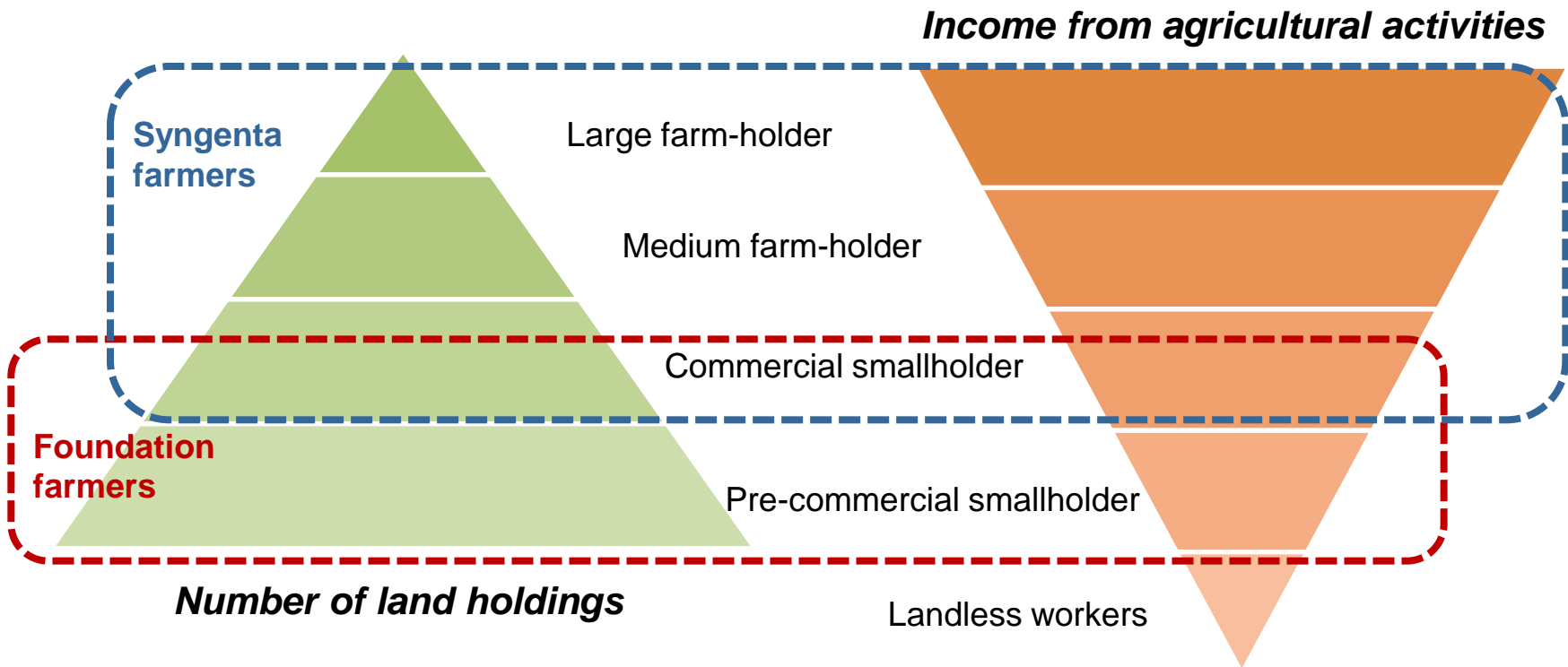


Bridging the seeds divide: lessons for demand-led breeding



Ian Barker
Head Agricultural Partnerships

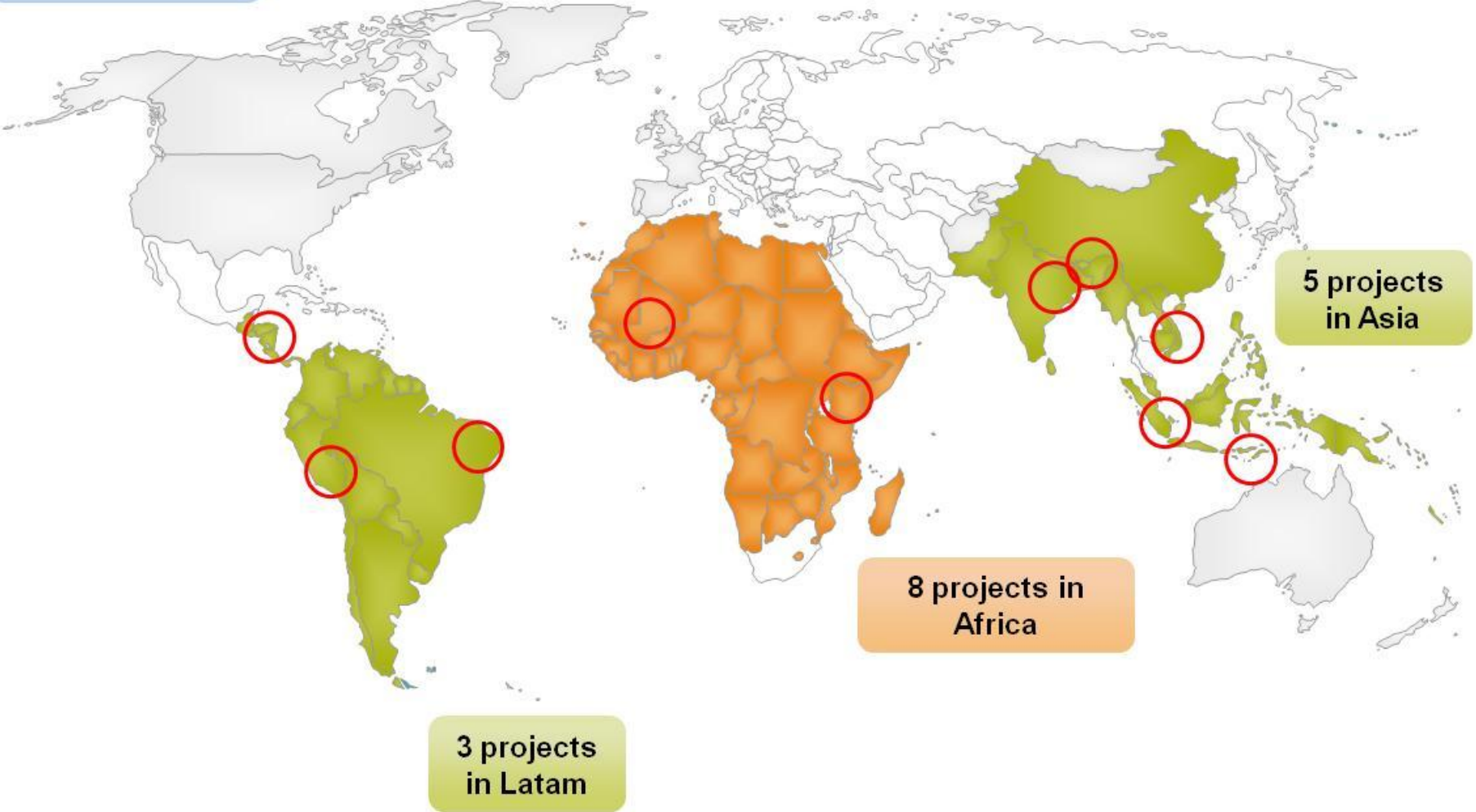
SFSA: Defining the 'Foundation farmer' and who we are



- A non-profit organization established by Syngenta under Swiss law
- Can access Company expertise but is legally independent and has its own board

