Community Managed Sustainable Agriculture – A pathway out of Poverty

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Main objectives

• To bring **Sustainability to Agriculture based livelihoods** and to improve the quality of life with special focus on SF/MF and women farmers

• To reduce cost of cultivation by avoiding **chemical pesticides and fertilizers** without compromising on yields

• Providing **house holds nutritional security**

• Providing **livelihoods to the land less poor** through land lease and NPM shops etc

• Enhancement of **Natural Resource base**
Unique features of the program

• CMSA originated from *Agriculture crisis*

• **Demand driven program:** SHG women demanded:
  
  A. For *Sustaining agriculture based livelihoods* – Reducing cost of cultivation

  B. Ensure chemical free food - On *health considerations*

• From the dominant and conventional “external input-driven” agriculture to “knowledge, skill-based and local natural resource” model

• **Technology available** from mainstream and civil society organizations

• Existing **SHG platform** for scaling up
Contd...

- Decentralized Extension System: -
  - Best practicing farmers as extension workers
  - Best practicing farmer in the village identified as village activist
  - Best practitioner as cluster activist for 5 villages
  - Weekly group meetings (FFS) in the fields for reviewing, researching, trouble shooting and capacity building
  - Variety of resource material
  - Best practising farmers as CRPs
  - Demystifying science
  - Continuous capacity building

- Program owned, anchored and regularly reviewed by the Federation of SHGs at village, mandal and district level
Technology

• Understanding **Natural Processes** – Sailing with it, synergized with scientific knowledge

• **Blend of cutting edge technology with traditional wisdom**

• **Local natural resource** based

• **Knowledge centric** than product centric, hence support only in the form of knowledge

• **Technology transfer through Community Resource Persons**

• Farmers are encouraged to **take-up experiments**
Working with Natural processes

• A natural ecological balance between beneficial and harmful insects will ensure that pests do not reach a critical number in the field that endangers the yield

• Using trap crops to attract egg laying by pests

• Nature can restore such a balance if it is not meddled with too much

• Community Managed decentralised extension system enables adoption of all Cultural, Mechanical, biological methods (Non-Negotiables) hence no chemical pesticides at all not even as a last resort

• Understanding the insect biology and crop ecology is important to manage pests.

• Sustaining and improving natural resources like ground water through rainwater harvesting

• Treating soil as living media – Creating enabling environment for soil flora and fauna
Contd....

- **Crop diversity** with legume/tree based farming, crop, leaf based composting back (Nadeep) to soil is key for managing soil fertility and reducing pest load.

- **Harvesting maximum sun light** (free energy source for agril) through appropriate multi tier crop geometry.

- **Converging with other livelihood options** like sheep, goat, poultry, apiary, Pisciculture – **Recycling of wastes** – one system’s waste becomes another system’s feed – Enhancing incomes through multiple livelihoods.

- **Treating dung** (not in terms of N,P,K) as source of microbial inoculum – to kick start biochemical reactions in the soil.

- Propagating **naturally occurring Azolla (In Paddy)** helps in supplying Nitrogen, Conservation of water and suppressing weeds.
Contd...

- **Gradual Withdrawal/Reduction** of chemicals resulted in:
  
  A. **Local earthworms** making appearance in soil with attendant benefits

- **Pollinators like bees**, dragon flies, etc started appearing, helping in cross pollination and improved yield

- **Fishes** were seen in paddy fields

- Well documented - Natural properties of locally available **botanicals** to act as repellent, ovicides, antimolting, antifeedant are exploited – when the pest is in the early stages – Requires regular surveillance for pests and diseases done by decentralised extension system (weekly FFS)
### Branding of NPM products for Premium prices – 2010-11

