



Ministry of Agriculture,
Nature and Food Quality

INNOVATING AGRICULTURE

How Malaysia could become a high tech agriculture hub



'the Netherlands, second largest agricultural exporter in the world'



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Dutch agriculture:

4,2 mln ha landmass

1,0 mln ha of grassland

0,5 mln ha of arable crops

0,1 mln ha of vegetables, fruits and bulbs

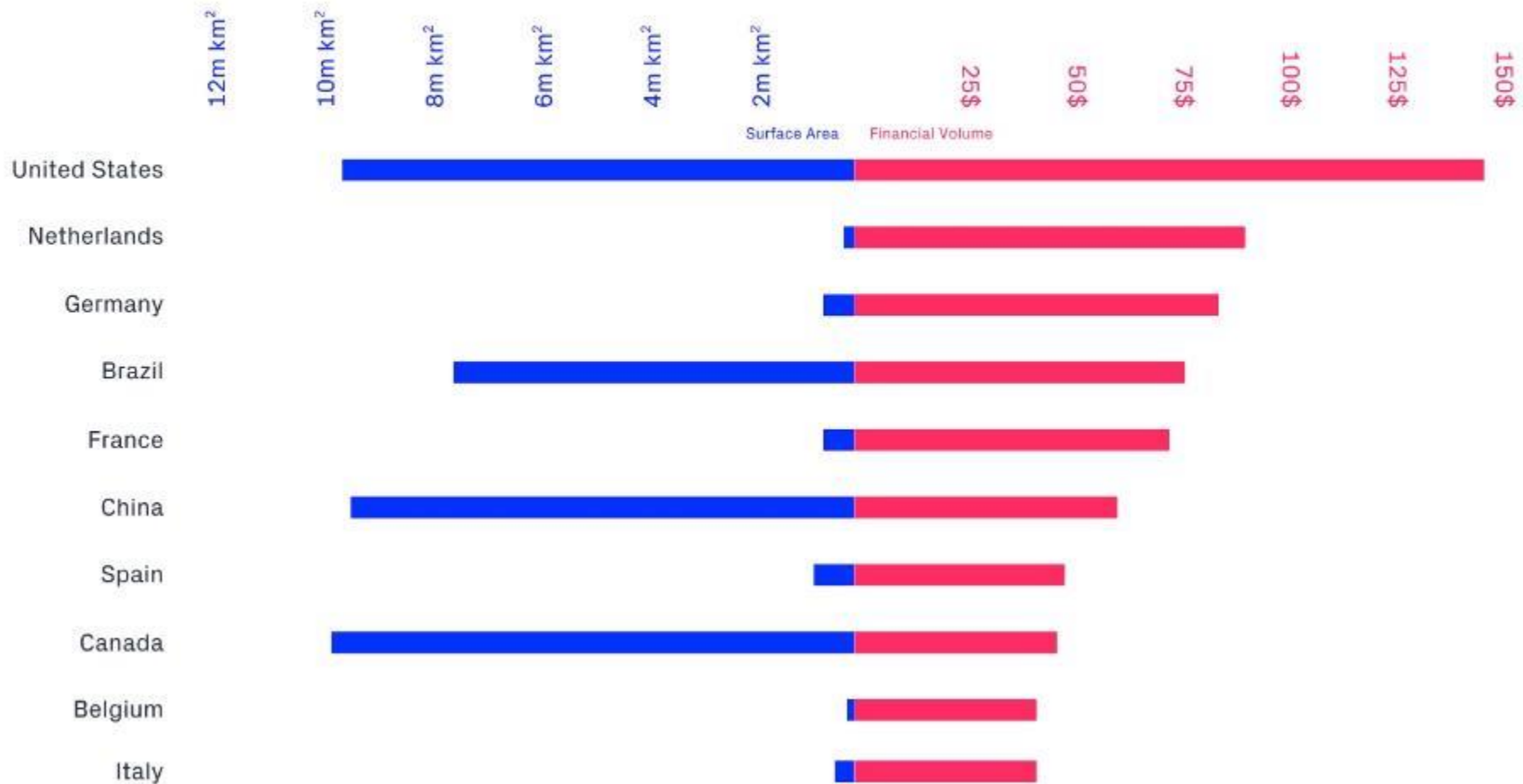
**Highly competitive in dairy, potatoes, pork,
glass house horticulture, flowerbulbs, poultry;
Mostly sectors *without heavy EU regulation***

