# *AMmonium REcuperatie en plantgebaseerde WAterzuivering op Stikstofrijk afvalwater*

# AMREWAS


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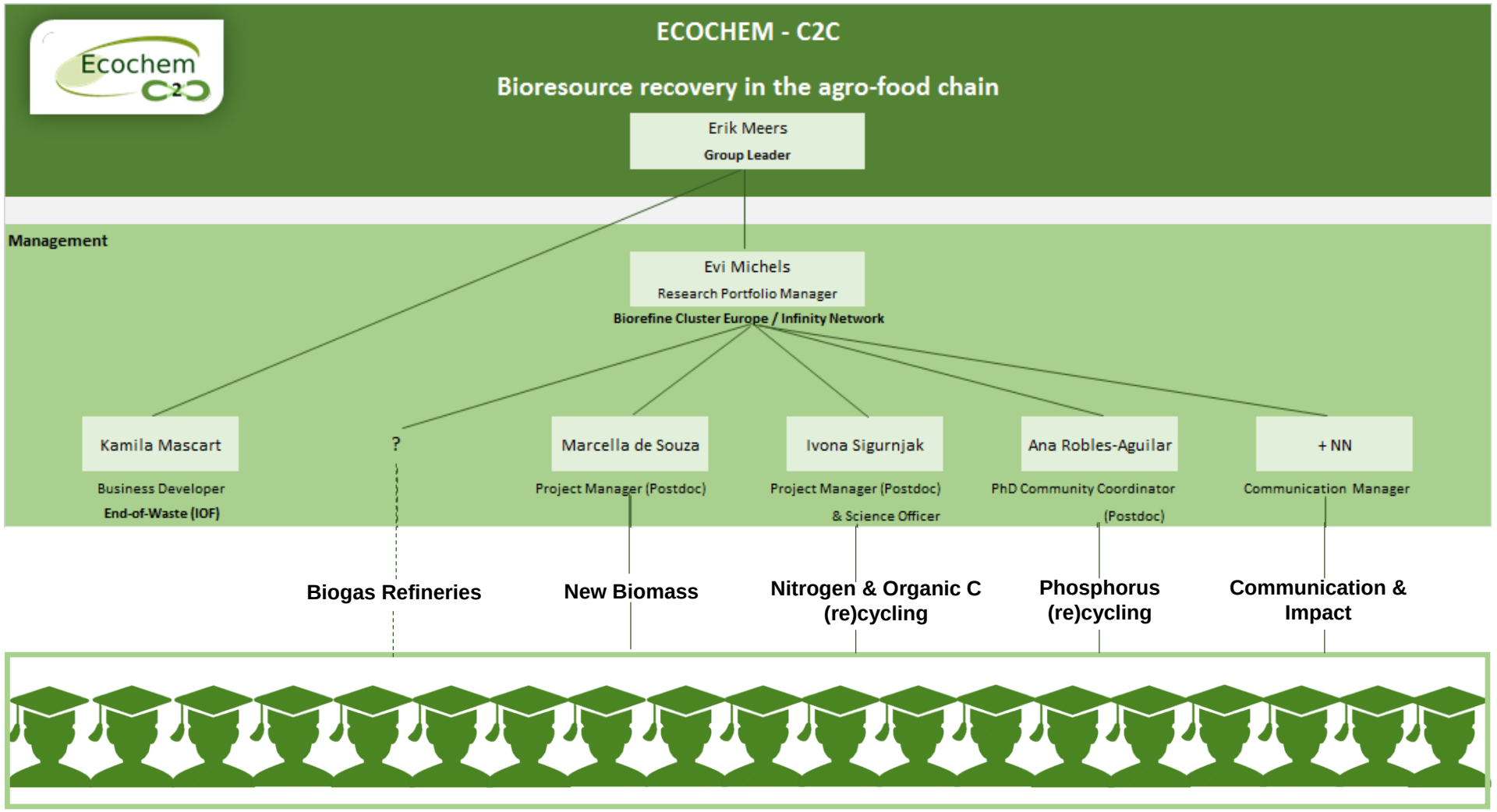


*Currently running PhD : 23*

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*Our research group is dedicated to practical implementation of innovative technologies that can help the transition towards a circular economy.*

