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More choice, better access – Seeds2B program

Ian Barker – 17th May 2019, Addis

Seeds2B AFRICA

Outline

- Importance of seed and placement of the formal seed sector- what can we expect from the private seed sector in SSA
- The Seeds2B model and what we do
- Some examples
- Lessons and conclusions
- (trait product profiles and value pricing)

Quality seed delivers impact to farmers: closing the yield gap

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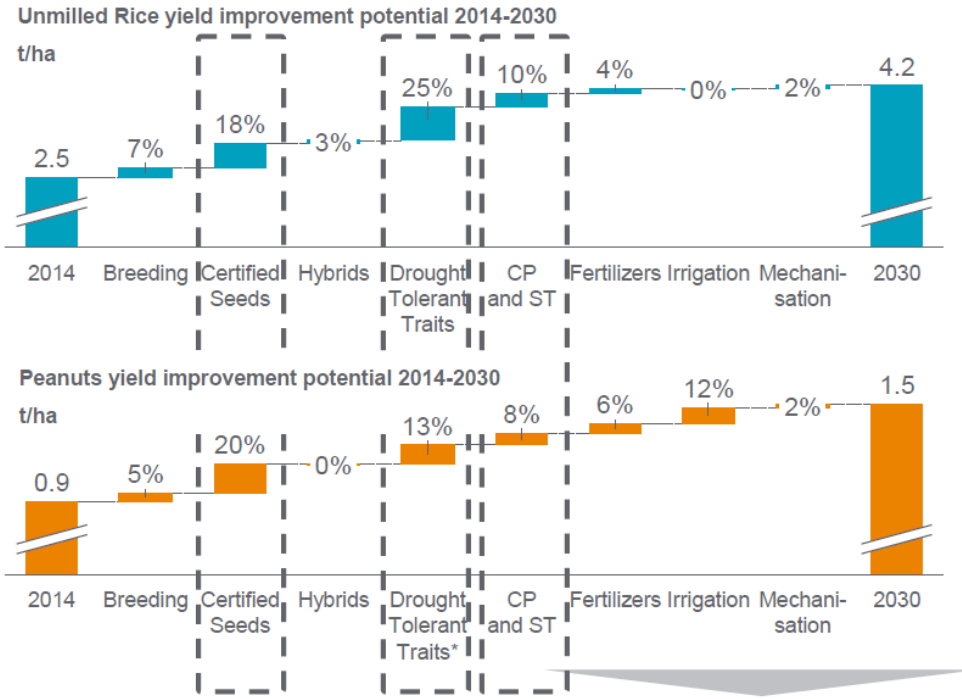

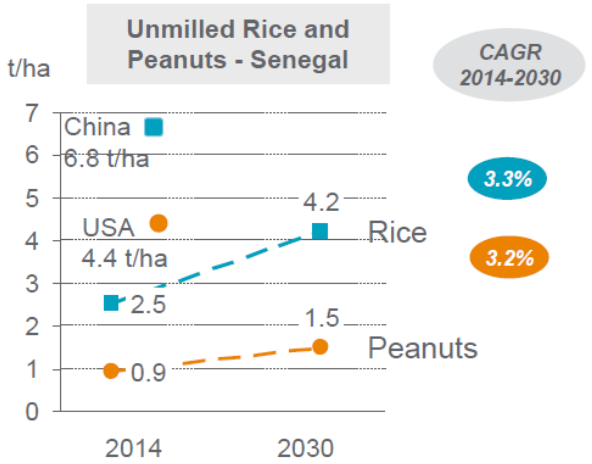

- Certified seeds: major driver for both crops; major limitation is seed production capacity and skills
  - Use of certified seeds drives overall practice upgrade (better CP, fertilizers, etc.)
- Irrigation limited to the Senegal River Valley; dry conditions are the major issue outside of the River Valley; Drought Tolerant traits are a significant yield driver for both crops

Source: Interview with Senegal experts, BI analysis
* Adapted genetics are assumed under DT traits as well

Seed (quality, treatment, genetics) contributes substantial productivity gains (groundnut in Senegal example – SFSA Yuan Zhou & SYT BI)