**Only 9000 ha of glass house horticulture,
representing one third of the gross production
value**





THE LARGEST FOOD PRODUCERS



Origins of Dutch competitiveness in agriculture

**INNOVATION and
ENTREPRENEURSHIP**



PILLAR 1 OF SUCCESS:

OPEN ECONOMY, STRATEGIC URBANIZED LOCATION:

- rich markets nearby
- imports contribute to exports
- superior logistics





Already in the 17th century more than half of the Dutch population lived in cities.

Dutch farmers were producing for the market early



Pillar 2 of success:



Trust & sectorial interaction, my neighbour is not my competitor



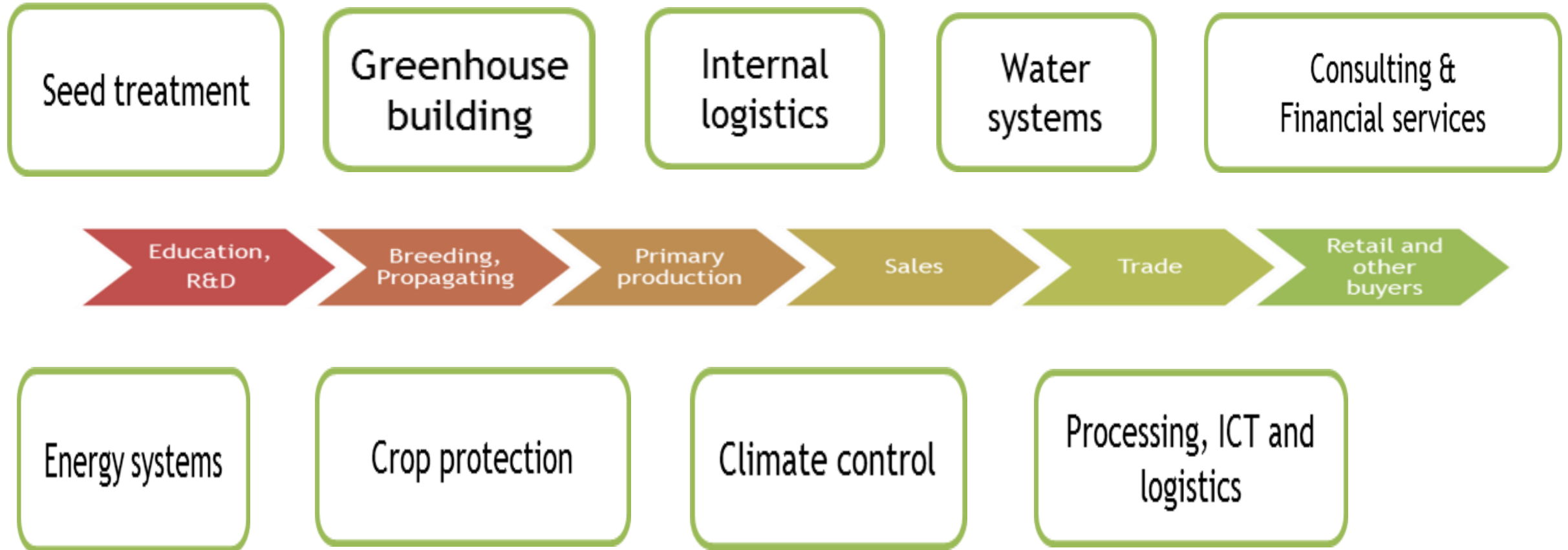


Holland Agriculture strong in Innovation based on Clustering (Porter model):

