

Wageningen and CCAFS

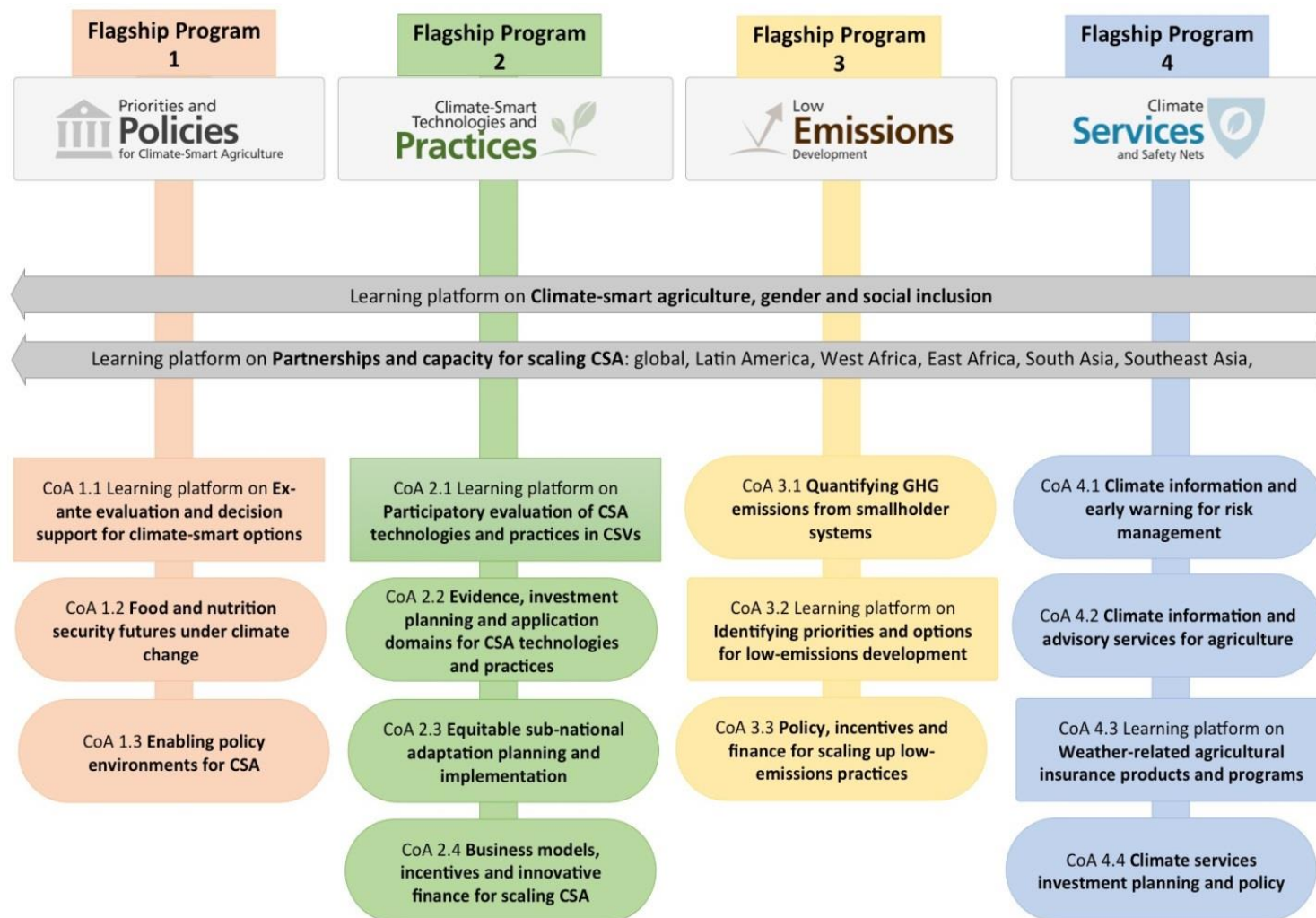
Martin van Ittersum, professor Plant Production Systems



Structure of CCAFS



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Important aspects for Wageningen involvement

- Expertise
- Multi disciplinary approach
- Result-oriented
- Engagement with the private sector