SFSA: Global presence

5 projects with
Global focus

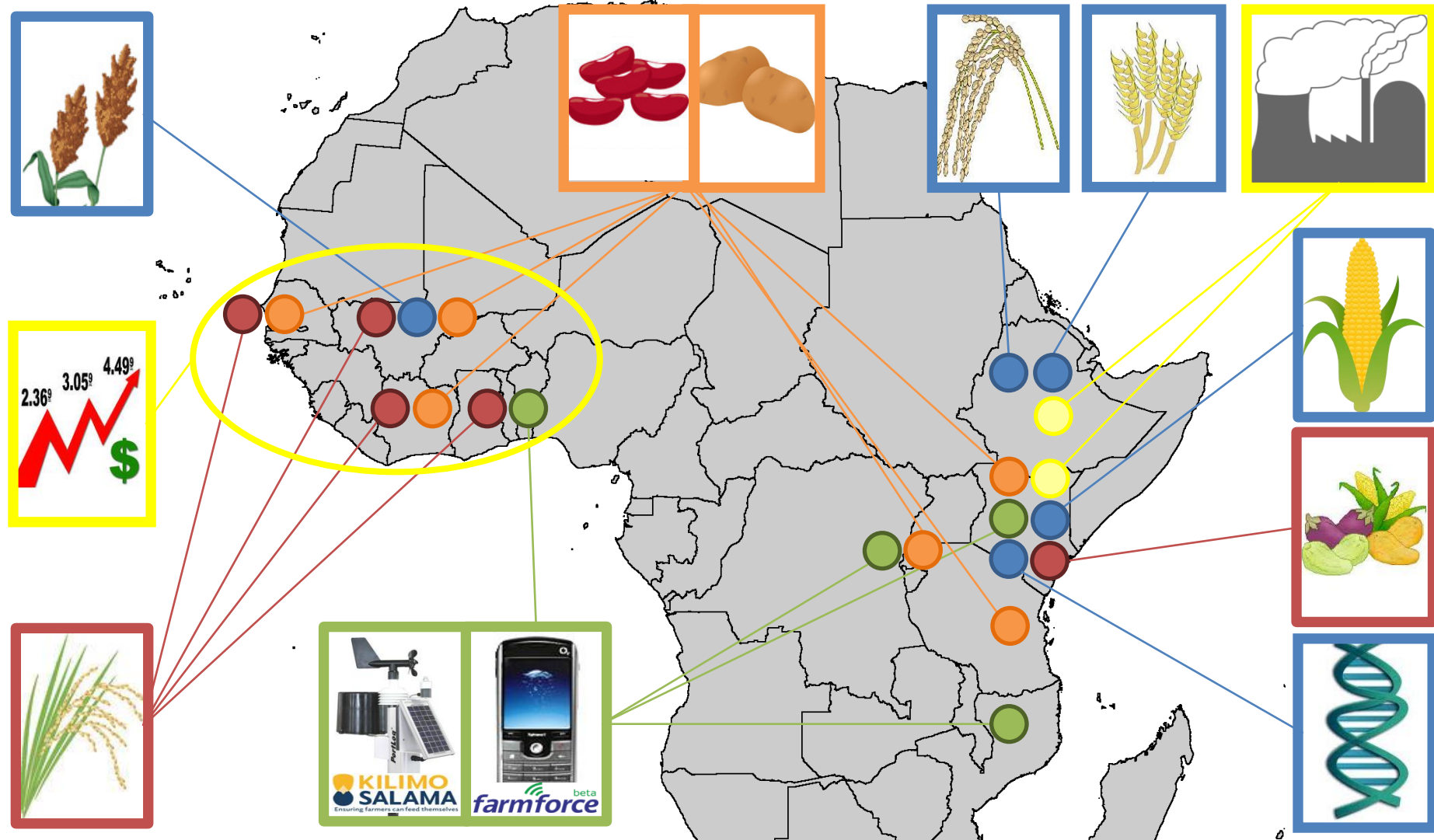


5 projects
in Asia

8 projects in
Africa

3 projects
in Latam

SFSA projects in Africa (2013): Proof of principle across the whole value chain



R & D	Market-led Extension	Policy Development
Seed Systems	Risk Management	Outreach

Three breeding projects to deliver improved varieties of wheat, tef and maize for farmers in East Africa

