

# Partnerships for Impact at Scale

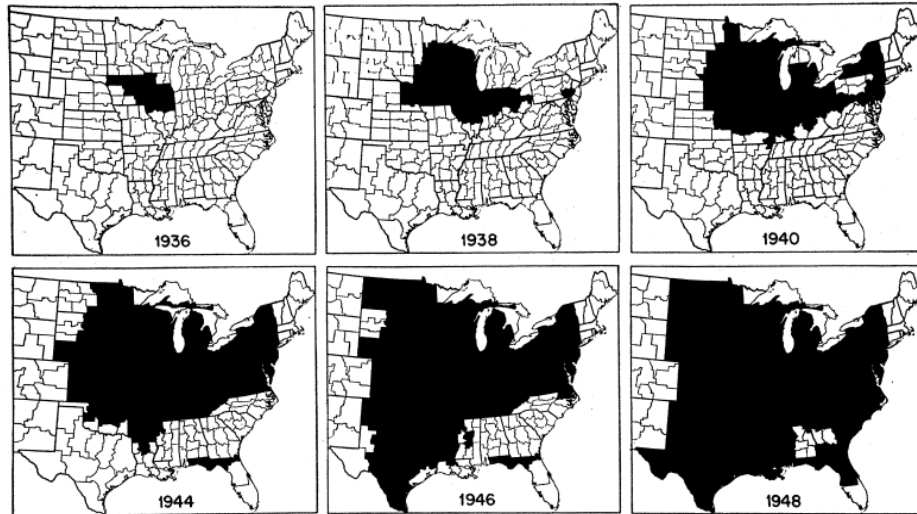
Marco Ferroni

Syngenta Foundation for Sustainable Agriculture

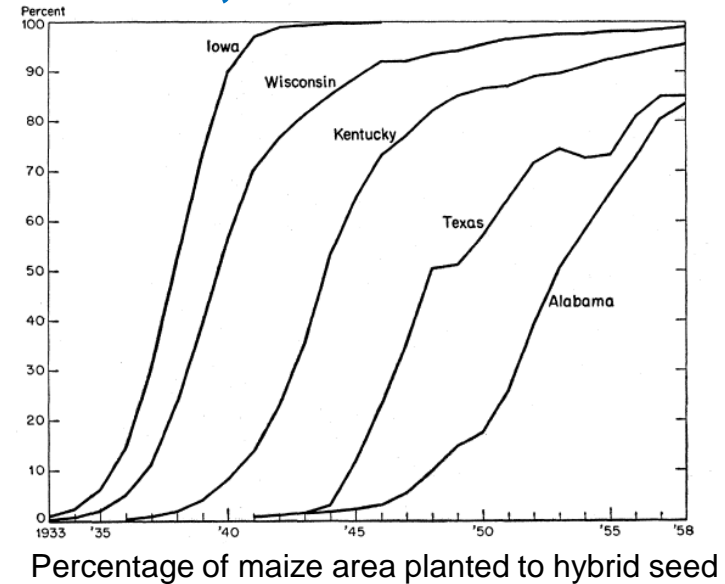
**Crawford Fund Conference on  
The Business of Food Security: Profitability, Sustainability and Risk  
10-12 August 2015, Canberra**