Wageningen involvement

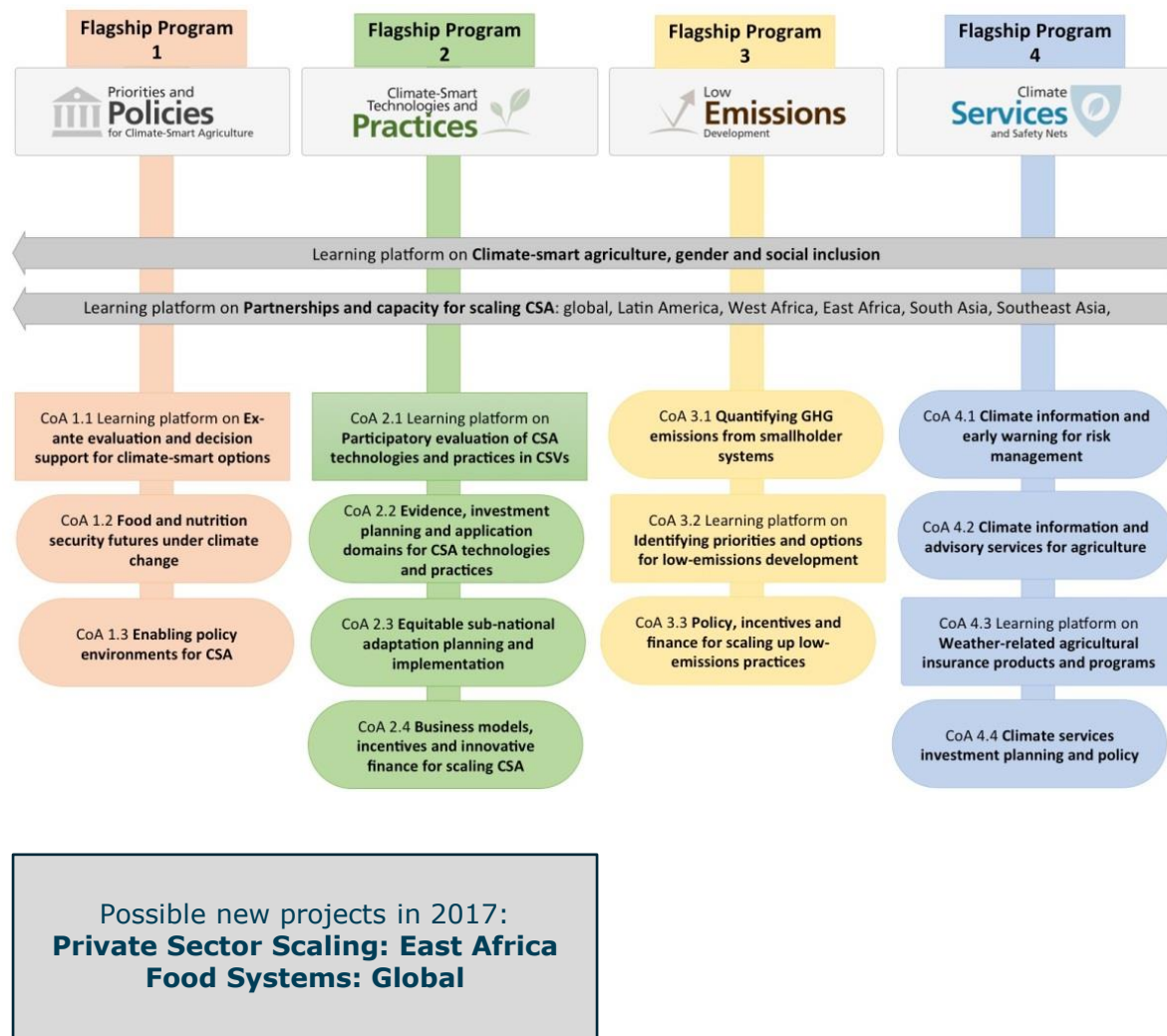
Overall:
Program Management Unit
Coordination and Admin

CoA 2.4: Business models and finance
for scaling CSA
Leadership
Enabling and Scaling

FS 3: Low Emissions Development
Project: Sustainable intensification of
dairy production in Indonesia
**PPP: Frieslandcampina,Trouw
Nutreco
Systems Approach**

FS 3: Low Emissions Development
Project: Bringing CSA practices to scale:
assessing their contributions to narrow
nutrient and yield gaps
**PPP: International Fertiliser Ass.
Yara International
Systems Approach**

CoA 3.3.3: Reducing emissions from
food loss and waste
Leadership
**PPP: Champions 12.3 Programme
Coalition on Food Loss and Waste**



Sustainable Intensification of Dairy Production in Indonesia (SIDPI)

Overall goal:

To sustainably increase farmer incomes and improve livelihoods in smallholder dairy systems in Indonesia.