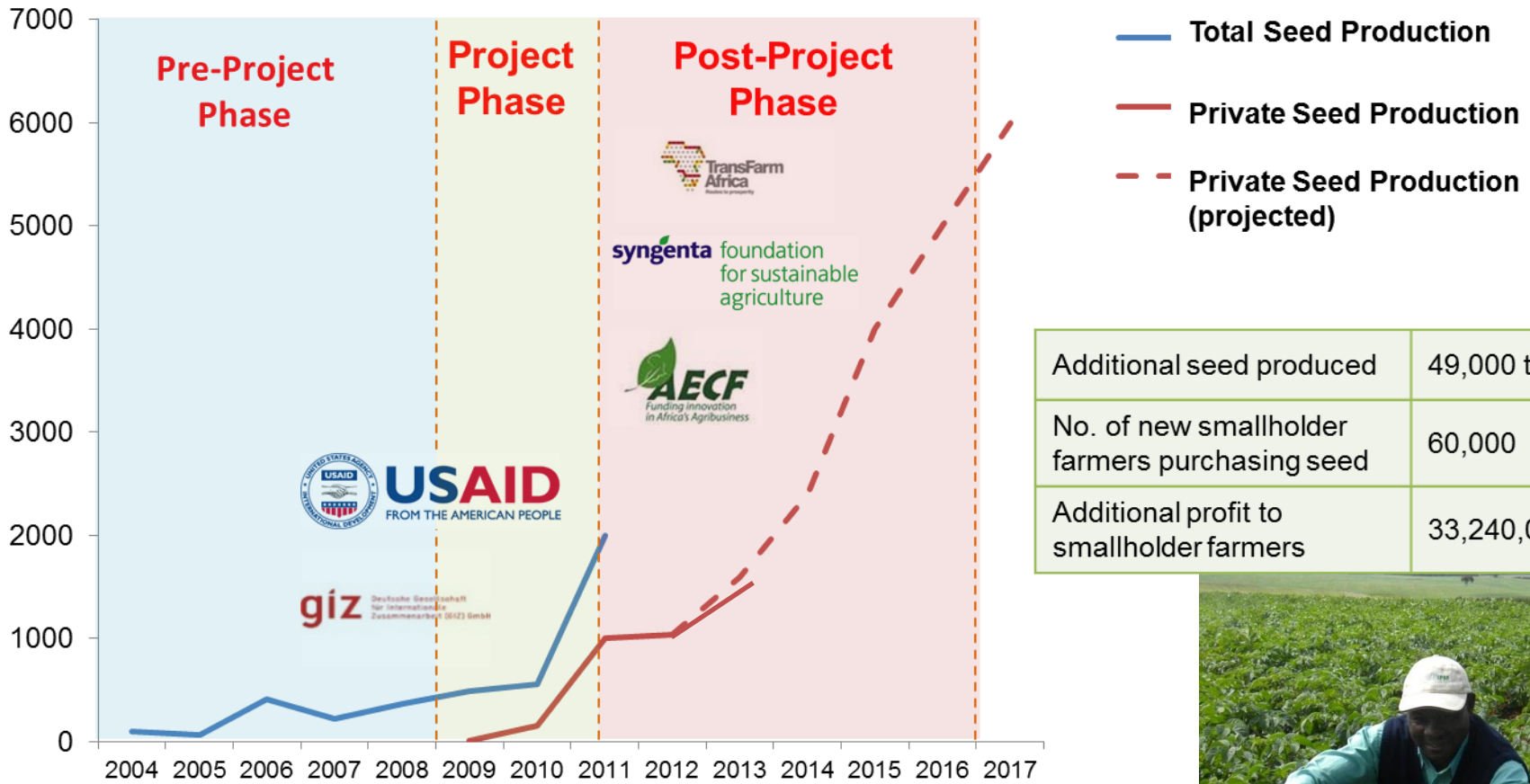


POSSIBLE MIGRATION ROUTES OF WHEAT RUST Ug99
Based on prevailing winds and areas of wheat production considered the more likely route for the continuing adv



Local quality commercial potato seed production in Kenya

Production of certified seeds in Kenya (tons)



Additional seed produced	49,000 t
No. of new smallholder farmers purchasing seed	60,000
Additional profit to smallholder farmers	33,240,000 USD



Commercial investment in delivering potato seed to small-holder farmers (including public (KARI) and private (HZPC) varieties).