# Impact at scale requires markets, commercial depth (1/2)

## Spread of hybrid maize in the US, 1936-48



Areas with >10% hybrid seed of total corn acreage

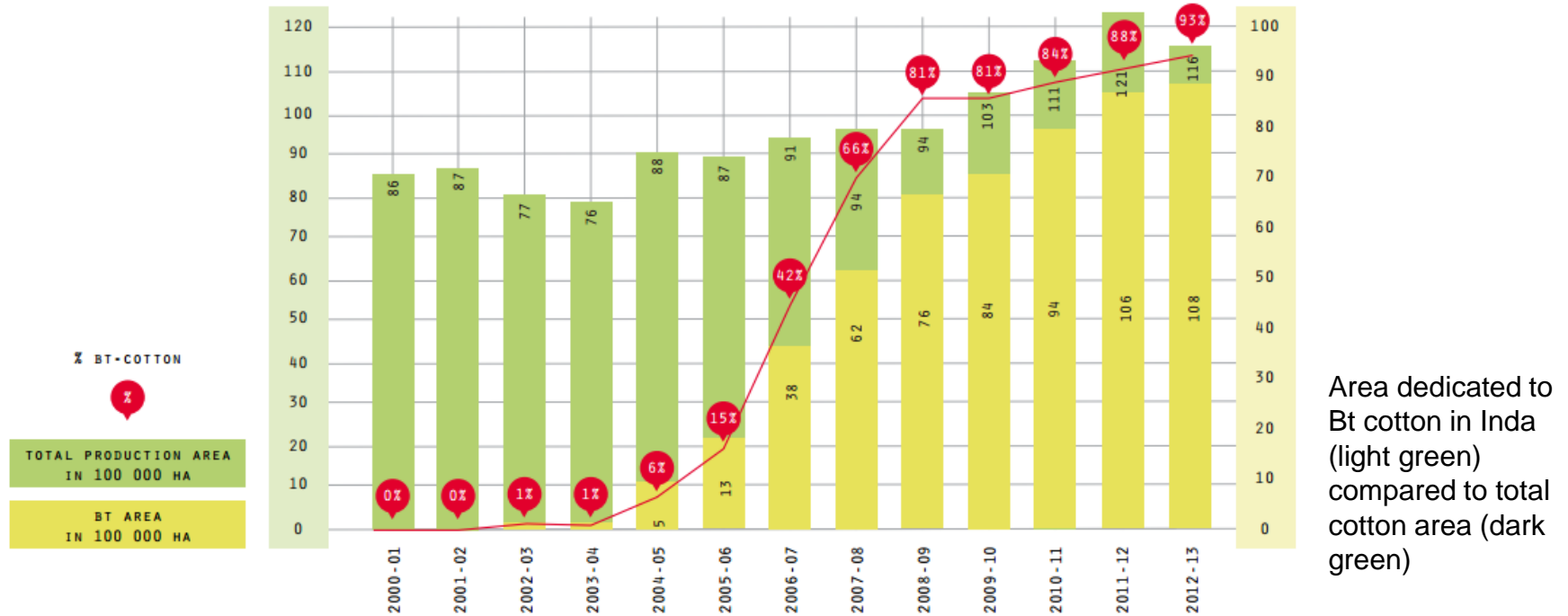


- S-shaped pattern of diffusion (slow at first, accelerating until reaches peak, slowing down as laggards enter)
- Geographic differences in the use of hybrid maize explained by differences in the profitability of that use (adoption more profitable in 'good' areas)
- Breeding for locally adapted varieties and availability of seed was 'demand-led' and followed the market

Source: Griliches, 1960

# Impact at scale requires markets, commercial depth (2/2)

## *Bt* cotton India as an illustration of the same phenomenon today



- First approved in 2002, heralding in a new era in Indian agriculture (S-curve)
- By 2013, 7.3 million farmers grew *Bt* cotton on 11 million hectares in India; about 1000 hybrids in the market
- Product relevance ('demand-led') and availability of locally adapted varieties were key

Source: VIB 2013

## 'Public-private' errands in this context

- Historically, the on-set of sustained yield growth has been associated with the rise of a private seed industry
  - Sub-Saharan Africa the last frontier in this respect
- For a seed industry to emerge, the following is needed:
  - Public goods (R&D, regulatory, 'conducive' business climate)
  - Enablers of farm-level demand (nothing new here: cf. Sir John Grenfell Crawford's India ag strategy recommendations, 1965!)
  - Public-private cooperation to 'kick-start' markets (addressing 'failures'), improve the functioning of value chains, create synergy in agricultural R&D, shape social and environmental outcomes
  - Products, appropriability

# The role of non-profits, foundations

## Broker public-private cooperation

- Understand need, opportunity, tech aspects, tactics and tools
- Know relevant actors, their skills, incentives, weaknesses, comparative advantage
- Be able to act, i.e., listen, design, coordinate, convene, elicit contributions, clarify accountabilities, invest