Project aims:

- To increase herd and cow productivity
- To improve resource use efficiency
- To reduce greenhouse gas emissions

Private sector involvement



LIVESTOCK RESEARCH
WAGENINGEN UR



trouw nutrition
a Nutreco company

Crop nutrient gaps project

Bringing CSA practices to scale:

assessing their contributions to narrow nutrient and yield gaps

- Ethiopia, Kenya and Tanzania

Aims:

1. estimate crop nutrient gaps to bridge maize yield gaps
2. define climate-smart nutrient management packages and scaling these up

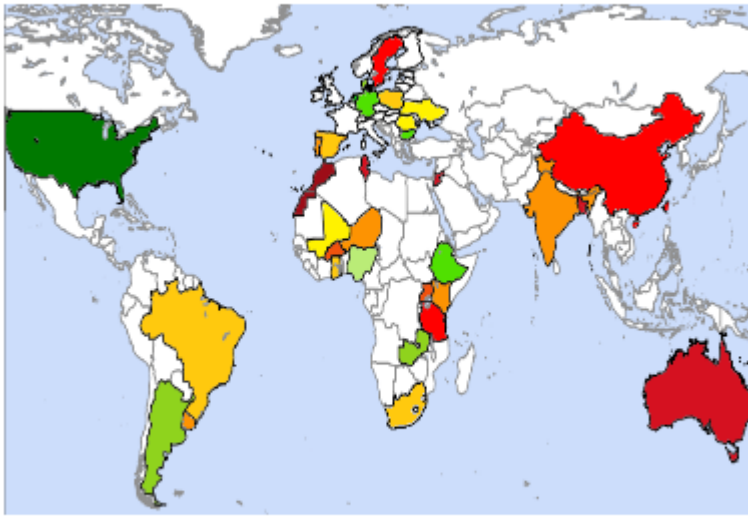
Private sector involvement:

- International Fertilizer Association
- Yara



Global Yield Gap Atlas

[Go to the Atlas](#)

