
Sioux Group  
Neways Technologies  
...

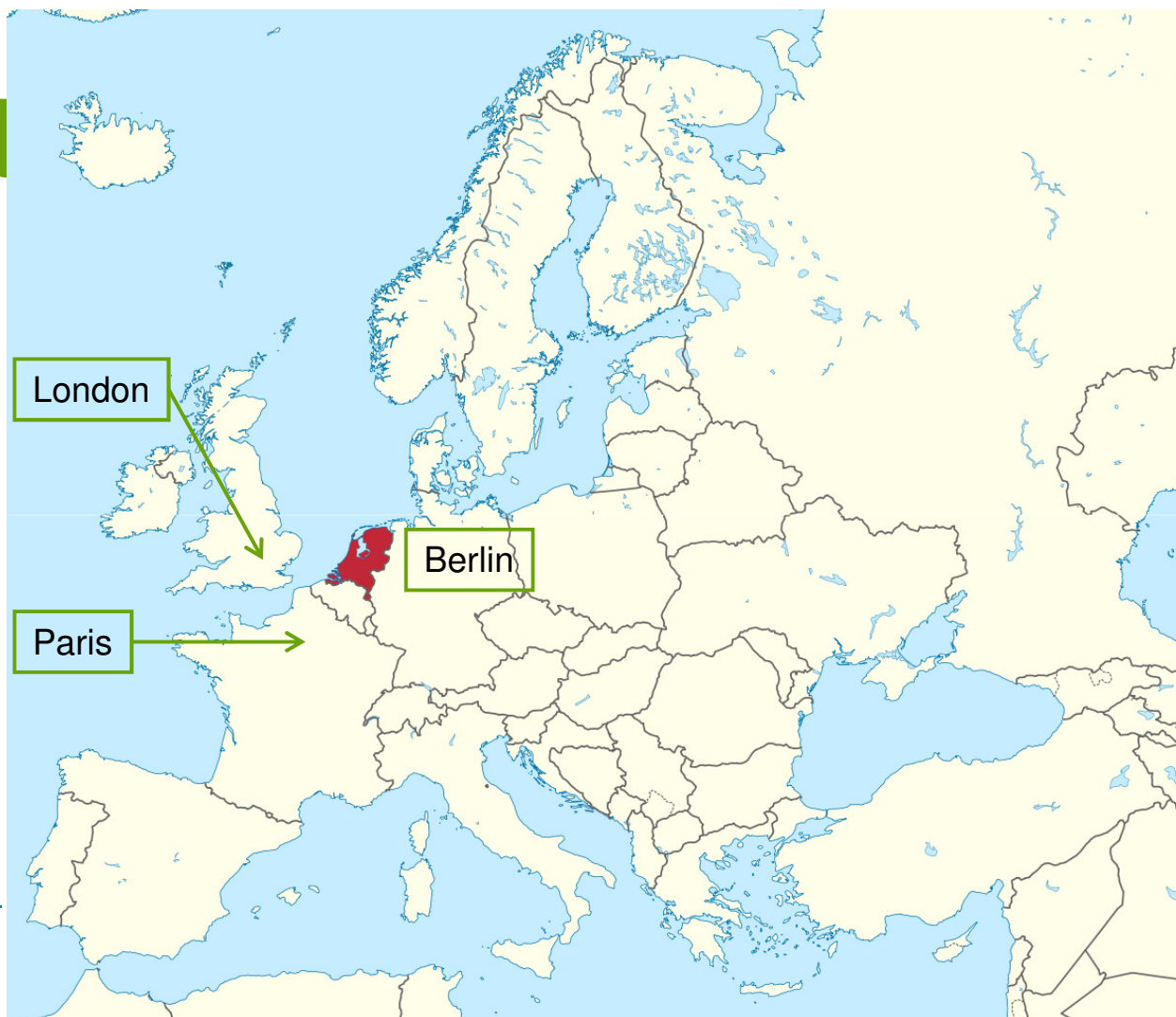


# Our region

- Broadband: NL in Top 5, fastest and most widespread broadband connection
- Our region: even better!
  - 94% of the inhabitants are broadband internet connection
- Smartest region in the world
  - Most innovations per inhabitant
  - Most patents per inhabitant
  - Public-Private-Partnerships



# Net



The Southern Agriculture and Horticulture Organization (ZLTO) represents the interests of entrepreneurs working in green areas. Around 16,000 farmers and growers in the South-Netherlands are members of our association. Together with them, we work to produce healthy food innovatively and sustainably.



