



IFDC Mozambique Soil Health Activities

Soil Health Workshop
Maputo, June 12-13, 2013

Alexander Fernando
IFDC Mozambique

IFDC Mozambique Core Activities

1. Transfer of Commercialized Sustainable Farming Systems (CSFS) technologies
2. Support to national BDS providers to strengthen input supply chains (*AgriMerc*)
3. Policy reforms and regulations for the input sector
4. Strengthening market information systems
5. Expansion of the purchasing power support (vouchers)
6. Development of output commodity/product markets



**Strategic Framework (PEDSA)
Comprehensive Africa Agriculture Development Program
(CAADP)**

IFDC Organizational Philosophy

Smallholder farmers need a commercial incentive to use fertilizers and improved inputs

1. Embedding fertilizer use & improved inputs in a technology package that is optimized to the smallholder farmer's commercial and agronomic conditions
2. Farmers linked to input and commodity markets so that the full benefit of productivity-enhancing investments is realized



Profitable farming encourages farmers to make further investments in their farms and soils, creating the virtuous cycle required for a Green Revolution

CSFS – A Market Driven Approach

Agronomic efficiency (AE)

$$= \frac{\text{kg yield increase}}{\text{kg nutrients applied}}$$

(Yield per unit input)

Value?

Cost?

$$\times \frac{P_Y}{P_N}$$

Value:cost ratios

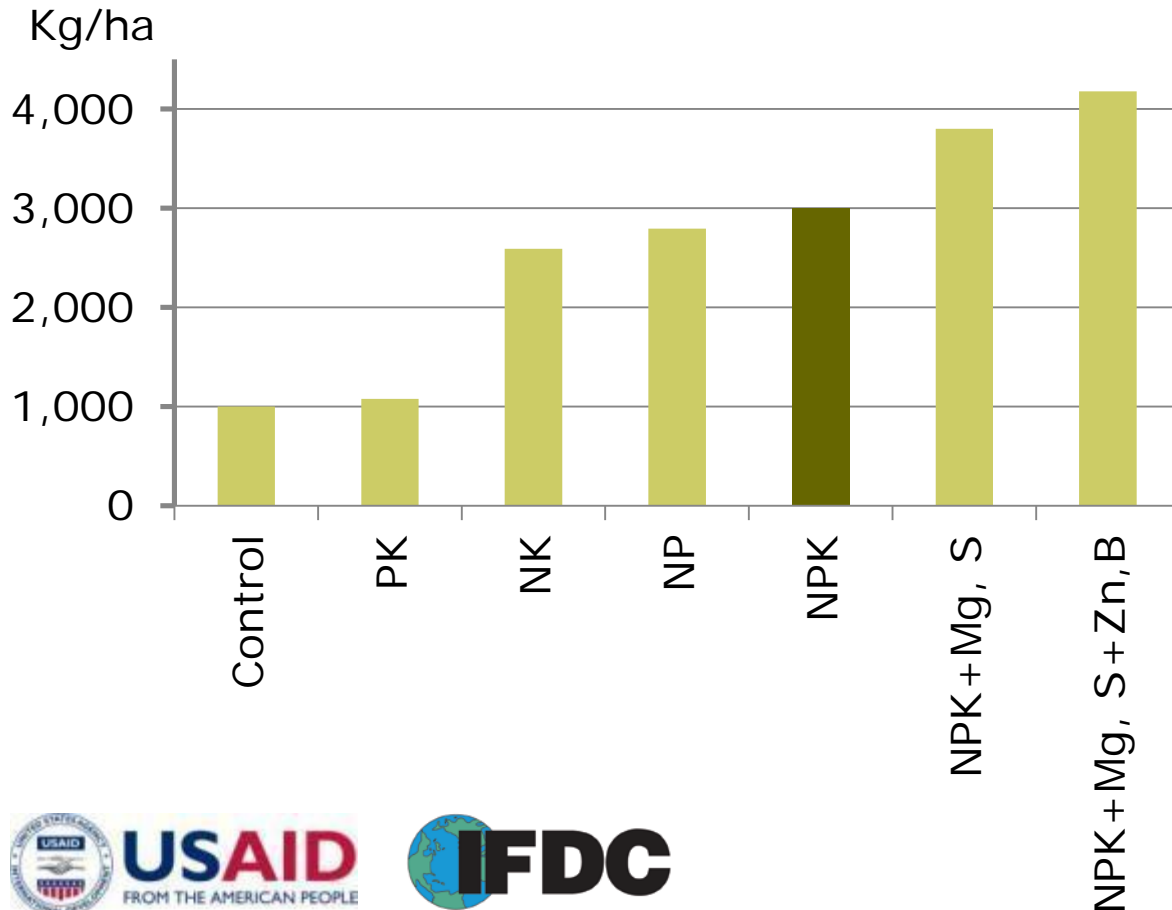
$$= \frac{\text{Value of yield increase}}{\text{Cost of nutrients (incl. application)}}$$