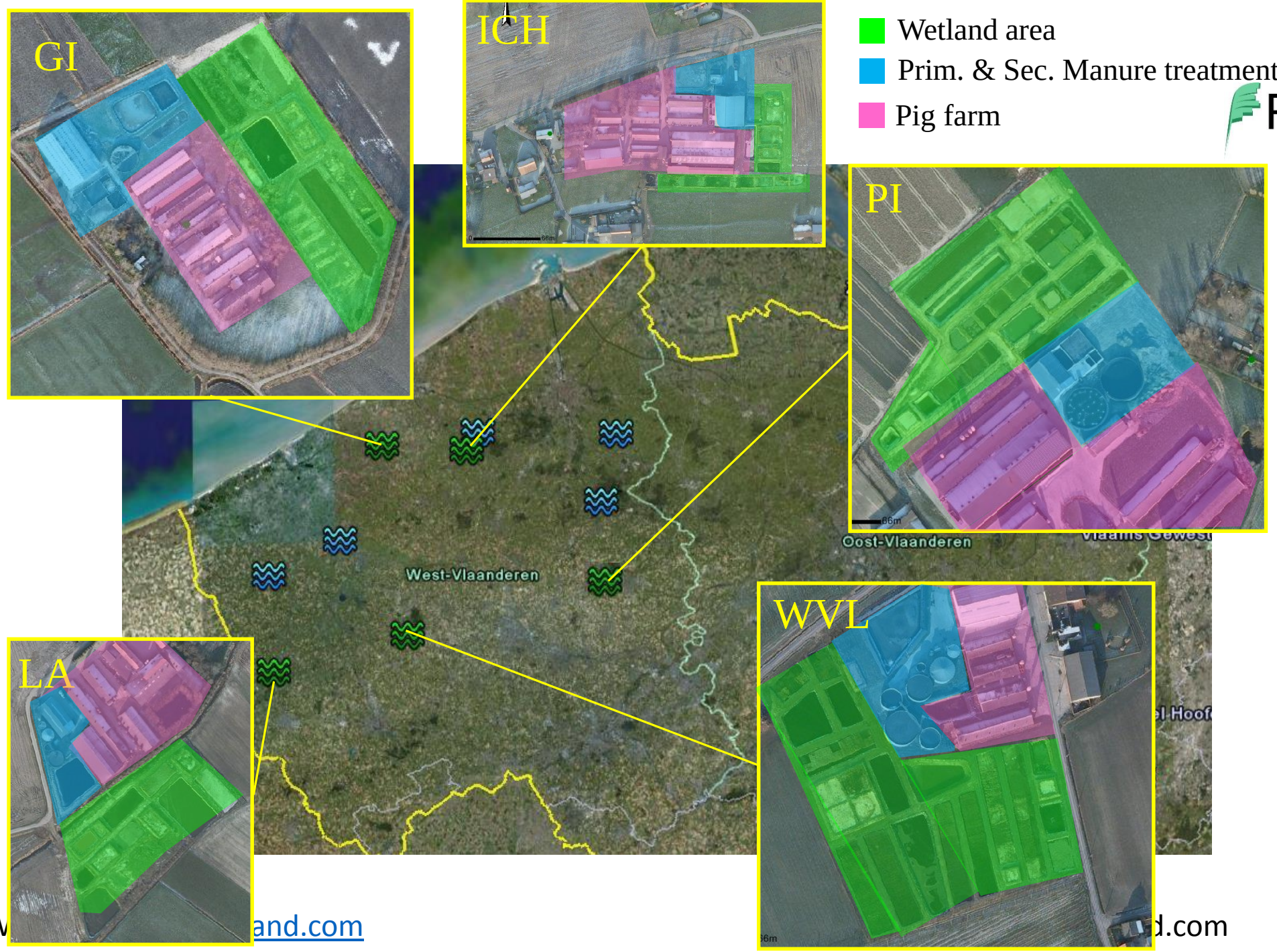




Pocket Power
Interreg North-West Europe ReNu2Farm
Interreg North-West Europe Phos4You
Interreg North-West Europe ALG-AD
TRANSBIO powered by Biogas-E
Interreg 2 Seas Mers Zeeën GRASSIFICATION
Interreg France-Wallonie-Vlaanderen NEW-C-LAND
Pilots4U BIOECONOMY INNOVATION
SYSTEMIC Circular solutions for biowaste
Nutri2Cycle Nurturing the Circular Economy
WWW.NUTRIMAN.NET NUTRIMAN




