Agriculture is part of the solution

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ZLTO founded in 1891

- 10,000 members from the profession
- provinces Brabant, Zeeland & Zuid Gelderland
- 65 local departments, 700 active board members
• ZLTO supports its members that operate in the green space in realising a sustainable perspective
Supporting members ZLTO

- Collective promotion of interests
- Individual member service
- Projects
- Investment and participation
ZLTO vision

Link in the agri food complex

• of interest to the province of Brabant:
  o 110,000 jobs (70,000 FTEs)
  o 13,000 businesses in the primary sector
  o 1,000 businesses within the agri food complex
  o 22% of Dutch exports
  o 75% of the agri food production for export
Working towards Sustainability is a process

- Demanding an integrated approach
- Addressing the following aspects of cattle-breeding:
  - Environment
  - Health
  - Animal well-being
  - Completing cycles
  - Market and economy
Working towards sustainability in cattle-breeding

Ambitions of the ZLTO

- Overall sustainability in cattle-breeding with closed cycles at the lowest possible levels of scale
  - Reduction of greenhouse emissions
  - Upgrading the value of manure and minerals
  - Further regionalisation of feed, food, energy
What's the question?

- 175 million kilos of phosphate produced
- 125 million kilos of phosphate can be accommodated (2015)
- 50 million kilos of phosphate in excess
  - Feed
  - Export
  - Processing
ZLTO opts for upgrading value

About upgrading value

- Minerals for plant-growing
- Recycling, upgrading residual currents
- Renewable minerals are raw materials
- Regional production of green energy
- Transition towards a bio-based economy
- Utilising innovation
the approach of ZLTO

Manure → Anaerobic digestion → Separation → Reverse osmosis → Water

Output
- Power
- Heat
- Green gas
- Solid fraction
- Liquid fertilizer (N and K)

Revenues
- Renewable energy production
- Reduction of Greenhouse gases
- Less transport
- P-recycling
- Input bio-based economy
- Nutrient recycling
- Water re-use
Upgrading manure and minerals

A step in sustainability

• Linking up agriculture with society
• Decreasing dependence on raw and ancillary materials
• Creating a local regional economy
Upgrading manure and minerals

What opportunities are implied?

Annual manure production 70 mln. tonnes (slurry)

- 175 mln. kgs phosphate, 500 mln. kgs nitrogen
- 1,750 mln cbm bio gas, equivalent to 1,172 mln cbm natural gas
- 2 megatonnes (mln) less CO$_2$ emission
- Considerable decrease in fertilizer use
What is required for this?

- Robust intervention in chain
- Breakthrough in upgrading
- Financial support
- Policy room in fertiliser legislation: better implementation of the Nitrate Directive
- Access to the energy grid
What are the bottlenecks?

• Concretization of the Nitrate Guideline or/and Fertiliser Guideline
• Manure surplus, decrease of fertility of the soil
• Legislation regarding the use of liquid fertilizers made out of manure
• National subsidies (SDE-scheme for the promotion of sustainable energy)
• Processing of thick/solid manure components
In summary

• We would like (and would be able) to play an important role creating a sustainable society
• We have the experience and the resources
• Anaerobic digestion is part of the solution towards sustainable agriculture
• Government: you are holding the key
  o Room in mineral (fertilizer) legislation and financial support
Thank you