

IITA, the lead research partner facilitating agricultural solutions to overcome hunger and poverty in Sub-Saharan Africa

→ *The critical role of appropriate soil fertility and land use management*

N Sanginga, Director General

B Vanlauwe, many colleagues/partners

International Institute of Tropical Agriculture (IITA)

IITA
Research to Nourish Africa

2012–2020 Refreshed Strategy

*The lead research partner
facilitating agricultural solutions for
hunger and poverty in the tropics*

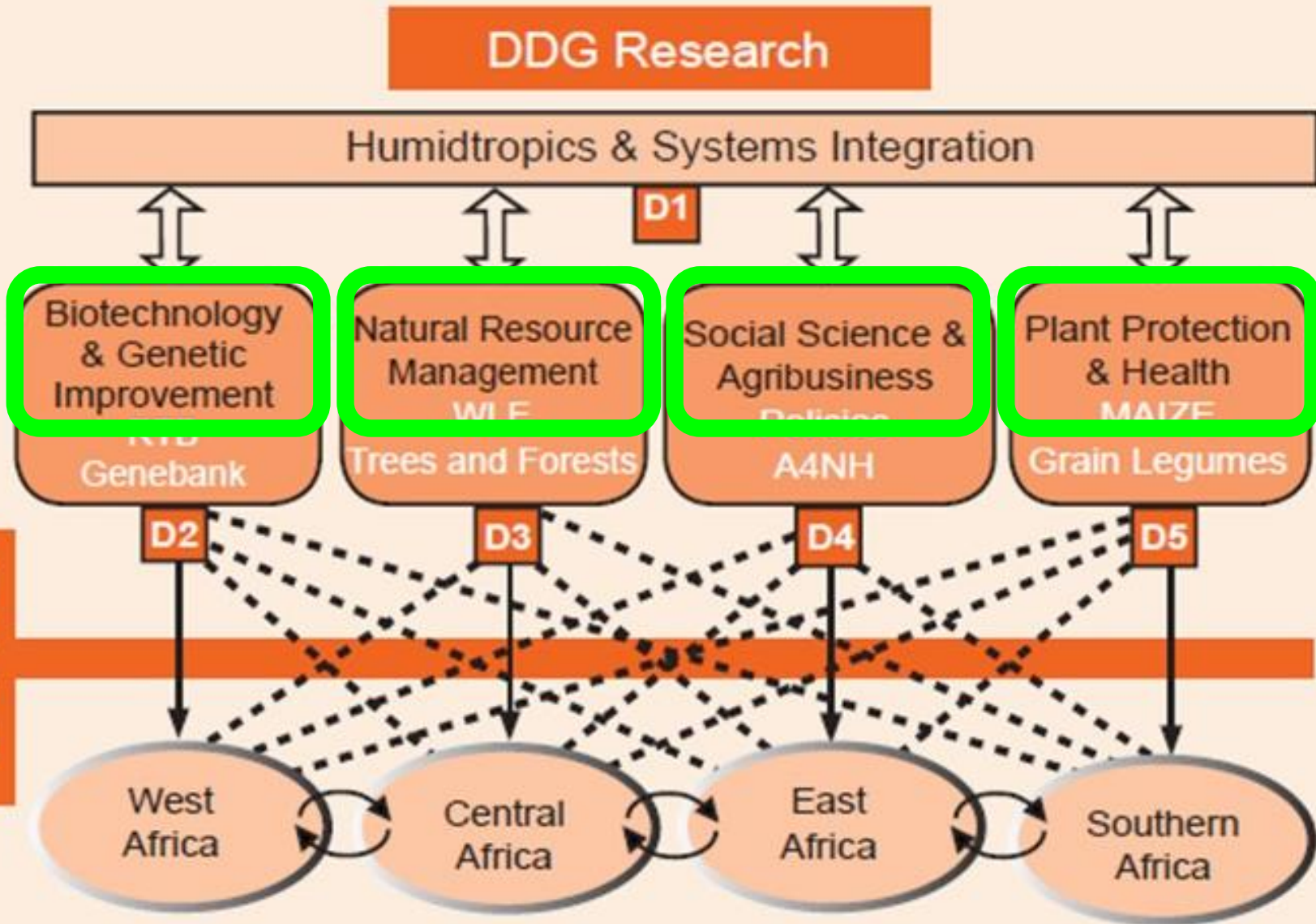
***‘To lift over 11.6 million
Africans out of poverty and
turn 7.5 million ha of land
into sustainable use’***