Currently running projects @ECOCHEM-C2C

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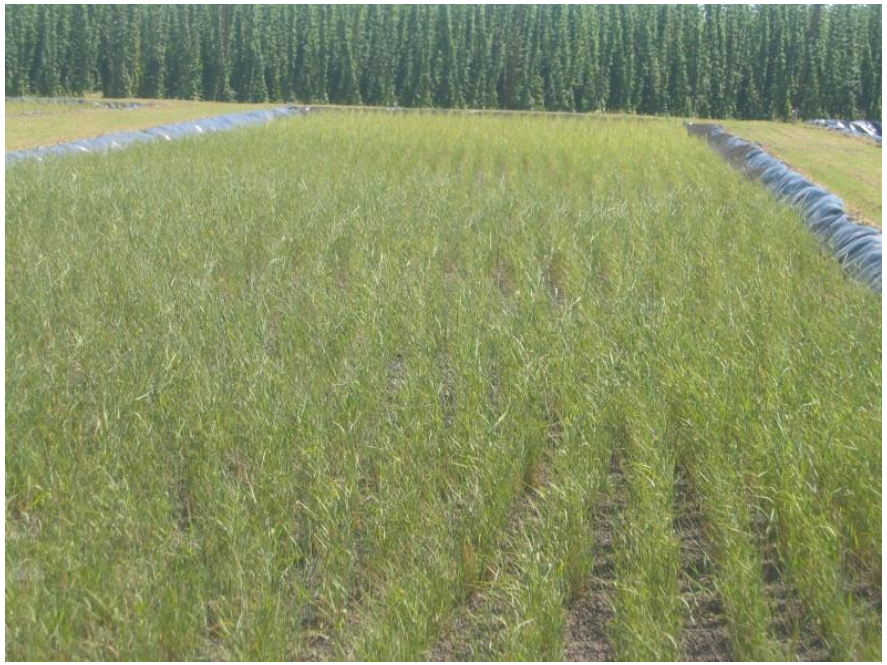
Horizontal Flow

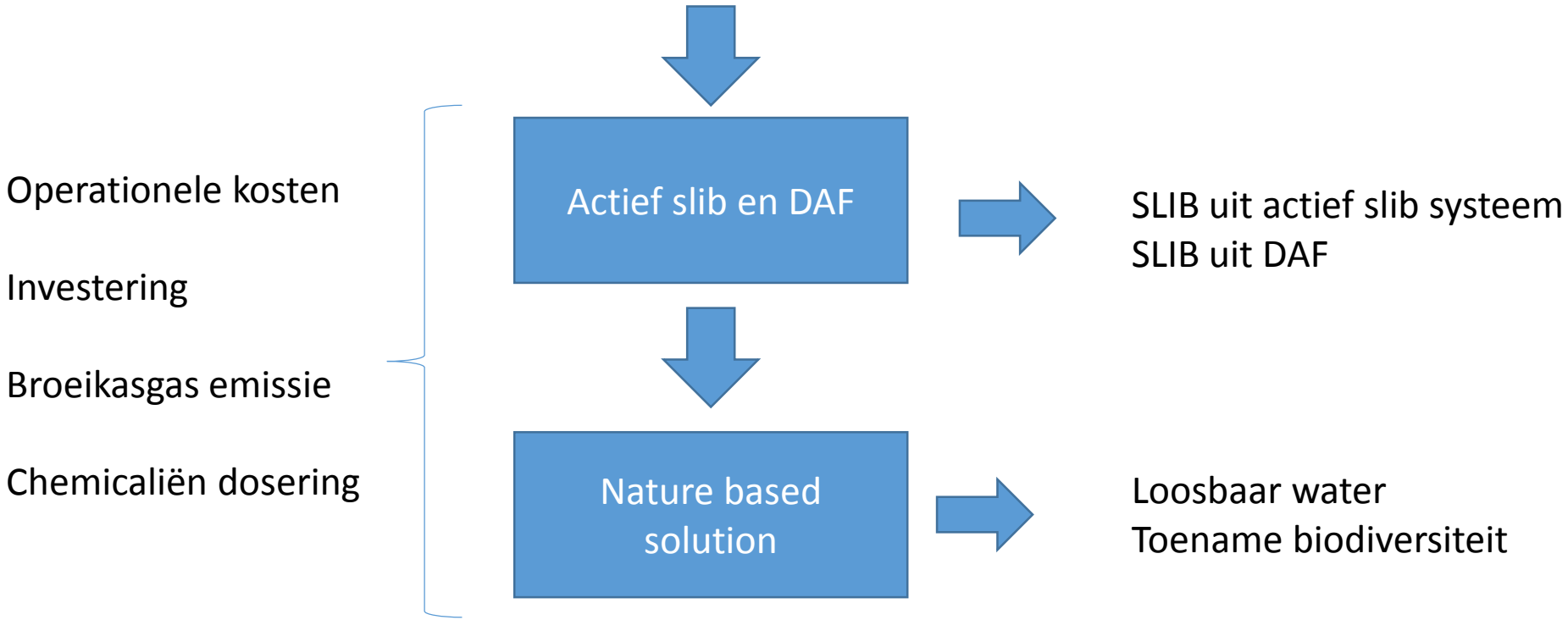


Vertical Flow

- Cascade of plant- & microbial based processes
- “Intelligent design”: steering in function of crucial monitoring parameters, feed forward & feedback loops
- PLC steering, monthly monitoring

