



Managing PGRFA post SoW-PGRFAI

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Food and Agriculture Organization of the United Nations

for a world without hunger

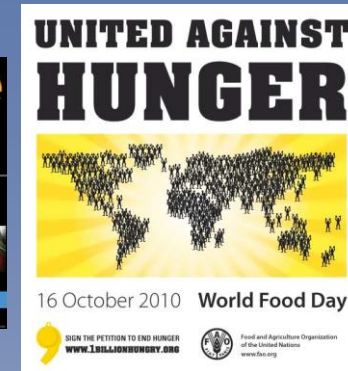
Outline

- Food insecurity and the pivotal role of PGRFA
- Salient lessons from the Second Report on the State of the World's PGRFA
- Result-oriented management of PGRFA



Need to produce more, nay, a lot more food!

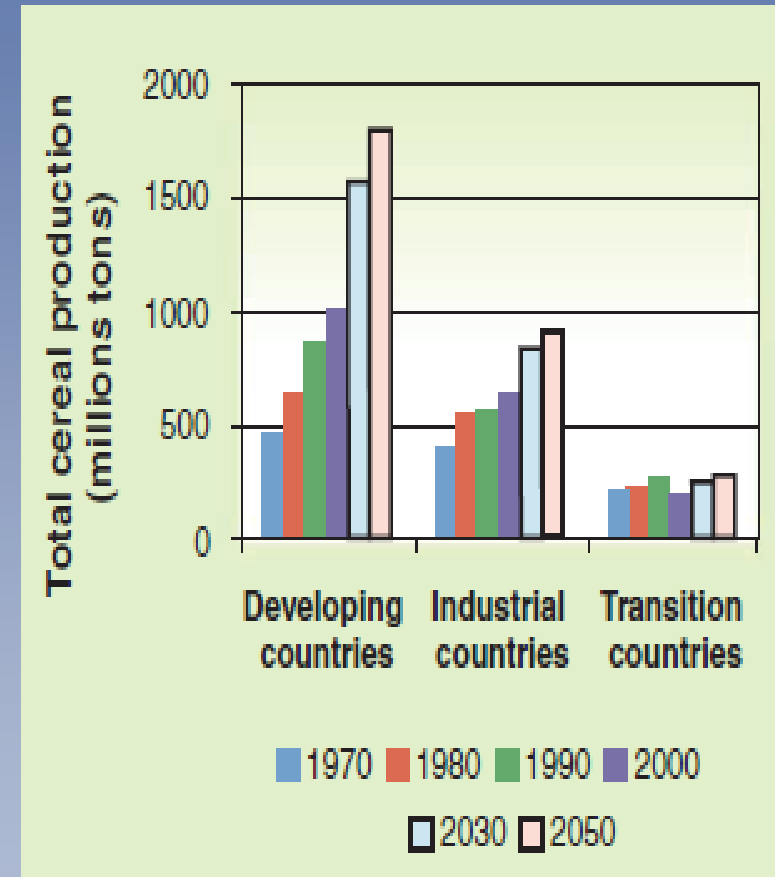
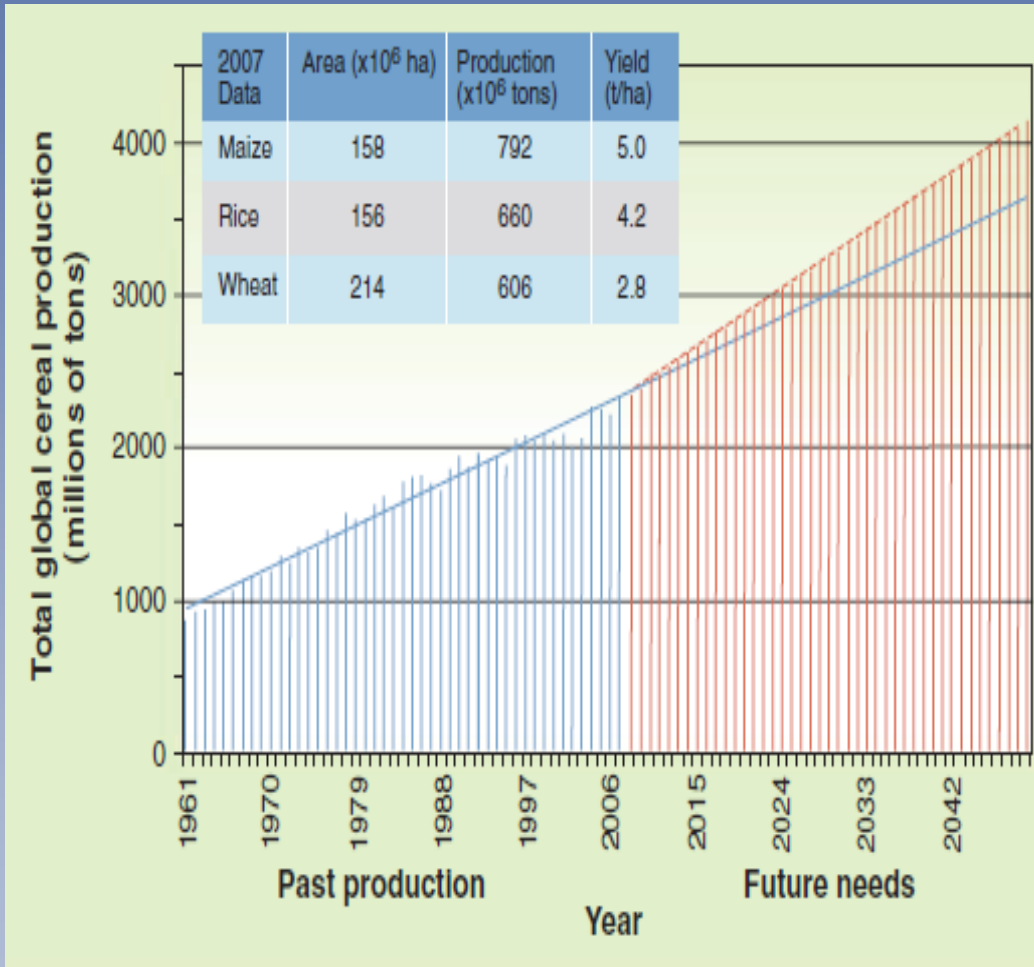
- World Food Conference 1974
- World Food Summit 1996
- World Summit on Food Security 2009
- Need to increase food production by 70% in 40 years!