www.iita.org

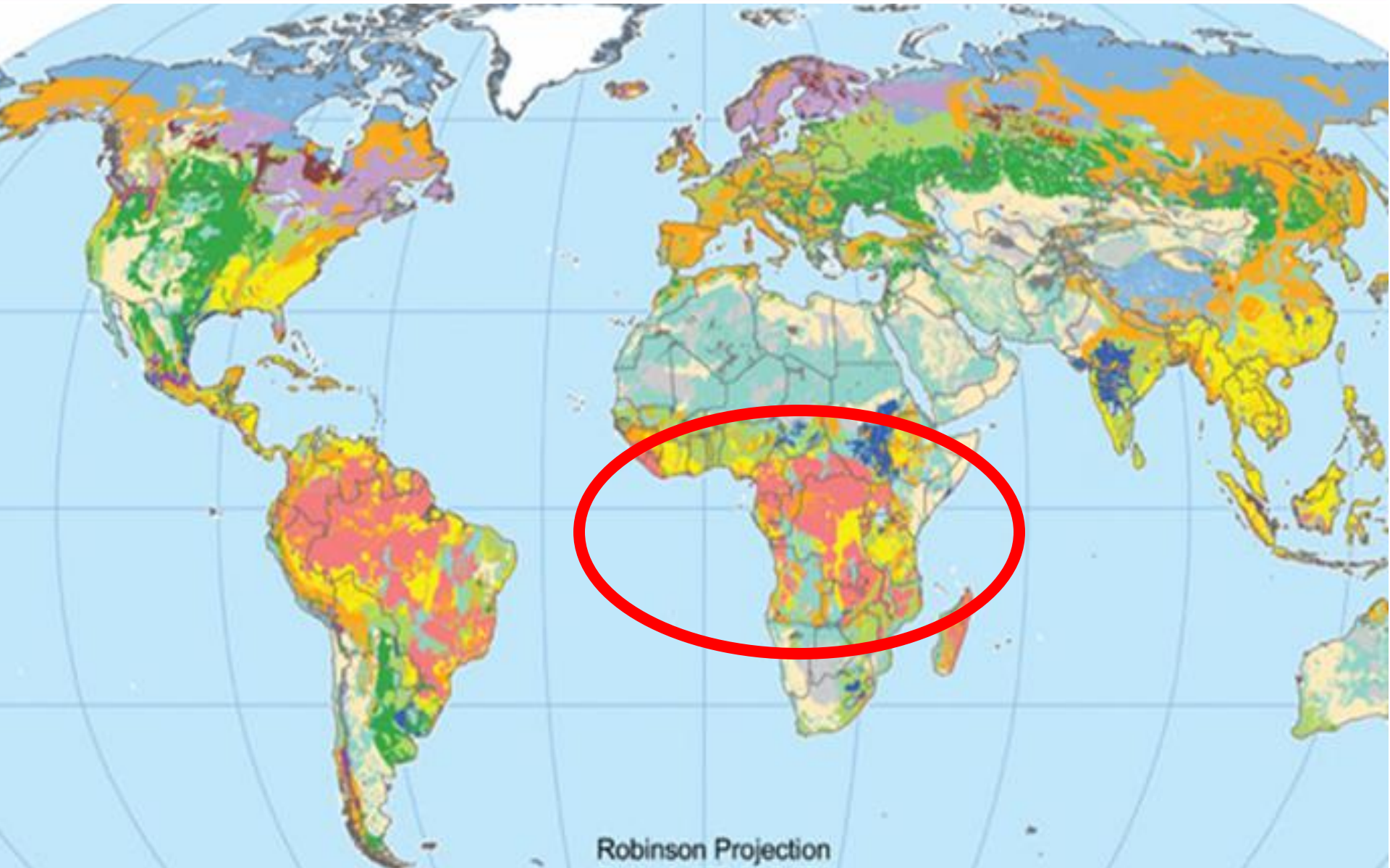


Bukavu, DR Congo

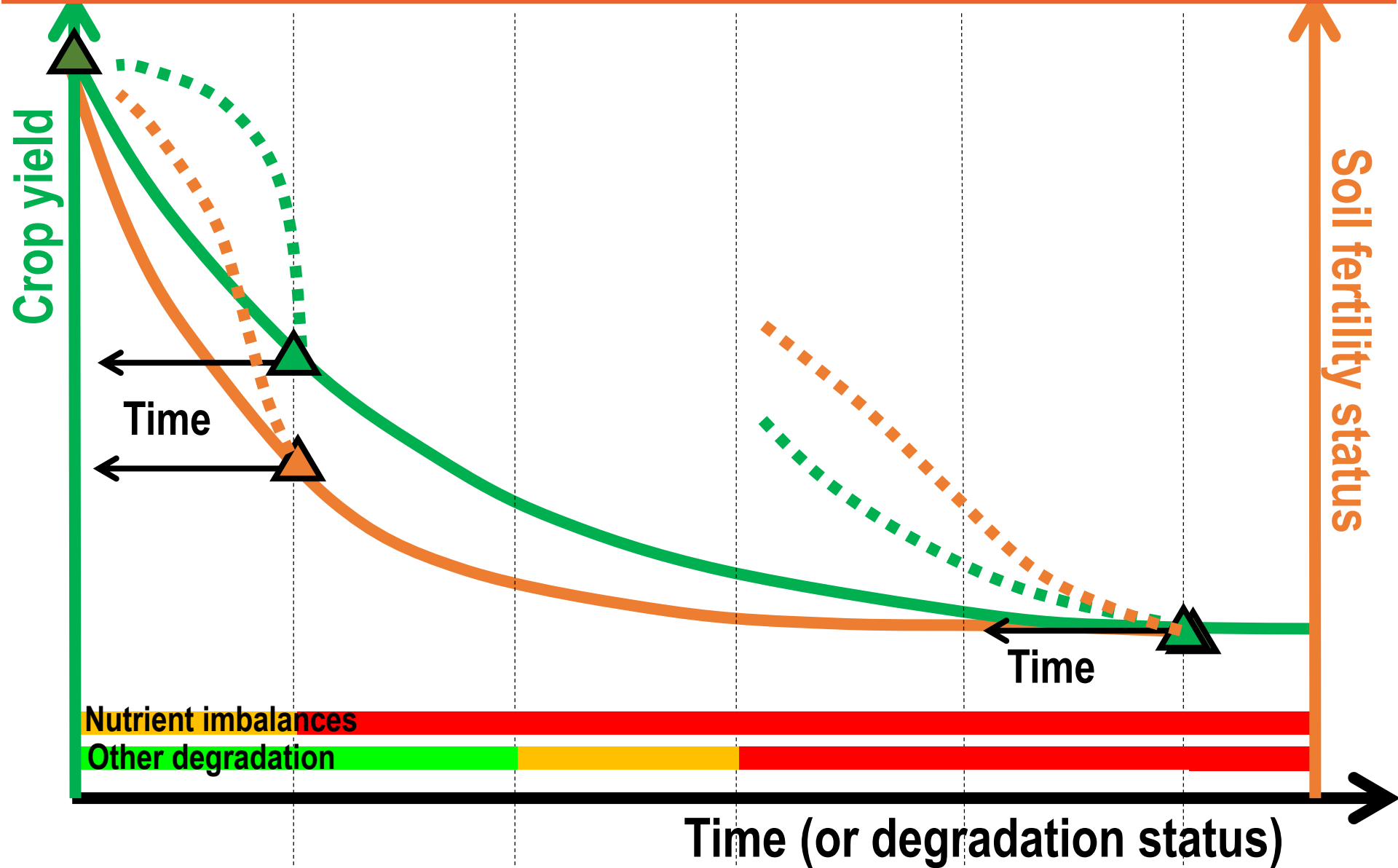


1. Deriving a livelihood from being a smallholder farmer in sub-Saharan Africa is not easy

Old and degraded soils



Robinson Projection



\$ 200-500 /tonne urea world market 2010-2011

\$ 900-1,400 /tonne urea in Bukavu (DRC)