- **Geographic concentration of companies, presence of related and supporting industries, rich diversity within a specialized sector, offers an optimal structure.**
- **Companies learn from each other because they understand each other, but differ enough. They enter into relationships, built on trust.**
- **Greenports: seed companies, trade, logistics, production, education, research; proximity to urban centers**
- **Presence other agricultural sectors also helps, eg via biogas valorization or residual flows**



Clusters of expertise representing all parts of supply chain drives innovation





Crossovers

Horticulture & Propagation Material have many valuable crossovers with other main sectors

Water

- Sustainable and efficient use of water (reduce, re-use and recycle)
- Reduction of leaching to ground and surface water
- Drought and salt tolerance
- Urban indoor farming

Life Sciences

- Health
 - healthy food
 - production of medicines
- Technology
 - supporting technology
 - system biology
 - synthetic biology

- Healthy diet
 - better taste
 - less fat
- Improving health
 - reduction of obesity
 - anti oxidants

Agri-Food

- Healthy food
- Sustainability
- Biodiversity
- Phyto sanitary policy
- Soil management
- Vegetable proteins

Chemistry

Logistics

- Infrastructure
- Chain control and logistics optimization
 - ICT, track & trace, RFID
- Multi-modal networks
- Sustainable of transport and conditioning

High Tech materials & systems

- Steering, precision technics, assortment and sales
 - robotics, smart systems
- Controlled breeding
 - LED, Bio nanotechnology
- Logistics
 - RFID track & trace

Creative industry

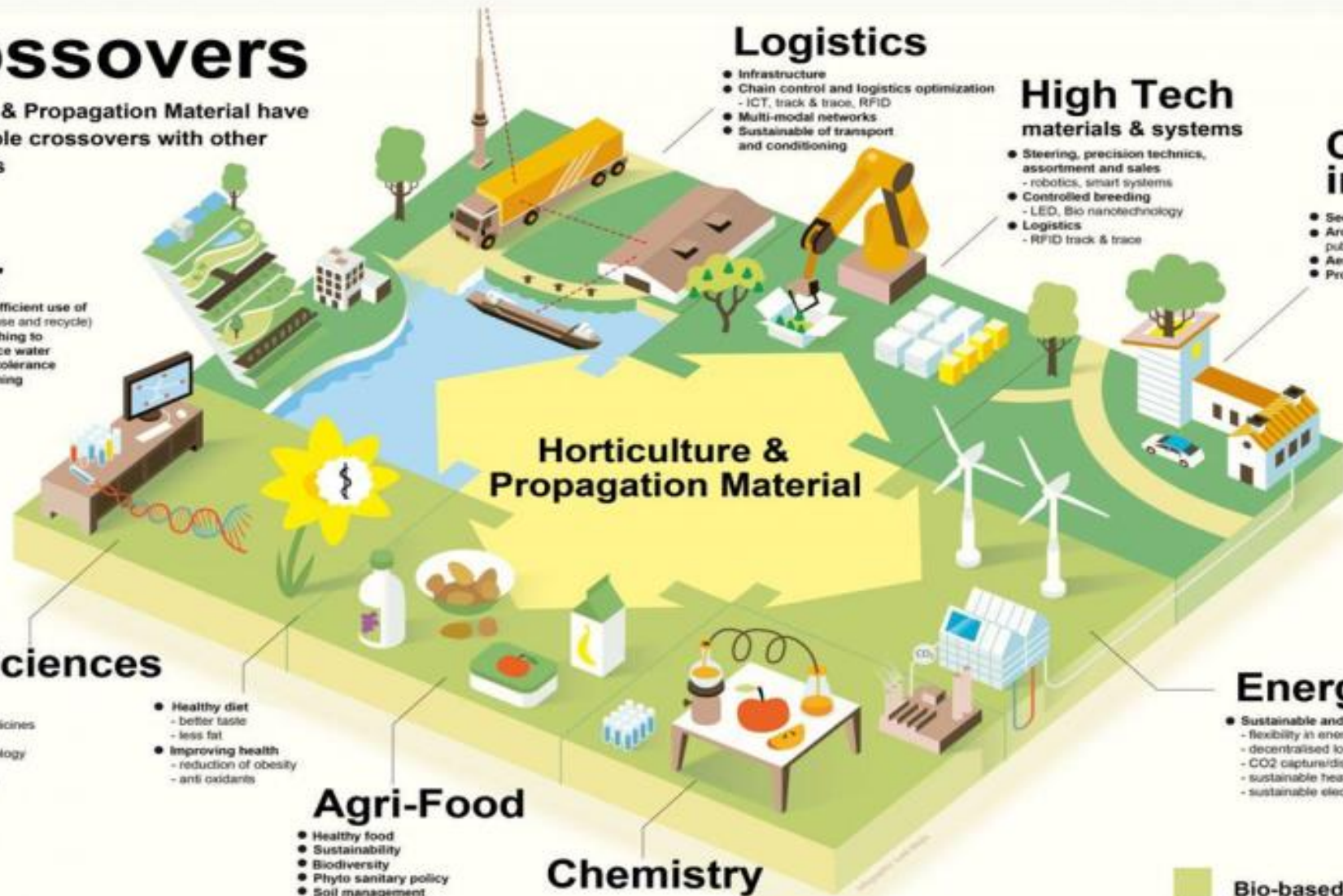
- Sector image
- Architecture (importance of green in the public space)
- Aesthetic greenhouses
- Product design