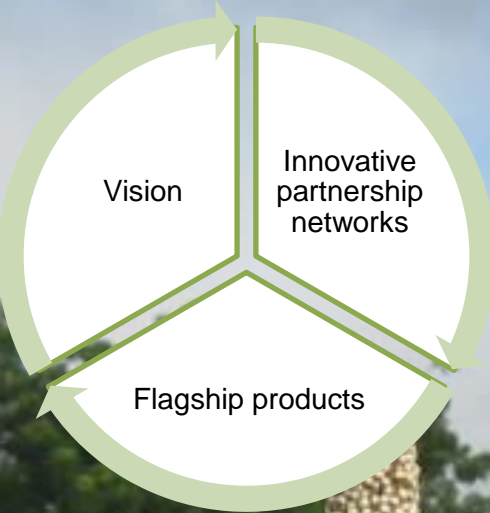
## Profits, sustainability and risk outlook implies the need for more of this, not less

- Outlook is for continued unprecedented food demand growth, a private sector keen on opportunities in ag value chains, governments wanting food security, everybody seeking to work with small farmers, but few aware of how to do it at scale
- In other words, profit and sustainability prospects are there; implementation fraught with risk; PPPs abound, but evaluability and evaluation in short supply
- ‘Catalytic nudge’ the space of non-profits, foundations

## Some examples (Syngenta Foundation and partners)

- Seed systems
- Triple A maize
- Demand-led plant variety design

# Seed systems development ('Seeds2B' powered by SFSA)



- Goals**
- Sub-Saharan Africa:**
- Foster intensification and improve farm income
  - Catalyse private investment in seed sector
  - Contribute to CAADP productivity growth goals (African-led agenda)
- South/South-East Asia:**
- Address remaining pockets of poor technology adoption
  - Extend private investment to wider range of crops

Research	Development	Markets & Policy	Products/Models
<ul style="list-style-type: none"> <li>• Demand-led R&amp;D (grains, root crops, vegetables)</li> </ul>	<ul style="list-style-type: none"> <li>• Licensing (public-private, private-private)</li> <li>• Trialling, registering varieties</li> </ul>	<ul style="list-style-type: none"> <li>• Policy development</li> <li>• B2B relationships</li> <li>• Advanced market commitments (AMC)</li> </ul>	<ul style="list-style-type: none"> <li>• Seed value chains</li> <li>• Seeds «Bridges»</li> <li>• Public licensing bodies</li> <li>• Seed Fund</li> </ul>

Millions of smallholders everywhere having access to the best genetics and seed technology to address the yield gaps seen around the world.



## ***Partnership for breeding low-cost maize hybrids with improved dry-season yields***

**CIMMYT:** Genetic diversity, field trialing network, experience in variety release

**Syngenta:** Molecular screening platforms, elite germplasm, performance assessment, product development

**Syngenta Foundation:** PPP models, royalty and IP ownership schemes; brokering function

***→ Distribution of new varieties through local seed companies***





# Market-responsive plant variety design (1/2)

## Implementing demand-led approaches to plant breeding

- Partnership Crawford Fund, SFSA and AIFSRC/ACIAR on how to do demand-led breeding
- Best practices gleaned from public and private expertise
- Professional development for breeders and postgraduates in SSA and implementation in national programs
- Foresight on supply and demand drivers on a set timescale
- Priority setting of variety design based on demand
- Partnering with the value-chain and seed system so that demand is supplied by R&D

***Start with key stakeholders in tomato value-chain in Ghana, deep-dive analysis of the tomato market segments and their needs***

# Market-responsive plant variety design (2/2)

- *Tomato: Most important vegetable in Ghana (38% of spend on vegetables)*
- *3 in-country processing plants currently not used (capacity of 400,000 t/year)*
- *Import of tomato paste from China and EU (80,000 t/year)*

## Consumer demand:

- Fresh produce (transport and shelf-life)
- Processing to paste
- Mini-tomatoes for premium markets



## Tolerance traits:

- Heat
- Nematodes
- Yellow leaf curl virus

# Conclusion

- Markets the 'vehicle' for scaling up
- Market development therefore essential, with implications for governmental action, aid agencies, the non-profit sector, business, civil society
- Enlightened cooperation across the relevant spectrum of actors indispensable
- The task: Get specific, tackle blockages, de-risk, build market pull, offer financing on the right terms, pursue shared value, reduce information asymmetry, support learning – all with a view to crowding in private investment and business

# Partnerships for Impact at Scale

**Crawford Fund Conference on  
The Business of Food Security: Profitability, Sustainability and Risk  
10-12 August 2015, Canberra**