



**agrocared**

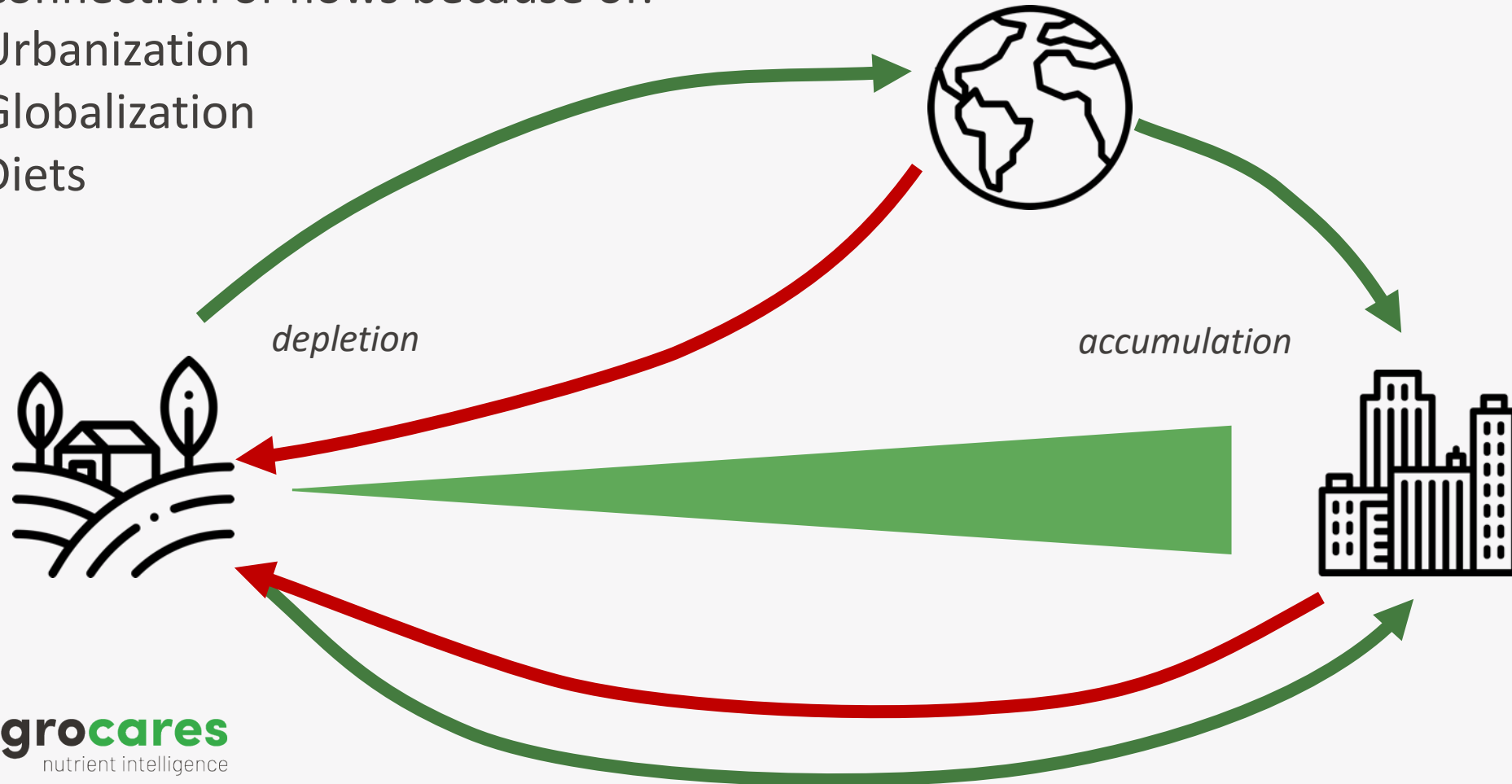
# Nutrient monitoring and nutrient management using field NIR spectroscopy