Currently, farmers lack access to both quality seeds and modern varieties

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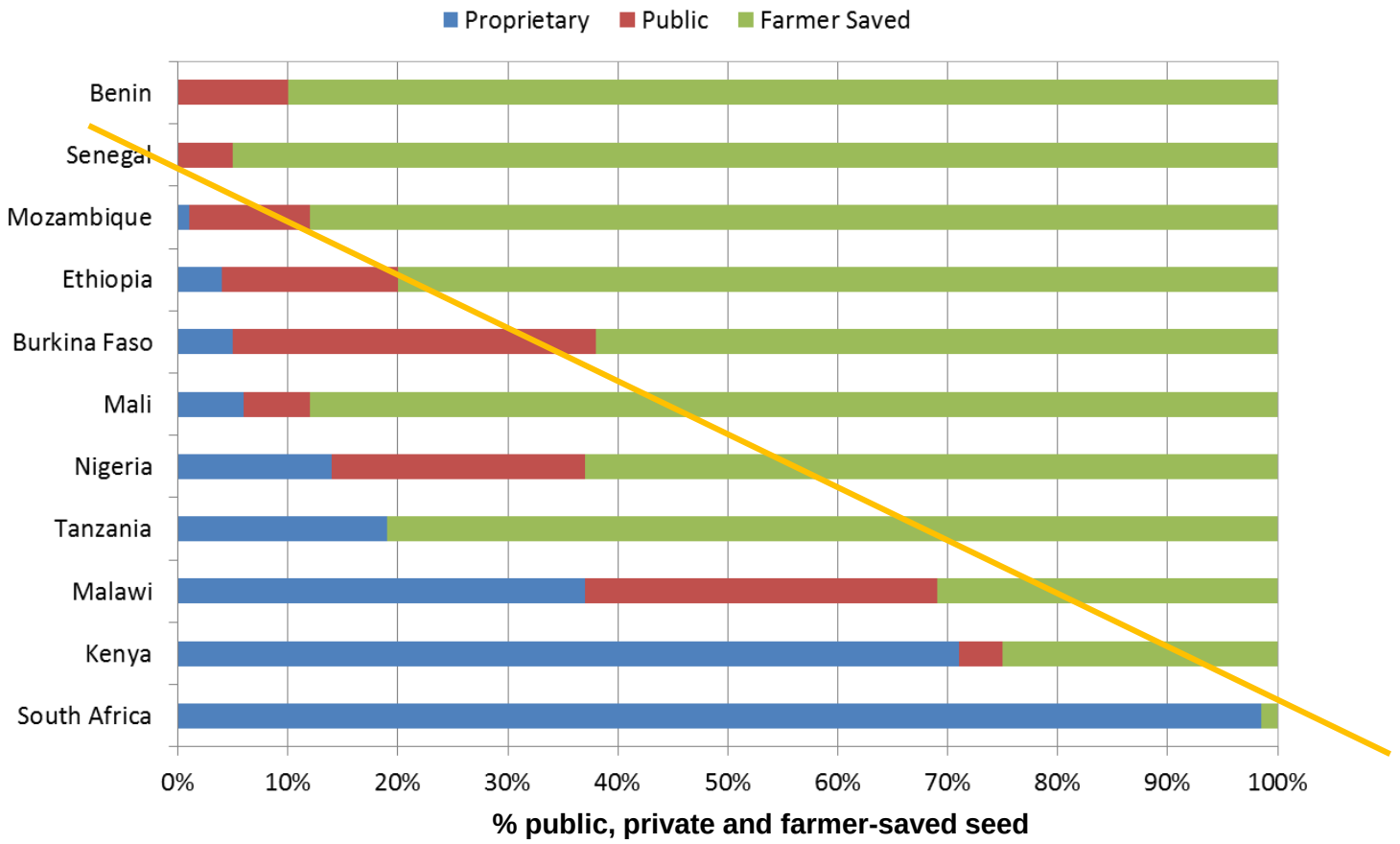
Area share of maize seed types, selected countries in SSA

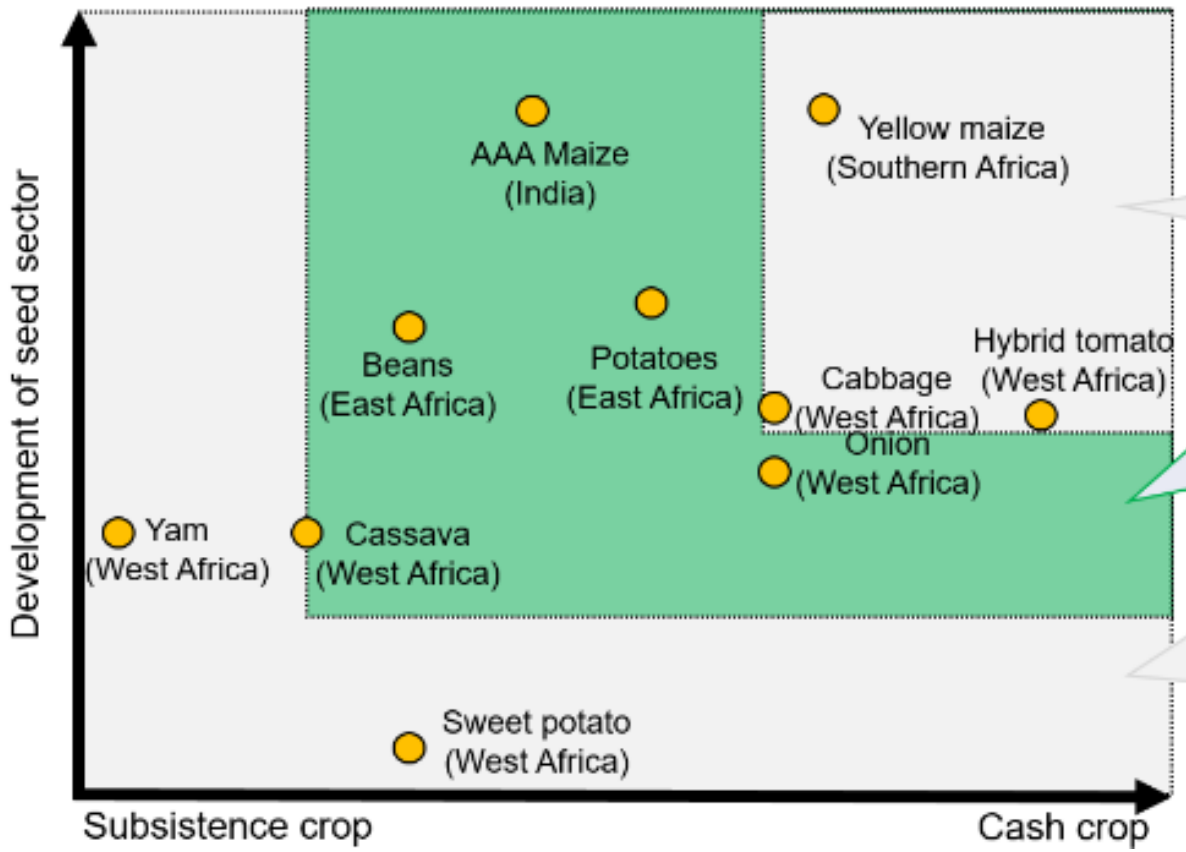


Farmers still using poor quality seeds of the same varieties used by their grandparents
SSA seed sector $400m (potential $1.6bn, McKinsey)