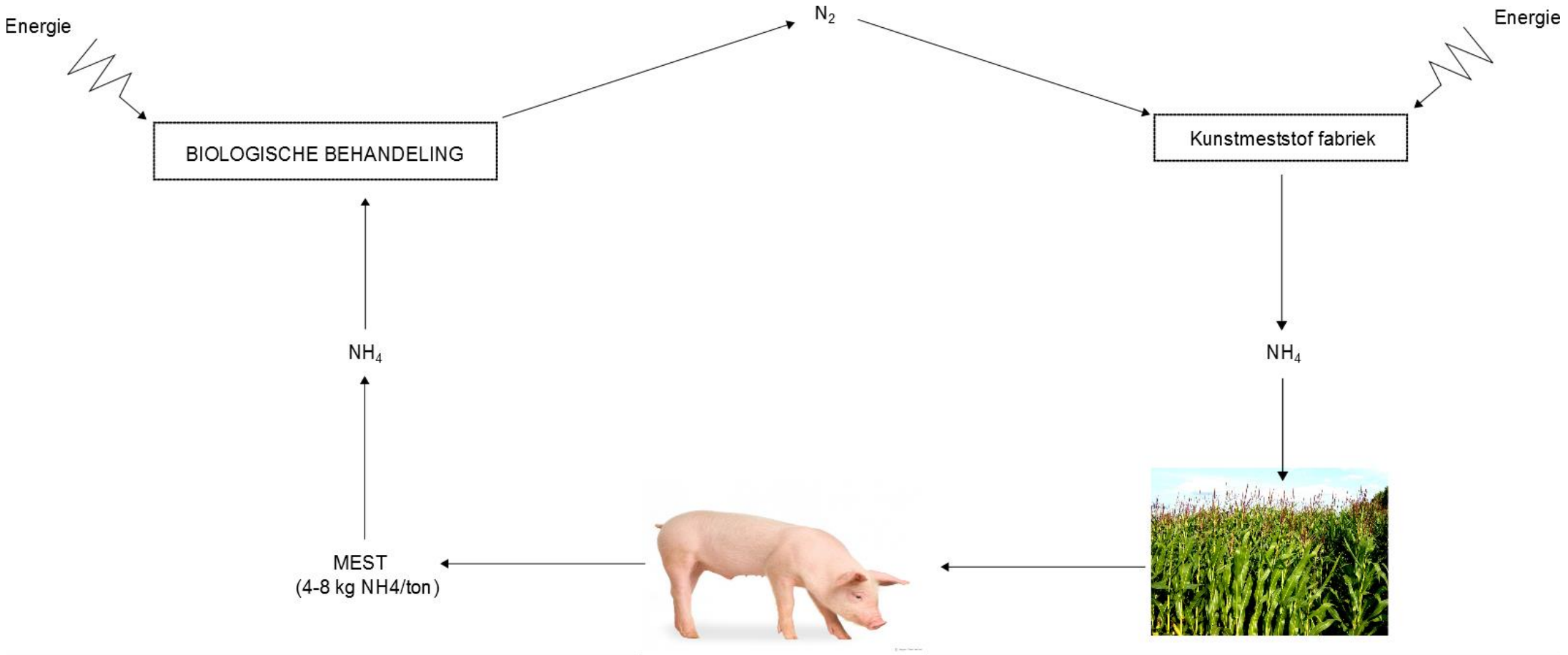
# STAND DER TECHNIEK

INPUT: Ammoniumrijk afvalwater

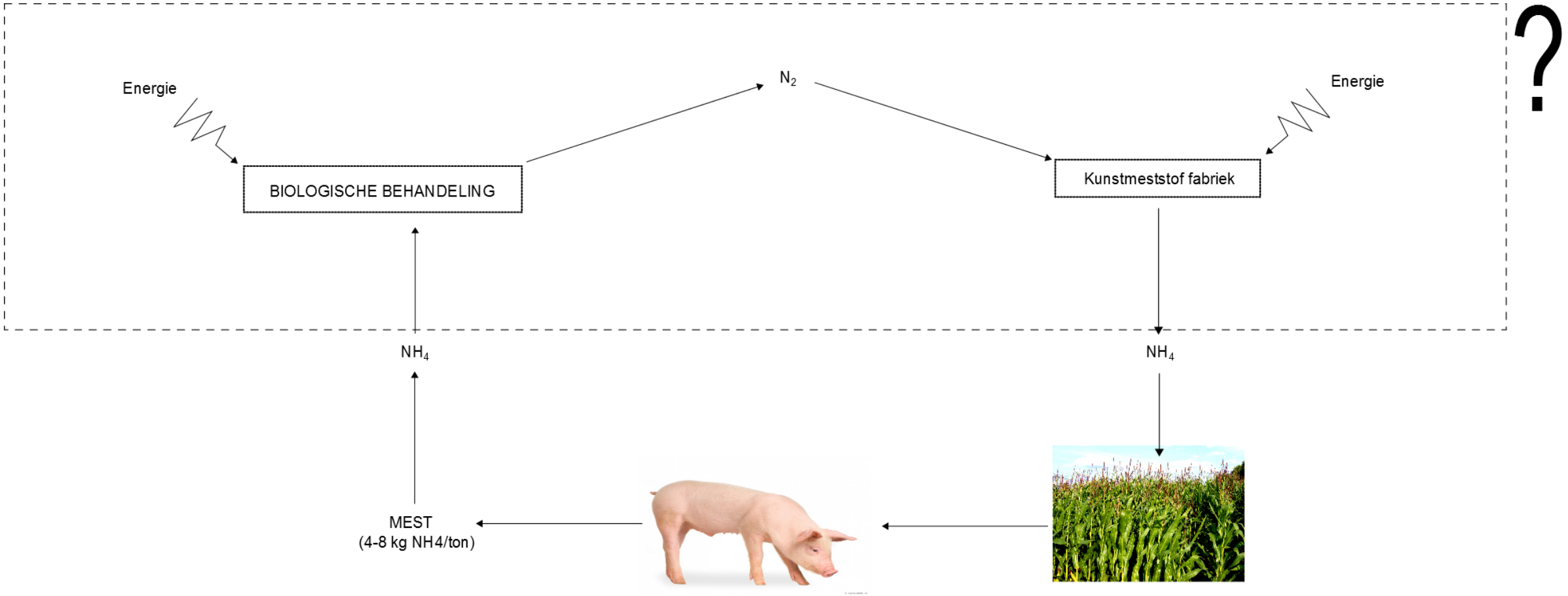


# *Vandaag: Conversie naar $N_2$ en Lachgas*