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Chief Agronomist AgroCares

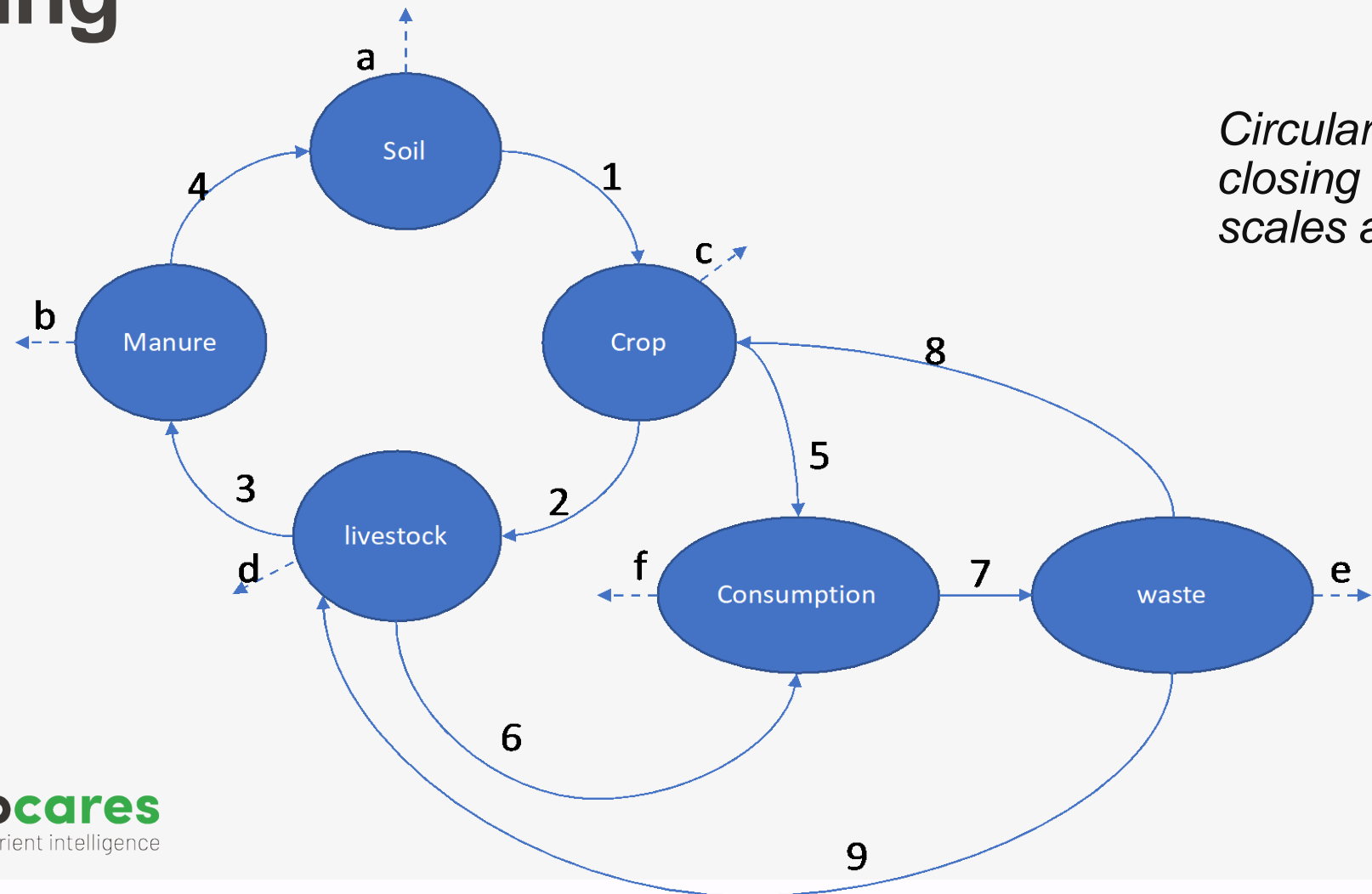
# The need for Circular Agriculture

Disconnection of flows because of:

- Urbanization
- Globalization
- Diets



# Circular Agriculture and the need for precision farming



*Circular agriculture is about closing loops at several scales and minimize losses.*



# *You can't manage what you don't measure*



- Analysing nutrients
- in soil, feed and leaf



# Nutrient intelligence: the technology behind it



## Cloud management

24/7 access via Portal



## Innovative sensor technology

In-house developed, robust and easy to use



## Intelligent learning global databases

Continuously improving  
Real knowledge in our databases



## Expert applications

Expertise of nutrients in soil, feedstuff and crops in practical, customizable apps and applications

# From Scan to Fertiliser Recommendation



1. Sensor technology
2. Conversion of an electromagnetic spectrum into soil data
  1. Calibration database
  2. Prediction models
3. Conversion of soil data into fertiliser recommendations
4. Proof of concept

