Progress in Impact Assessment
A Report on Asia

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Milestones

- IAO has 3 sets of IA Studies in different stages of accomplishment
  - Set I: 2011-2013
    - 8 studies (4 in Asia & 4 in Sub-Saharan Africa)
    - Completed in 2013
  - Set II: 2013
    - 6 studies (4 in Asia & 2 in Sub-Saharan Africa)
    - 4 studies completed in 2013 and 2 in 1st quarter of 2014
  - Set III: 2013-2014
    - Identification of studies in process
      - Impact of Chickpea research in Ethiopia
      - Microdosing impacts in Niger
      - Bhoochetana Watershed Impacts
  - Measuring Returns to Research Investment on ICRISAT Jewels
    - 10 Jewels estimates of ROI completed
## Impact Assessment Studies in Asia, (2011-13)

<table>
<thead>
<tr>
<th>Impact Assessment Studies</th>
<th>Set No.</th>
<th>Region</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact assessment of HPRC Pearl Millet– Part A</td>
<td>Set I</td>
<td>India</td>
<td>Completed</td>
</tr>
<tr>
<td>Impact Assessment of Pearl Millet (HHB 67 and HHB 67 Improved)</td>
<td>Set I</td>
<td>India</td>
<td>Completed</td>
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<tr>
<td>Impact assessment of HPRC Pearl Millet– Part B</td>
<td>Set II</td>
<td>India</td>
<td>Data collection in progress</td>
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<tr>
<td>Impacts of chickpea improved research in Central Dry Zone of Myanmar</td>
<td>Set II</td>
<td>Myanmar</td>
<td>Data collection in progress</td>
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<tr>
<td>Impacts of Lucheba watershed work in China</td>
<td>Set II</td>
<td>China</td>
<td>Completed</td>
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<tr>
<td>Impact assessment of the Agri- Business Incubation (ABI) program at ICRISAT</td>
<td>Set II</td>
<td>Global</td>
<td>In progress</td>
</tr>
<tr>
<td>Impact assessment of Village Level Studies in Asia</td>
<td>Set II</td>
<td>Asia</td>
<td>In progress</td>
</tr>
</tbody>
</table>
Criteria for Identifying IA Studies

• Criteria to enable screening different research projects for priority IA studies.
  – Is the research developed or attributed to ICRISAT?
  – Has intervention taken off in terms of adoption?
  – Relative size of potential benefit of adoption of the technology.
  – Are there any prospects for documenting impacts along the impact pathway?
  – Uniqueness of the Impact Assessment Study.
  – Geographic coverage of the research project.
Impact Assessment Studies Highlights
Impact Assessment of the Lucheaba Watershed in China

• Lucheaba watershed model holds high promise as an appropriate approach for improving natural resource base and enhancing livelihood options

• It has enhanced labor absorption by 43.47% and labor income by 81.81% through diversification in favor of high value vegetable crops

• Farm income from crops, largely vegetables, has increased by 192.30%
• Impacts
  – Crop diversification -> high value crops
  – Collective marketing -> product branding
  – Increased farm income
    ➢ Rmb.8,100 from Rmb.4,753 per capita
  – Food security
  – Increased resilience
  – Accumulated immovable properties
  – Women Empowerment
HPRC Pearl Millet Part – B: Status Update

Objectives

• Identify and measure quantitative and qualitative impacts of PMHPRC at household level in India

Current Status

• Seed company survey is over
• Household level survey will be initiated in 3 states—Rajasthan, Haryana and UP
Chickpea Improved Research in Central Dry Zone of Myanmar

Objectives

• The chickpea improved research in Myanmar is carried in close collaboration with the Department of Agricultural.

• The study will identify and measure quantitative and qualitative impacts of the Chickpea Improved Research in Myanmar.

• Household survey of 400 Chickpea farmers from 3 States—Sagiang, Mandalay and Magwe

Challenges

• Data collection interrupted due to problem in fund transfer
<table>
<thead>
<tr>
<th>Selected Jewels of ICRISAT</th>
<th>Region</th>
<th>PV of Cost (in 2010 US$)</th>
<th>PV of Benefits (in 2010 US$)</th>
<th>Benefit per $ invested</th>
<th>Internal Rate of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer Microdosing</td>
<td>Zimbabwe</td>
<td>$2,674,970</td>
<td>$29,705,220</td>
<td>$11.10</td>
<td>35.58</td>
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<tr>
<td></td>
<td>Niger</td>
<td>$3,000,000</td>
<td>$123,045,320</td>
<td>$41.02</td>
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<tr>
<td>Early Maturing Groundnut</td>
<td>Malawi</td>
<td>$346,810</td>
<td>$35,320,730</td>
<td>$101.59</td>
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<td>Nigeria</td>
<td>$1,561,310</td>
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<td>$49.67</td>
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<td>Anantapur, India</td>
<td>$971,530</td>
<td>$55,552,710</td>
<td>$57.18</td>
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<tr>
<td>Watershed Management</td>
<td>Lucheba, China</td>
<td>$472,191</td>
<td>$14,707,180</td>
<td>$31.15</td>
<td>20.12</td>
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<tr>
<td>Extra-Early Pearl Millet Hybrid</td>
<td>North-West India</td>
<td>$3,636,430</td>
<td>$158,411,270</td>
<td>$43.56</td>
<td>19.51</td>
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<tr>
<td>Pigeonpea in ESA</td>
<td>Northern Tanzania</td>
<td>$700,860</td>
<td>$6,135,690</td>
<td>$8.75</td>
<td>16.71</td>
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<td>Fusarium Wilt Resistant Pigeonpea</td>
<td>India</td>
<td>$4,438,050</td>
<td>$470,563,230</td>
<td>$106.03</td>
<td>32.06</td>
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<tr>
<td>Hybrid Parents Research Consortium (HPRC)</td>
<td>India, Pearl Millet</td>
<td>$2,062,550</td>
<td>$147,298,230</td>
<td>$71.42</td>
<td>96.49</td>
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<td>India, Sorghum</td>
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<td>$87,998,410</td>
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<td>Guinea-Race Sorghum Hybrids</td>
<td>Mali (ex ante)</td>
<td>$1,020,470</td>
<td>$80,560,140</td>
<td>$78.94</td>
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<td>Sweet Sorghum</td>
<td>India (ex ante)</td>
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<td>$56,251,530</td>
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<tr>
<td>Pigeonpea Genome</td>
<td>India (ex ante)</td>
<td>$1,352,280</td>
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<td>AVERAGE (ex post only)</td>
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<td>$71.35</td>
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<tr>
<td>AVERAGE (ex post only, excluding Wilt Res. Pigeonpea)</td>
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<td>$44.76</td>
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</tbody>
</table>
ROI – Sensitivity Analysis
Different Scenarios

- Baseline
- Pessimistic
- Highly Pessimistic

Groundnut, Malawi
Groundnut, Nigeria
Groundnut, India
HHB67 improved pearl millet
Pigeonpeas, Tanzania
Wilt Resistant Pigeonpea (WRP)
MD Zimbabwe
MD Niger
HPRC Hybrid Millet
HPRC Hybrid Sorghum
Integrated Watersheds, China
ROI – Early Maturing Groundnut
Asia, ESA & WCA
Summary

• While ROIs are imprecisely measured, large impacts reported are indicative of ICRISAT’s high impact research programs.

• But, need to complete estimation of ROI for the other 6+ Jewels of ICRISAT.

• Need to identify new IA studies for Asia
  – Consider geographic and strategic importance.