(Value of yield per unit cost of inputs)

- ❑ CSFS seeks to optimize farm profits rather than agronomic efficiency of inputs → Profits drive farmer adoption!
- ❑ Not a new approach, includes: ISFM, CA, farming systems (risk mitigation)

MIM Results

Maize Yields, Mozambique from MIM Project
(Average 18 sites, 2011-2012)



- Maize responds well to S, Zn, and B, but K is sufficient for maize production
- Low N content of 12:24:12 does not sufficiently address early-season N demands in maize
- The poor response to 12:24:12 discourages farmers from investing in mineral fertilizers, limiting productivity with downstream effects on ADs and input suppliers

Fertilizer Blends



Maize affected by multiple deficiencies, likely S and Zn

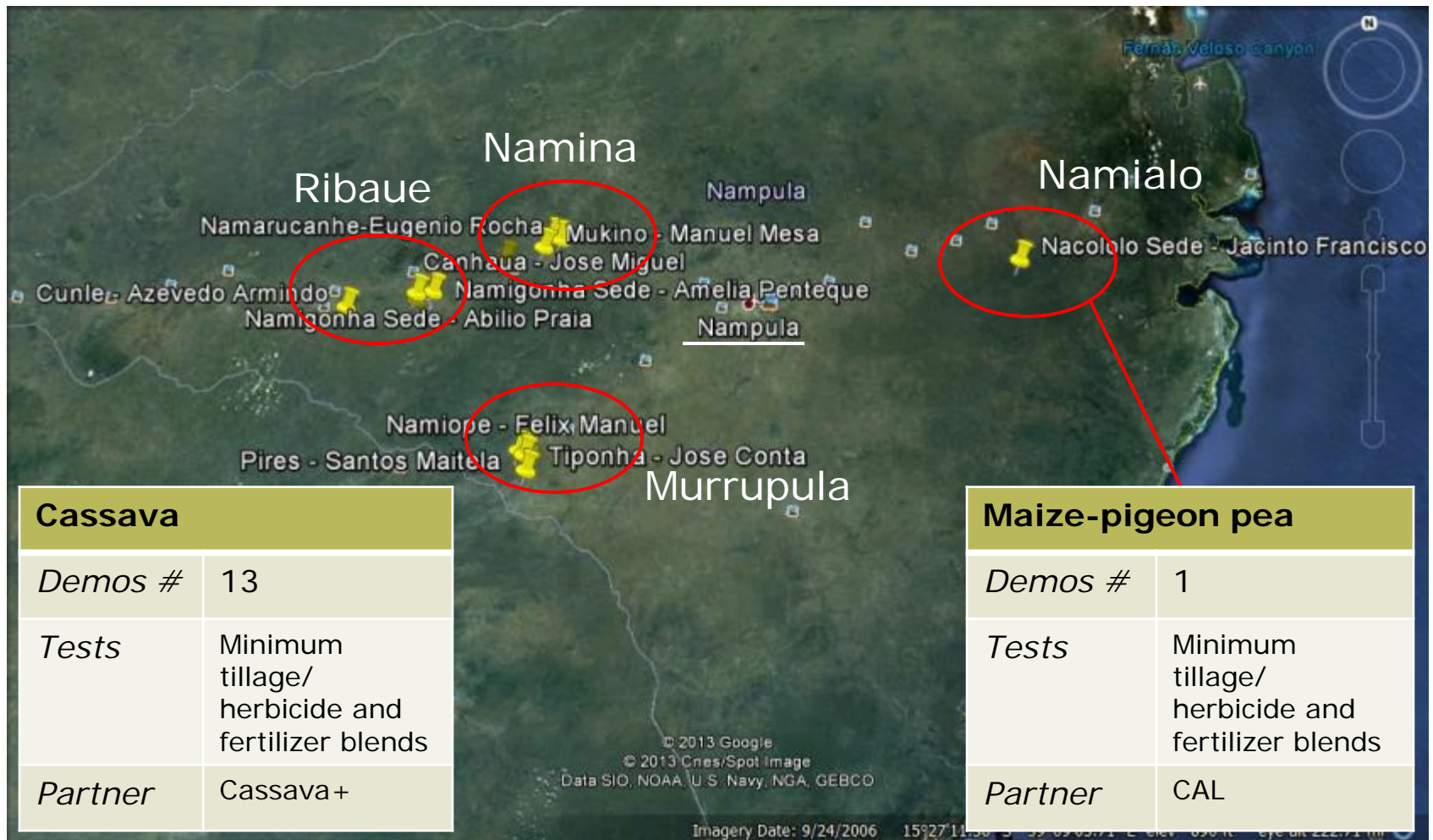
Fertilizer Blends Prepared by Greenbelt Fertilizer Company, Beira