- World class agriculture
- World smartest high tech region  
Brainport

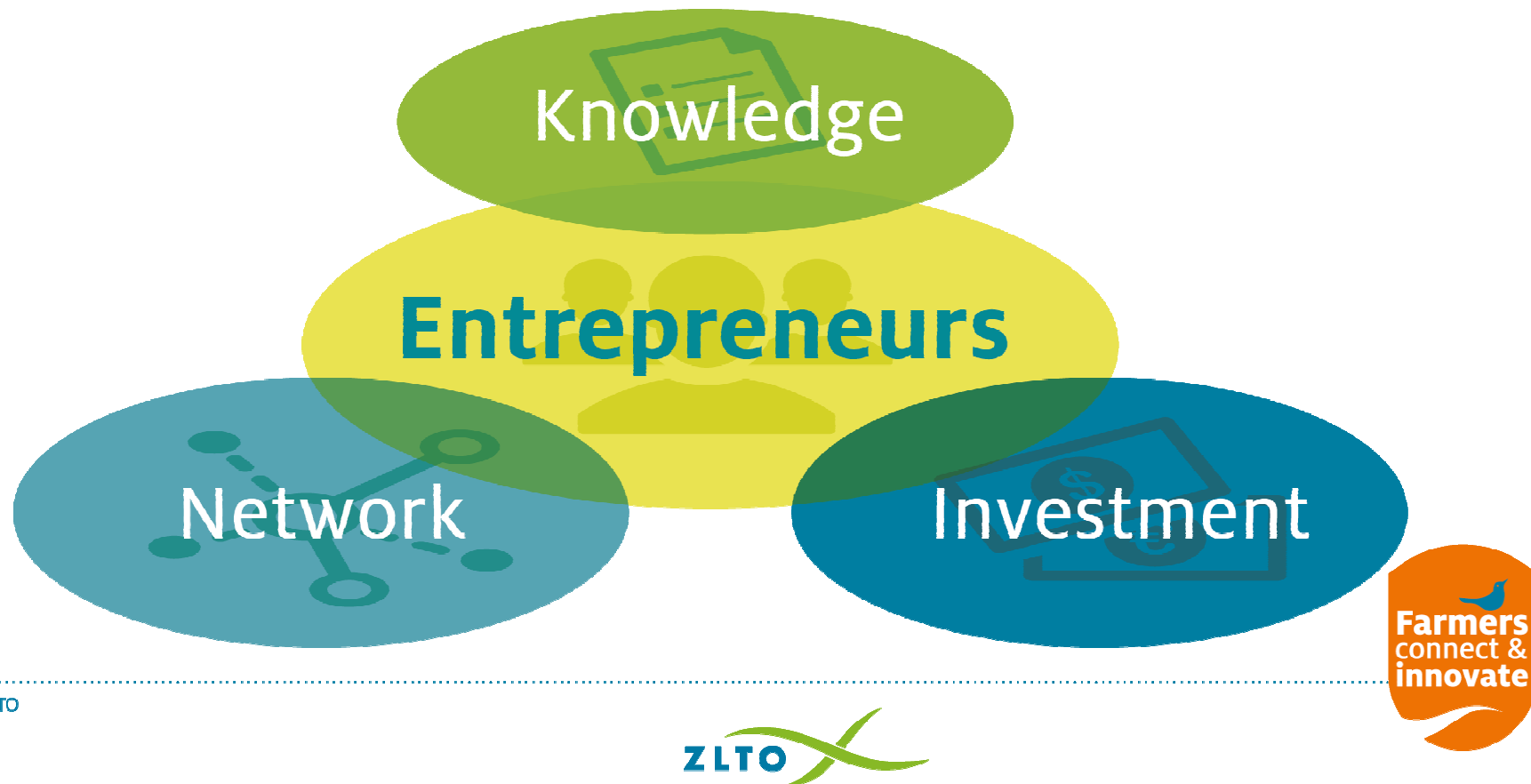


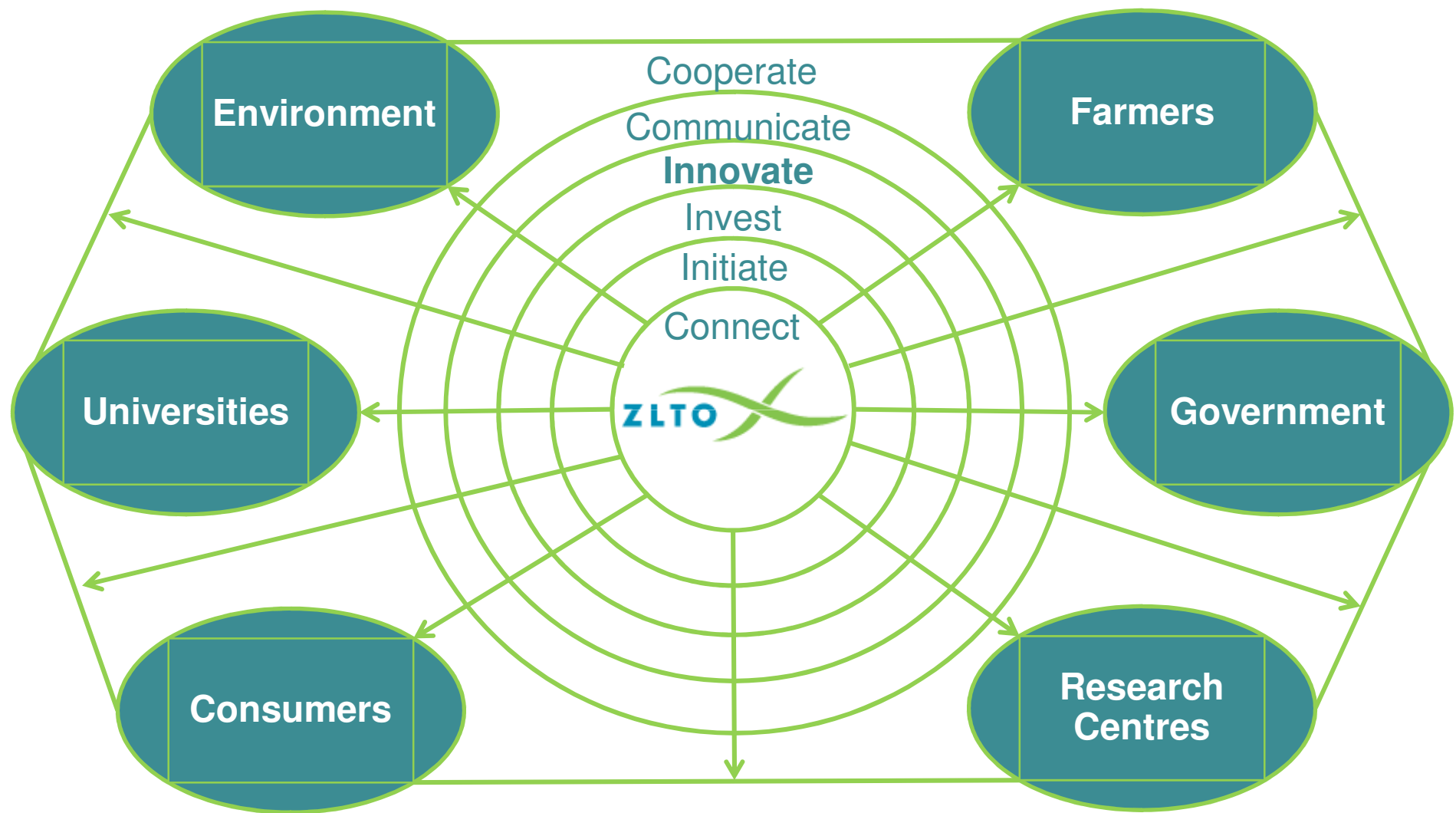
# ZLTO: a Farmers association





# ZLTO entrepreneurial triangle





# Future Farming – Healthy Living



connecting technology and design

connecting society and environment



# Cooperative Innovative Farming

## Our mission

Ensure continuity of the agricultural livelihood with technology

## Our vision

Enhancing:

- efficiency (more output, less input)
- transparency (information sharing)
- taking responsibility (towards environment and society)





# Smart-farming: experience, results and challenges





# Top 5 exporting countries



Source: World Bank

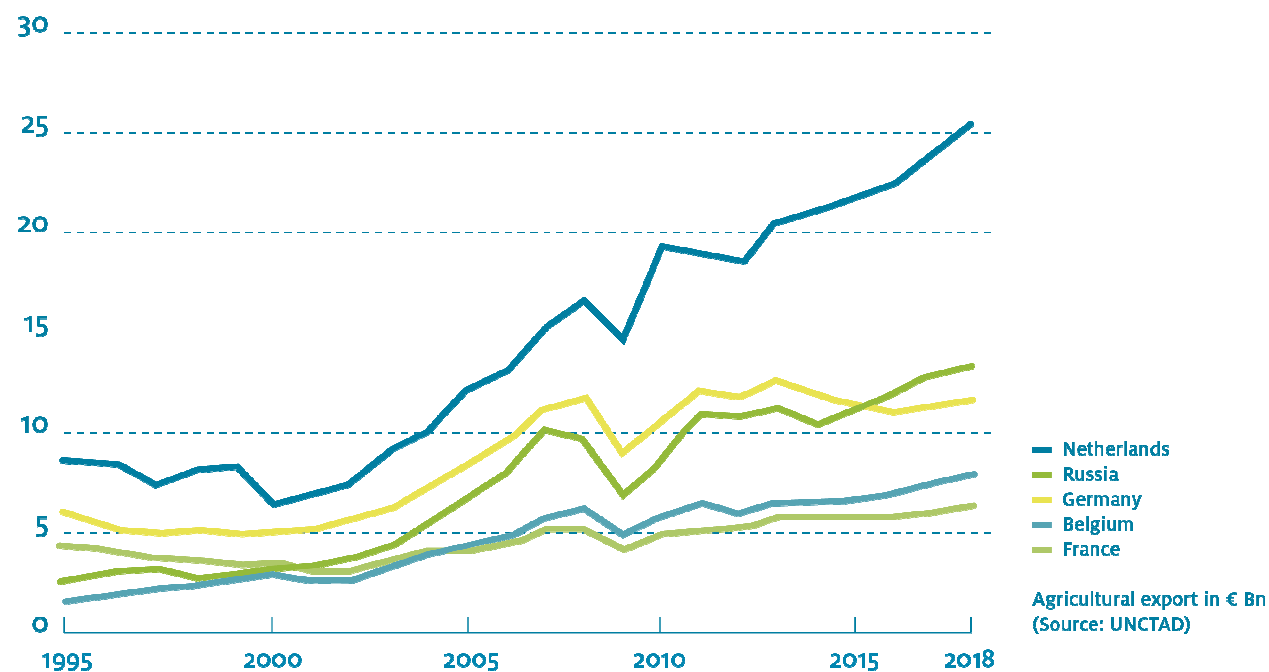
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# Export projected to increase

As the #1 European exporter

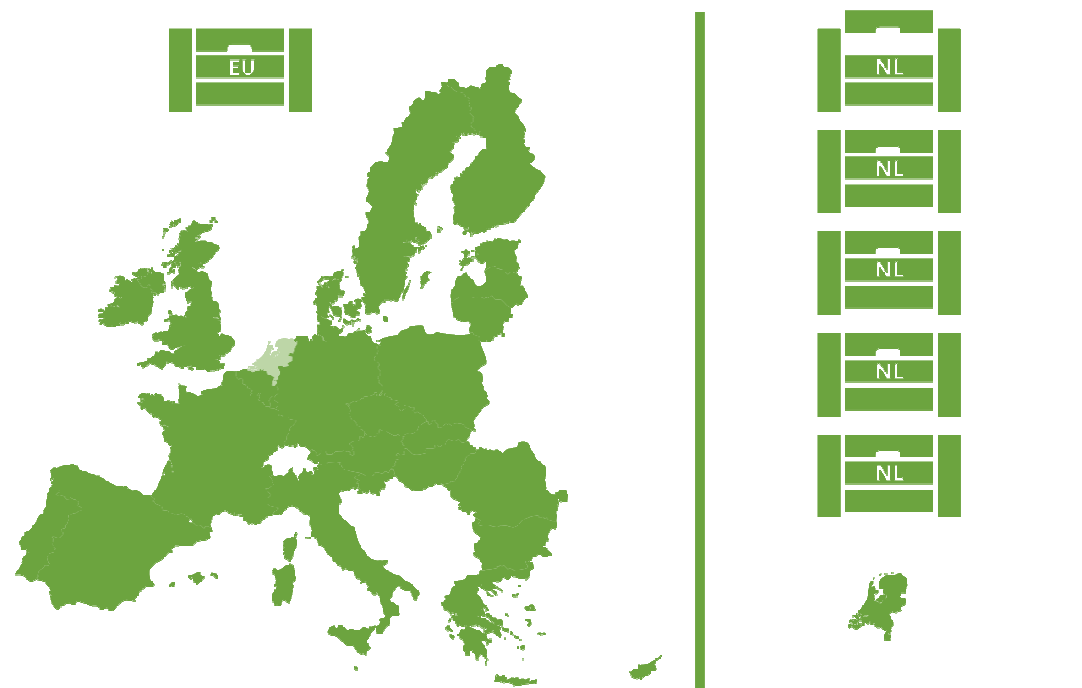
the Netherlands is a key player in the global agrifood supply chain