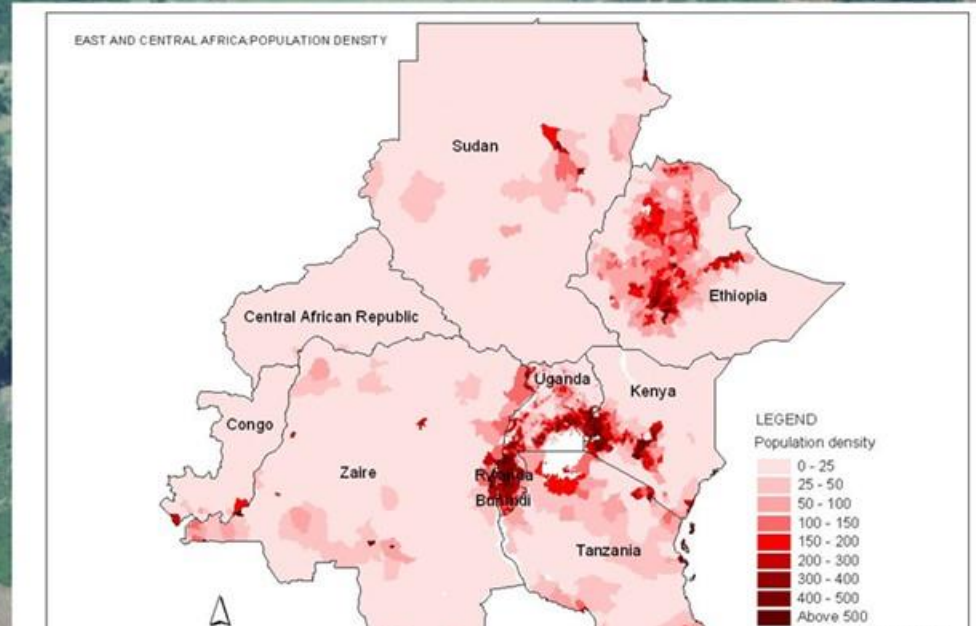
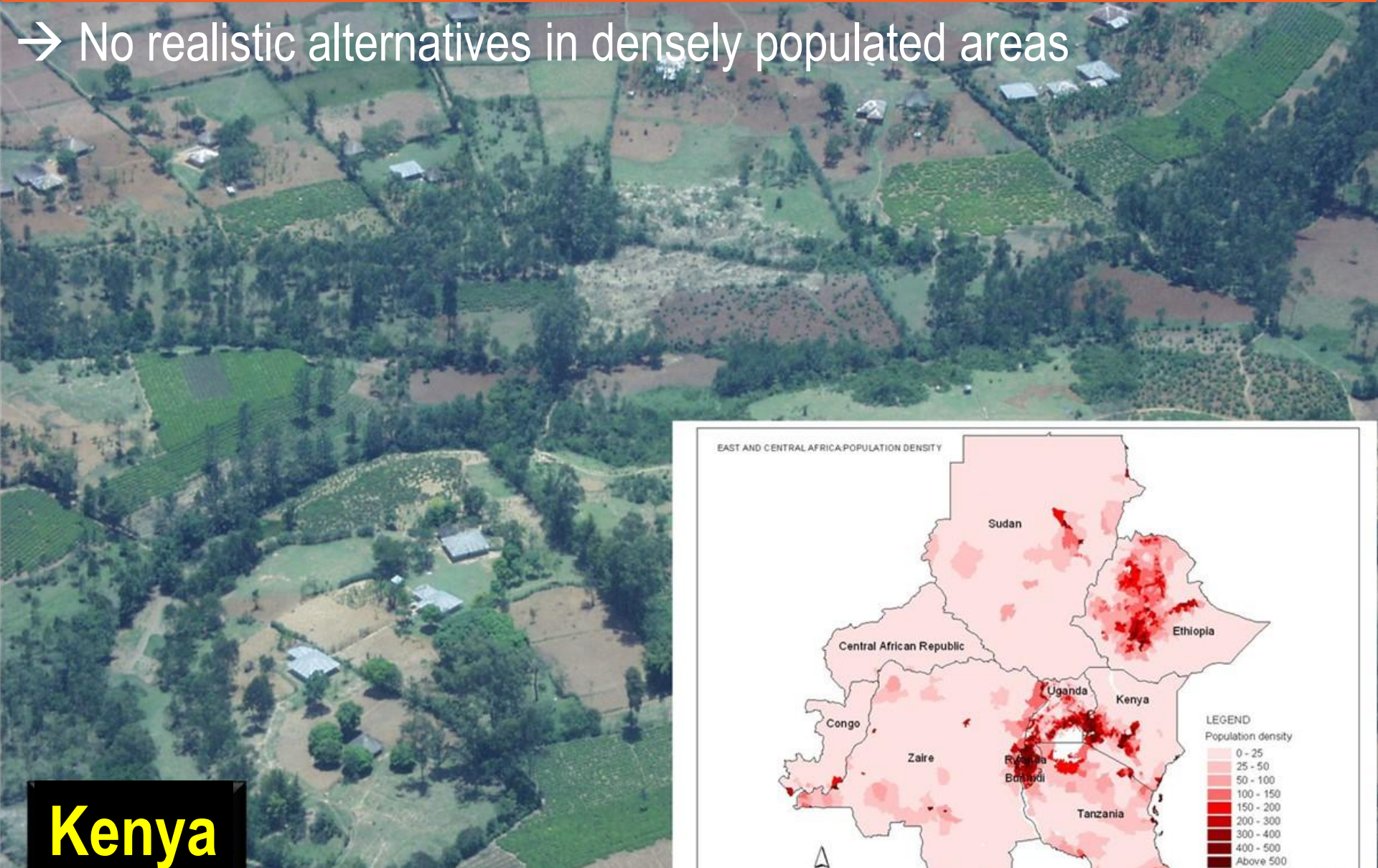