Potato varieties released in Kenya

Name	Source	Year of release	Maturity period (Days)	Late Blight	Use	Area in % or Status
Roslin Eburu (B53)	UK	1953	120-150	Suscept.	Good storability	0.1
Dutch Robyjn	NL	1960's	90-110	Moder. Suscept.	Chips, Crisps Table	15-20
Anett	GER	19702	70-90	Suscept.	Table	1-2%
Kenya Baraka		1973	90-110	Moder. resistant.	Chips, Crisps Table	< 1
Desiree	NL	1972	80-100	Suscept.	Supermarket potato	2-5
Kerr's Pink	UK	1960's	80-100	Suscept.	Popular as Meru	< 2
Roslin Tana		1974		Suscept.		Very little
Kenya Bvumbwe		1974		Suscept.		Very little
Kenya Dhamana		1988		Suscept.		Very little
Kenya Chaguo		1998		Suscept.		Very little

Potato varieties released in Kenya

Name	Source	Year of release	Maturity period (Days)	Late Blight	Use	Aera in % or Status
Asante	CIP 381381.20	1998	90-110	Resistant	Table	10-15
Tigoni	CIP 381381.13	1998	100-120	Resistant	Chips, Table	15-20
Kenya Karibu	KP 90172.34 (cross of 2CIP POP A clones)	Pre-release2002	110-130	Highly Resistant	Chips, Table	2-5
Kenya Faulu	KP 90142.7 (cross of 2CIP POP A clones)	Pre-release2002	90-110	Resistant	Chips, Crisps Table	0-never bulked
Kenya Sifa	CIP 720097 (Mexican)	Pre-release2002	85-100	Resistant		0-never bulked
Kenya Mavuno	KP 90131.10 (cross of 2CIP POP A clones)	Pre-release2002	85-100	Resistant		0-never bulked
Purple Gold	CIP 391916.96	Pre-release2010	100-120	Resistant	Chips, Crisps Table	0- Bulking started
Kenya Mpya	CIP 393371.58	Pre-release2010	90-110	Highly Resistant	Chips, Table	0- Bulking started
Sherekea	CIP 393385.39	Pre-release2010	90-100	Resistant	Chips, Crisps Table	0- Bulking started

Informal Farmer Varieties in Kenya

Name	Source	Maturity (Days)	Late Blight	Other Traits & Use	Area in % or Status
Thima Tuti	Escapee? Andean type	70-80	Moder. Resistant	<u>Short dormancy</u> , Table, Chips	15
Purple Tigoni	Escapee? Andean type	80-90	Resistant	<u>Short dormancy</u> , Table	10
Changi	Escapee? Andean type	70-80	Moder. Resistant	<u>Short dormancy</u> , Table	15
Nyayo	Escapee? Andean type	70-90	Moder. Suscept.	<u>Short dormancy</u> Chips, Crisps Table	5-10
Tigoni Red	Escapee? Andean type	80-90	Resistant	<u>Short dormancy</u> Chips, Table	10
Ngure	Escapee? Andean type	80-90	Moder. Suscept.		1-2

➤ *Farmers favoring short dormancy/early maturing – not a selection criteria in NPT*

Maize breeding in public-private mode: importance of segmenting markets and product profiles



Drought-tolerant corn (SFSA, CIMMYT, Syngenta) in India

- Yield 80% of current single cross hybrids and 2x yield current OPVs.
- Yield stability under drought and non-drought.
- Maturity: 85-95 days
- Price point 60-90 rupee/kg.
- Target seed yield minimum of 2x single cross (minimum seed yield 4t/ha.
- Target cost of seed production at least 50% of single cross (COGS target of 60-70 dollar cents per Kg).