Bhoochetana: Achievements, Opportunities and Learnings to Benefit Farmers
Opportunities: Large Yield Gaps for Rainfed Crops in Karnataka

* Figures in braces show % yield gaps from current levels
Objectives of Mission Mode Project

- To identify and scale-up best management practices (soil, crop, nutrient and water management) to enhance productivity by 20% of crops in 30 districts
- To train DoA staff in stratified soil sampling in villages, analysis of micronutrients, preparation of GIS-based soil maps. To guide DoA to establish high-quality Soil Analysis Laboratory in Bangalore. Training field staff of DoA for implementing the NRM technologies
- To build the capacity of the stake holders (farmers and consortium partners) to implement practices in the sustainable management of natural resources and enhancing productivity in dryland areas
Consortium Approach

ICRISAT

DOA

UAS (B,D,R)

Increased crop yields and incomes

WDD

CBOs
The Bhoo Chetana project was launched on 23rd May 2009 by the Hon’ble Chief Minister of Karnataka Sri B. S. Yeddyurappa at Haveri. ICRISAT and Government of Karnataka signed an MOU on providing technical backstopping for this mission mode project.
Bhoochetana: Mission Goal

Touch the lives of 3.6 million families by increasing productivity of crops in the state by 20% in four years
What We have Achieved
<table>
<thead>
<tr>
<th>Year consumed</th>
<th>Season</th>
<th>Area covered (Lakhs ha)</th>
<th>Quantity Consumed (t)</th>
<th>Nutrient used (kg ha⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ZnSO₄</td>
<td>Gypsum</td>
</tr>
<tr>
<td>2009</td>
<td>Kharif</td>
<td>2.25</td>
<td>372</td>
<td>4309</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>0.59</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2010</td>
<td>Kharif</td>
<td>12.72</td>
<td>2723</td>
<td>35376</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>3.70</td>
<td>362</td>
<td>5595</td>
</tr>
<tr>
<td>2011</td>
<td>Kharif</td>
<td>28.44</td>
<td>8775</td>
<td>96234</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>6.60</td>
<td>1678</td>
<td>12475</td>
</tr>
<tr>
<td>2012</td>
<td>Kharif</td>
<td>35.70</td>
<td>6803</td>
<td>59935</td>
</tr>
</tbody>
</table>
# Bhoochetana: Year-wise Area Coverage

<table>
<thead>
<tr>
<th>Component</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>2012 Kharif</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (million ha)</td>
<td>0.2</td>
<td>1.2</td>
<td>2.85</td>
<td>3.73</td>
</tr>
<tr>
<td>No. of districts</td>
<td>06</td>
<td>16</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>No of Villages</td>
<td>1440</td>
<td>5030</td>
<td>14014</td>
<td>26293</td>
</tr>
<tr>
<td>No of farmers (millions)</td>
<td>0.2</td>
<td>0.8</td>
<td>2.2</td>
<td>4.39</td>
</tr>
<tr>
<td>No of farmer facilitators for extension activities</td>
<td>517</td>
<td>2500</td>
<td>5688</td>
<td>9700</td>
</tr>
<tr>
<td>No. of lead farmers</td>
<td>1867</td>
<td>10500</td>
<td></td>
<td>45000</td>
</tr>
</tbody>
</table>
Sharing Soil-test Results with Stakeholders

Soil Fertility Atlas for Karnataka, India

Department of Agriculture, Government of Karnataka
International Crops Research Institute for the Semi-Arid Tropics

ICRISAT
Science with a human face
Regular and Effective Monitoring and Evaluation Systems alongwith Capacity Building

- Video conferencing empowered SLCCs
- District and Taluk level CCs
- Field Days and regular training
Empowered Farmers as Extension Agents

- Farm Facilitators (FF) and Lead Farmers (LF)
  Every 500 ha one FF and 2-3 LFs
- Training and empowering FFs and LFs
- Certified and quality assurance
- We need to strengthen this novel extension approach
New Innovative Extension Systems
Crop Diversification Opportunities

- From 1 acre farmer has harvested coriander worth Rs. 15000
- 1.2 t castor worth Rs. 50,000 is expected
- Farmer grew pigeonpea as an intercrop where farmers applied Bhoochetana package with micronutrients

Castor intercropped with coriander and mango
Groundnut – Success Story from Bhoochetana
Knowledge Sharing: Field Days
Increased Productivity of Groundnut with Bhoochetana (Contd..)