© ZLTO



# NL is 5 times more efficient than EU



Source: World Bank

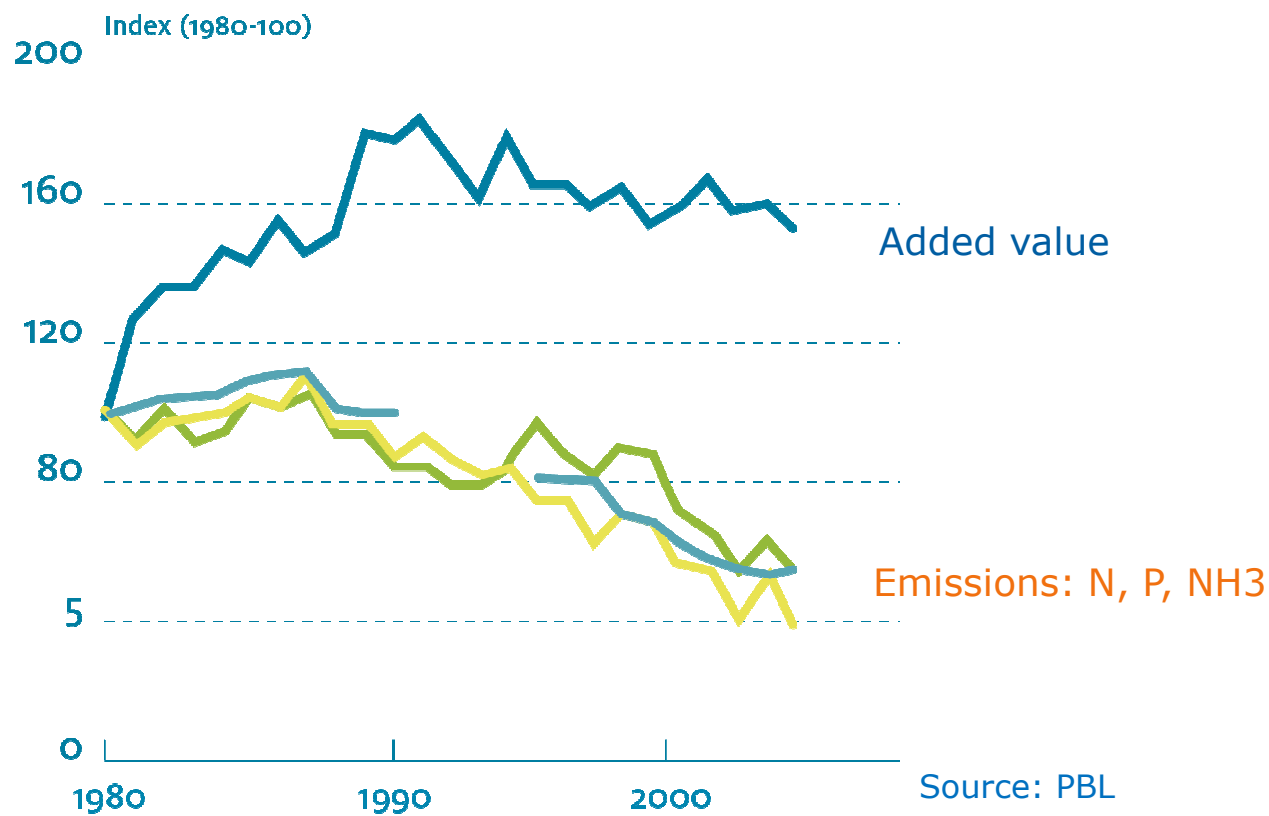


# High productivity

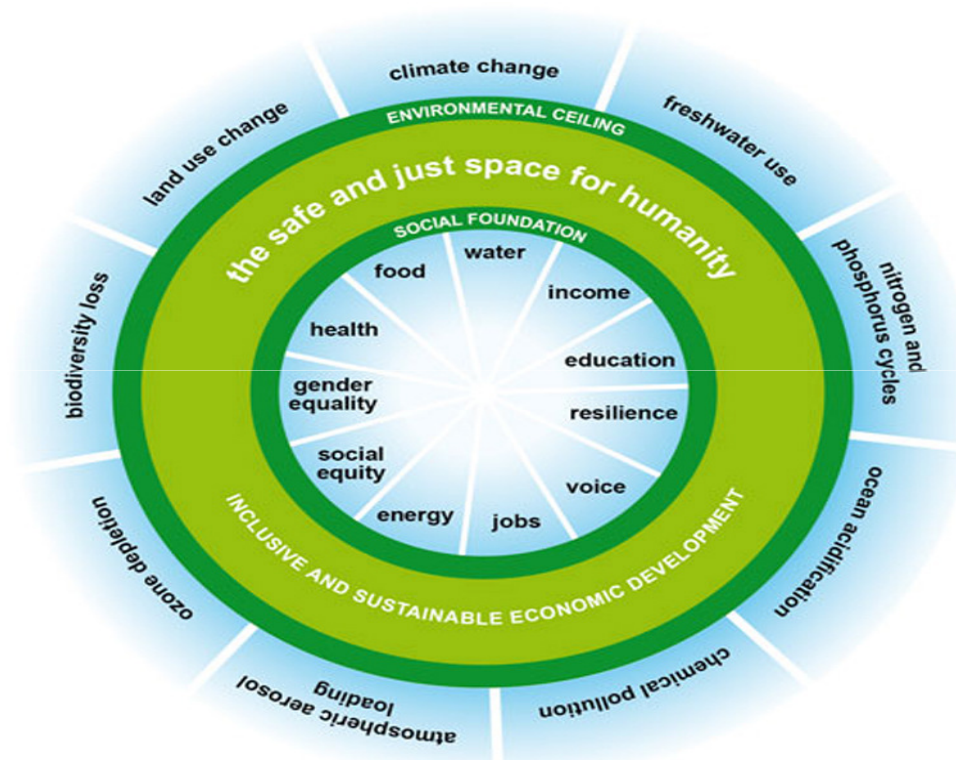


times as efficient as	
China	80,3
Mexico	15
Brazil	11,3
Germany	1,9
United States	1,2

# Decrease emissions



# Planetary Boundaries: sustainable production





# The challenges we face

- Fight poverty: increase productivity
- Fair and transparent trade & logistics
- New challenging employment





