



CGIAR Research Programs on Wheat and Maize



RESEARCH
PROGRAM ON
Wheat



RESEARCH
PROGRAM ON
Maize

Victor Kommerell, Program Manager



RESEARCH PROGRAM ON Wheat



RESEARCH PROGRAM ON Maize

Program Objectives

- Farmers in wheat- and maize-based systems produce more, more profitably, on less land, with lower inputs (N! & H2O!), GHG / environmental foot-print.
- Poor consumers can afford maize- and wheat-based foods (calories, proteins, nutrients) in future.



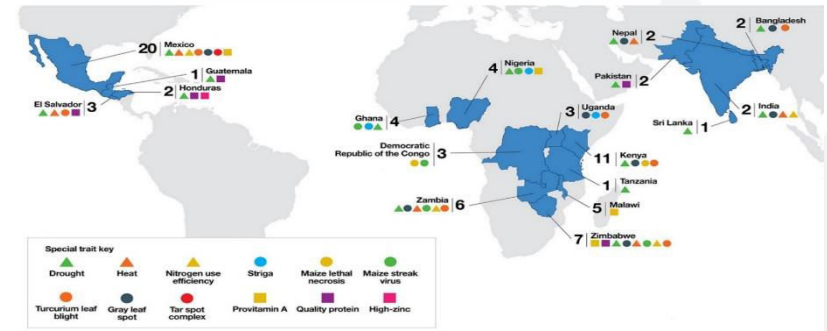


RESEARCH PROGRAM ON Wheat



RESEARCH PROGRAM ON Maize

Program Impact: So far



- ✓ Since 2000, 26% of spring wheat grown in China was CGIAR-derived.
- ✓ 1994-2014: 54% of released varieties CGIAR-derived.
- ✓ Benefit to China: valued at US \$3.4 billion (CCAP-CAS).
- ✓ 350 Chinese scientists in wheat training since 1970.



- ✓ Global: **324** CGIAR-derived maize varieties releases 2014-17.
- ✓ CGIAR-derived maize varieties on 1 million hectares in China.
- ✓ Collaboration between China, India, Brazil and Africa to develop small-scale machinery.



RESEARCH PROGRAM ON Wheat



RESEARCH PROGRAM ON Maize

Program Impact Future

CGIAR System Level Outcome Target: MAIZE + WHEAT	2022	2030
Farmers adopt improved varieties, practices, tech packages	32 M	58 M
People exit poverty	13 M	22 M
People no longer hungry (minimum dietary requirement)	15 M	62 M
More well-fed women of reproductive age (adequate # food groups)	4.5 M	11.7 M
Greater water, nutrient use efficiency in agro-eco systems	5 M ha	20 M ha
Agri-GHG emissions down by 15%	5%	5-20%



RESEARCH
PROGRAM ON
Wheat



RESEARCH
PROGRAM ON
Maize

CGIAR / CRP Partnerships

Challenges

- **Drivers:** Access to new knowledge & Enable scaling
- CRPs achieve **impact only through partnerships**, inside and outside the CGIAR
- Partners (CGIAR – NARS – private sector – NGOs) have **different comparative advantages**
- Different **kinds of partnerships, partners in different phases** along the *non-linear* continuum from science-to-impact
- The further a CRP moves **along continuum towards impact with farmers and consumers**, the less it can lead and influence
- **Struggle with funding modalities:** Short-term, project- not program-driven, donor preferences re: partners



Partnerships

Solutions

- Manage mix along R-to-D continuum
- Fit-for-purpose (scope, duration)
- Different co-funding approaches

	Discovery	Validation	Scaling-out
Research-driven			
Regional / Global	International Wheat Yield Partnership Genomic Selection (wheat)	IWIN, precision phenotyping platforms	Scaling Out networks (GIZ)
	G-20 Wheat Initiative: Int'l research coordination		
National	CIMMYT-ICAR (India) 5-Yr plans		mechanization business development (e.g. CSISA-MI: iDE)
		Mexico Take It To The Farmer: Innovation Systems Approach	
Multi-stakeholder p'ships			
Development/Scaling-Out focused			
Regional / Global	GENNOVATE (11-CRPs, 80 case studies)	Cereal Systems Initiative in South Asia (CSISA): <i>Complex agri impact challenges*</i>	
	Durable Rust Resistance in Wheat Initiative: Global germplasm improvement program		
National		MasAgro: <i>Complex agri impact challenges*</i>	
	S. Korea, Japan, BMZ-CIM: post-doc expert secondment	Pakistan Agricultural Innovation Program: <i>Discrete agri impact challenges*</i>	
Sub-national		Innovation hub partners (e.g. NOGs, CSOs, private sector partners)	