Groundnut pod yield response to IM and FM in various districts of Karnataka during 2011-12 kharif season.
Increased Yields of Different Crops in Karnataka, Rainy Season 2012

Grain / Pod yield (kg ha⁻¹)

- Blackgram: 35%
- Cotton: 33%
- Greengram: 32%
- Groundnut: 33%
- Lab Lab: 31%
- Maize: 31%
- Paddy: 29%
- Pearl Millet: 38%
- Pigeonpea: 28%
- Ragi: 32%
- Soybean: 33%
- Sorghum: 30%
- Sunflower: 31%

Farmers' practice
Improved practice
Increased Crop Yields by 23 to 66 per cent for Small Farmholders

Mean yields of ragi, maize and soybean from farmers’ fields in different districts of Karnataka during kharif season 2009

Increased oil seed crop yields with improved management practices under Bhoochetana over farmers’ practice in different districts, rainy season 2011

Increased yields of maize in Haveri and groundnut in Kolar districts with improved management during 2009-2012
Percentage departure of cumulative rainfall as on 15th July 2012 is -43%, which is the lowest in the corresponding period of last 42 years.

Source: KSNDMC, Karnataka
## Enhancing Family Incomes and State’s Gross Production, Rainy Season 2011

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production with FM (Million t)</th>
<th>Production increase with IM (Million t)</th>
<th>Price (Rs t(^{-1}))</th>
<th>Increase economic value with IM (Rs in crores)</th>
<th>Total production (Million t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Total (Cereals)</td>
<td>4.05</td>
<td>0.48</td>
<td>9,700</td>
<td>463.56</td>
<td>4.53</td>
</tr>
<tr>
<td>Grand Total (Oilseeds)</td>
<td>0.35</td>
<td>0.05</td>
<td>23,967</td>
<td>109.81</td>
<td>0.40</td>
</tr>
<tr>
<td>Grand Total (Pulses)</td>
<td>0.22</td>
<td>0.02</td>
<td>33,000</td>
<td>73.34</td>
<td>0.24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4.62</strong></td>
<td><strong>0.55</strong></td>
<td><strong>646.71</strong></td>
<td><strong>5.17</strong></td>
<td></td>
</tr>
</tbody>
</table>
Bhoochetana in the Limelight

Bhoo-chetana project launched in Haveri

Project aims at introducing latest technology in dry-land farming

Allot more funds for farming sector: Seema

‘Bhoo Chetana helped to enhance productivity in fields’

‘Use development funds for schemes benefiting farm sector’

This will benefit entire society, says Seema Masuti
Bhoochetana in the Limelight (Contd..)

- National Level
  - MoA
  - ICAR

- International Level
  - BBC
  - Alertnet
  - What ICRISAT thinks
  - Philippines
  - The Guardian
  - World Water Week
Awards and Recognitions

- Krishi Karman Award for the highest productivity of Coarse Cereals thru Bhoochetana. This award was instituted to recognize state’s contribution to increase the food production in the country.
- Agriculture Leadership Award – 2011 as a best performing State by Agriculture Today
Drivers of Success

- Converge – Collective action – Capacity building – Consortium
- Efficient M&E mechanisms
- Holistic and integrated approach
- Galvanized and transformed DoA
- Innovative and empowered extension and delivery system
- Champions at higher policy level
Drivers of Success (Contd.)

- Translated rhetoric of inclusiveness and enhancing input use efficiency into action thru science-led R4D scaling-up – holistic inclusive approach
- Working passionately and persistently for productivity enhancement by bringing all stakeholders on the same page – Good team work
- Tangible economic benefits to small and marginal farmers in rainfed areas
- Broke vicious cycle of supply driven approach and established demand driven mindset—Change of mindset of actors
- Strengthened innovative extension and knowledge sharing systems – Effective dissemination
Thank you!