	<i>Mozambique Standard Fertilizer</i>	<i>Legume & Cassava Root Blend</i>	<i>Cereal Blend</i>	<i>Cassava Stem Multiplication</i>
NPK	12:24:12	5:16:30	21:20:0	15:15:17
Secondary & Micro-nutrients	-	5.5%S, 0.5%B, 1%Zn	5.2%S, 0.5%B, 1%Zn	6.1%S, 0.5%B, 1%Zn



- Developing targeted fertilizer blends to:
- 1) match soil conditions and crop-specific needs
 - 2) increase profitability from mineral fertilizer use

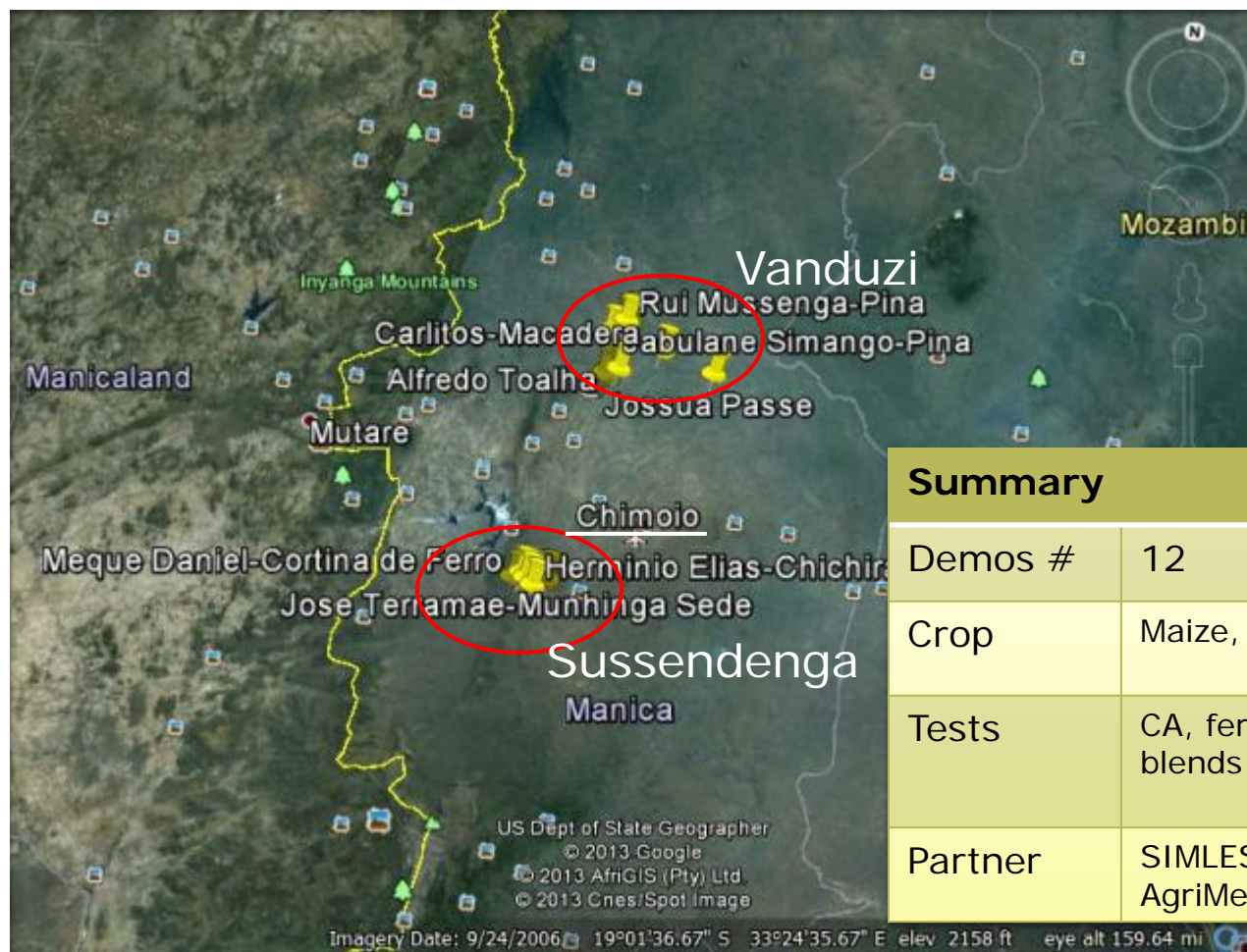
Demonstrations: Nacala Corridor



Cassava	
<i>Demos #</i>	13
<i>Tests</i>	Minimum tillage/ herbicide and fertilizer blends
<i>Partner</i>	Cassava+

Maize-pigeon pea	
<i>Demos #</i>	1
<i>Tests</i>	Minimum tillage/ herbicide and fertilizer blends
<i>Partner</i>	CAL

Demonstrations: Beira Corridor



Summary

Demos #	12	19
Crop	Maize, Beans	Maize, Soybeans
Tests	CA, fertilizer blends	Fertilizer blends
Partner	SIMLESA, AgriMerc	Dropped SIMLESA sites

Preliminary Results



Demonstration Plot in Manica by farmer Rosa Joao showing results from conventional fertilizer NPK 12:24:12 (left) versus IFDC's specialty fertilizer blend NPK 21:20:0+5S+1Zn+0.5B (right), with herbicides & minimum tillage creating a thick residue, February 2013

Demonstration Plot Manica



Manica, Tome
Blunde, Maize,
23:21:0+5S (left)
vs.
21:20:0+5S+1Zn+
0.5B (right)
illustrating the
effects of Zn and B

Conclusions

- ❑ Need for increased investment in developing soil maps, fertilizer recommendations and soil testing facilities
- ❑ Herbicides and fertilizer blends are the way to go
 - Positive response to herbicide with minimum tillage and fertilizer blends
 - Agro-input dealers reported receiving many inquiries regarding herbicides and would be carrying them next season
- ❑ Demonstrations in collaboration with agro-dealers, input supply companies and output market activities
 - Planning and coordination with partners
- ❑ TOT training of lead farmers/farmer groups on herbicide application, service sprayer teams operated as rural enterprises



IFDC is looking for partners to scale up activities

Thank you

Alexander Fernando
IFDC

IIAM, Edificio de Quimica e Biotecnologia
1st Floor, Room 14
Maputo

Tel: +258-82-3066731
afernando@ifdc.org
www.ifdc.org

