Wageningen and CCAFS

Martin van Ittersum, professor Plant Production Systems
Structure of CCAFS

Learning platform on Climate-smart agriculture, gender and social inclusion

Learning platform on Partnerships and capacity for scaling CSA: global, Latin America, West Africa, East Africa, South Asia, Southeast Asia,

CoA 1.1 Learning platform on Ex-ante evaluation and decision support for climate-smart options
CoA 1.2 Food and nutrition security futures under climate change
CoA 1.3 Enabling policy environments for CSA

CoA 2.1 Learning platform on Participatory evaluation of CSA technologies and practices in CSVs
CoA 2.2 Evidence, investment planning and application domains for CSA technologies and practices
CoA 2.3 Equitable sub-national adaptation planning and implementation
CoA 2.4 Business models, incentives and innovative finance for scaling CSA

CoA 3.1 Quantifying GHG emissions from smallholder systems
CoA 3.2 Learning platform on Identifying priorities and options for low-emissions development
CoA 3.3 Policy, incentives and finance for scaling up low-emissions practices

CoA 4.1 Climate information and early warning for risk management
CoA 4.2 Climate information and advisory services for agriculture
CoA 4.3 Learning platform on Weather-related agricultural insurance products and programs
CoA 4.4 Climate services investment planning and policy
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


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

Possible new projects in 2017: Private Sector Scaling: East Africa Food Systems: Global
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
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

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

www.yieldgap.org
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)
West and East Africa aggregated

- 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)
The challenge: tunelling through

Income level

Mining soil nitrogen

N surplus

Sustainable intensification

Hypothetical limit to efficiency

Early development

Zhang et al., Nature, 2015
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

www.yieldgap.org
Trade off surface – income – $\text{N}_2\text{O}$ - carbon

Bos et al., 2017 – Agricultural Systems
Thank you for your attention!

© http://www.riennijboer.nl/