# Fighting Poverty – Increasing Productivity

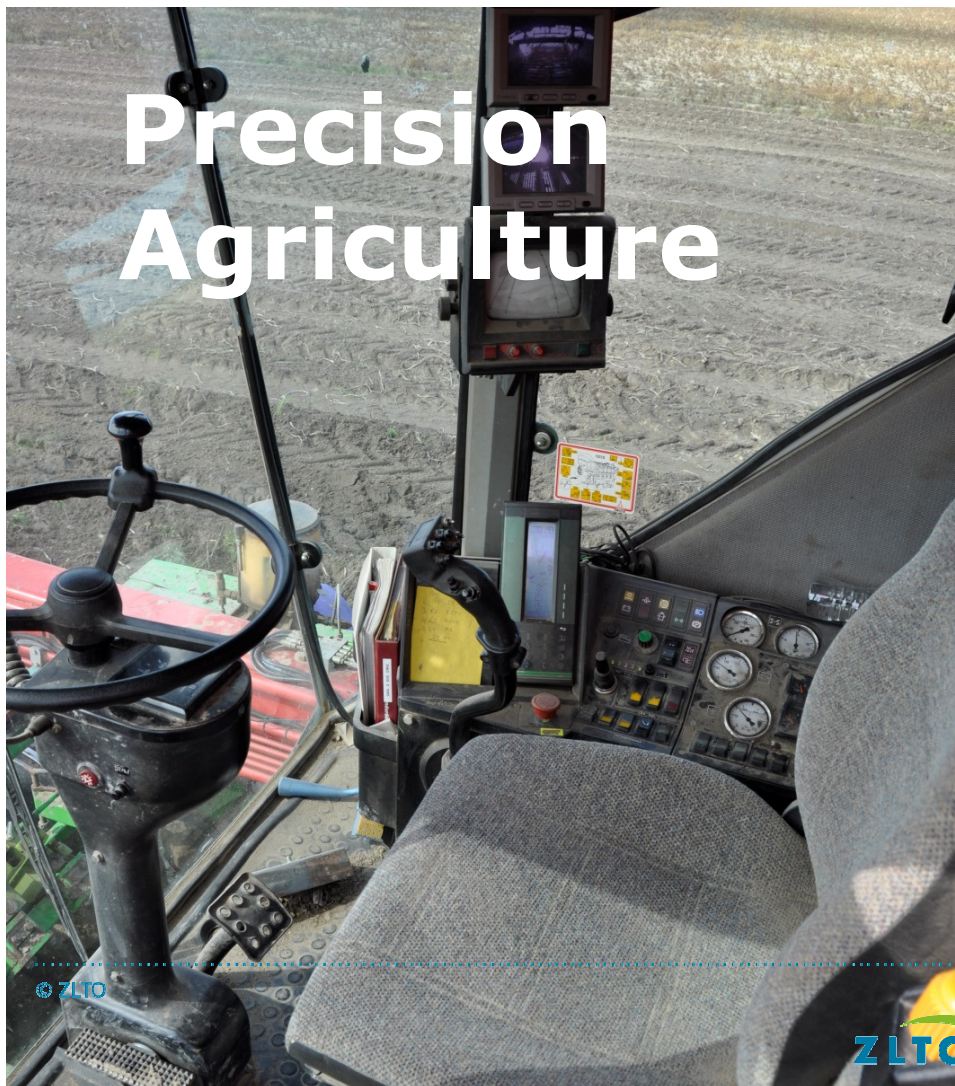


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# Precision Agriculture



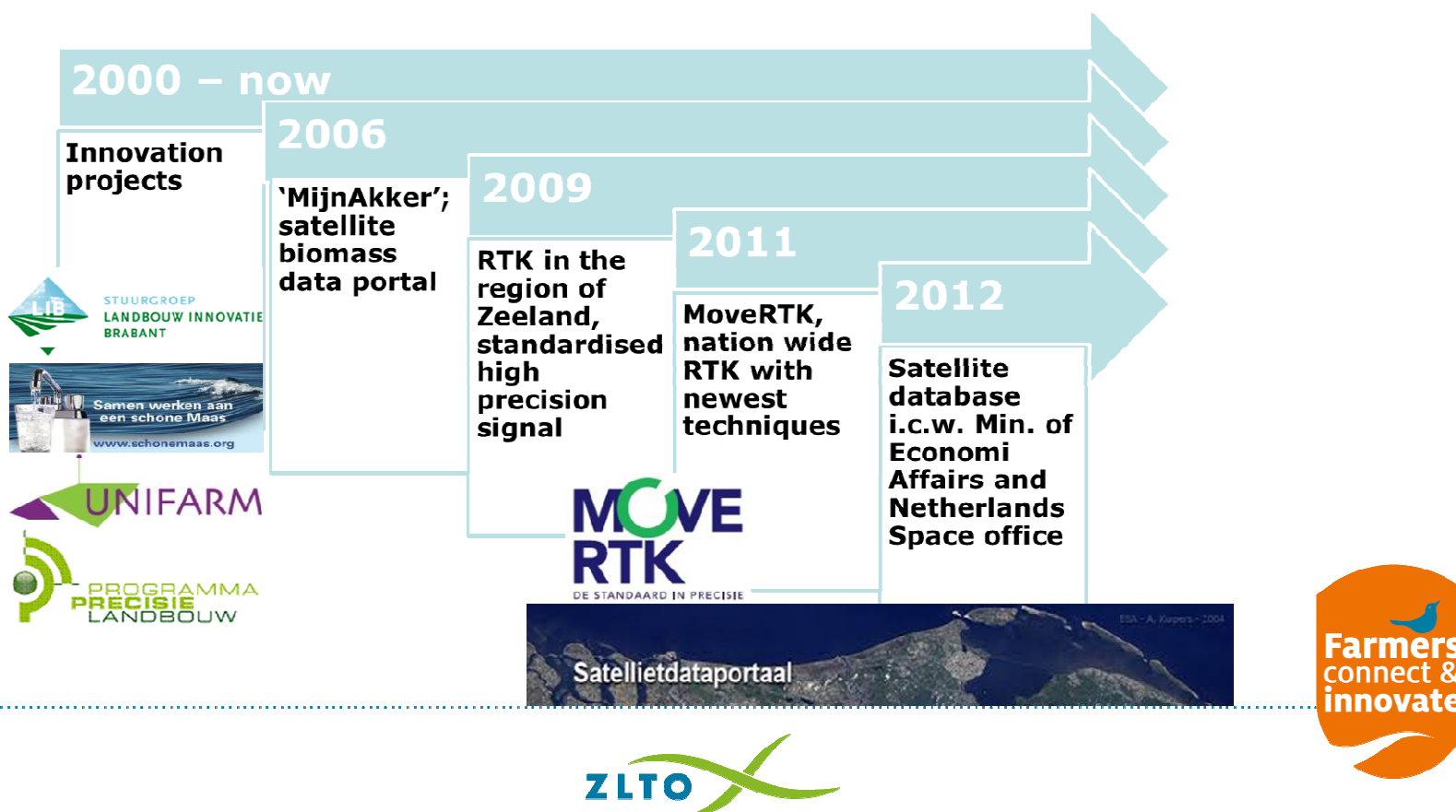
Farmers  
connect &  
innovate

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ZLTO



# ZLTO: over 10 years in smart-farming



# Use of Precision Agriculture

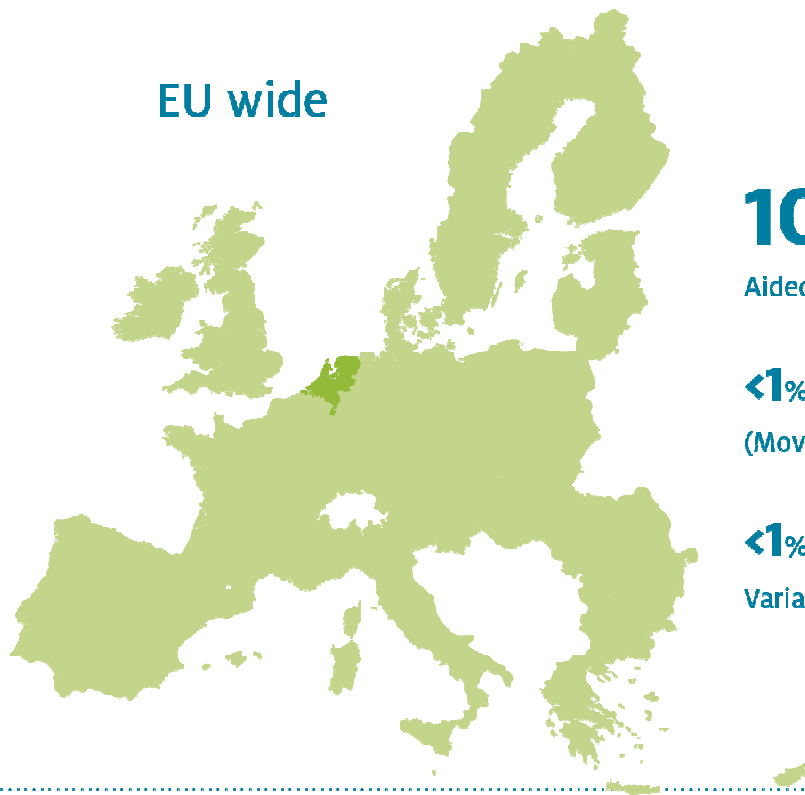
## The Netherlands

 **50-65%**  
Aided guidance/GPS

**8%**  
(Move)RTK

**2-5%**  
Variable Rate Application

## EU wide



**10%**  
Aided guidance/GPS

**<1%**  
(Move)RTK

**<1%**  
Variable Rate Application

# Greenhouse horticulture



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# Animal Husbandry





# New strategies



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# Fair and transparent trade & logistics



# Geo tracking & tracing in manure logistics





# Animal transport: tracking & tracing

© ZLTO



# Geo ICT in consumer logistics



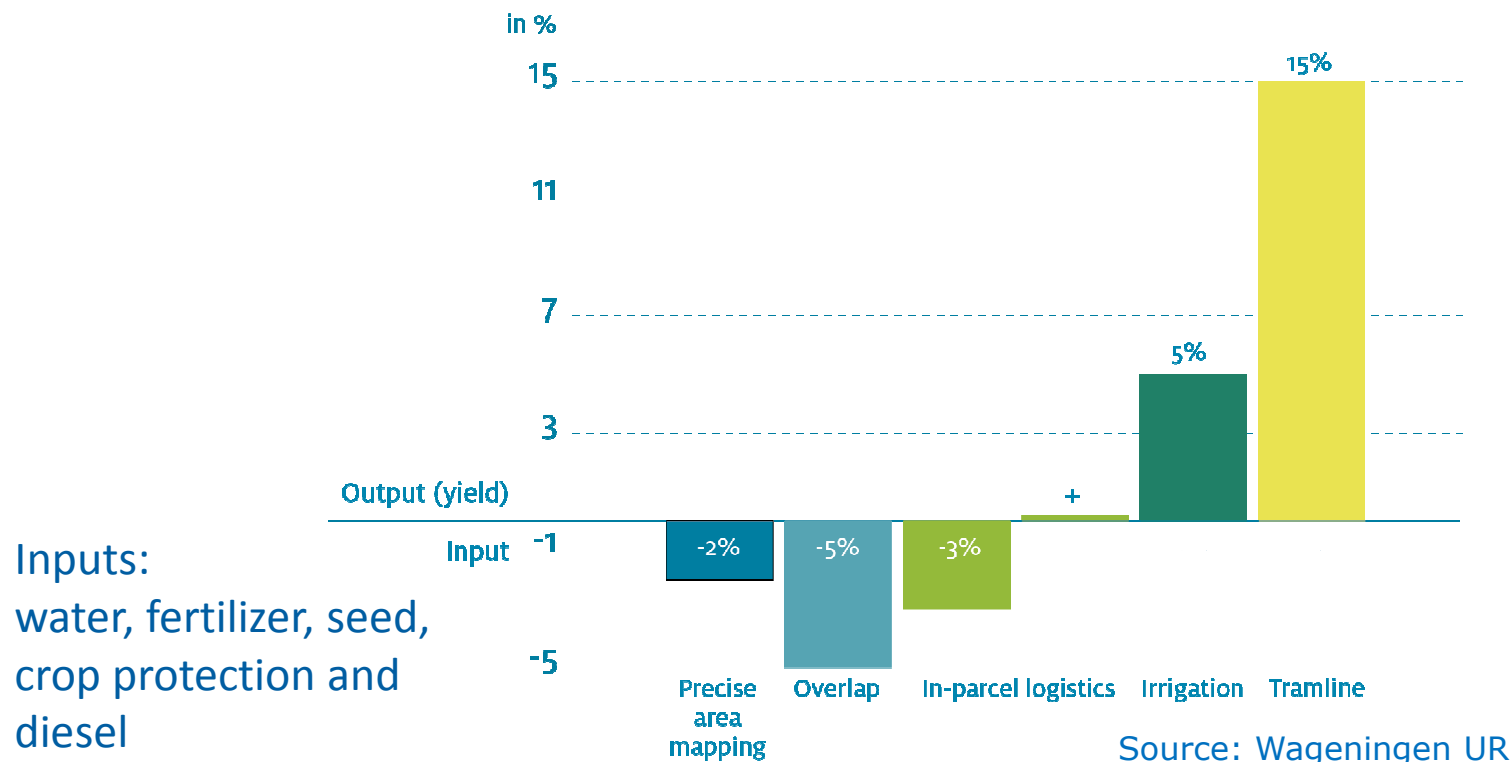
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# New Challenging Employment