Energy

- Sustainable and decentralized energy production
 - flexibility in energy delivery by WKK
 - decentralised local energy systems
 - CO2 capture/distribution
 - sustainable heat production
 - sustainable electricity production

Bio-based economy

Materials for other sectors by breeding, facilitate optimal fractionation by breeding, use of bio-based materials



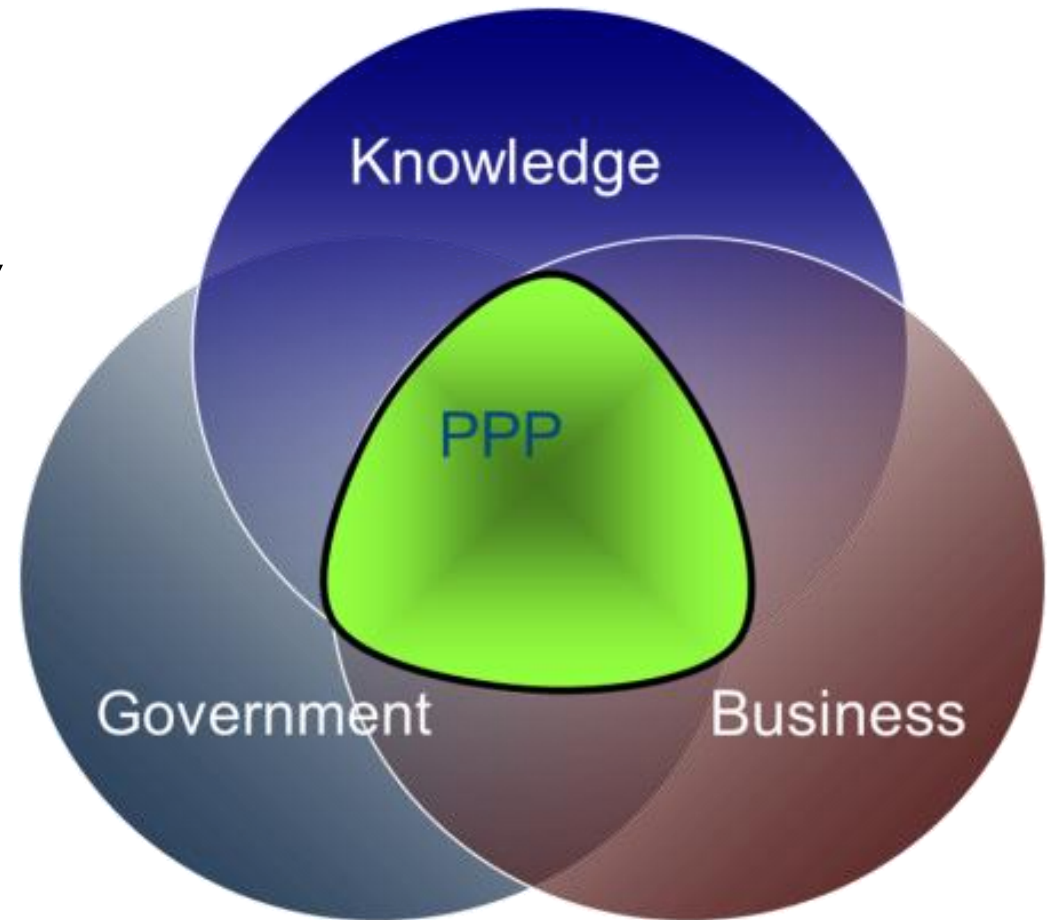


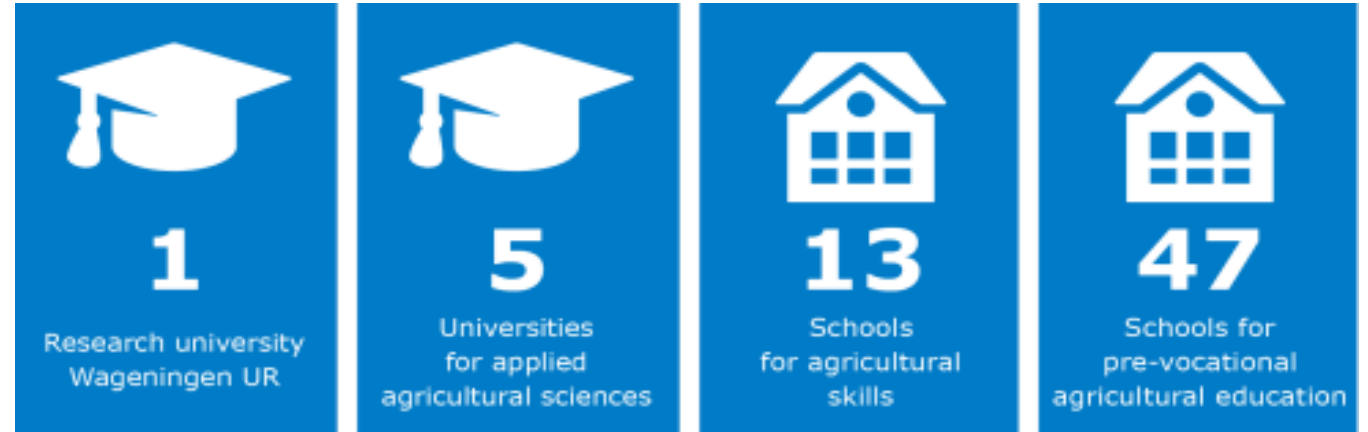
PILLAR of Success III:

Collaboration between Government, private sector, research institutions, on national, regional and local level. Public Private Partnerships (PPP)

Originates from traditional cooperation in education, research and education, but now also creates frameworks for innovation.

Co-financing model too!





High level of training:

- Education of farmers & support services;
- Wageningen University world renowned;
- Vocational Training equally important!

We need to make farming attractive for young people. No farmers, no food!

Pillar IV:

Proximity of farming activities to cities, the need to acquire a civil license to produce;

→ Results in constant innovation and sustainability drive





It is not our ambition to export tomatoes to the whole world.

International cooperation is crucial for the sustained success!

Thank you!
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