Seeds2B

Source: Global Seed Market Database, 2015

Based on…



No need for SFSA: strong private interest

Current SFSA investments: pre-commercial market segment, several years away from private interest

Minimal private interest (no current involvement by SFSA): as seed sectors develop, many crops expected to become more commercial

Four partnership domains to end market failures

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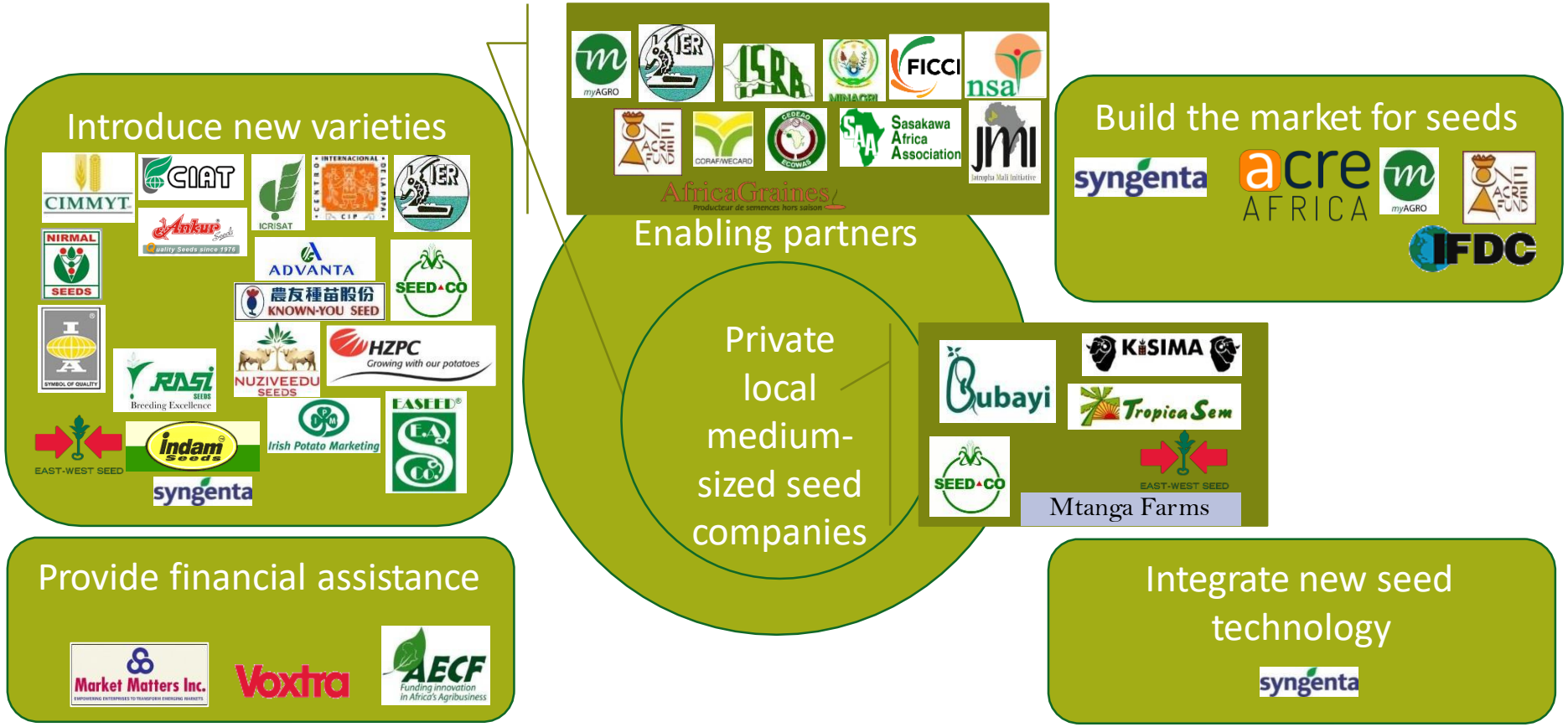