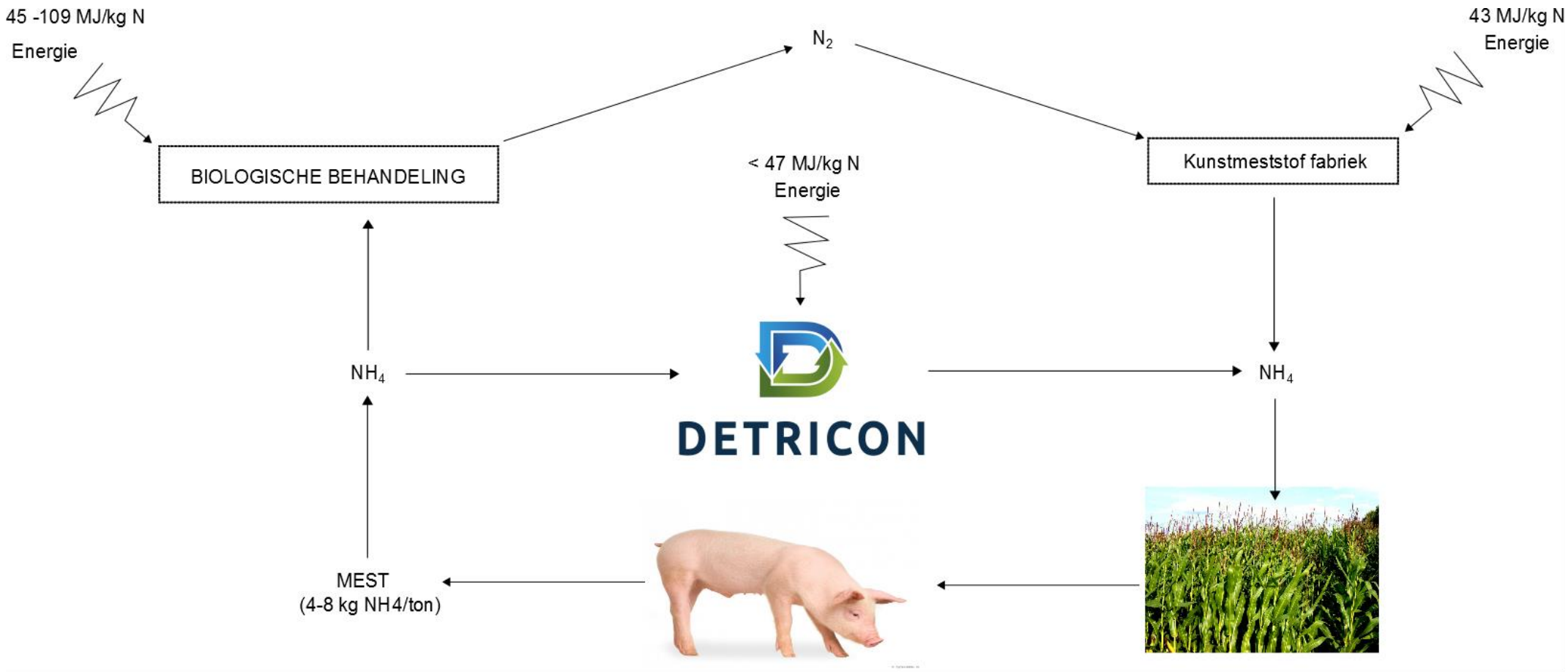
# $NH_4$ cyclus in Vlaanderen



# $NH_4$ cyclus in Vlaanderen

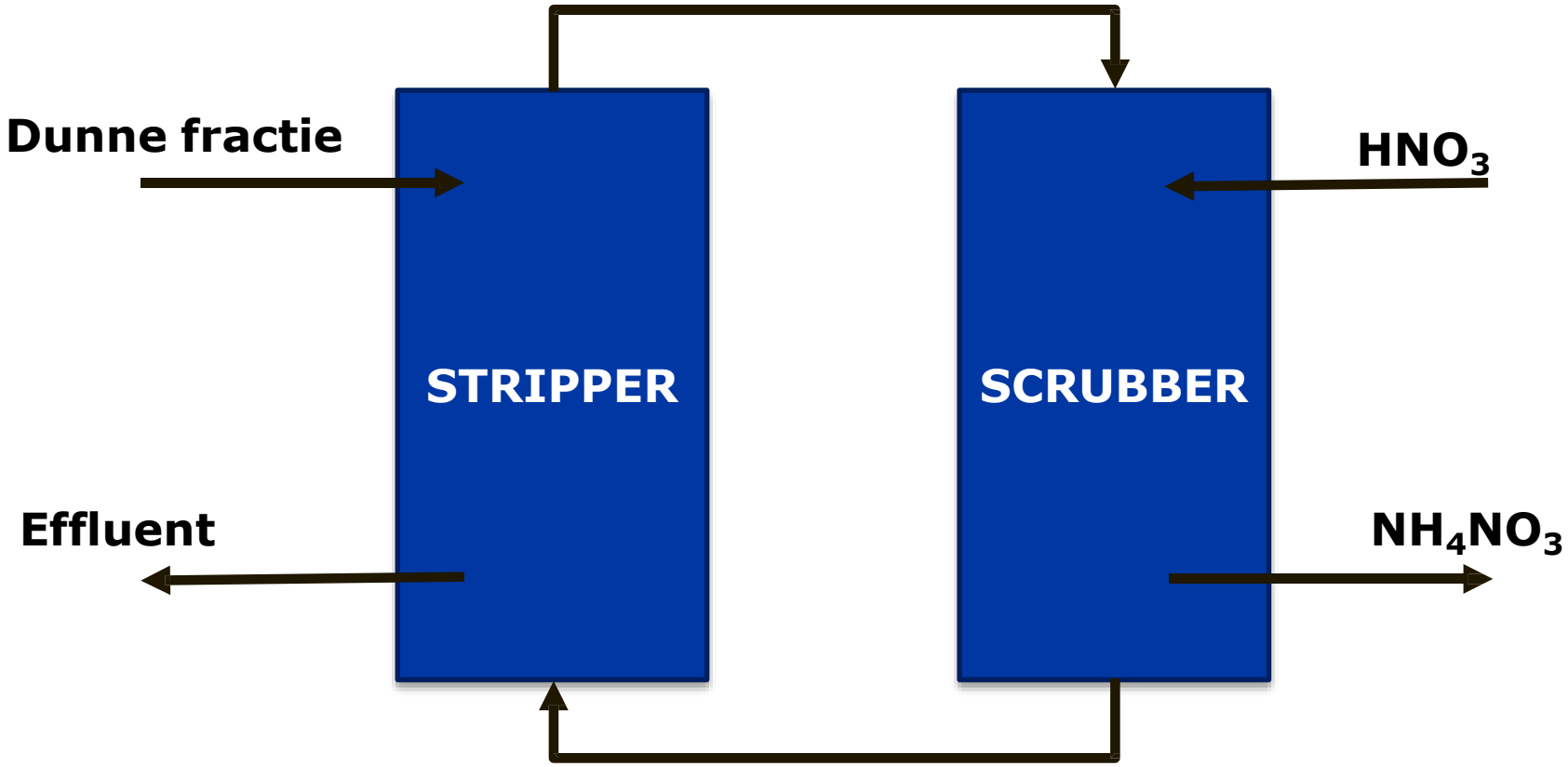


# $NH_4$ cyclus in Vlaanderen



**N recuperatie:**

LCA: < 43 MJ/kg N



# TECHNICAL DATA SHEET

## AMMONIUM NITRATE 52%

**FORMULA :** $NH_4NO_3$ (CAS : 6484-52-2 / EINECS : 229-347-8)

Solution in water.