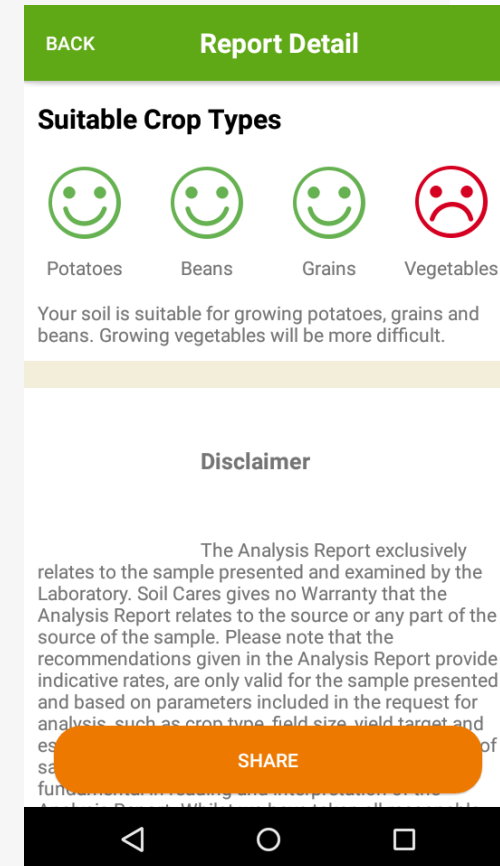
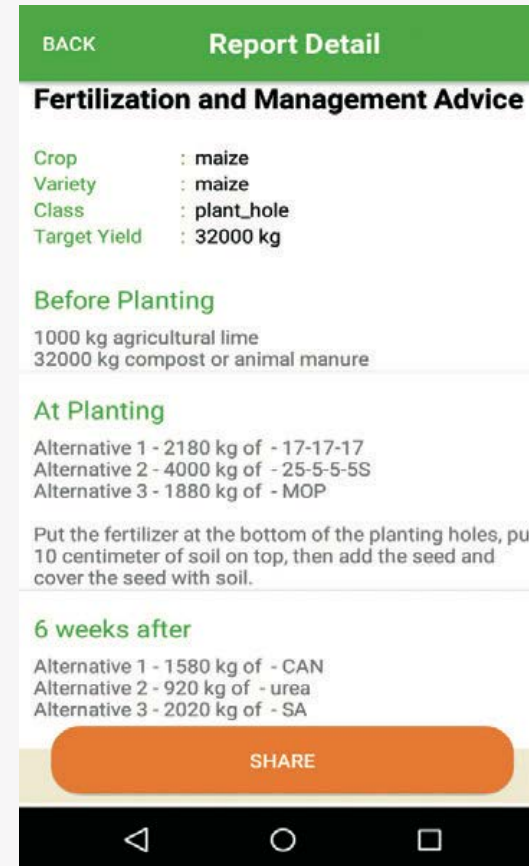
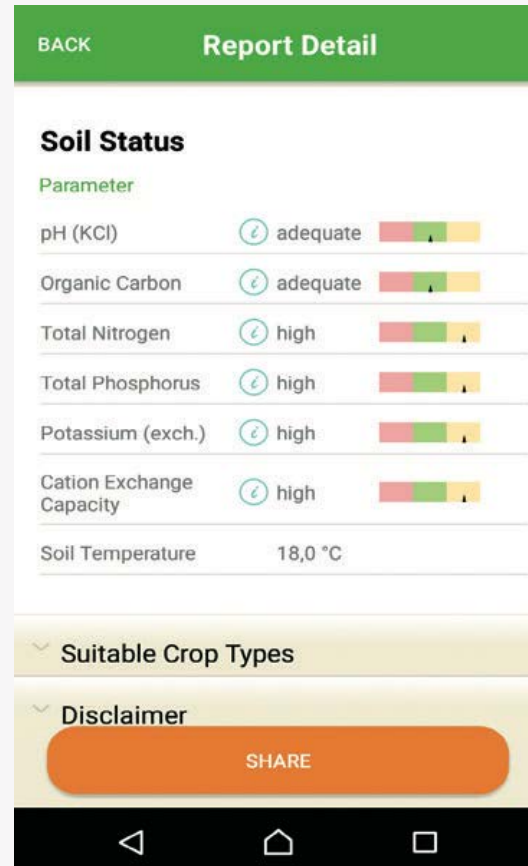
# 2019 status of our Global Soil database