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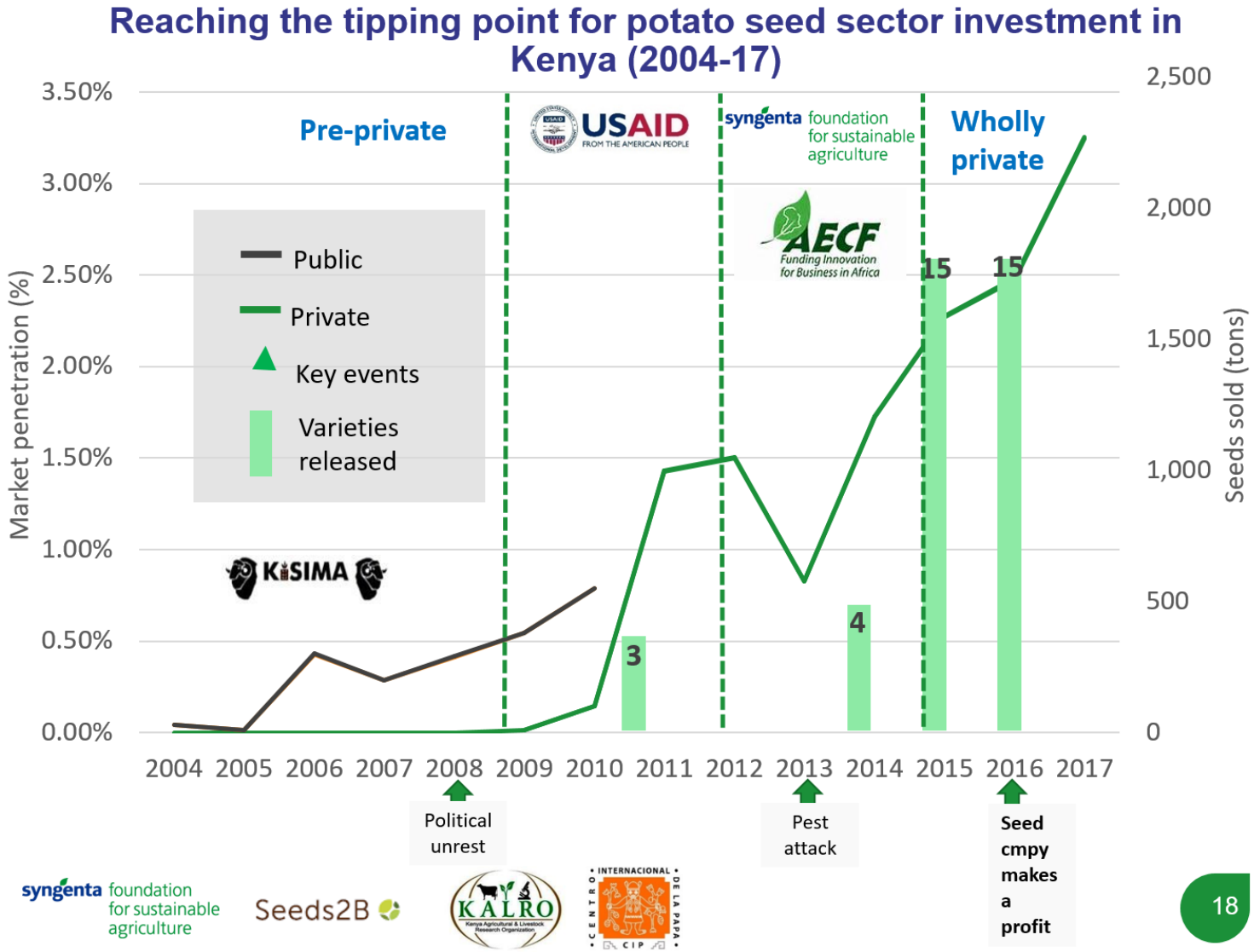
LION'S HEAD global partners

NML New Markets Lab

SIDLEY AUSTIN LLP SIDLEY

Seeds2B theory of change ("tipping point")



Our menu of services are scalable, in-demand and are generating results for seed companies

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stainable
riculture

Innovate	De-Risk	Licence	Scale-up
Demand-led, internal or external IP	Demonstrate viability in SHF sector	Traditional licensing, royalty-bearing or free licences	Confident, sustainable business serving farmers

Innovate: demand-led, internal or external IP

- SFSA R&D
- Technology scouting

De-risk: demonstrate viability in SHF sector

- Trials (including market acceptance)*
- Marketing consent*

License: exclusive/non-exclusive, royalty-bearing

- Licensing (royalties returned to NARS or private breeders)

Scale-up: confident, sustainable business serving farmers

- Technical support*
- Additional capital
- Market links
- M&E

Seeds2B

Key: red = menu of services | * = charging

Crops and countries on a PLC basis: often representing private delivery of public goods