\$ 2 – 2.5 in Europe
\$ 0.5 in Bukavu (DRC)



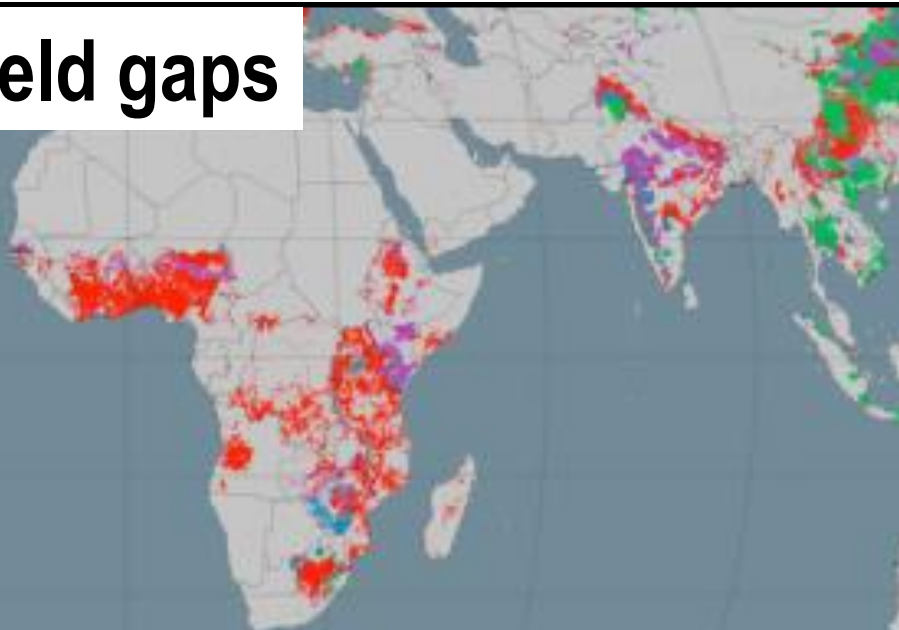
2. Intensification is a must!





→ No realistic alternatives in densely populated areas



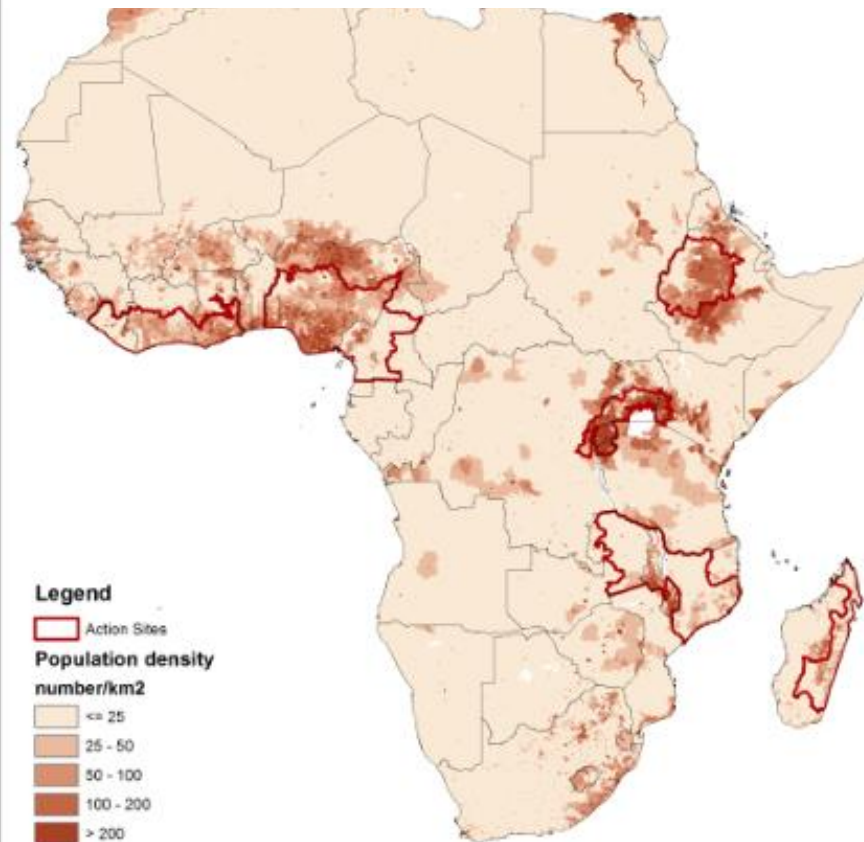
Kenya







Yield gaps



-  nutrient limited
-  nutrient + water limited
-  water limited
-  yield ceiling limited