### APPEARANCE

Clear, colourless to pale pink solution; free of insoluble particles

### CONCENTRATION

Ammonium nitrate content : 51 - 53 %
Nitrogen : approx. 18 %

### PHYSICAL PROPERTIES

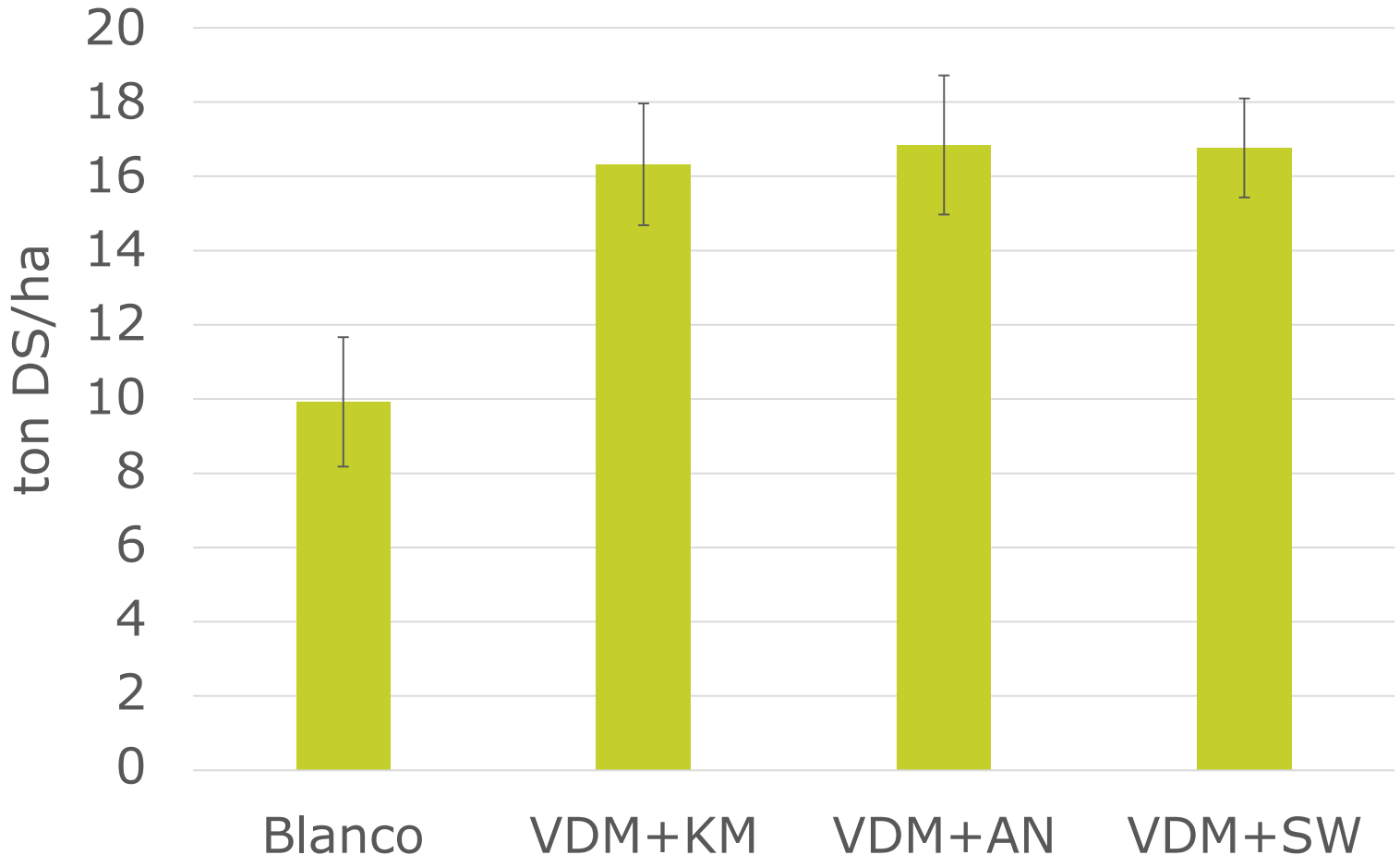
Density : approx.1,27 kg/l
pH : min. 5,0
Crystallization temperature : -6 °C

### PACKING

Can be obtained in bulk, drums and multiboxes. Other packaging are available on request.