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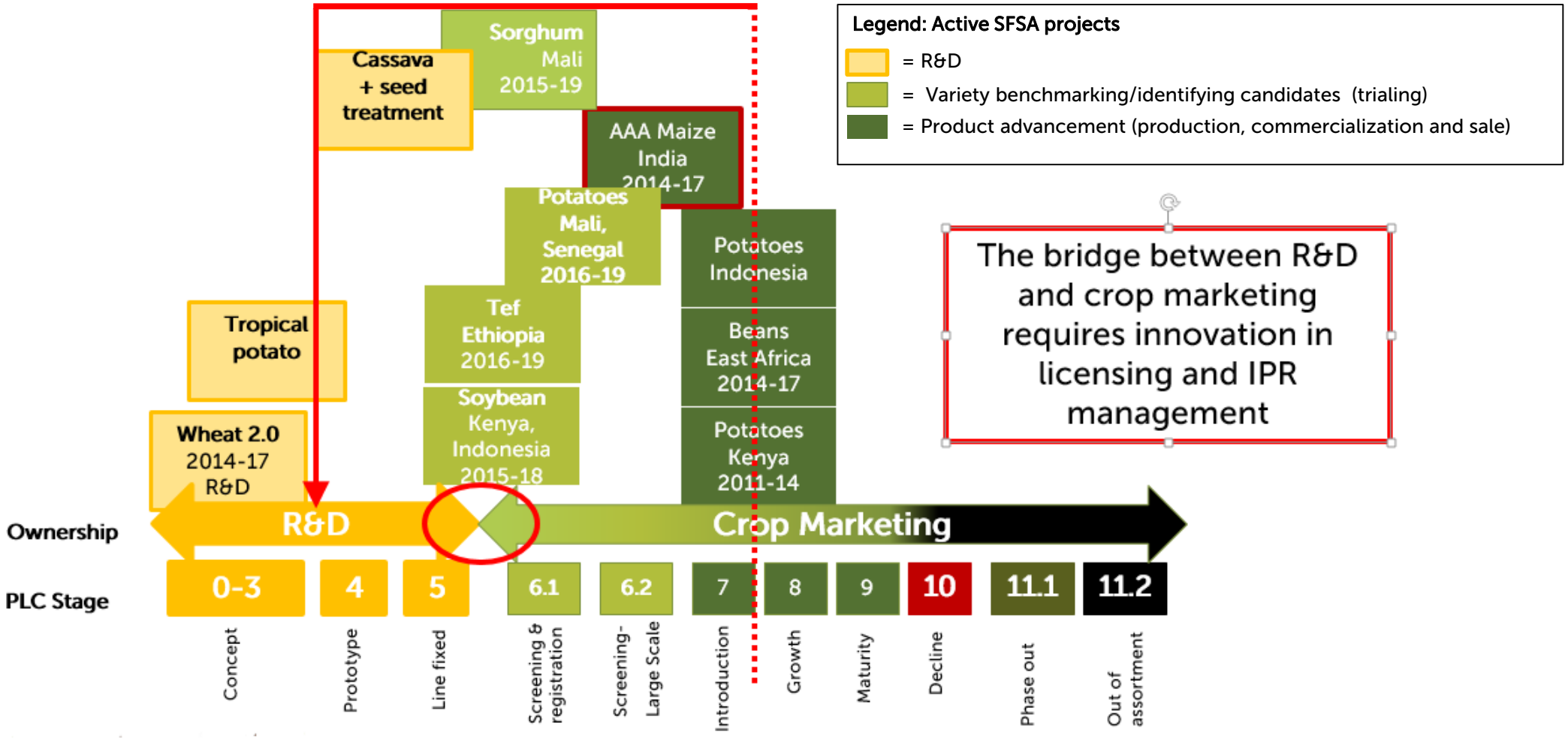

Seeds2B

Boost the yield potential of an orphan crop

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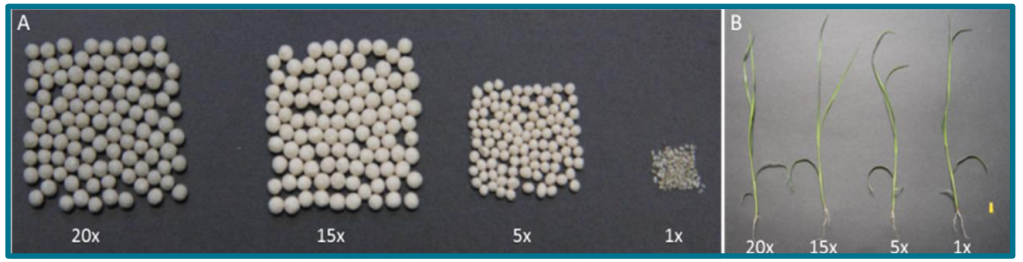
Variety Tesfa (2018)

- Compact panicle
- Thick culm (lodging)
- Non-shattering



EIAR Ethiopian Institute of Agricultural Research

b UNIVERSITÄT BERN

Improve the cassava seed system

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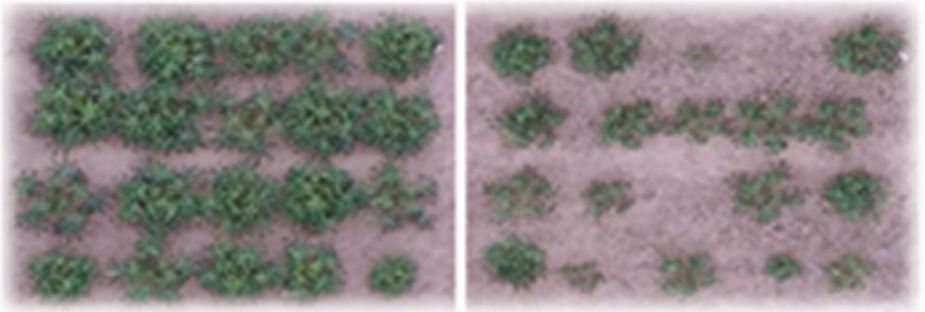
What?

- Use seed treatments to increase early vigor
- Decrease seed size, increase multiplication rates