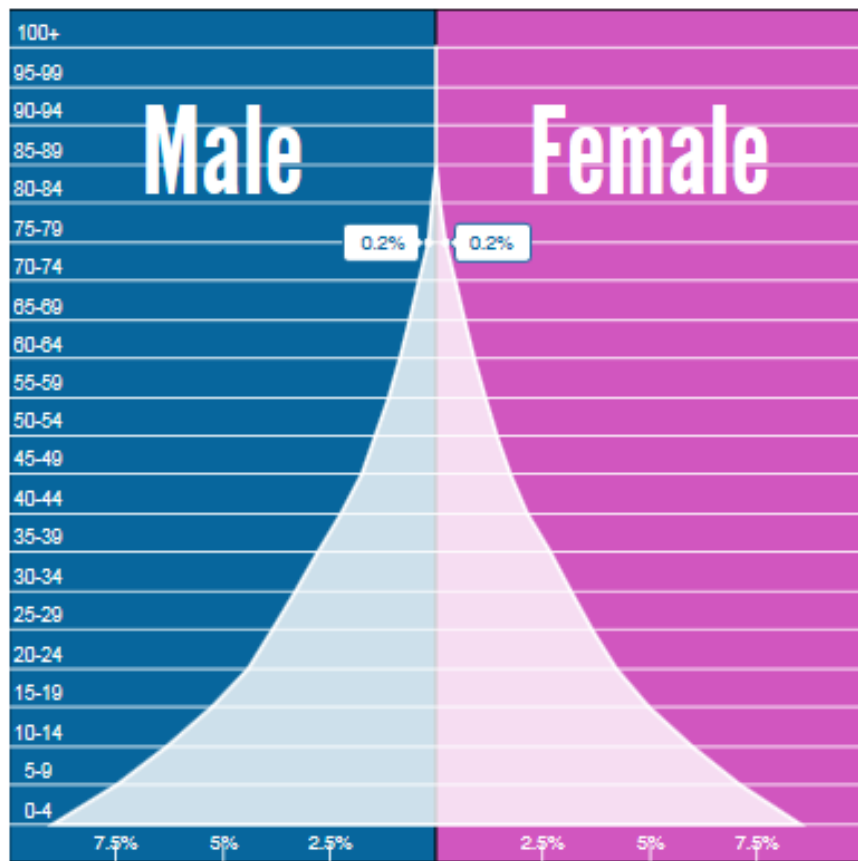
Population density



- Legend**
-  Action Sites
 - Population density number/km2**
 -  <= 25
 -  25 - 50
 -  50 - 100
 -  100 - 200
 -  > 200