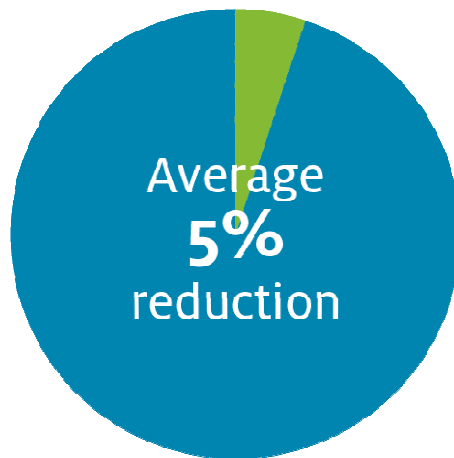


# Advantages of Precision Agriculture

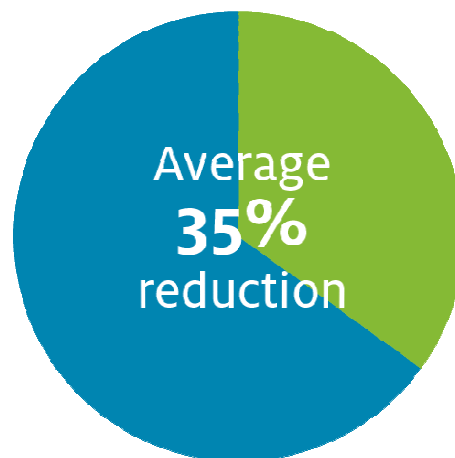




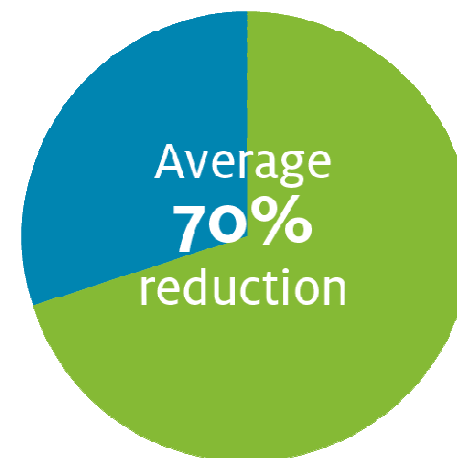
# Extra advantages of integrated agriculture



Section wide  
per ha



Variable  
10m<sup>2</sup> to 30m<sup>2</sup>  
20%-50% reduction



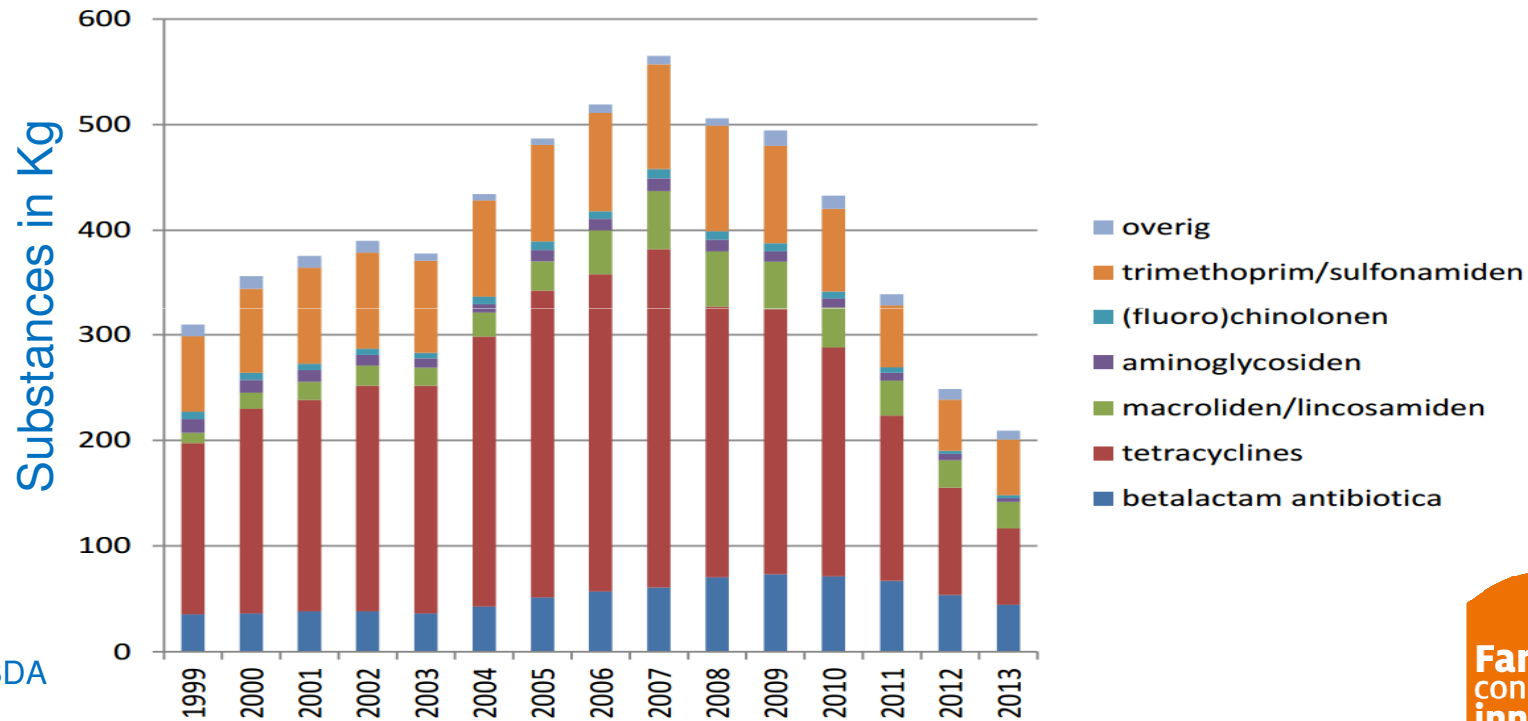
Plant specific  
2 cm<sup>2</sup>  
50% to 90% reduction

Source: Wageningen (UR)

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# Reduction of antibiotics

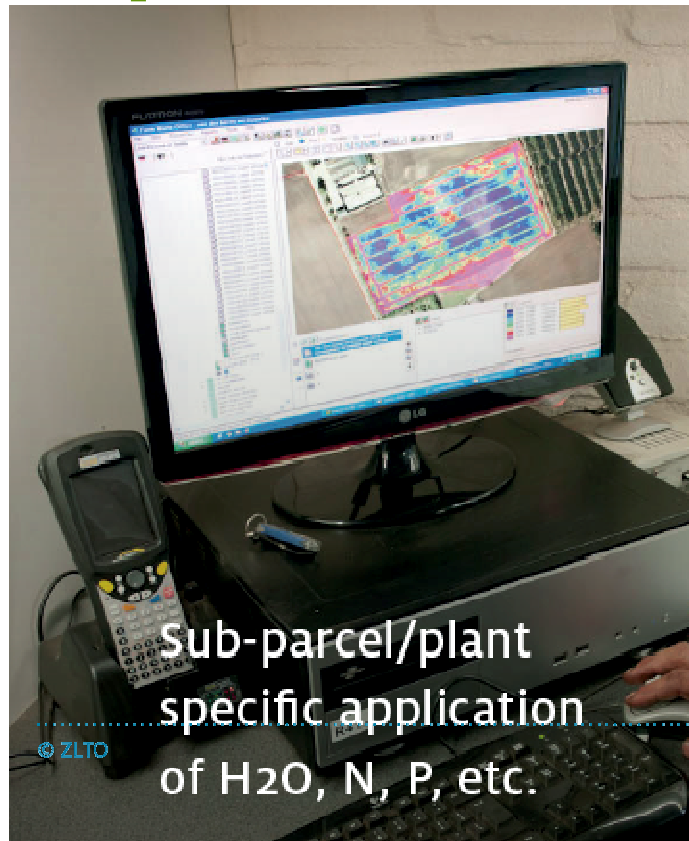


Source: SDA

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# Chances of GeoICT in 5 years plants