RESEARCH PROGRAM ON Wheat

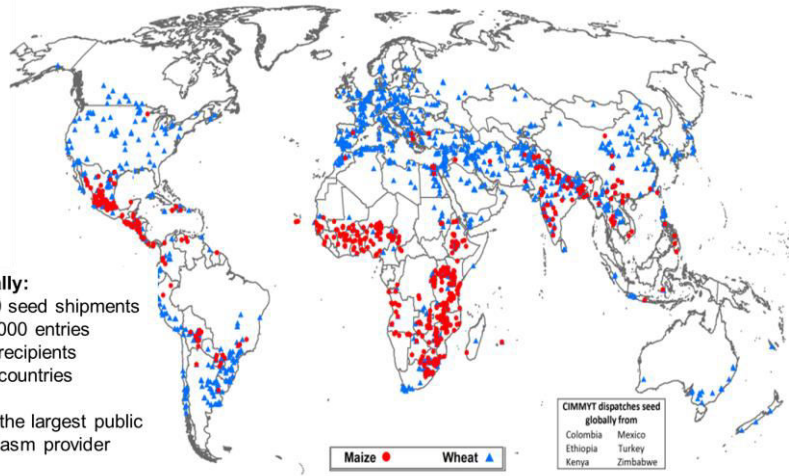
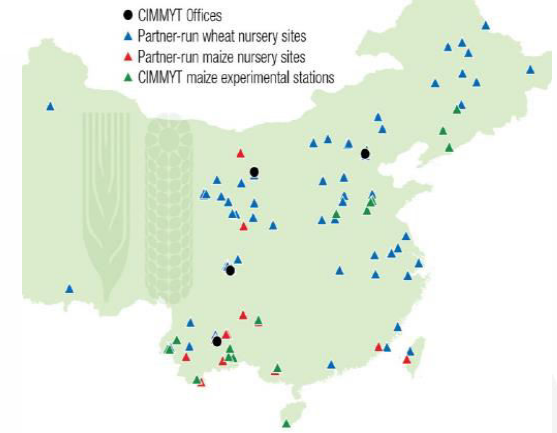


RESEARCH PROGRAM ON Maize

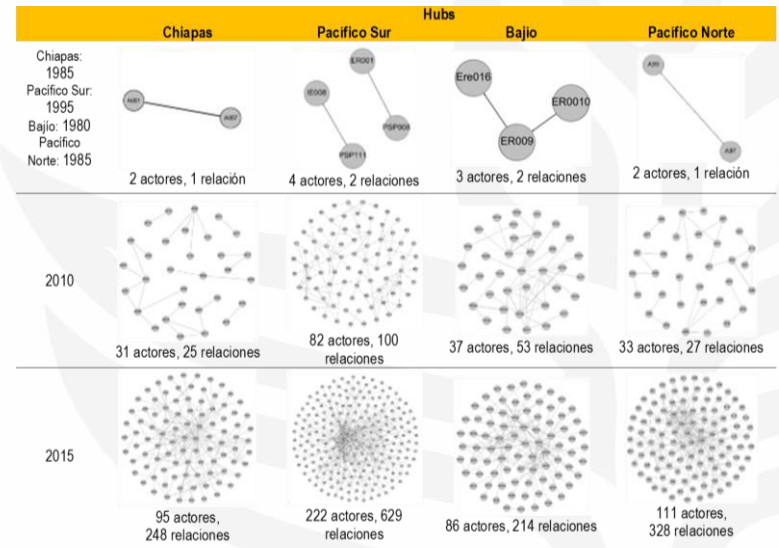
Partnerships

Examples

- International Maize / Wheat Improvement Networks
- Innovation Hubs in Mexico
- Bilateral Partnerships in China



Annually:
 > 1500 seed shipments
 > 500,000 entries
 > 800 recipients
 > 100 countries
 By far the largest public germplasm provider





RESEARCH PROGRAM ON Wheat



RESEARCH PROGRAM ON Maize

Partnerships

Future outlook and innovations

1. CGIAR Country Collaboration: Practicing ground
2. Invest more in partnership design, management, learning - on all sides
 - Think scaling from the beginning (Scaling Tool); screening partners 'lense'
 - Stay closer to partners; relationships!
 - Use network analysis to understand innovation networks
3. Inflation of middlemen-connectors-alliances
 - Partner only if you have generated substance in-house
 - The fewer the merrier



RESEARCH PROGRAM ON Wheat



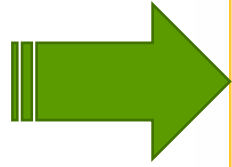
RESEARCH PROGRAM ON Maize

China and WHEAT, MAIZE




1970 - now: Long-standing relationships

2017: China joined G-20 Wheat Initiative

For 2019+: Future project opportunities



- CAAS network node role
- Counterparts from different institutes, universities per research topic

1. Understanding and using genetic resources 
2. Genomics-assisted introgression strategies (tropical/temperate maize, spring/winter wheat) supported by precision phenotyping
3. Improve water and nutrient efficiency 
4. Mechanization for smallholders 
5. Scientific exchange programs
6. China-MAIZE/WHEAT-Asia & -Africa partnerships



RESEARCH PROGRAM ON Wheat



RESEARCH PROGRAM ON Maize

China and WHEAT, MAIZE, EiB

2017: China joined G-20 Wheat Initiative

For 2019+: Future project opportunities

- CAAS network node role
- Counterparts from different institutes, universities per research topic

China co-invests in G20 Wheat Initiative- endorsed Heat & Drought Wheat Improvement Consortium?

CAAS co-lead global winter wheat improvement program with CIMMYT, ICARDA, Turkey, Iran ?

CAAS a NARS partner in Excellence in Breeding Platform?

Thank you



谢谢