Year	Theme
2010	United against Hunger
2009	Achieving food security in times of crisis
2008	World Food Security: the Challenges of Climate Change and Bioenergy
2007	The Right to Food
2006	Investing in agriculture for food security
2005	Agriculture and Intercultural Dialogue
2004	Biodiversity for Food Security
2003	Working Together for an International Alliance Against Hunger
2002	Water: Source of Food Security
2001	Fight Hunger to Reduce Poverty
2000	A Millennium Free from Hunger



Crunching the Numbers ---



Tester and Langridge. 2010. Science 327:818-822



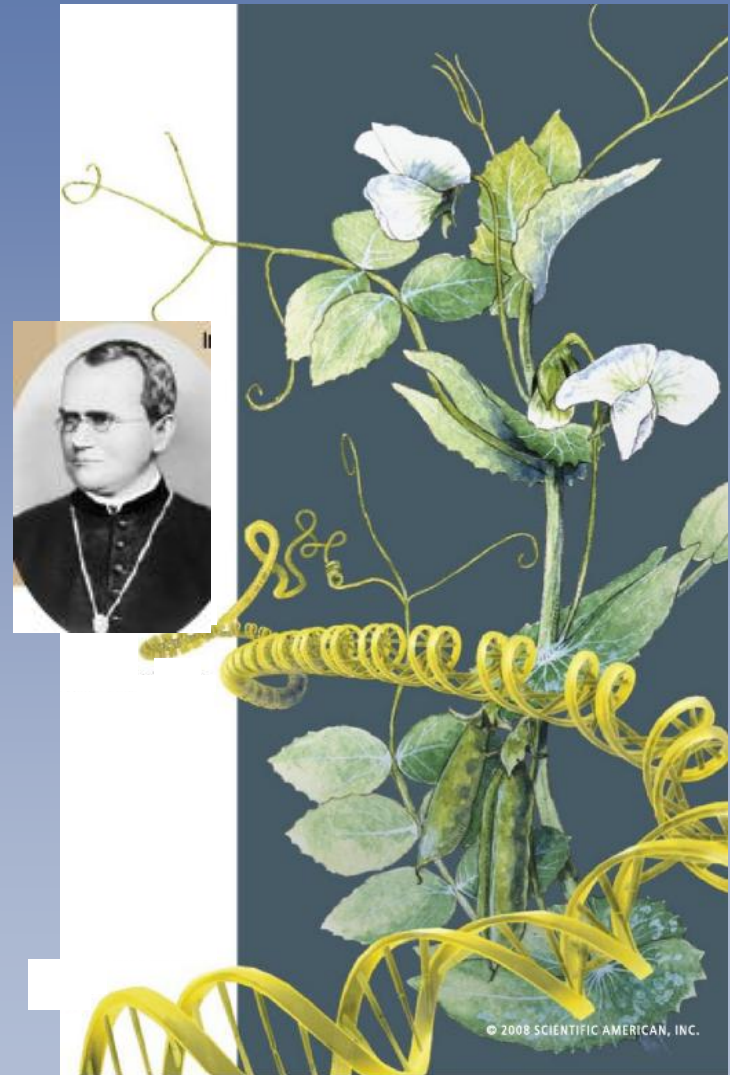
Increasing Crop Production ----

- Finite natural resources base
 - Available water and arable land either stagnant or dwindling
 - Prohibitive cost of agricultural inputs
- So, increased productivity is the most viable option!
 - Genetic gain accounts for 50% of increased crop yield
 - Balance is due to improved agronomic practices



Its All About Nature and Nurture!

- Re-enact the drivers for agriculture
 - Evolution, Domestication, Speciation
 - Green revolution
- Plant Breeding --- Science of altering the genetic pattern of plants in order to increase their value



Scientific American, Jan. 2009



Key Partners and Collaborators



- Preparation overseen by the Commission on Genetic Resources for Food and Agriculture (CGRFA)
- 1,200 stakeholders of 113 National Agricultural R&D systems
- 5 Donors – Canada, Italy, Japan, Norway and Spain
- Bioversity International, 5 other CG- Centers, and GCDT

Region	Country Reports
Africa	24
Americas	22
Asia & Pacific	19
Europe	31
Near East	17
Total	113



State of the World's PGRFA



The Second Report on
THE STATE OF THE WORLD'S
PLANT GENETIC RESOURCES FOR
FOOD AND AGRICULTURE

COMMISSION ON
GENETIC RESOURCES
FOR FOOD AND
AGRICULTURE



Coverage of the SoWPGR-2

- Current status of plant diversity, how it is being preserved and used
- Main achievements at the global, regional and national level
- Key technical and scientific advances
- Major gaps and needs that require urgent attention





Major Changes in Conservation since 1998

- Greater recognition of the importance of PGRFA
 - 1,750 gene banks hold 7.4 M samples,
 - up from 6 M in 1998,
 - 240,000 samples new samples
- International Treaty on PGRFA adopted by FAO Conference in 2001, now fully functional
- Global Crop Diversity Trust established in 2004
- Svalbard Seed Vault established in 2008
- Since SoW-PGRFA-II, new GPA for PGRFA



Major Gaps and Needs in Conservation

- Many genebanks with poor funding and facilities
- Large unplanned duplication (only 1-2 M samples are estimated to be unique)
- 45% of total collections held in just 7 countries, so increased need for facilitated access
- In-situ conservation - 30% more Protected Areas but not necessarily secure
- Crop Wild Relatives poorly collected and preserved