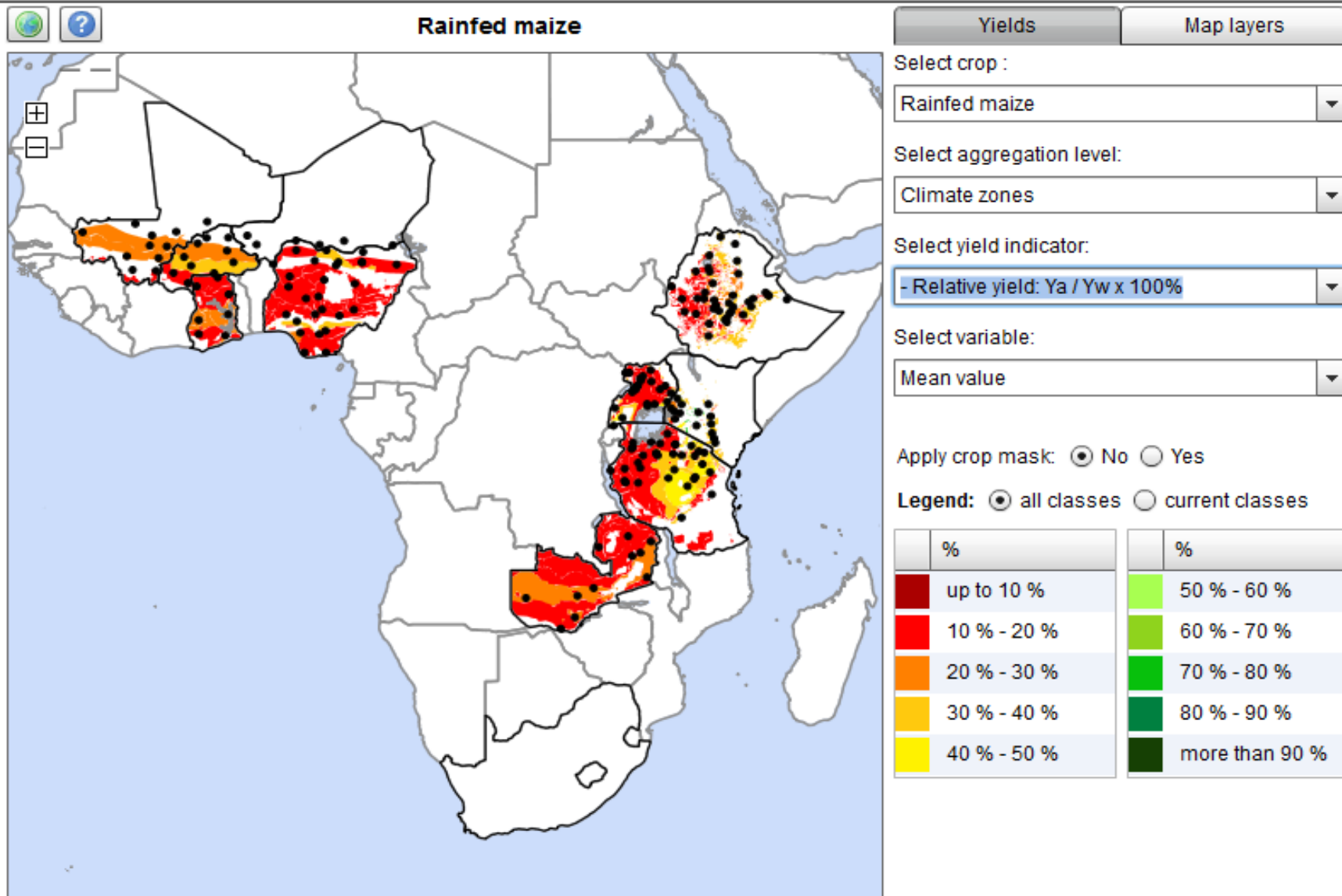


[Go to the Atlas for advanced users](#)

www.yieldgap.org

With University of Nebraska, ICRISAT, AfricaRice, CIMMYT and many regional and national partners

- Major food crops in the world
 - Global protocol with local application
 - Local data and evaluation
 - Strong agronomic foundation
-
- Co-financed by Bill and Melinda Gates Foundation





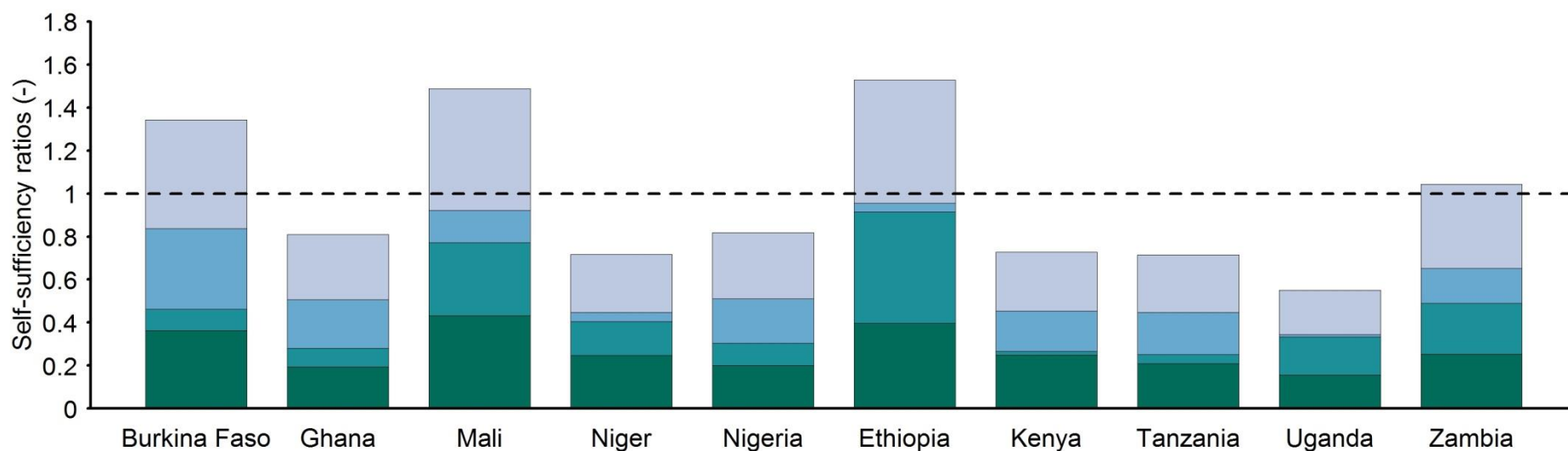
Global Yield
Gap Atlas

Can sub-Saharan Africa feed itself?