Treated

Untreated



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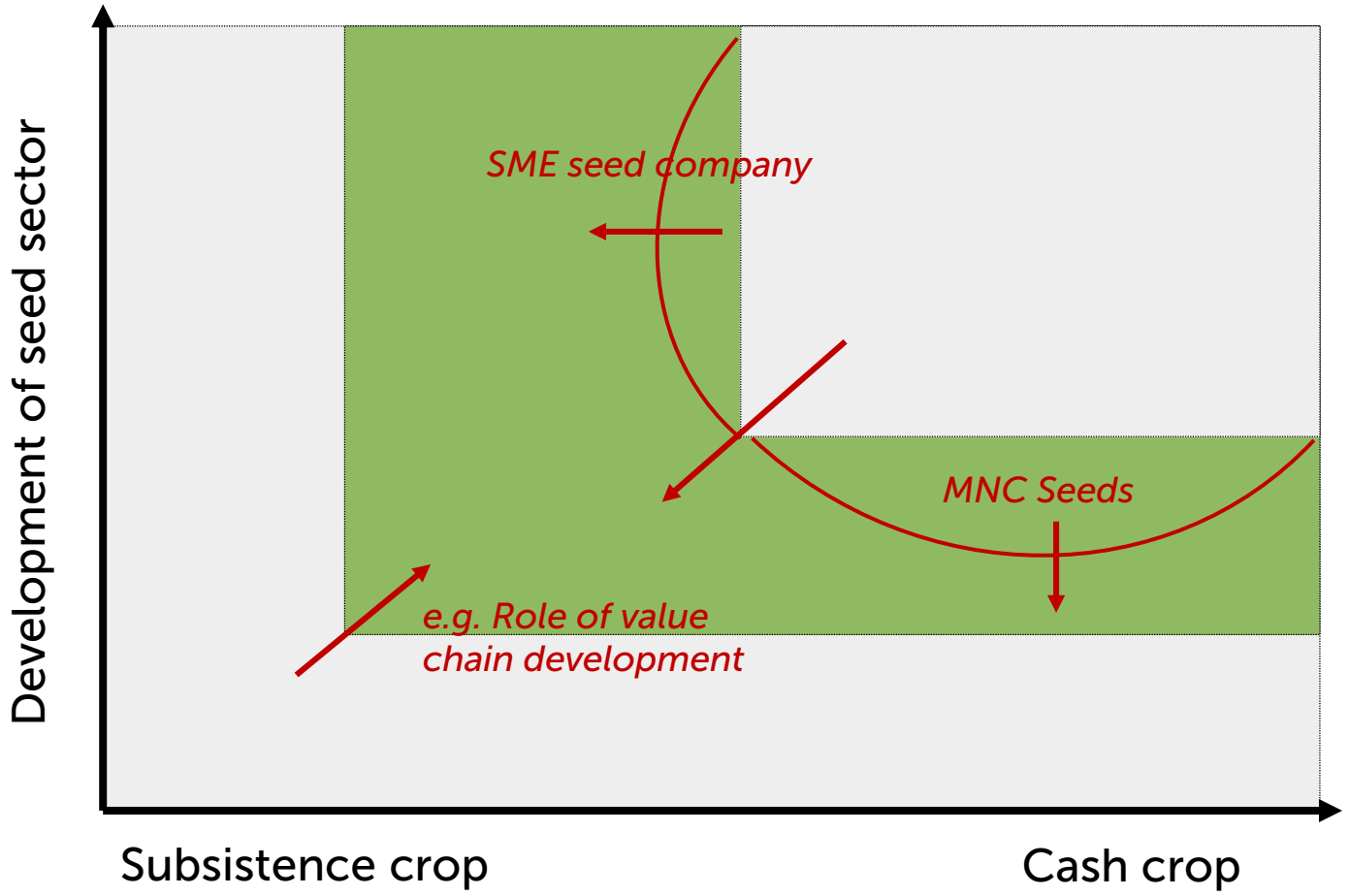
Embrapa

