



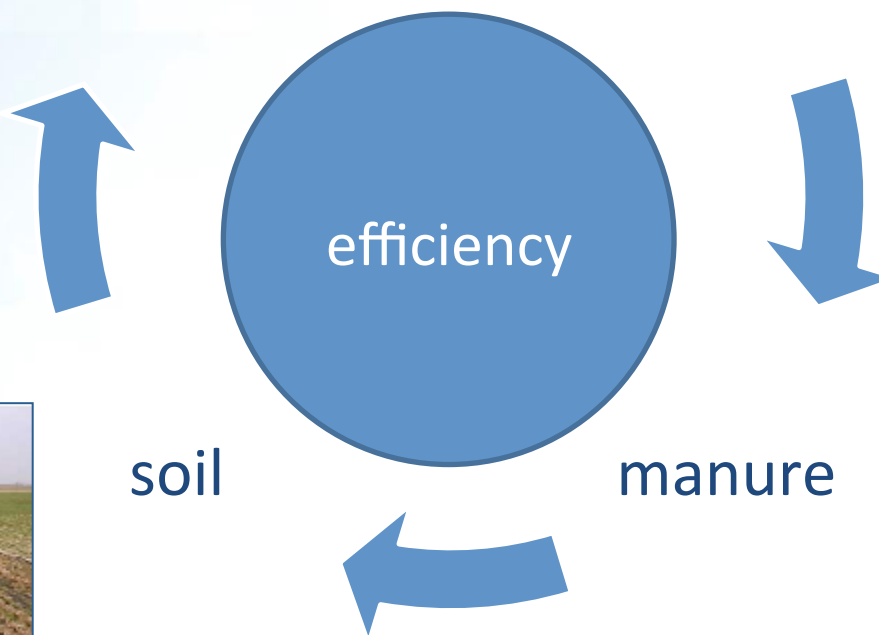
The nutriënt cycle



crop



production





LTO vision on manure management

1. Optimize nutrient cycle on the farms
 - a) Replace chemical fertilizer with animal fertilizer products and other products
 - b) Minimize losses via precision farming
 - c) Maximize own feed production: Reduce imports via feed



Replace chemical fertilizer

- Direct manure removal
- Closed floors/separation urine and faeces
- Air scrubbers
- Covered storage/digestion
- Low emission application for high nutrient use efficiency
- Maintaining soil organic matter



Source: www.hcibeton.nl, 2016





Minimize losses via precision farming

- Right time
- Right amount
- Right form
- Right place: roots

Resulting in optimal food/feed production

- High quality
- High quantity





LTO vision on manure management

1. Optimize nutrient cycle on the farms
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2. Valorization of surplus
 - a) Export phosphate surplus to shortage areas
 - b) Processing into valuable products suitable for the needs of crops and soil of the end user





Export phosphate surplus to shortage areas

- NL has unique surplus
- In EU large shortage areas
- Diversification of markets is needed.

Separation and pasteurization of solids



Composting



Digestion



Drying and pelleting





Processing into valuable products

- Dewatering for more value and less logistical costs/carbon footprint
- Facilitate optimal plant growth
- Remain and improve soil fertility and replace use of fertilizer
- Improve water storage capacity

Create the market:

- Product quality
- Reliability of parties
- Demonstrate and prove