Sustainable use of PGRFA



- Dwindling or stagnant national capacities
- Increased roles of the private
- Focus largely on major crops and yield gains
- Sub-optimal adoption of advances in biotechnology
- Increasing targeted use of diversity (e.g. for climate change, pests, malnutrition)
- Increasing public – private partnerships



CIAT



Seed Systems: Commercial vs. smallholder Farmers

Commercial Farmers

- Served by private sector
- 5 MNC run 30% of global market
- Near 100% use of high quality, replaceable seed of improved varieties

Smallholder Farmers

- Served by public sector or NGOs and mainly farm-saved seeds
- Limited access to quality seeds of improved varieties
- Lack facilities, funds and markets

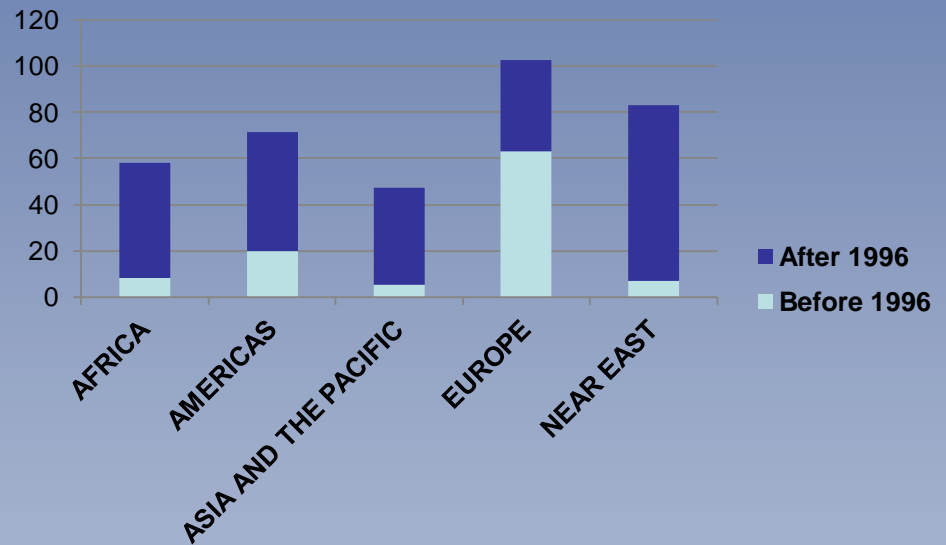
World regions	Billion US\$
ASIA	10
NAFTA	9,5
EU -27	9
CENTRAL & SOUTH AMERICA	3,5
AFRICA	1,1
REST OF THE WORLD	3,4
TOTAL ISF 2007	36,5





PGRFA-relevant national legislations have increased dramatically

<u>Instrument</u>	<u>Members</u>
Biosafety Protocol	157
CBD	193
IPPC	176
ITPGRFA	126
Seed Certification	125
UPOV	68
WTO-TRIPS	147



Percentage of countries that have adopted national legislations on new plant varieties



Urgent Call for Action

- Member countries should
 - increase investments in the collection and conservation of PGRFA
 - rebuild and upgrade R&D infrastructure
 - adopt and implement International Treaty on PGRFA and related GPA
 - Broaden genetic diversity in food production
- International community to foster winning partnerships



Sustainable Crop Production Intensification in the Context of Policy Making



- The challenge
- Farming systems
- Soil health
- Crops and varieties
- Water management
- Plant protection
- Policies and institutions