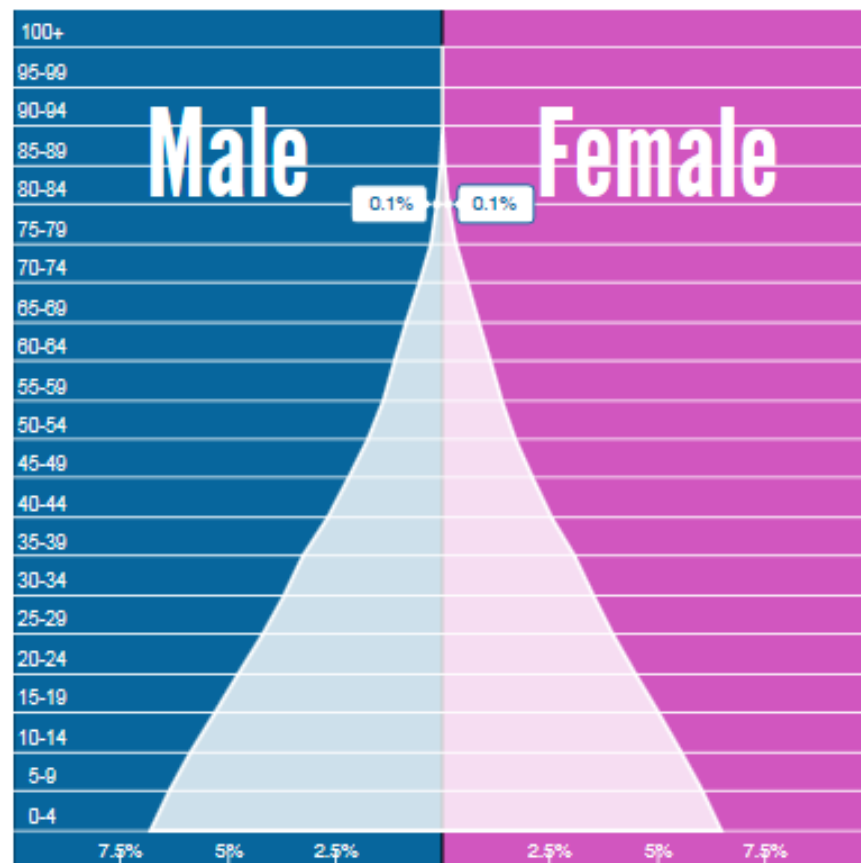
Nigeria 2015

Population: **183.523.000**



Nigeria 2050

Population: **440.355.000**



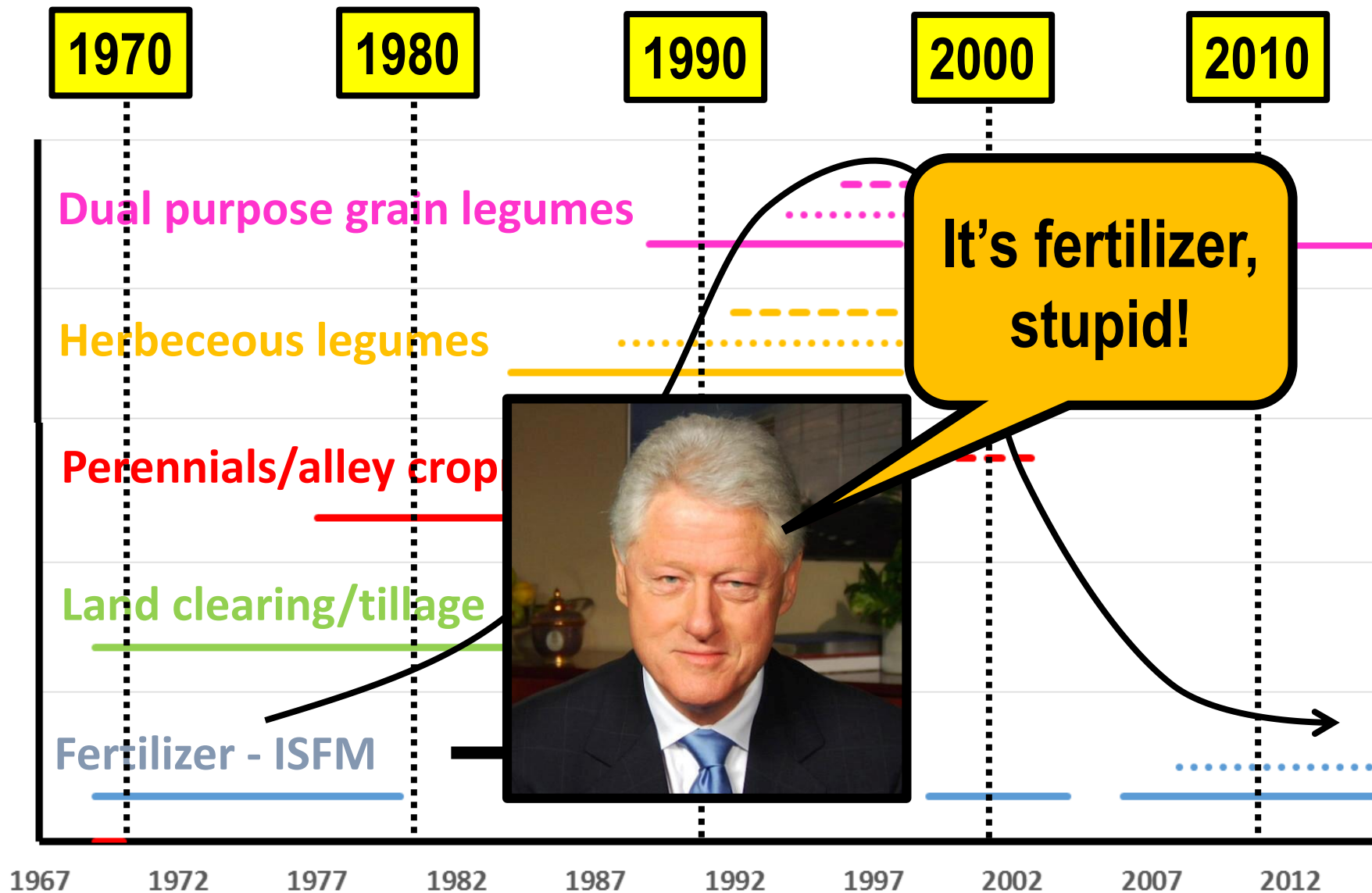
<http://populationpyramid.net/nigeria/2050/>





DR Congo

3. We've learnt a lot about potential solutions (and failures) to sustainably intensify smallholder agriculture

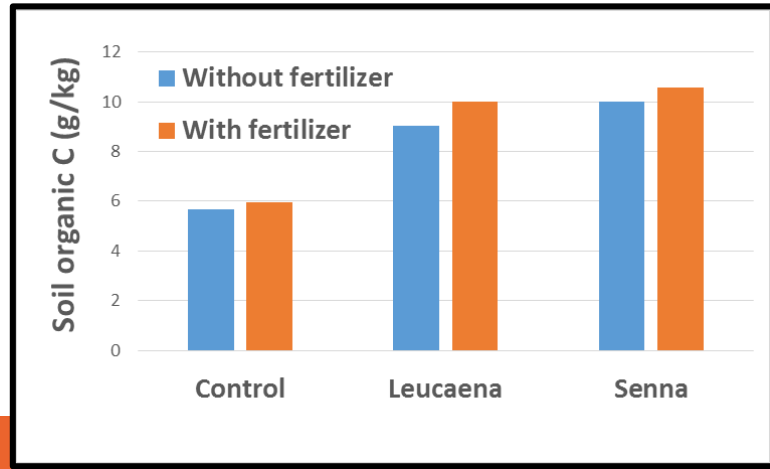
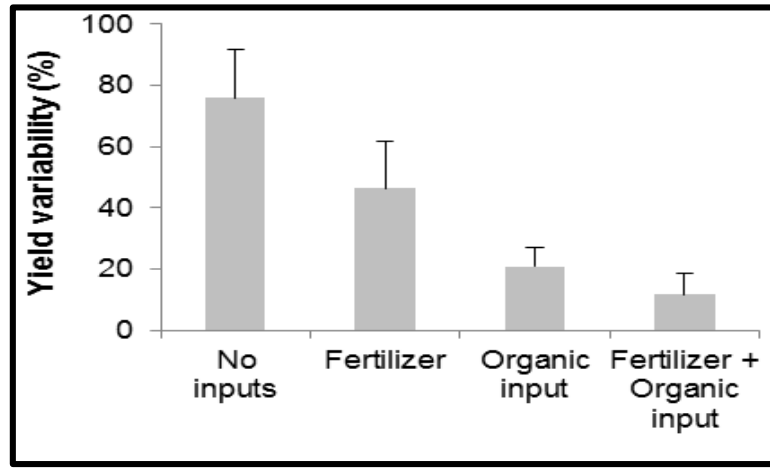
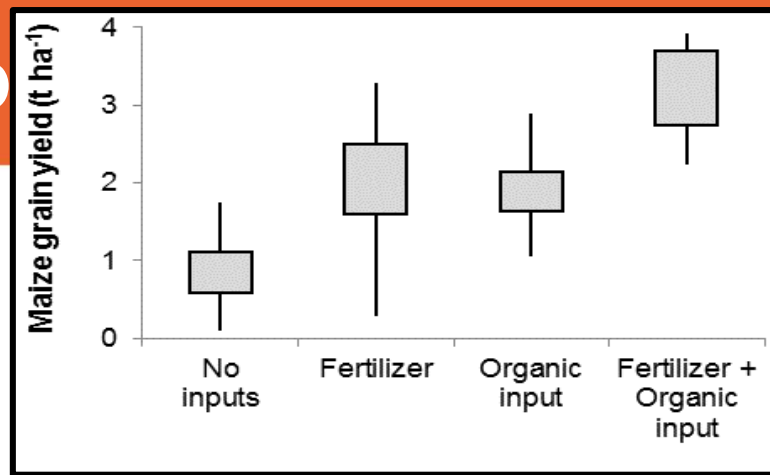
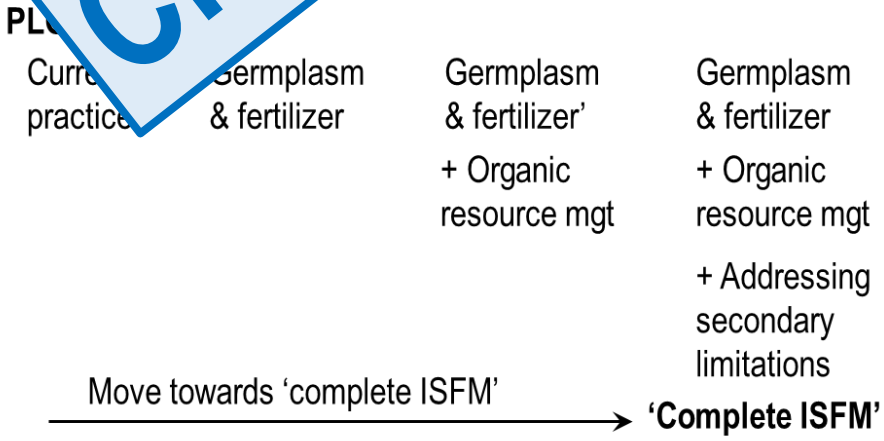