# Chances of GeoICT in 5 years animals





# Living Lab NL

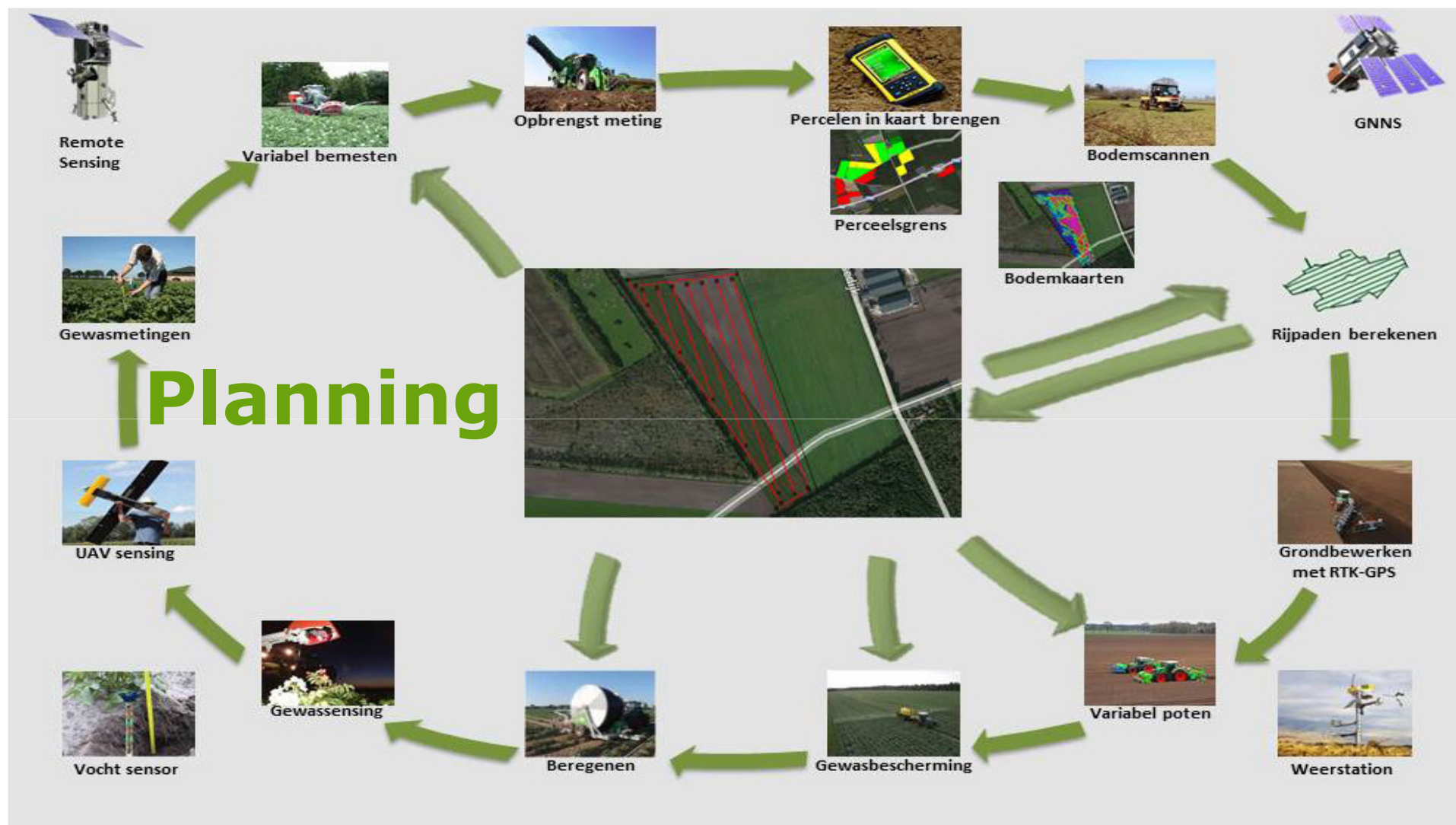


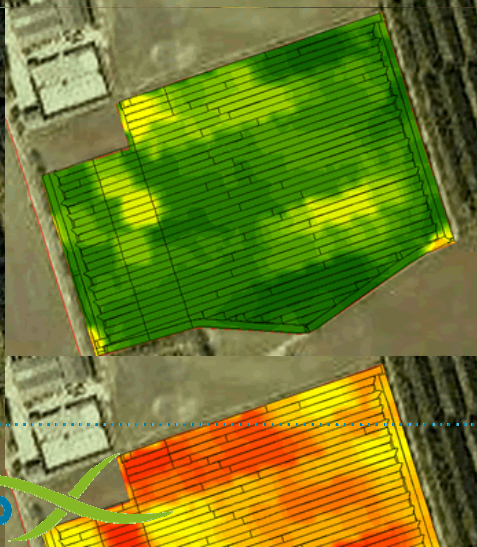
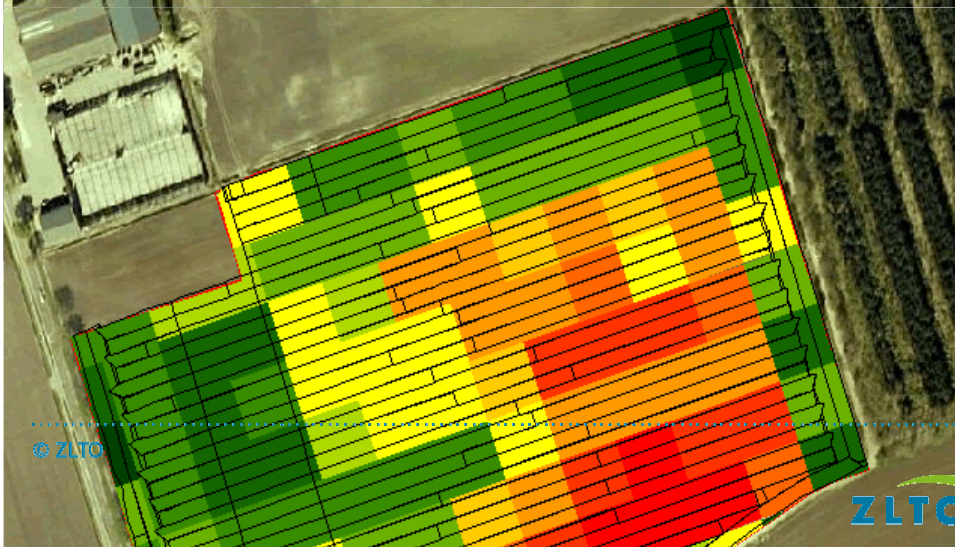
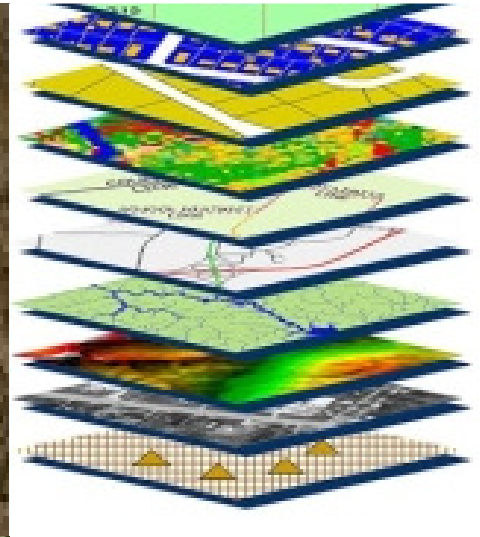
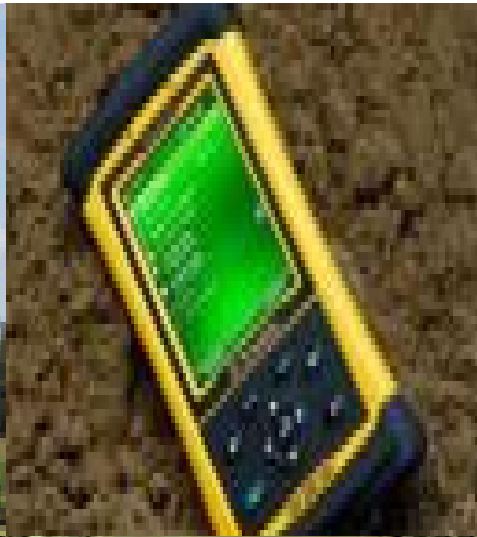


