ICRISAT and Partners

Champions of the Poor of the Semi-Arid Tropics

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This presentation

- The context
- Our research heartland
- Major outputs and impacts
- Moving into the future
The context

- The semi-arid tropics
- Climate change and surging food and fuel prices
- Return of agriculture into center stage of global economy
- Emergence of private sector and civil society in rural development
- CGIAR change management process
800 million people: the world’s poorest
Unpredictable climate, low/erratic rainfall and poor soils
Inadequate physical and social infrastructure

The semi-arid tropics
The only global R&D organization for semi-arid agriculture

ICRISAT
Our research heartland
An integrative strategy of agricultural research that maximizes synergies among biotechnology, plant breeding, agronomy, agro-ecosystems and social sciences with people empowerment at its core.
Global research themes

• Agro-ecosystems development
• Crop improvement, management and utilization
• Harnessing biotechnology for the poor
• Institutions, markets, policy and impact
Enhancing biodiversity

Conserving accessions of sorghum, pearl millet, chickpea, pigeonpea, groundnut and six small millets
ICRISAT’s improved crops are important in ensuring food and nutritional security of more than 565 million poor people in Asia and sub-Saharan Africa.
Enhanced legume cultivation in Myanmar

- To enhance food security and farmer livelihoods in Myanmar
- ACIAR-funded project to increase the legume cropped area to at least 4.5 million ha by 2010
- Collaborators include: NSW Department of Primary Industries, University of New England; Department of Agricultural Research, Myanmar and Myanmar Agricultural Services
# Chickpea improvement program with Australia

**ARC Linkage grant**

- Chickpea development program to develop lines with excess boron and salinity tolerance with ARC linkage
- 55 salinity-tolerant lines exchanged and being evaluated with WA
- ICRISAT works on this with UWA and the Dept of Agriculture & Food (WA)

**COGGO grant**

- To develop early-maturing, disease-resistant desi chickpea breeding lines
- Over 2,000 breeding lines reviewed and rated by COGGO
- COGGO-sponsored targeted pre-breeding program with ICRISAT, UWA, CLIMA, Dept of Agriculture & Food, and PAU (India)
Reducing rural poverty through crop diversification

Increasing farming system efficiency through high value crops, new markets and adding value to farm products
Improving pearl millet residues for livestock

• To improve animal productivity in crop-livestock systems in India

• Through marker-assisted and conventional plant breeding to genetically increase the nutritive value of pearl millet

• ICRISAT-implemented project, supported by ACIAR and partnered by ILRI
Sorghum development

- Need for high quality post-rainy sorghum grain and stover
- Research to increase productivity and fodder quality
- Sponsored by ACIAR, involves University of Queensland, QDPI&F, Indian National Center for Research in Sorghum, and ICRISAT
Greening landscapes and improving livelihoods of the rural poor
Improving policies and institutional innovations

Making agricultural innovations accessible to the rural poor and linking them with markets for higher income
Research on contemporary global issues

• Climate change and vulnerability
• Drought and land degradation
• Bio-energy
• Agricultural diversification
Major outputs and impacts
Global impact of ICRISAT’s crops

610 improved varieties and hybrids developed by ICRISAT and partners released in 77 countries (1976-2007)
Pushkal is the world’s first pigeonpea hybrid through cytoplasmic male sterility (CMS) system
Kabuli chickpea: increased area 5-fold and production 13-fold in 9 years in Andhra Pradesh, India
New “super early” chickpeas

Mature in 75 days, escape terminal drought and heat stress, with improved resistance to fusarium wilt and large seeds
Bio-reclamation of degraded lands

Planting basins to harvest rainwater and reduce soil erosion, and leguminous crops and trees to improve soil fertility and mitigate drought in the Sahel
Conservation agriculture

Maintains soil nutrients, stops soil erosion and prevents water loss, doubling cereal yields in Southern Africa
Community watersheds

- Increases yields fourfold and incomes by 77% (India) and 45% (SE Asia)
- Influenced policies for adoption of model in Asia and Southern Africa
Linking farmers to markets

The best way to prosperity for African farmers
Moving into the future
**Vision:** Improved well-being of the poor of the semi-arid tropics

**Mission:** Reduce poverty, increase agricultural productivity, enhance food and nutritional security and protect the environment of the semi-arid tropics
Thank you !!!
“A roadmap from the genomics revolution to a new era in public plant breeding”

Dr Yunbi Xu
Head of Applied Biotechnology Center
International Maize and Wheat Improvement Center, Mexico

17 August 2009 from 5-6pm
Tattersall Lecture Theatre (G103), UWA
(Hackett Drive, Entrance No. 2, Car Park 4, 5 and 6)