FARM LEVEL

- + Local adaptation to within-farm soil fertility gradients
- + Local adaptation to resources available to farmer

Increase in knowledge

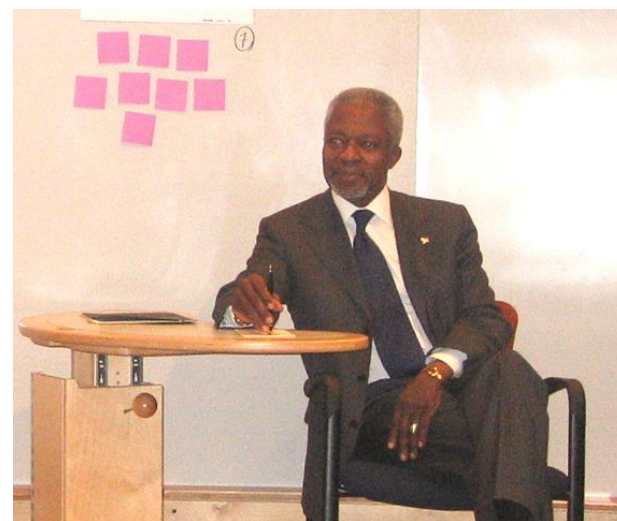
Climate-smart!



4. The enabling environment is changing!

The African Union Ministers of Agriculture convened in Abuja on 12 June 2006 for the Africa Fertilizer Summit:

Given the strategic importance of fertilizer in achieving the **African Green Revolution** to end hunger, the African Union Member States resolve to increase the level of use of fertilizer from the **current average of 8 kilograms per hectare to an average of at least 50 kilograms per hectare by 2015**





Bukanga Lonzo DR Congo, 2015





Yara enters agreement to sell its European CO2 business ✕

Select your country ▼

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Print page

Yara's History in Africa

Yara has a long history of doing business in Africa and engaging with African agro-dealers, farmers and policymakers – delivering its first mineral fertilizer shipment to the continent back in 1929, and now looking back on a permanent presence in Africa since 1985.



Yara is the only global mineral fertilizer company with a direct presence throughout the continent. Continuously developed and expanded through sales offices and production facilities, this presence also

Sustainability ▼

Global Challenges ▶

Climate smart agriculture ▶

Commitment and Policy ▶

How we engage

Stakeholder dialogue ▶

Africa engagement

Growth corridors

Grow Africa partnership

New Alliance

Ghana Grains partnership

Yara Prize

AGRF

Yara's History in Africa

Green Growth ▶

Reporting ▶

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comment

En route to plentiful food production in Africa

Pedro A. Sanchez

Africa south of the Sahara is going through a major agricultural transformation. Low crop productivity, hunger and pessimism are being replaced by a rapid rise in food production, an increasingly vibrant agricultural value chain and convergence towards a common goal.

5. Change is happening!

Abuja 2006: Increase fertilizer use from the current 8 to 50 kg fertilizer nutrients per hectare → LSMS data (Sheahan & Barrett, 2014)

Country	Proportion of cultivating households using (%)	Use across all households, including zeros (kg ha ⁻¹)	
		Mean total	Mean nutrients
Ethiopia	55.5	45.0	25.2
Malawi	77.3	146.0	56.3
Niger	17.0	4.5	1.7
Nigeria	41.4	128.2	64.3
Tanzania	16.9	16.2	7.7
Uganda	3.2	1.2	0.7
Average	35.2	56.9	26.0

**Average agronomic efficiency:
14 kg grain per kg N fertilizer**

2005	1.5	+ 45%	0.8
2006	2.4	+ 18%	1.5
2007	3.3	+ 57%	2.7

	Farmer-lead fertilizer management	Researcher-lead fertilizer management	Improved varieties + researcher-lead fertilizer management	Organic inputs + researcher-lead fertilizer management	Researcher-lead fertilizer management on infields across soil fertility gradients
Nr cases	24	324	73	272	28
N-AE mean	19	23	34	32	33
N-AE st-dev	15	19	23	29	22

(**Δ2.5X**)

6. New models for accelerating the impact of research outputs

Placing research within development

ACAI R4D team →



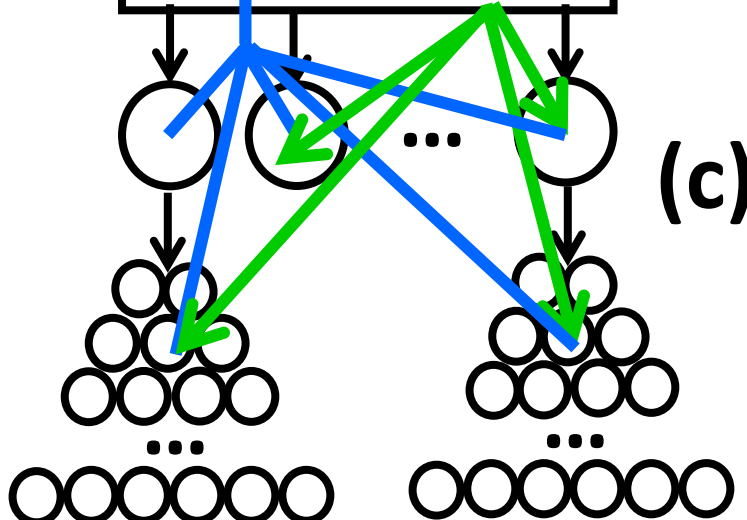
Demand for
(a) cassava
agronomy
information