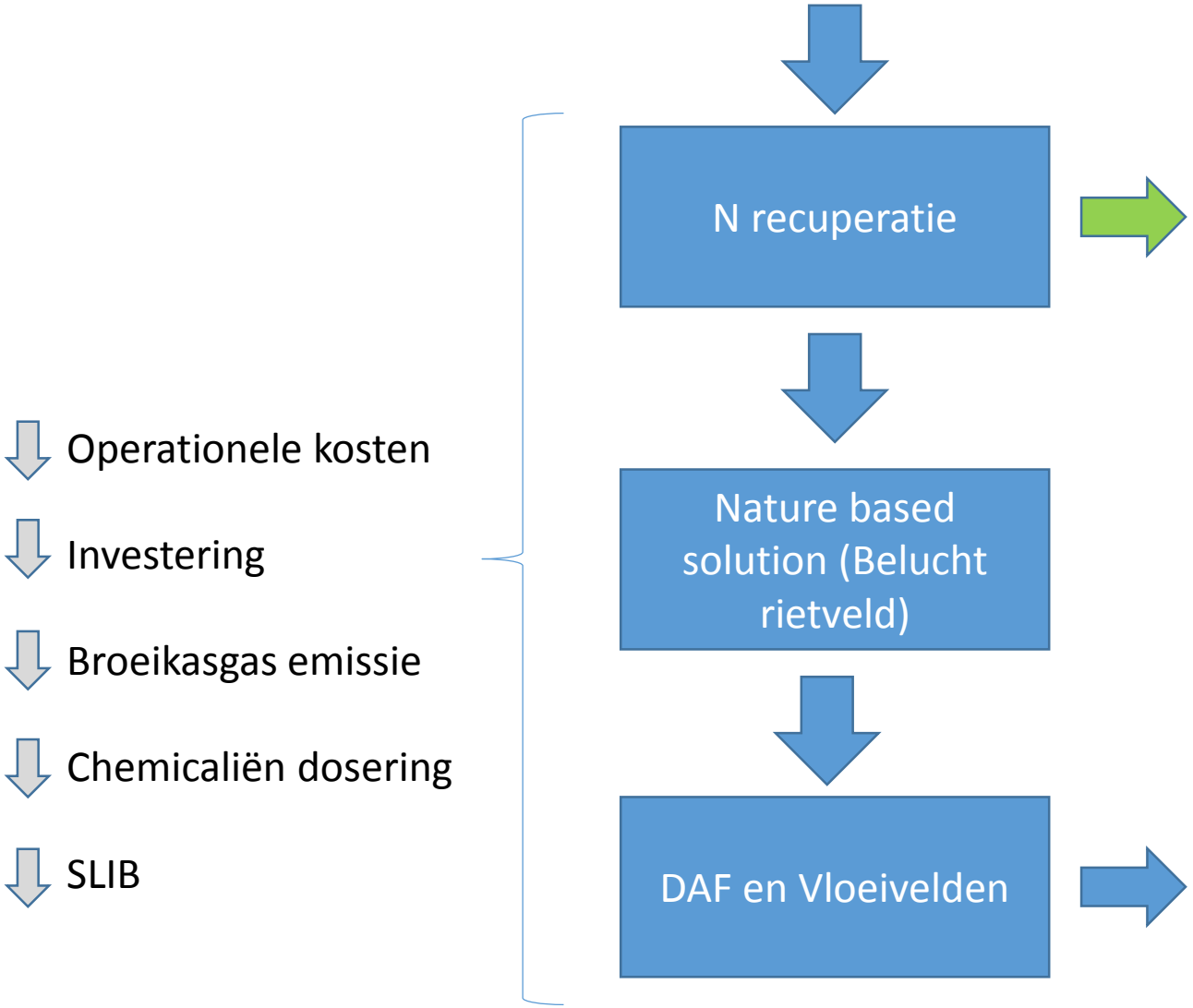
### SAFETY REGULATION

The safety data sheet is available on request.


20
18
16
14
12
10
8
6
4
2
0
ton DS/ha
Blanco
VDM+KM
VDM+AN
VDM+SW

# PROJECT DOEL

INPUT: Ammoniumrijk afvalwater




Biogebaseerde ammoniumzouten (Ammoniumnitraat – 52m%)

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- Operationele kosten
- Investering
- Broeikasgas emissie
- Chemicaliën dosering
- SLIB

SLIB
Loosbaar water
Toename biodiversiteit

Rietland AGRO

# Implementatie

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# Eerste Resultaten

Stripping/scrubbing installatie 50% recuperatie

- $NH_4^+$-N: 3633 mg/l input – 1636 mg/l output
- $NO_3$-N: 15,8 mg/l
- COD: 28133 mg/l

Belucht rietveld (opstart fase)

- $NH_4^+$-N: 9,5 mg/l
- $NO_3$-N: 204,5 mg/l
- COD: 545 mg/l