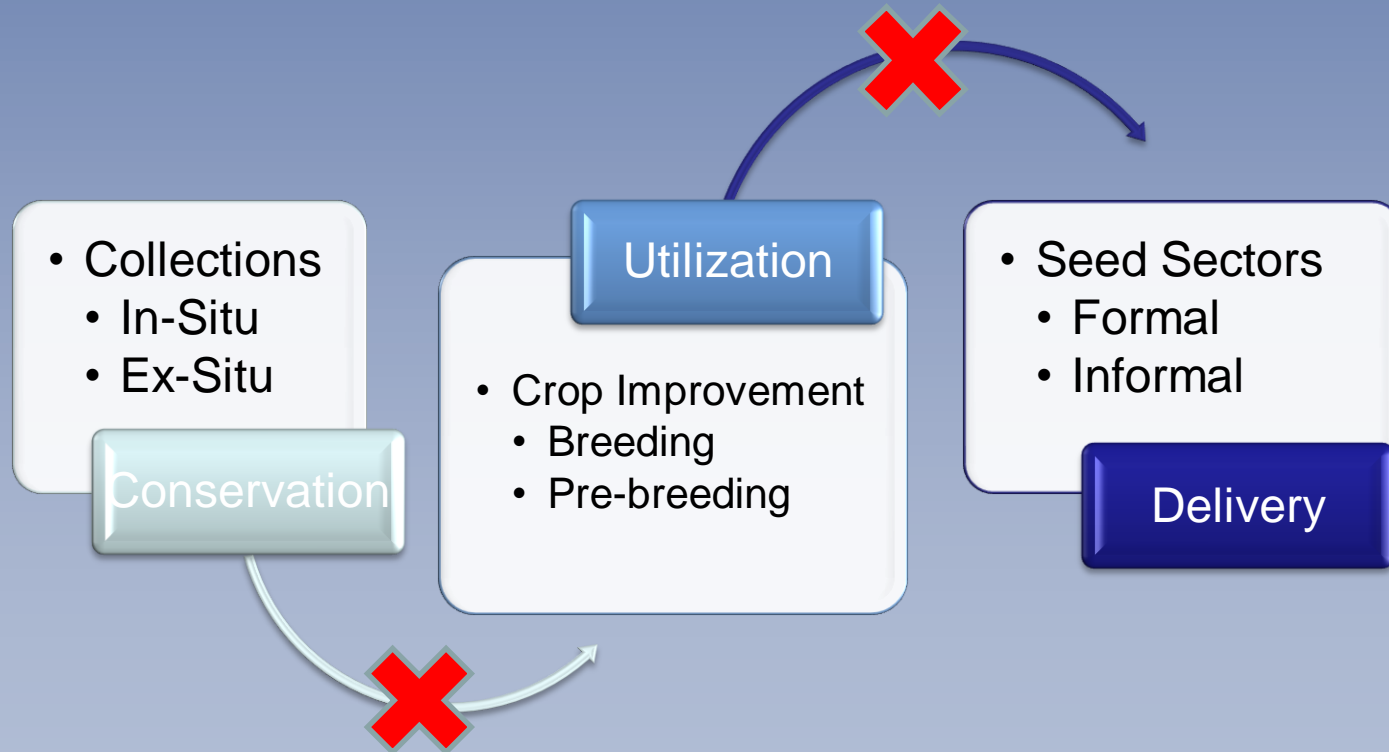
<http://www.fao.org/ag/save-and-grow/>

- “Shows how we can launch an ‘evergreen’ revolution.” M. S. Swaminathan
- “Puts greener techniques all together in one document.” *New York Times*
- “Will cut agriculture’s contribution to climate change.” *Wall Street Journal*