Development of tools
and applications for
scaling agronomy
recommendations **(b)**

Extension partner with
need for agronomic
information →







Extension agents →



Farming
households →

Tool/application	Targets
Fertilizer blending tool	Fertilizer blending industry
Fertilizer recommendation tool (Nutrient Expert for Cassava)	Cassava farmers with access to agro-inputs and markets
Optimum planting/harvest for high starch content	Farmers supplying the cassava processing sector
Staggered planting for continued root supply	Farmers supplying the cassava processing sector
Best planting practices tool	All cassava farmers
Cassava intercropping tool	All cassava farmers

<p>Capacity Building & Dissemination</p>	
<p>Input supply</p>	
<p>Market Access</p>	
 <p>Production – Input & Market Links</p>	<p>Hun Coop</p> <p>www.N2Africa.org</p> <p>Sidama Elto Union Awash Melka Union</p>





Nodumax

NoduMax

legume inoculant

IITA

Manufactured and distributed by the IITA Business Incubation Platform

*contains 100 g for application to soybean
store in cool, dry, shaded conditions
avoid direct sunlight, do not freeze*



IITA
Research to Nourish Africa

NoduMax

User Instructions

For more information
please contact:

IITA Business Incubation
Platform, PMB 5320, Ibadana
Oyo State, Nigeria.

Tele: +234-2-7517472

Email: iita@cgiar.com

Manufacture date

08/07
2011

Expiry date

08/07
2011

Batch number

0001
11/11

Guaranteed
to contain at
least 1 billion
live soybean
rhizobia per
gram



Prepare sticker. Dissolve
contents of enclosed gum
arabic packet into 300 ml of
warm water.

Spread seeds. Add 10 to 15
kg of soybean seeds to a
large basin.

Apply sticker. Add sticker to
seeds and mix until uniformly
coated.

Apply inoculant. Add 100 g
of Nodumax to seeds and mix
until seeds are uniformly
covered with the inoculant.

Allow to set. Cover the
inoculated seeds with a cloth
and allow the sticker to set for
10 minutes. Avoid direct
sunlight.

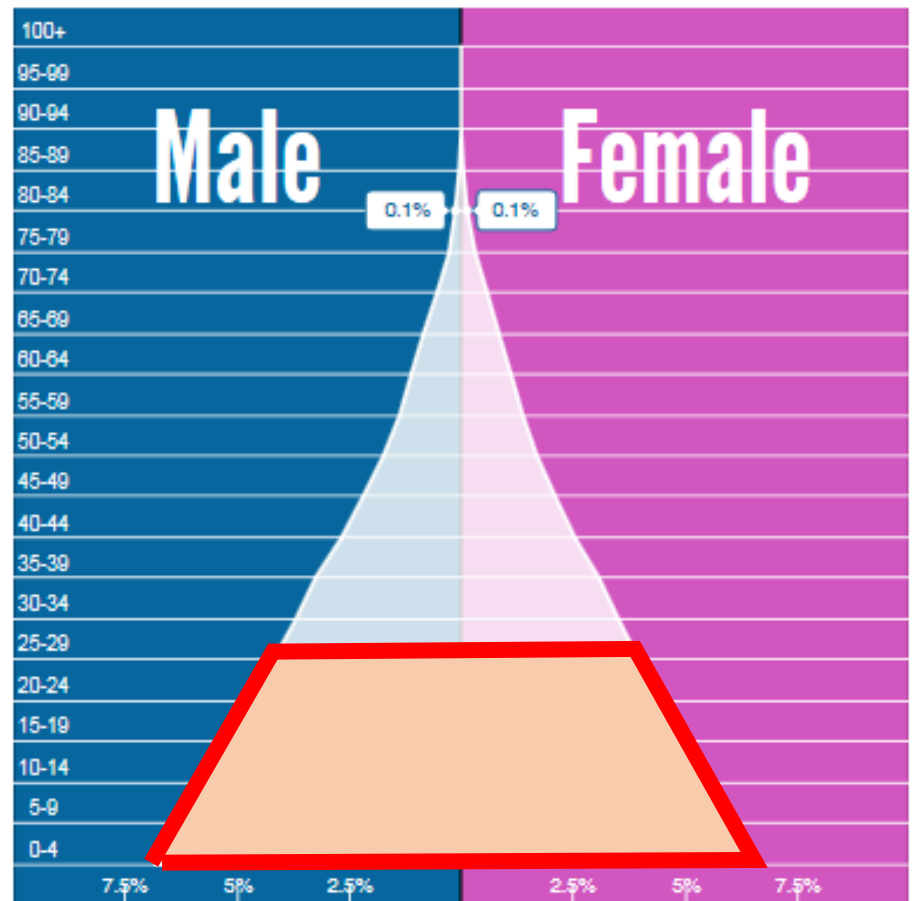
Plant seeds. Plant the
inoculated soybean seeds as
soon as possible into a moist
seed bed.



Abuja, Nigeria, 2014

Nigeria 2050

Population: **440.355.000**







www.asssonline.org or
www.asssland.org



2015
International
Year of Soils



2 to 8 December 2015, Ouagadougou, Burkina Faso

Second announcement and call for communications

7th International Conference of the Africa Soil Science Society

Theme:

Critical soil solutions for sustainable development in Africa

A soil health platform for managing sustainable agricultural intensification in Africa

- Data and information management
- Network of laboratory services
- Networking and partnership
- Communication and Information Services
- Etc

Jeroen Huising
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Thank you!
Danke Schön!



Welcome to IITA!
Willkommen im IITA!