



Unlocking on-farm nutrition management

A bio-reactor concept for on-farm nutrient cycling

Olivier de Schaetzen – 4 December 2025

MEET FARMER JAANUS

HIS CHALLENGES

**1. Declining
Soil Fertility**

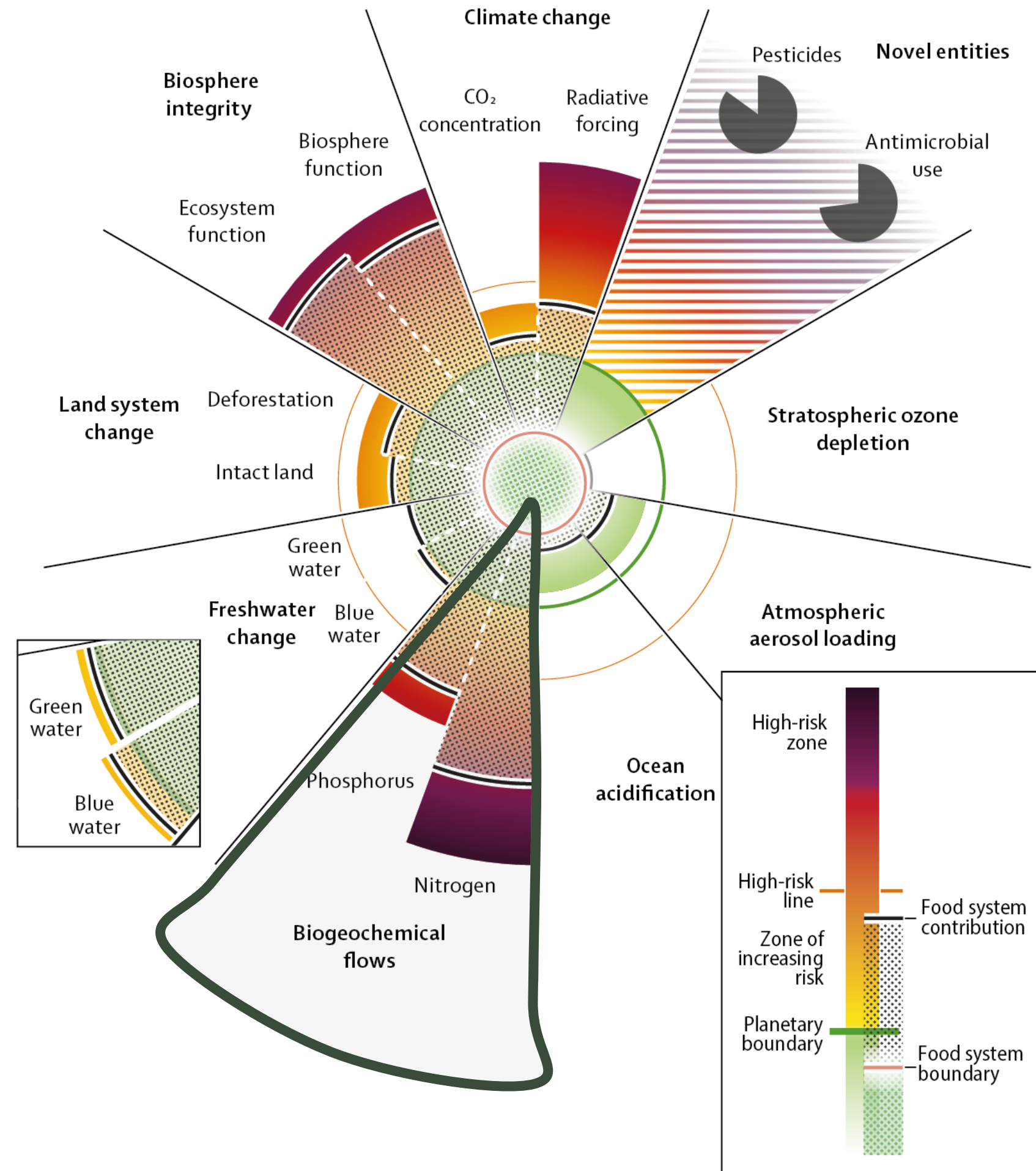
**2. Reduced
Profits**

**3. Systems
Lock In**

ZOOMING OUT

OVERLOADING THE ECOSYSTEM

Fertilizers use as
major contributor to
high risk in
biogeochemical
flows.



THE SCIENCE IS CLEAR

SYNTHETIC FERTILIZER USE

15-60%

**Low nutrient
use efficiency**

Sarkar et al. (2021)

50%

**Decline in natural
soil fertility**

Fan et al. (2019)

5%

**Of global GHG
emissions**

Gao et al. (2023)

ON FARM BIOREACTOR

NUTRIENT USE EFFICIENT

Microbiology inoculants

- Seed coating
- In-furrow injection
- Foliar inoculation

Organically chelated plant nutrition

- Seed coating
- Foliar fertilizing

Amino acid biofertilizers

- In-furrow injection
- Foliar fertilizing



Prototype – 1500L
Semi-automated

COST EFFECTIVE BIOFERTILIZERS



LEVERAGING LOCAL BIOMASS

THE POTENTIAL BENEFITS

**Between
20 – 70 %**

**Reduced fertilizer
use**

**185 – 380
€/ha**

**Cost saving fertility
management**

**Up to
-60%**

**reduction in GHG
emission**

Benefits possible from year 1 and grows over 3-5 year period to reach full potential.