Martin van Ittersum, Lenny van Bussel – Plant Production Systems group
Patricio Grassini, Ken Cassman – University of Nebraska-Lincoln
GYGA team, including ten country agronomists from SSA

Van Ittersum et al., PNAS, 2016

Self-sufficiency 2050: 10 countries

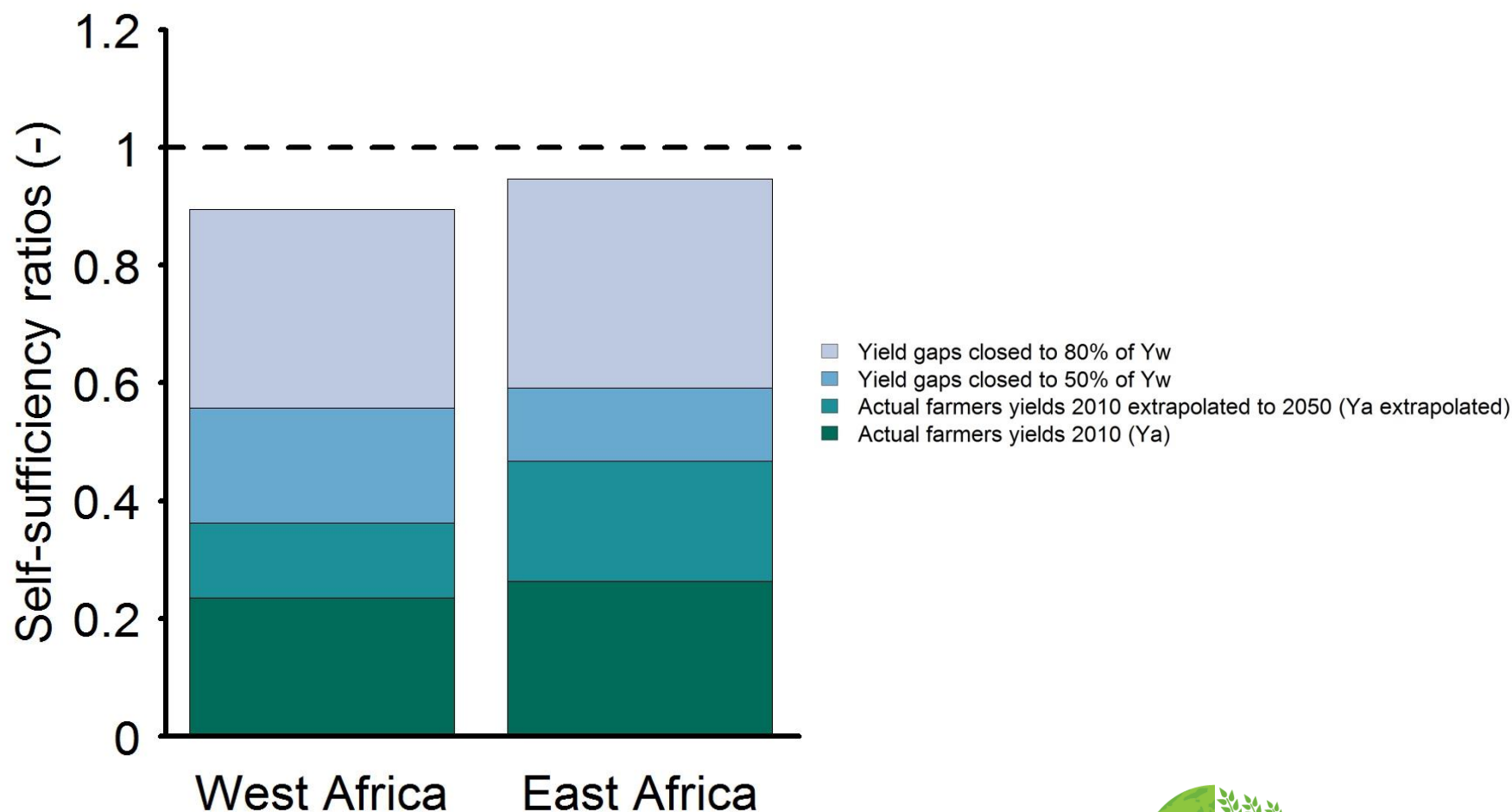


- Yield gaps closed to 80% of Yw
- Yield gaps closed to 50% of Yw
- Actual farmers yields 2010 extrapolated to 2050 (Ya extrapolated)
- Actual farmers yields 2010 (Ya)