# Soil status report: example AgroCares

## App

- NIR sensor
- Parameters:
  - Nitrogen(N)
  - Phosphorus (P)
  - Potassium (K)
  - pH
  - Organic matter level
  - CEC
  - Clay
- Real-time lime and fertiliser recommendations





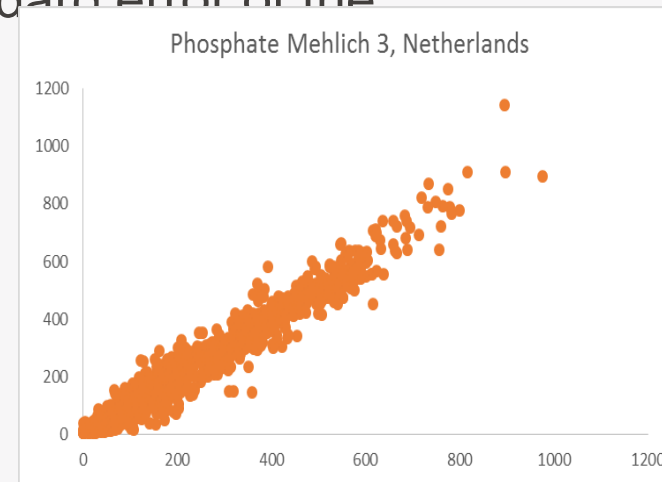
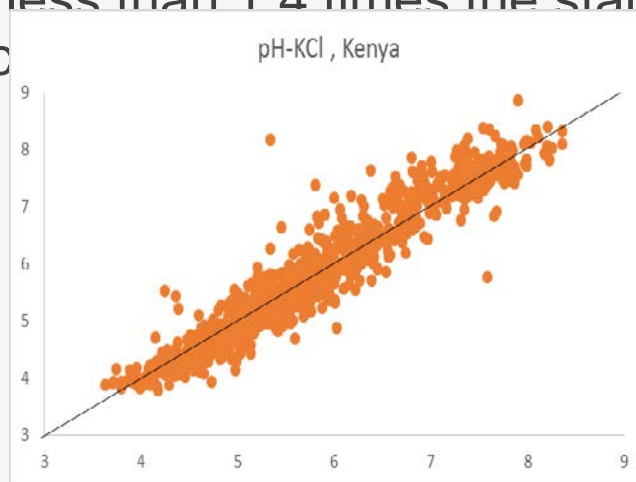
# Is it good enough?

Against wet chemistry

Differs for different countries and different parameters, but all have passed the release criteria.

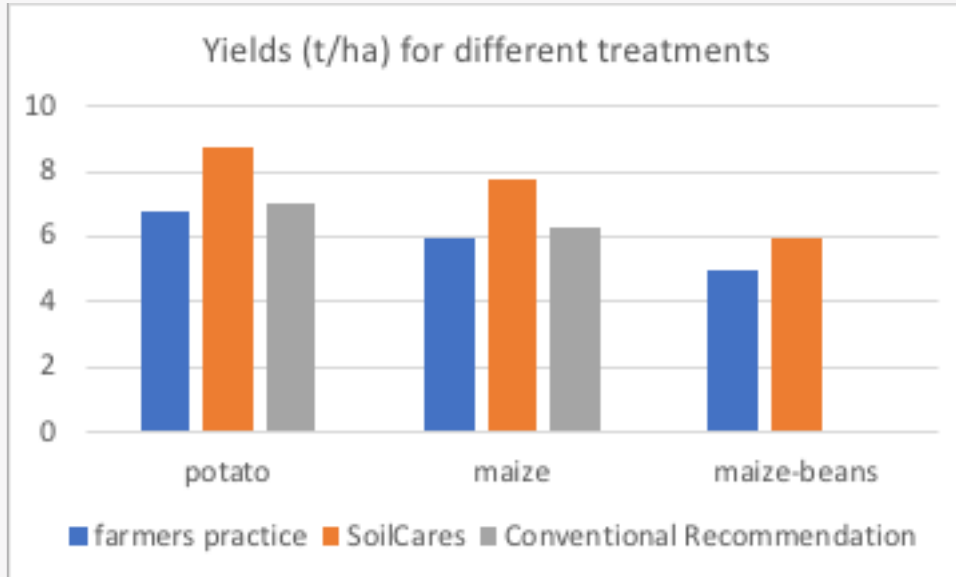
Release (per country) depends on:

R2 between wet chemistry and dry chemistry of more than 0.9,  
Standard error of less than 1.4 times the standard error of the  
WEPAL proficiency

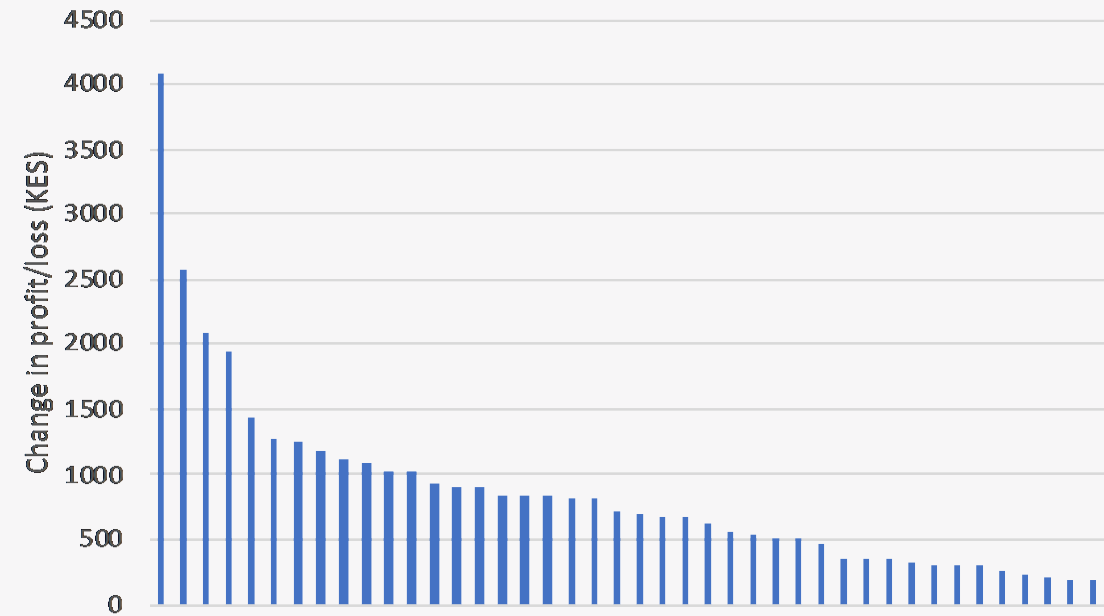


**Is it good enough?  
Yes! for fast and  
affordable  
recommendations.**

# Proof of concept: yields and profits increase



Yield increases are 25% or more compared to current practice. Farmers report much higher impacts.



90%



of the farmers reported **yield increase** after soil testing:  
**21%** of them qualified the increase as "a lot"<sup>1</sup>

Average yield increase was 21%, which led to an **increase in revenues of 39%** and near to doubling the profit per hectare<sup>1</sup>

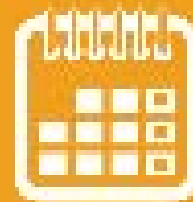


**67%** of the farmers implemented the advice. The ones who were less satisfied were affected by other producing factors like drought or diseases<sup>2</sup>