START TRIAL

Severe soil compaction

Lack of Nutrient Cycling

TRIAL RESULTS

After 2 years

Improved soil structure
Enhanced nutrient cycling
Improved kernel weight
Reduced fertilizer cost 20%

Trial

Control



Regenerating farmland and farm business

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FERTILIZER OVER USE

5% of global GHG emissions

Gao et al. (2023)

Up to -50% reduced soil fertility

Fan et al. (2019)

Up to -50% in food nutrient density

Bhardwaj et al. (2024)

Locks farmers into dependency

Nutrient	Efficiency (%)
Nitrogen	30–50
Phosphorus	15–20
Potassium	50–60
Sulphur	8–12
Zinc	2–5
Iron	1–2
Copper	1–2
Manganese	1–2
Boron	2–3
Molybdenum	2–5

Sarkar et al. (2021)

THE MARKET

52.9 billion
TAM

EU Fertilizer market

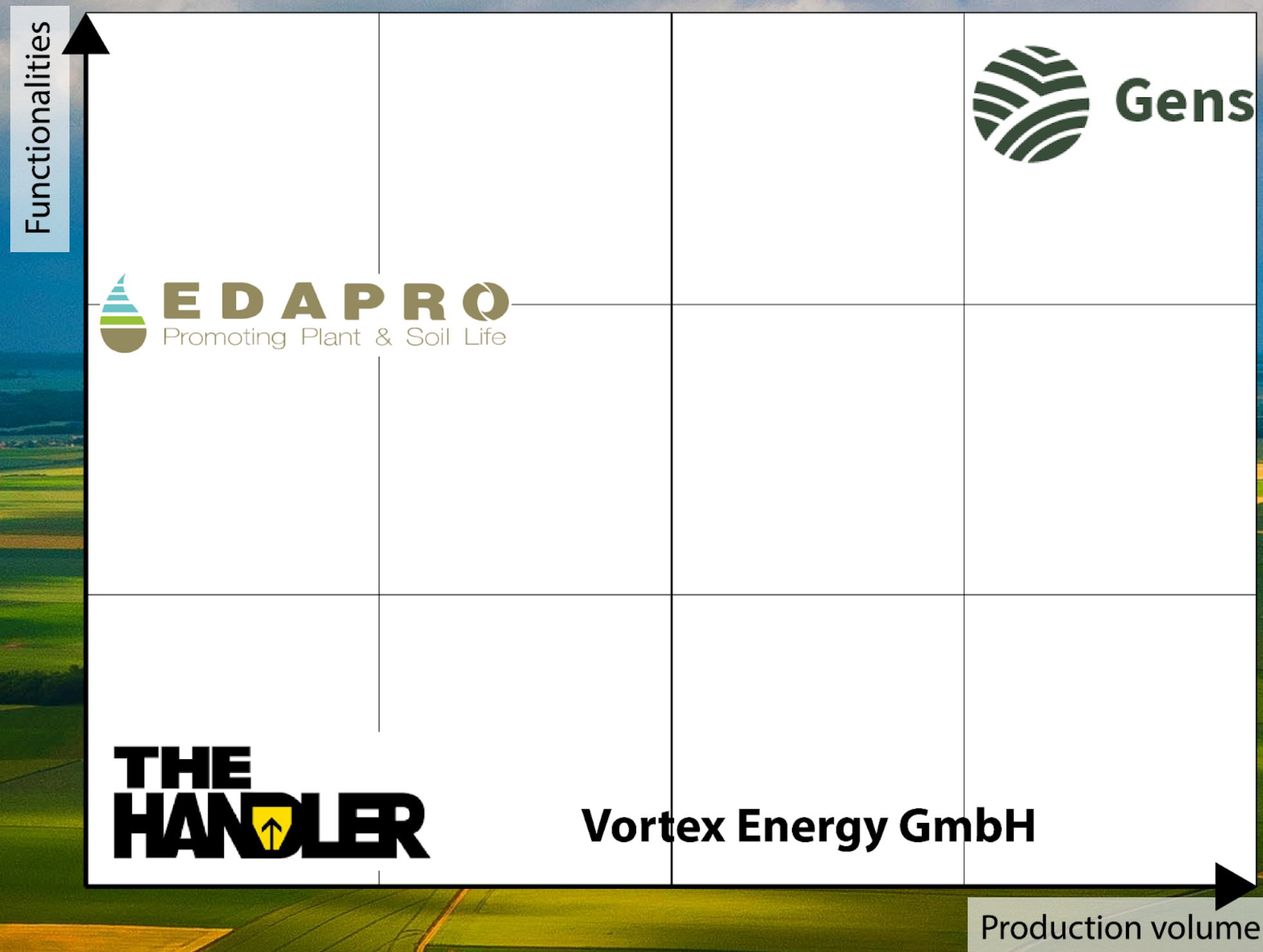
3.2 billion
SAM

EU Biofertilizer market

32.8 million
SOM

Baltic 10%

THE COMPETITION



THE TEAM



Olivier de Schaetzen
CEO and product manager



Patricia Wiklund
COO and marketing



Riina Maruštšak
Project management and grant writing



Will you be our - CTO ?

Come and help us build an awesome tool that empowers farmers, saves the soil and addresses climate change!