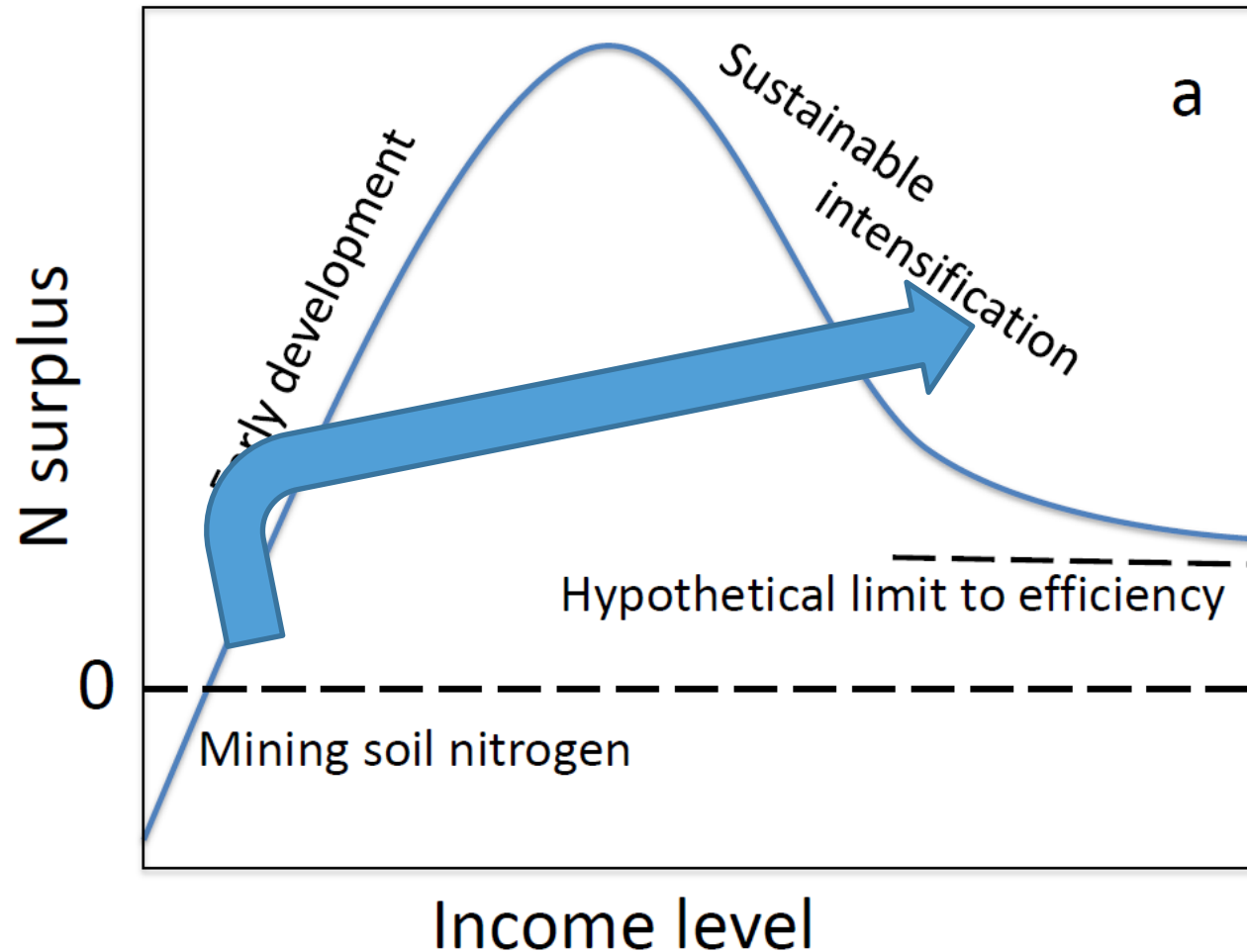


Global Yield
Gap Atlas

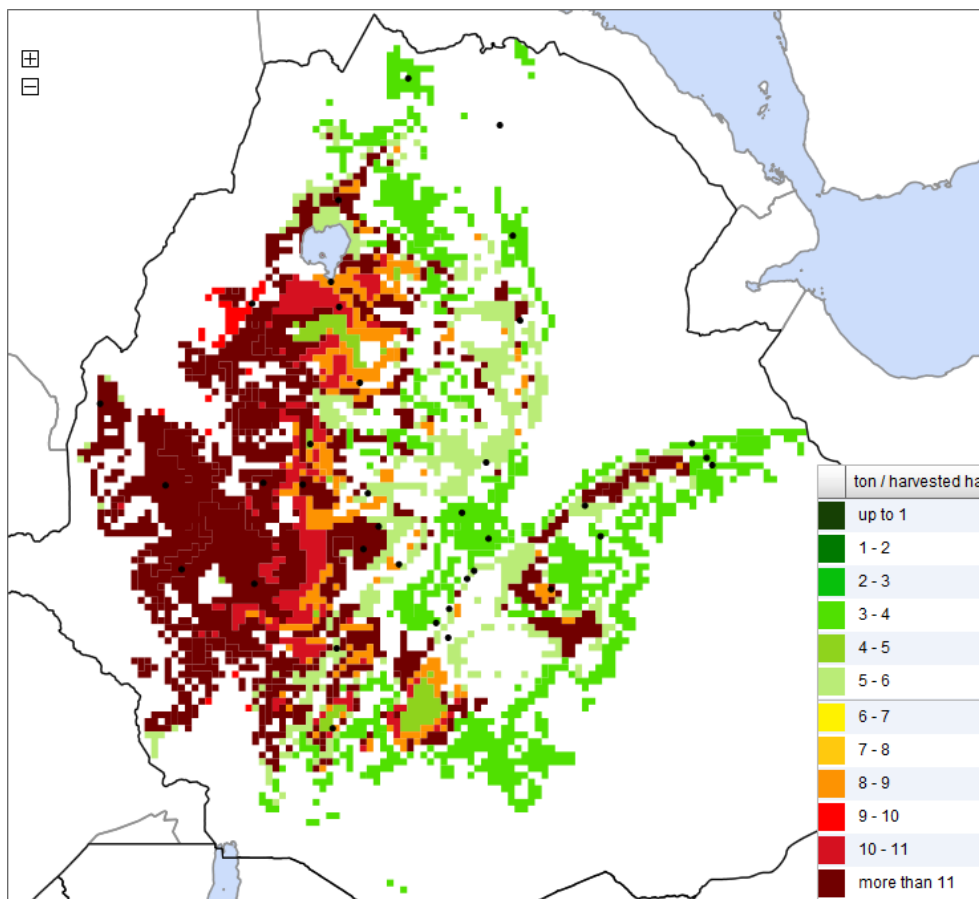
West and East Africa aggregated



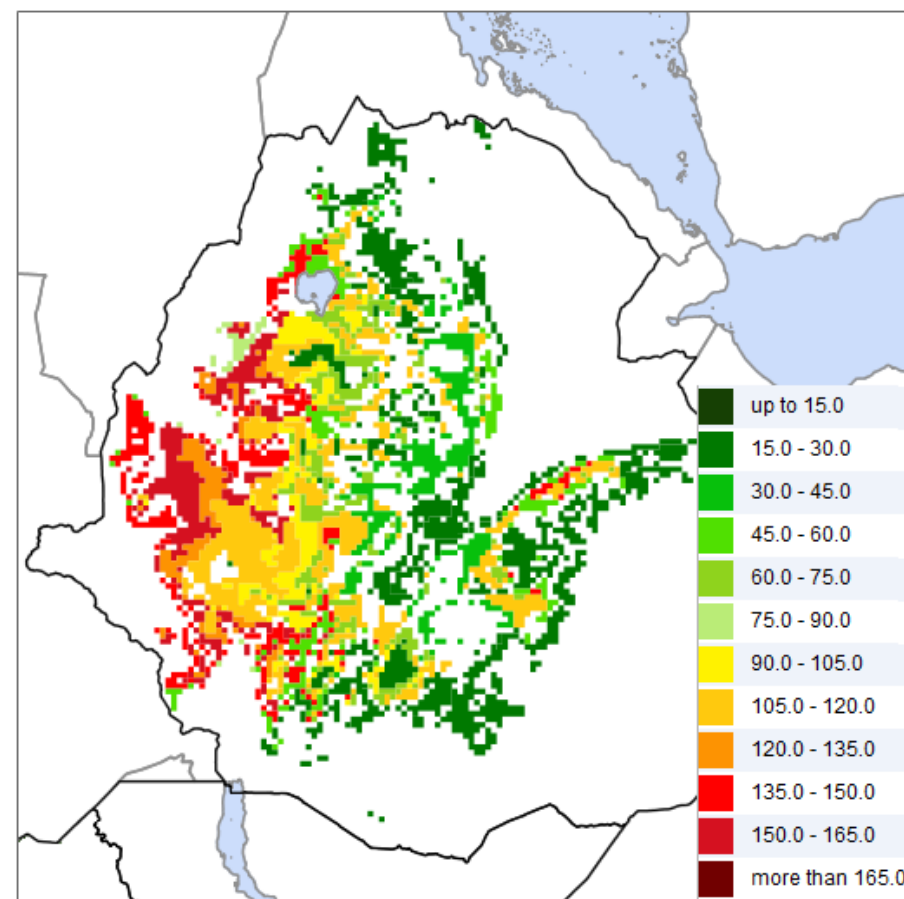