NaCRRI
NATIONAL CROPS RESOURCES RESEARCH INSTITUTE

Insights and learnings – Expanding private sector involvement

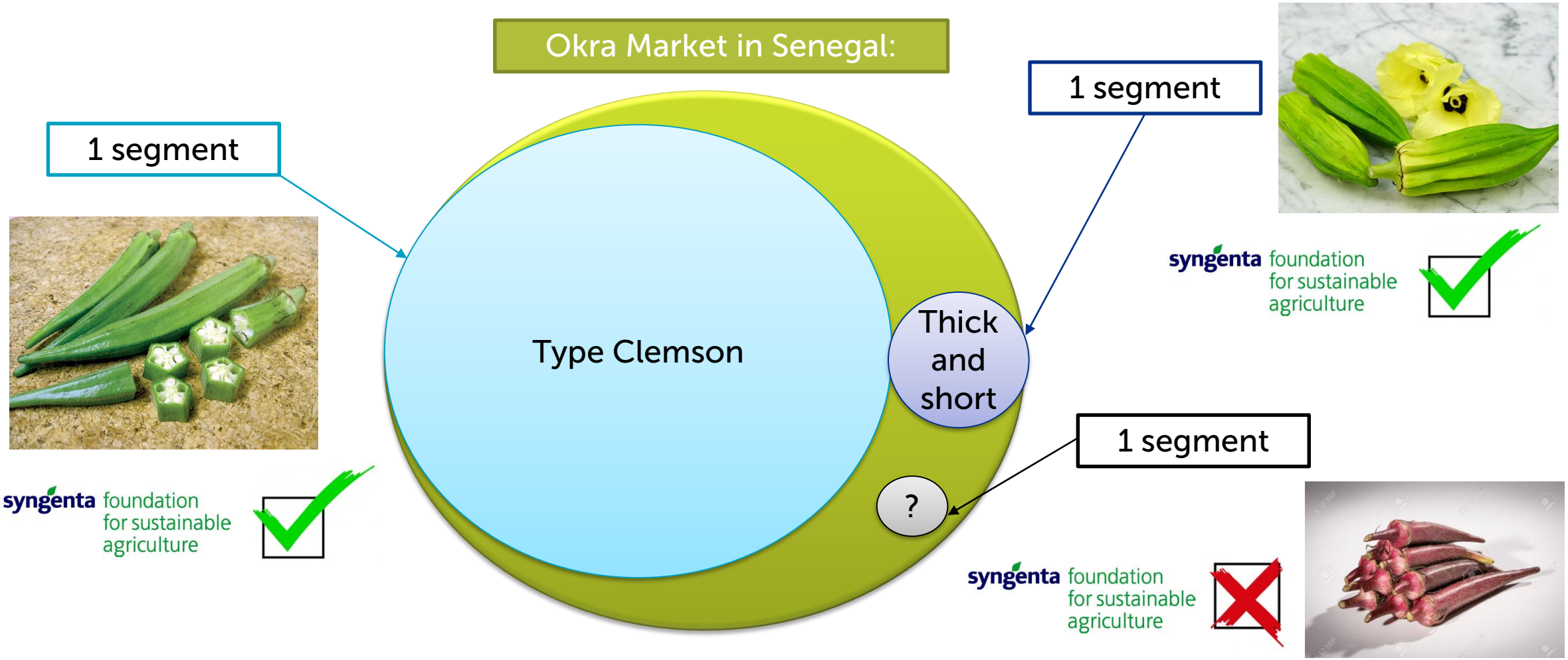


Conclusions

- Progress in formal seed sector development for less commercial crops will require a PPP approach
- We should take a more market-oriented approach to product advancement and variety portfolio management based on sound **market segmentation** and **trait product profiles**
- The importance of seed production costs and **seeds production research** (hybrids) have not been fully realized by public breeding programs
- In the early stages of seed sector development, extension, access to finance, seed enabling technologies (seed treatment), links to markets etc. will all also be important
- An appropriate and consistent seed regulatory environment to lower the cost of business for seed companies in Africa) is very important
- We remain committed to work with CGIAR, NARS and other colleagues to share and co-develop best practice in seed technology-transfer.

Thank you for your attention.

What is a market segment ?



What does it look like ?

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TPP Senegal Okra Type Clemson		Senegal	Okra
Segments and descriptions			
	TPP information		
Market segment	Type Clemson (14 à 16 cm)		
Targeted zone	Niayes		
Target number of variety (+time)	3 varieties / 5 years		
Reference varieties	Clemson, Volta...		
	Market information		
Market size (country*crop) (ha)	494 ha (2017) (FAOSTAT)		
Market size (country*segment) (ha)	484 ha (98%)		
Seed variety current offer			
Crop use	Home consumption		

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Trait product profile: what does it look like ?

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Variety traits					
Trait category	**Trait description**	**Target value**	**(+ unit)**	**Reference variety**	**Required >/=/</>=/<= + %**	**Market priority**
Agronomy	Number of days between sowing a	30 days		Clemson	<=	High
Abiotic stresses	Cold tolerance during Dry Cold Sea	Tolerant		Volta	>=	Medium
Biotic stresses	Pest resistance	Tolerant		Clemson	>=	Medium
Biotic stresses	Disease resistance	Tolerant		Clemson	>=	Medium
Biotic stresses	Okra mosaic virus resistance	Tolerant		Clemson	>=	Medium
Yield potential	Yield	14 t/ha		Clemson	>=	High
Fruit characteristics	Diameter	4 cm		Clemson	=	High
Fruit characteristics	Height	14 à 16 cm		Clemson	=	High
Fruit characteristics	Size uniformity (visual)	Homogenous		Clemson	>=	Medium
Fruit characteristics	Shape (visual)	Very thin and long		Clemson	=	High
Fruit characteristics	Ridges	Deep ridges		Clemson	>=	Medium
Fruit characteristics	Color	Shiny green, med green		Clemson	>=	Medium
Fruit characteristics	Lignification	Tender		Clemson	>=	Medium
Fruit characteristics	Slimyness	Very slimy		Clemson	>=	High
Post-harvest traits	Cooking test	Good		Clemson	>=	Medium
Post-harvest traits	Shelflife	Lignification (+3 days)		Clemson	>=	Medium
Post-harvest traits	Taste	Good		Clemson	>=	Medium
Post-harvest traits	Cooking time?			Clemson		Medium

A Potential business opportunity of $2m to $3.6m sales at peak

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		TARGET at Peak					
3 states GUJ-RAJ-MP		32 districts all Tehsils	**9 districts 72 tehsils**	Volume in Tons	Planted area in Kha	Net Sales in $M	MS in %
total maize area	Mha	1.6	**0.58**				
total seeds volume	Tons	24000	**8700**				
Unmet needs	Tons	20000	**8000**				
AAA Sales BASE case scenario				**1450**	**97**	**2.03**	**18%**
AAA Sales BEST case scenario				**2600**	**173**	**3.64**	**33%**

Accessible areas for AAA in South RAJ, West MP and East GUJ

- Total OPV market in the 3 states: 1.6 MHa
- Focus on districts and sub-districts where OPV are dominant: 0.6 Mha
- Potential seeds volume: 8000Tons