# Integrated Management Cycle



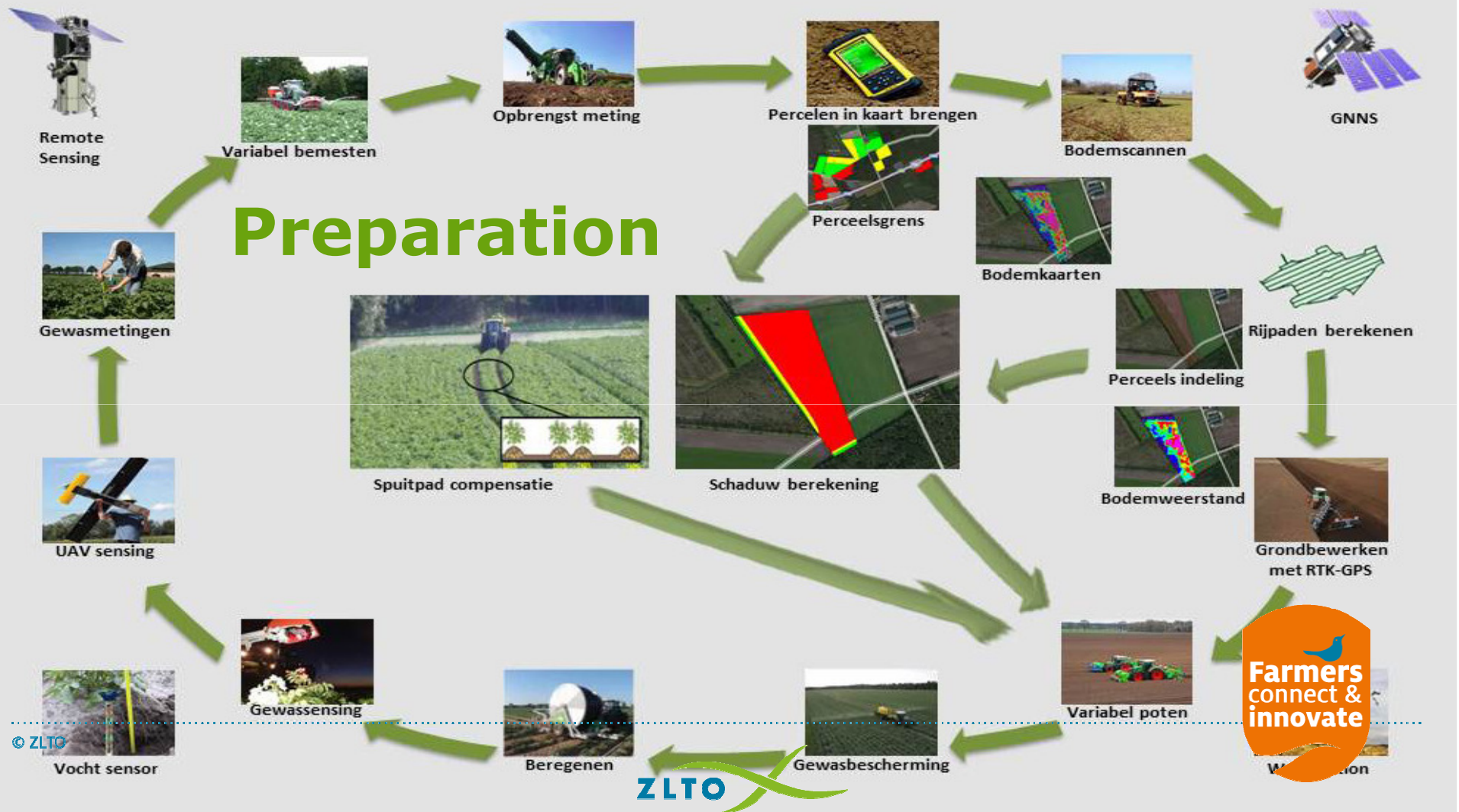








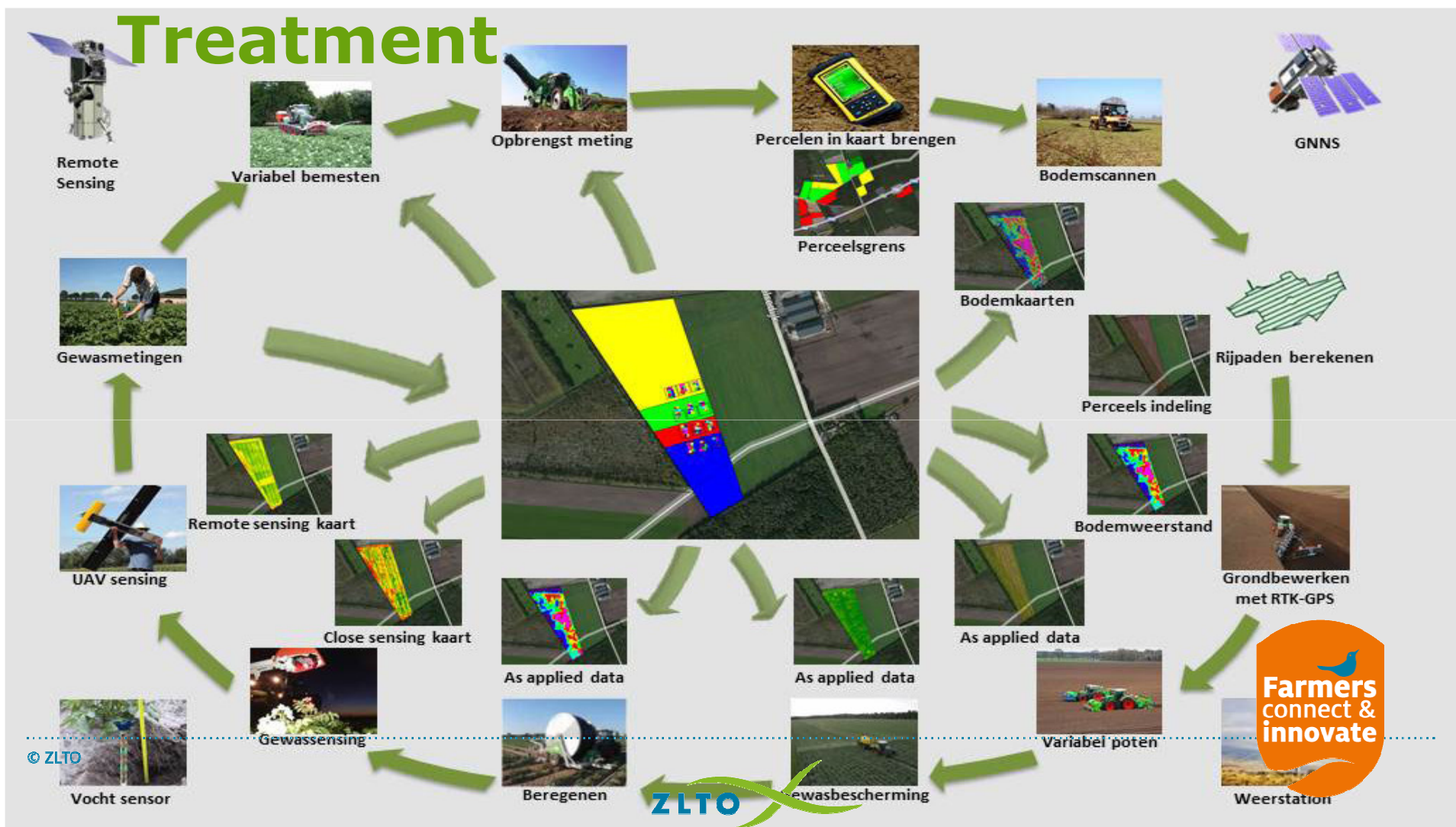
# Preparation







# Treatment

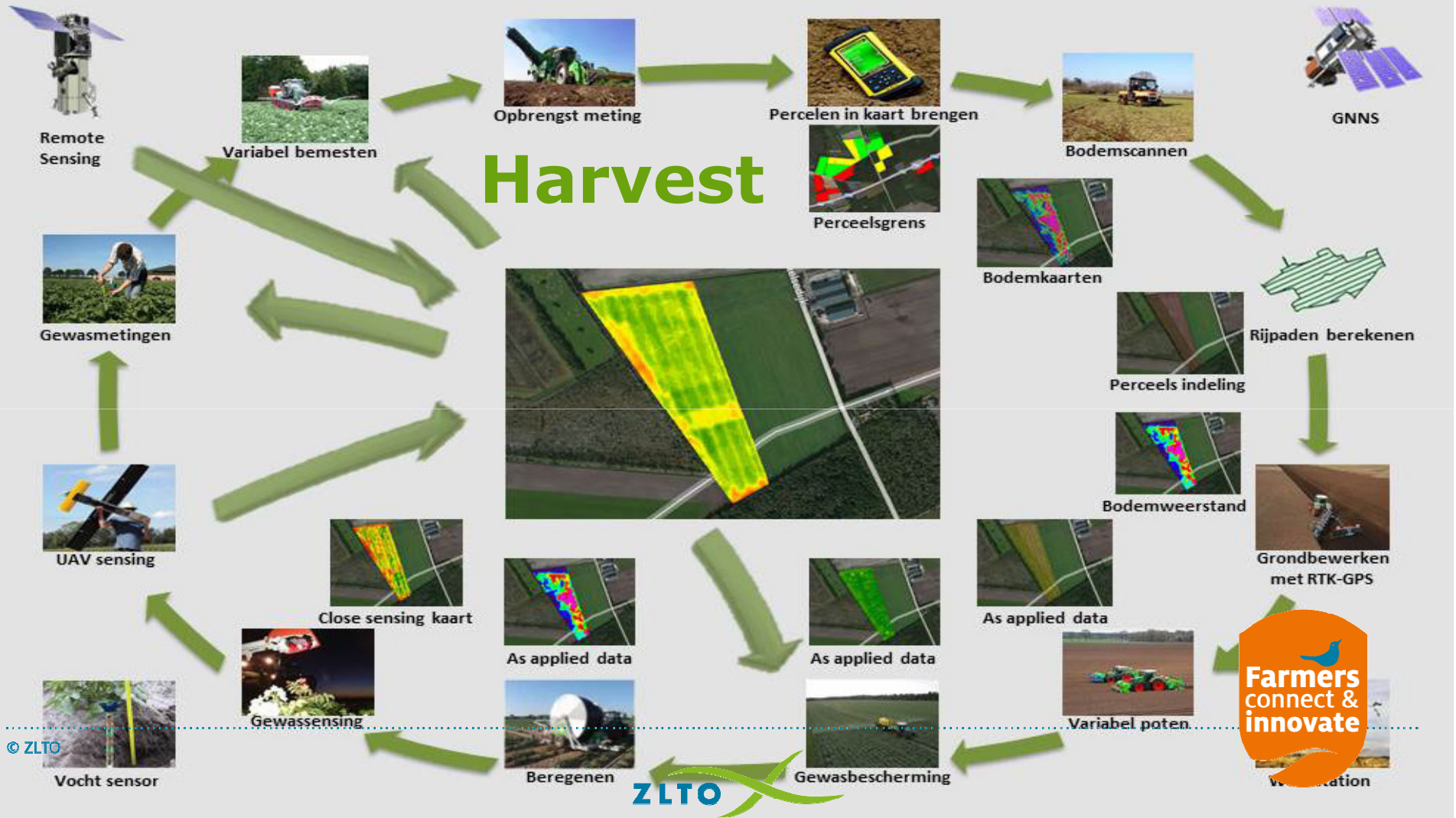






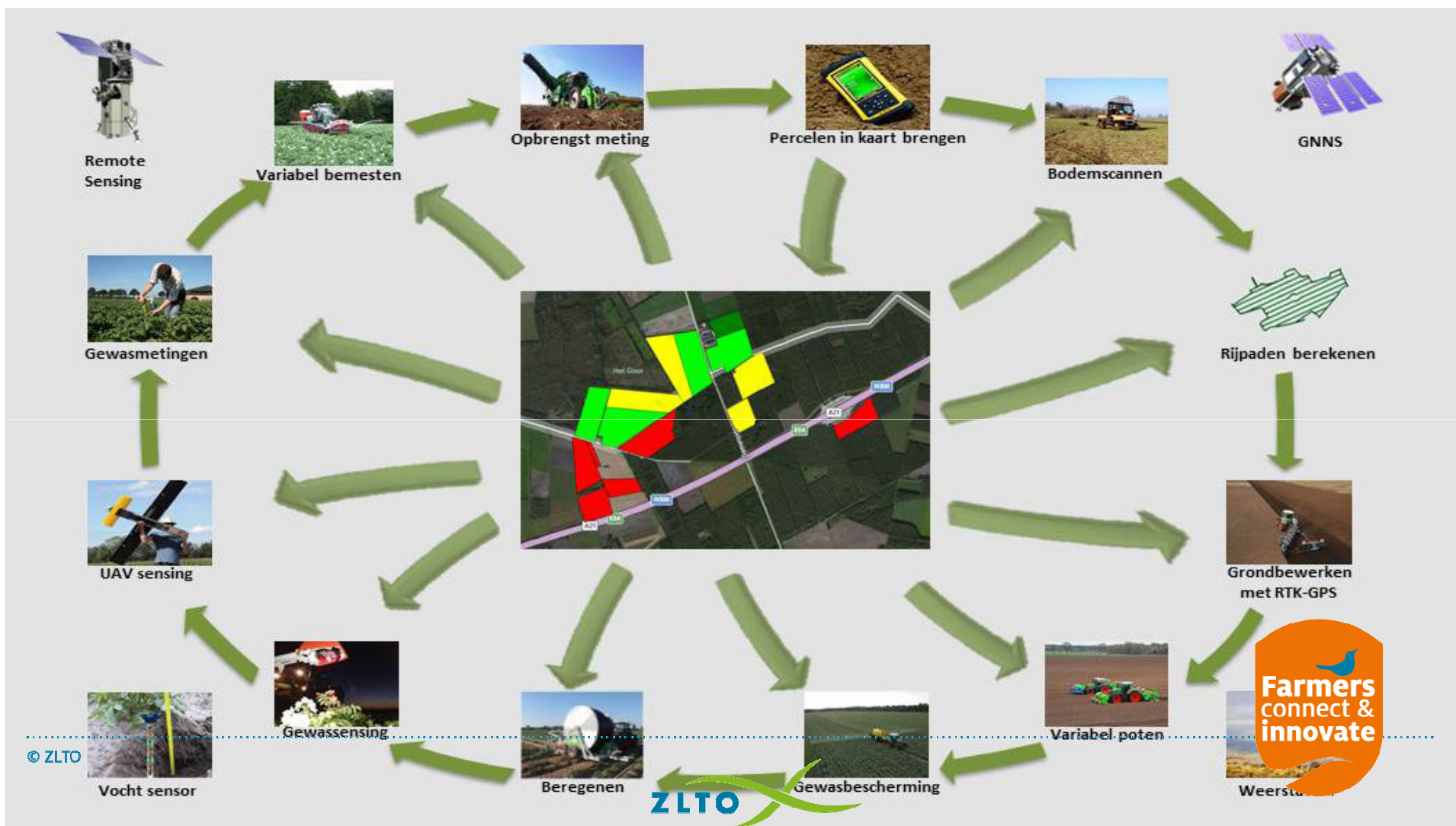


# Harvest











# Information comes to the farmer

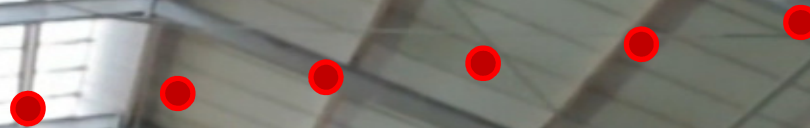


—innovators in agriculture—

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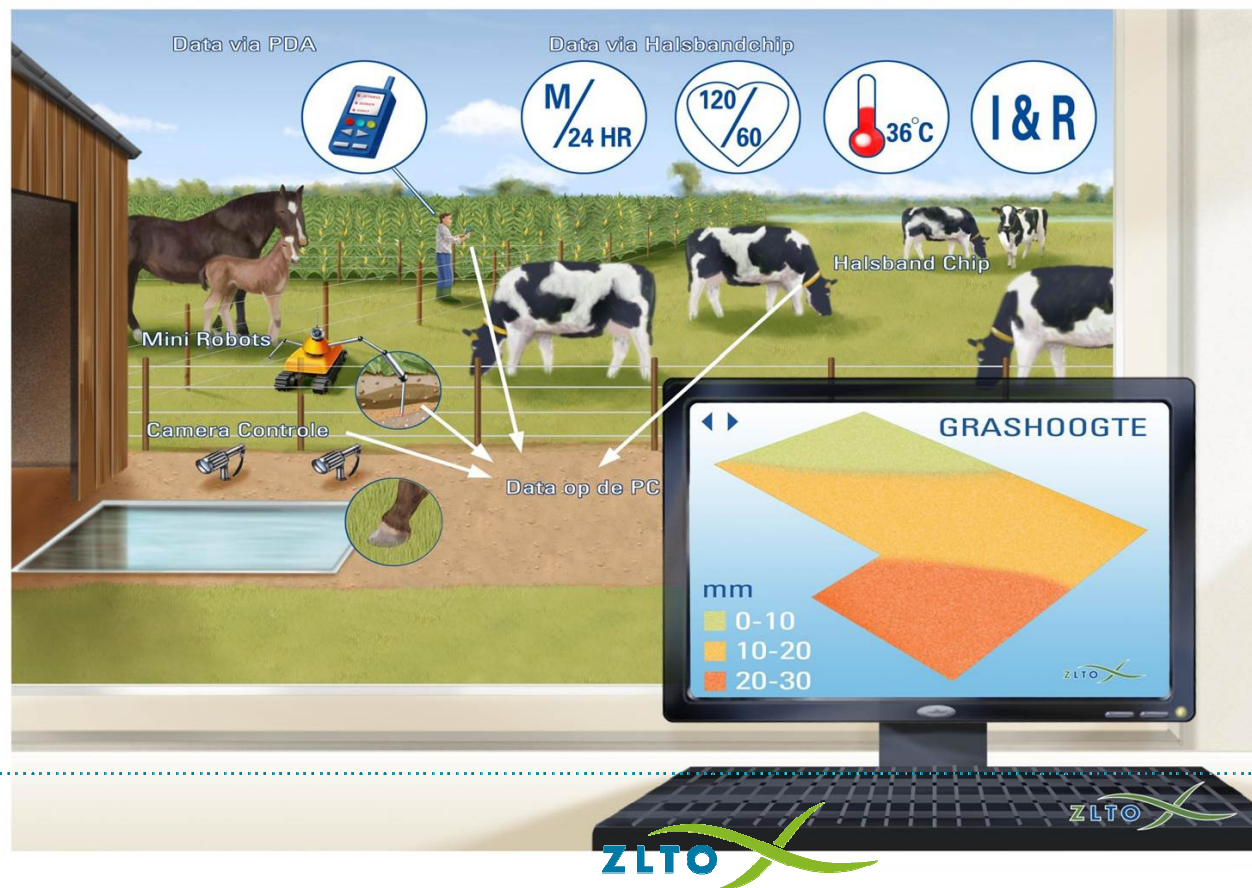


# Clear actions





# Precision Agriculture in Animal Husbandry





# Dutch government: Topsector policy



 Hightech systems en materials  
**64.120**

Chemistry  
**2.150** 

 Agriculture & food  
**59.050**

Creative industry  
**97.020** 

 Energy  
**1.270**

Life sciences & health  
**2.290** 

 Transport & storage  
**23.820**

Horticulture &  
Propagation Material  
**18.460** 

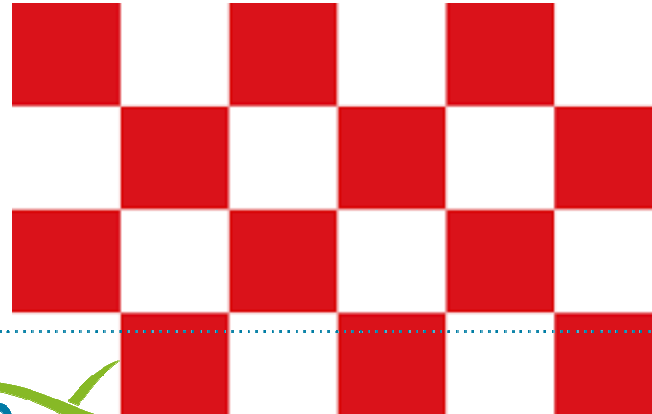
 Water  
**2.820**



# The Netherlands: Living Lab for smart-farming

Top sector policy:  
focus on innovation, international  
business, human capital,  
sustainability, market and society

Agri&Food Innovation Programme:  
innovation, new businesss, living  
labs, new products.



# ZLTO in EU Horizon 2020

H2020: €70 billion (2014 to 2020)

1. Excellent Science (€24 b)
2. Industrial Leadership (€17 b)
3. Societal Challenges (€31 b)



## ***Food, Energy and Health***

*"Europe move towards smart, sustainable, inclusive growth, and along the way to tackle its pressing societal challenges"*



# ZLTO in EU Horizon 2020



## ZLTO in EU Projects:

Focusgroup Precision Agriculture European Innovation Partnership,  
linked to H2020 and the rural development programme

**Satisfarming:** the implementation of Satellite Farming in Europe

**AgriSpin:** innovation brokership in Europe.

**Euro Dairy Farming:** Innovation in dairy Farming



# Invitation to cooperate



# Partners





# ZLTO: your partner in smart-farming

1. Leading role in Public Private Projects
2. Excellent network: private and public sector partners (EU, NL province)
3. Access to key players and entrepreneurs in high tech and design
4. Direct connection with entrepreneurial and innovative farmers
5. Testing grounds available
6. Co-investor in innovation

# CONTACT



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## Your connection to Living Lab NL