The challenge: tunnelling through



From yield gaps to nutrient gaps



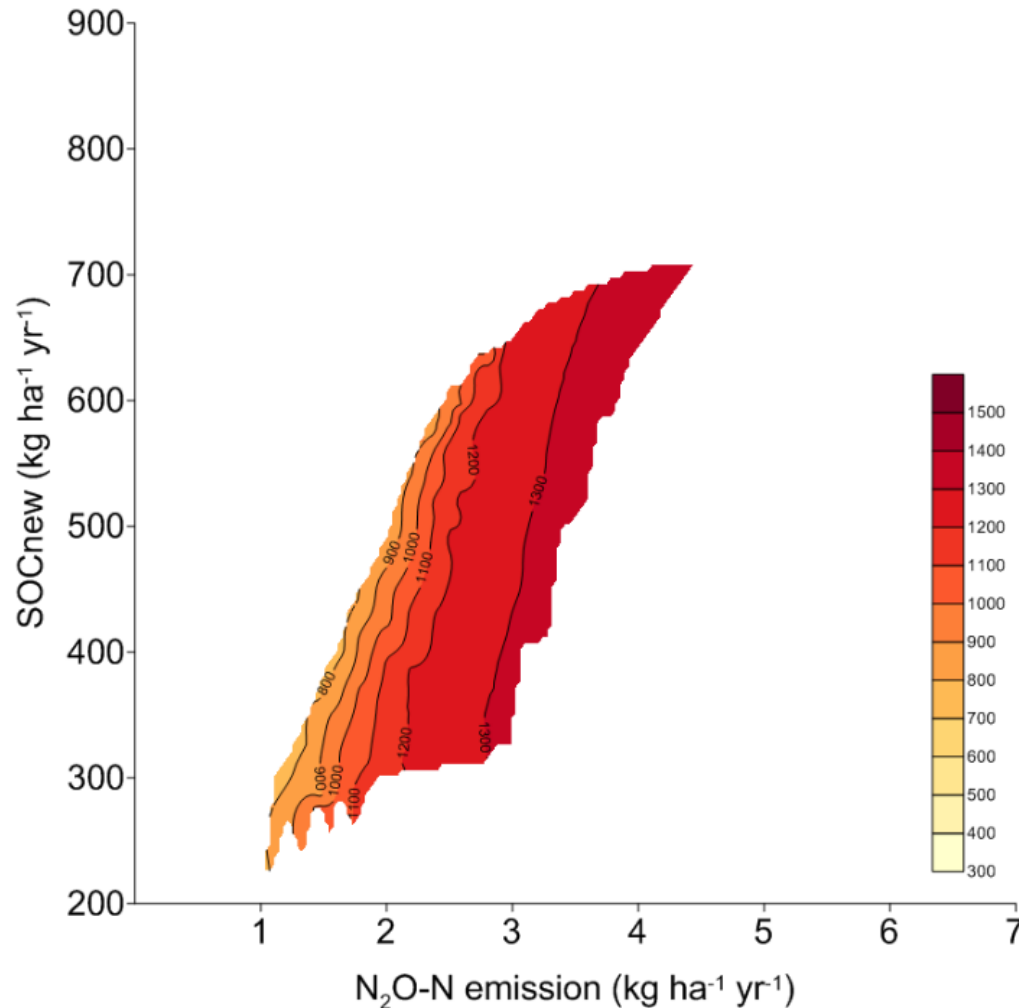
Yield gap: $Y_w - Y_a$: t/ha



Nutrient uptake gap for 50% $Y_w - Y_a$: CNE/ha



Trade off surface – income – N₂O – carbon



Thank you for your attention!

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