Sources: Kabil market research 2017

An affordable farmer price aligned with the product performance

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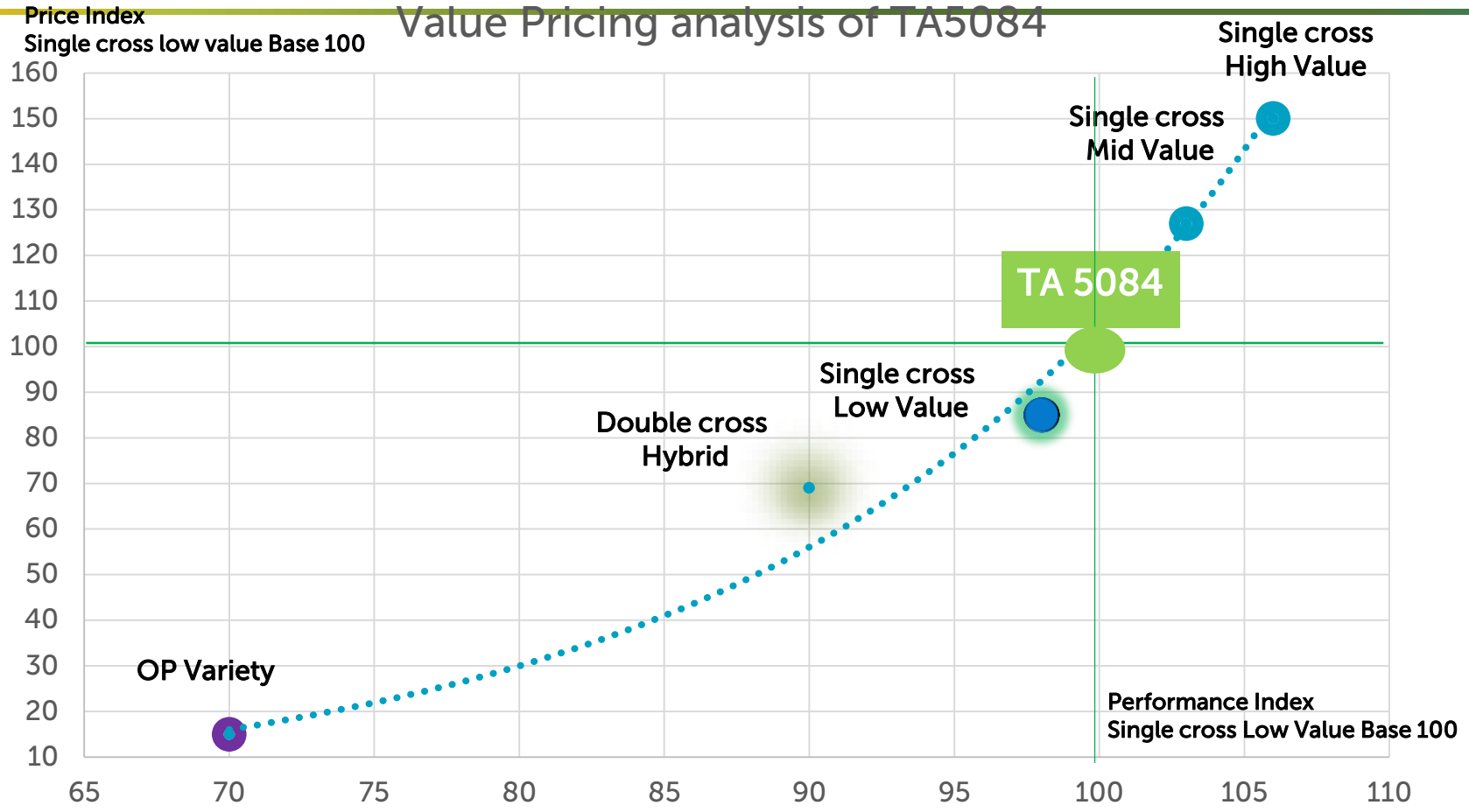

Performance index TA5084 @102% Local single cross hybrid, average yield 3T/ha
Seeding rate: 30kg/ha OPV vs 15kg/ha Hybrid

A proven Return on Investment for smallholders

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			OPV		TA5084	
Revenue	yield	Tons/Ha	2.1		**3**	
	price	USD/Ton	150		**150**	
	TOTAL Income	USD/Ha	315		**450**	
Costs	Fertilization	USD/Ha	39	23%	**46**	**22%**
	Labor	USD/Ha	65	38%	**55**	**26%**
	Seeds	USD/Ha	10	6%	**46**	**22%**
	CP	USD/Ha	17	10%	**21**	**10%**
	Mechanization	USD/Ha	39	23%	**42**	**20%**
	TOTAL Costs	USD/Ha	170		**210**	
Net Income	Net Income	USD/Ha	145		**240**	

Source: Syngenta

Key messages

- OPV seeds has a cost for farmers. It is never free!
- Hybrid seed cost is only 20+% of the total production costs
- Labor / mechanization and fertilization represent the main costs

Maize production costs analysis

			OPV		Local COM hybrid		TA5084		BRANDED hybrid	
Revenue	yield	Tons/Ha	2.1		2.9		3		3.3	
	price	USD/Ton	150		150		150		150	
	TOTAL Income	USD/Ha	315		435		450		495	
Costs	Fertlization	USD/Ha	39	23%	45	22%	46	22%	55	23%
	Labor	USD/Ha	65	38%	55	27%	55	26%	53	22%
	Seeds	USD/Ha	10	6%	44	22%	46	22%	60	25%
	CP	USD/Ha	17	10%	21	10%	21	10%	29	12%
	Mechanization	USD/Ha	39	23%	40	20%	42	20%	43	18%
	TOTAL Costs	USD/Ha	170		205		210		240	
Net Income		USD/Ha	145		230		240		255	
	%MARGIN	%	46%		53%		53%		52%	

Source: Syngenta

Key messages

- Seed costs is max 25% of the total production costs for BRANDED hybrids, compared to 6% for OPV. Labor and mechanization represent the main costs. Fertilization is also an important production factor (>25% of total costs)
- Farmer net income is increasing when farmers shift towards Branded hybrids despite higher costs

Value sharing analysis: AAA maize price positioned at a similar level as local COMMERCIAL Hybrids

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Farmer price – in USD / kg