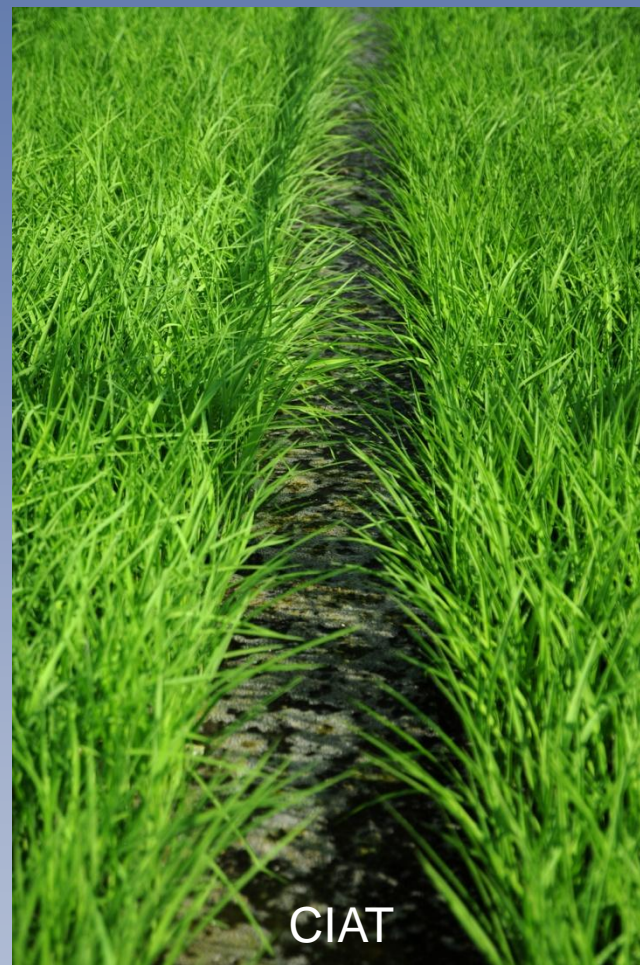
The PGRFA Continuum

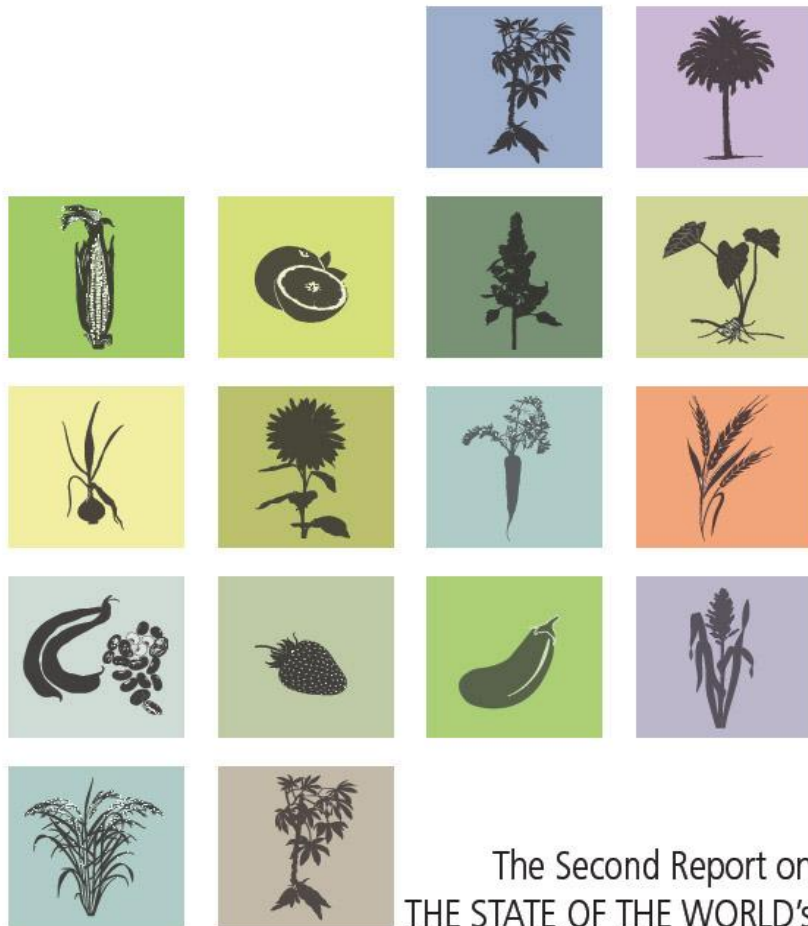
Not always continuous. Indeed, broken often



Template of a National Strategy on PGRFA

- Measures
 - All inclusive from conservation through breeding to seeds
- Governance
 - High-Level Coordinating body; Subsidiaries
- Tools
- Enabling Capacities
- Partnerships
- Monitoring and Evaluation





The Second Report on
THE STATE OF THE WORLD'S

PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Thank you!