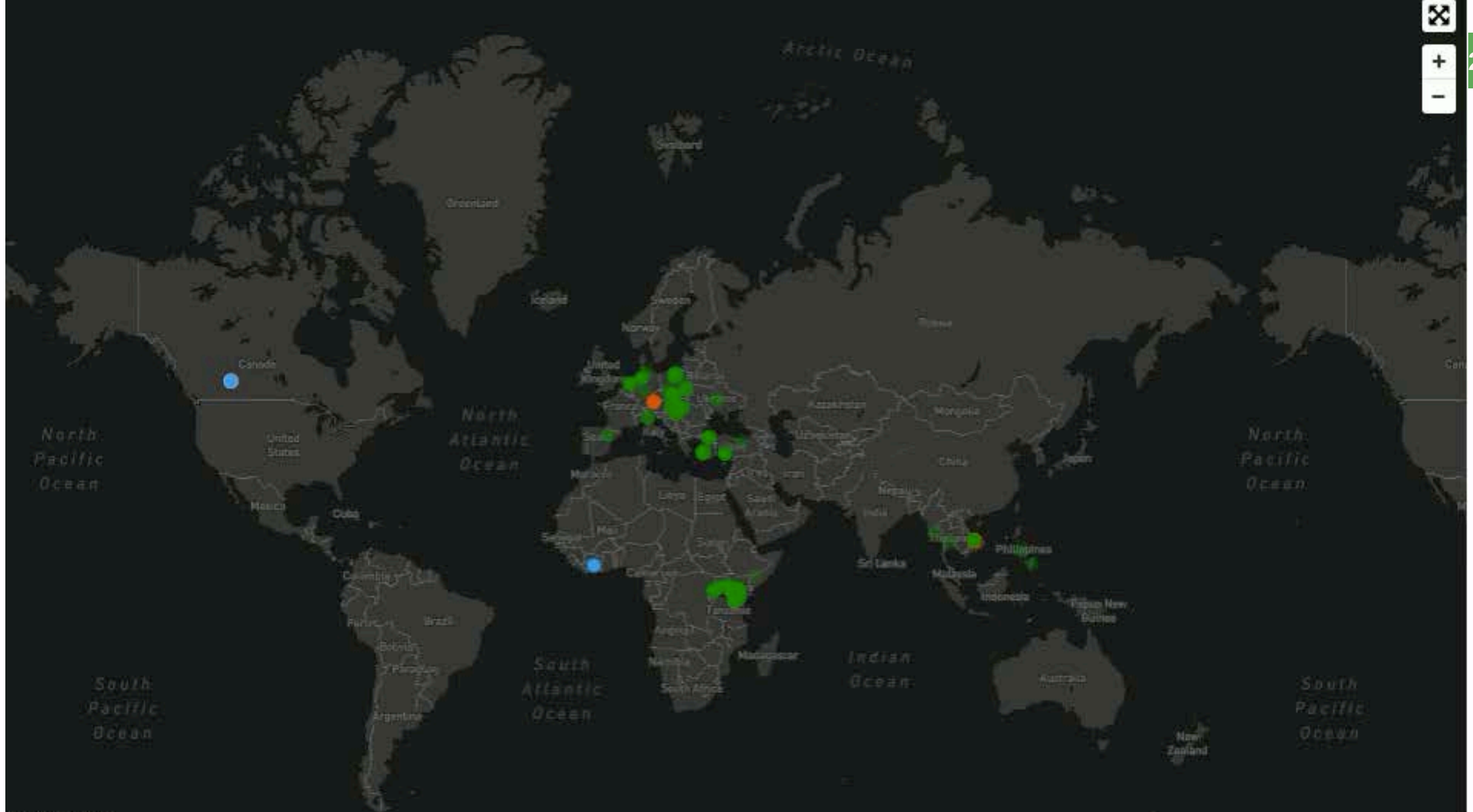


More than **70%** of the farmers agree that soil testing **increases productivity** and knowledge of alternative crops to grow<sup>1</sup>

**48%** of the farmers believe that they should test their soil annually. The **net promotor score** is

9.6<sup>2</sup>

The recommendation does not always lead to more fertilizer input. **40%** of farmers applied **more fertilizers** while **10%** applied **less fertilizers**<sup>3</sup>



# Soil testing uber: next generation in soil testing

**agrocures** THE SCANNER LAB-IN-A-BOX HOW IT WORKS? GET YOUR SOIL TESTED NEWS CONTACT

Pramukh Swami Ave, Nairobi, Kenya

Show all soil testers

Find soil tester

**Filter**

Select a Category

**Radius**

25 km

**Results**

**OCP kenya**  
Nairobi  
KE  
Tel.: (254)700013530  
Email: j.abuli@ocpafrika.com  
Website: www.ocpgroup.ma  
Jackson  
Soil testing services with  
AgroCares Lab-in-a-Box  
Get Direction Call Now

**I procure/Mercy corps**  
Lavington  
KE  
Tel.: (254)724585470  
Email: elizabeth.njagi@iprocare.re  
Elizabeth Njagi  
Get Direction Call Now

# A tool to facilitate the transition towards CA?

Three principles:

- Regenerative agriculture: preserving & enhancing our 'natural capital'
- Efficient use of resources: closing nutrient loops
- Multi-purpose & recovering value: from waste to value

**Soil testing at your doorstep: Let's change agriculture together!**

**Thanks for your attention**



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