ICRISAT and Andhra Pradesh
Champions of the Poor in Dryland Agriculture
Our vision...  
a prosperous, food secure and resilient dryland tropics

Our mission...  
to reduce poverty, hunger, malnutrition and environmental degradation in the dryland tropics

Our approach...  
partnership-based agricultural research-for-development that embodies Science with a Human Face
ICRISAT Locations in the semi-arid tropics

- Headquarters
- ESA Regional Office
- WCA Regional Office

- 55 countries
- 6.5 million sq km
- 2 billion people
The New Strategy

IMOD
Inclusive market-oriented development

IMOD: A new approach

Inclusive Market-Oriented Development (IMOD)

Harness markets

Manage risks

IMOD: A new approach

Inclusive Market-Oriented Development (IMOD)
Biggest Challenge

The Perfect Storm

- Climate change
- Land degradation
- Loss of biodiversity
- Food crisis
- Energy crisis
- Population explosion
Improving crops for the world’s poorest

Sorghum  Pearl millet  Groundnut  Chickpea  Pigeonpea
High Yielding Cultivars for Andhra Pradesh

- 214 improved varieties/hybrids released in India
- Of these, 73 varieties are suitable for AP
  - Sorghum: 25 (7 hybrids & 18 varieties)
  - Pearl millet: 24 (19 hybrids & 5 varieties)
  - Pigeonpea: 7 (2 hybrids & 5 varieties)
  - Chickpea: 9 varieties
  - Groundnut: 8 varieties
- Many have contributed significantly to increased production and farmers income
During the past decade

- 4-fold increase in area
- 2.4-fold increase in yield
- 9-fold increase in production
- Over 80% area under improved cultivars
Anantapur is the largest groundnut growing district globally with 0.8 m ha.

Farmers prefer short-duration ICGV 91114:
- High pod and haulm yield, drought tolerant
- Milk production increased by 11%
- Higher per day live weight gain in sheep

Another drought tolerant variety (ICGV 00350) released by RARS, Tirupati

Both have potential to replace 60-year-old TMV 2
Performance of ICPH 2740 in Multi-location Trials (MLTs) (4 years, 33 locations)

ICPH 2740 first high-yielding hybrid for black soils of Andhra Pradesh

<table>
<thead>
<tr>
<th>State</th>
<th>Hybrid</th>
<th>Asha (C)</th>
<th>Percent gain (%)</th>
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<tr>
<td>Madhya Pradesh</td>
<td>1646</td>
<td>1194</td>
<td>37.9</td>
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<td>Maharashtra</td>
<td>1643</td>
<td>1224</td>
<td>34.2</td>
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<td>Andhra Pradesh</td>
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<td>650</td>
<td>63.5</td>
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<tr>
<td>Mean</td>
<td>1451</td>
<td>1023</td>
<td>41.8</td>
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Andhra Pradesh as Pearl Millet Seed Production Hub for India

- AP farmers produce >80% of pearl millet seed marketed in India.
- About 80% of pearl millet hybrids marketed in India are based on ICRISAT-bred lines.
- ICRISAT-bred highly productive hybrid parental lines make seed production a profitable business.
- Farmers generate substantial incomes from seed production.
Sorghum in Andhra Pradesh

- Sorghum grown in 0.65 m ha, with 0.74 m t grain production
- Improved cultivars developed with ANGRAU
- AP farmers also earn higher incomes from seed production (3 times higher than grain)
- Sweet sorghum for commercial ethanol production and syrup for other purposes
- Sweet sorghum is also high value fodder
Rainfed Agriculture: A Large Untapped Potential

- Current farmers’ yields are lower by 2 to 5 folds than the achievable yields.
- Vast potential of rainfed agriculture needs to be harnessed.
Adarsha Community Watershed
Converging community livelihoods

- Upscaling a farmer-centric participatory model thru APRLP
- Provided an exemplar site for new common watershed guidelines
In five target districts 150 learning watershed sites trained trainers and doubled crop productivity

Consortium approach at state level for enhancing productivity in watersheds

Being up-scaled in all the districts through capacity building initiative
Andhra soils are thirsty and hungry!

<table>
<thead>
<tr>
<th>Village</th>
<th>OC</th>
<th>Av P</th>
<th>Av K</th>
<th>Av S</th>
<th>Av Zn</th>
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Awareness Building for Bhoochetana Project

Meeting in Mehboobnagar

Bhoochetana Review and Planning Meeting

Awareness building for Bhoochetana project in Kadapa

Staff team building and explaining Bhoochetana to farmers in Ranga Reddy district
Increasing crop yields through Bhoochetana in Andhra Pradesh

**Increased grain yields of paddy in farmers’ fields with application of micronutrients in Rangareddy district, rabi season, 2011-12**

Maize and paddy grain yield (kg ha-1) increase (%) with improved management compared to farmers’ management under Bhoochetana (rabi 2011-12) in different Mandals of Kurnool district

Paddy grain yield increases with balanced nutrition in Medak district, rabi 2011-12
• Covers 37 villages, learning experiences will be shared with other parts of the world.
• New innovative platforms have helped farmers become more resilient to drought.
• Novel platforms provide agro-advisory information on inputs, credit, access to markets and agribusiness entrepreneur support systems.
Agribusiness and Innovation Platform (AIP) @ ICRISAT

- Agri-Science Park @ ICRISAT (ASP), renamed as Agribusiness and Innovation Platform (AIP):
  - Set up in 2003 with funds from Andhra Pradesh Govt.
  - Vision of AIP: “Enhancing agricultural development through entrepreneurship, innovation & partnerships”

- A Food Safety Laboratory supported by AP Government

- NutriPlus Knowledge Program (NPK)
  - Established in 2008 with funds from Andhra Pradesh Govt.
  - NutriPlus acts as a platform for value-addition to crops and for food safety
Insights from Village Level Studies

- Income sources have diversified – non-farm income increasing
- Agriculture still important
- Substantial reduction in poverty due to interventions
- Urban centers acting as hubs for economic activities
- Income disparities among people to be addressed

Sources of per capita Real Income (Rs 2009/10 equivalent)
in Aurepalle: 1975 -2010

Sources of per capita Real Income (Rs 2009/10 equivalent)
in Dokur: 1975 -2010
Thank you very much!