<table>
<thead>
<tr>
<th>Name of the district</th>
<th>Brand</th>
<th>Commodities</th>
<th>Turnover in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Srikakulam</td>
<td>Sahaja Thrupthi</td>
<td>Rice, Pickles</td>
<td>20 lakh</td>
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<td></td>
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<td></td>
<td>50 lakhs</td>
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<tr>
<td>Khammam</td>
<td>Kinnera</td>
<td>Rice, Redgram, Chilli powder</td>
<td>30 lakhs</td>
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<td></td>
<td></td>
<td></td>
<td>20 lakhs</td>
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<tr>
<td>Guntur</td>
<td>Amaravathi</td>
<td>Dry Chillies, Chilli powder, Green chillies, Vegetables</td>
<td>6.00 crores</td>
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<tr>
<td>Ranga Reddy</td>
<td>Prakruthi</td>
<td>Vegetables</td>
<td>3.50 crores</td>
</tr>
<tr>
<td>Adilabad</td>
<td>Susthira</td>
<td>Rice</td>
<td>50 lakhs</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<td><strong>11.20 Crores</strong></td>
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</table>

Through “Mobile Bazaar” everyday mandi price information through sms (free) to farmers.
Comprehensive strategy to produce export quality Chillies and Organic Certification

• Internationally recognized lab checking quality - samples drawn at random and tested for pesticide residueM.V.Rao lab.pdf – success rate 98% for different crops including chillies

• International buyers paid Rs.1850/qtl additional amount to market price – Exported 500-700 MT exported to Germany every year

• Pre/mid season trainings organized to staff, farmers and samakhyas on Chillies

• All NPM methods including border crops, white and yellow plates from nursery stage are achieved in 100% fields

• SERP is identified as Regional Council for Participatory Guarantee System (PGS) for accessing market premium for all crops

• PGS is being implemented in with 1147 farmers from 158 villages as pilot

• In 2011-12 planning to implement with 10,000 farmers from 1568 villages
Glimpses of CMSA (RFSA- tree based farming)
Guinea fowls

Goat and Sheep

Smoke less Chula

Rural water filter
Crop cutting experiments

Trench in Cotton field

CMSA field

Non CMSA field

Non CMSA field
Impact of the interventions

• Reduced cost of cultivation

• Increased yield

• Increased net incomes

• Increased access to food

• Building social capital

• Building organic and pesticide free villages
Evaluation Report – ANGRAU

- Third party evaluation commissioned by Department of Agril for RKVY

- Study conducted in 18 districts funded by RKVY

- Proportionate Random sampling method was used

- Study conducted in 24 Mandals, 62 clusters, 320 villages

- 3200 farmers, 10 farmers from each sample village
## Reduction of Costs and Yield Costs/ Acre

<table>
<thead>
<tr>
<th>S.No</th>
<th>District</th>
<th>Crop</th>
<th>Reduction in Pesticides</th>
<th>Reduction in fertilisers</th>
<th>Net amount saved on pesticides</th>
<th>Net Amount saved on fertilisers</th>
<th>Yield</th>
<th>Increase in yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kadapa</td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>544</td>
<td>508</td>
<td>21.0</td>
<td>2.0</td>
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<tr>
<td>2.</td>
<td>Chittor</td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>390</td>
<td>440</td>
<td>26</td>
<td>2.5</td>
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<td>3.</td>
<td></td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>1200</td>
<td>246</td>
<td>21</td>
<td>2.5</td>
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<td>4.</td>
<td>Vizag</td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>1200</td>
<td>1048</td>
<td>24</td>
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<tr>
<td></td>
<td></td>
<td>Maize</td>
<td>100%</td>
<td>50%</td>
<td>1300</td>
<td>1080</td>
<td>24</td>
<td>2</td>
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<td>5.</td>
<td></td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>1100</td>
<td>1949</td>
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<td></td>
<td></td>
<td>Maize</td>
<td>100%</td>
<td>50%</td>
<td>1300</td>
<td>1825</td>
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<td>6.</td>
<td>Medak</td>
<td>Paddy</td>
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<td>50%</td>
<td>1400</td>
<td>646</td>
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<td>Maize</td>
<td>100%</td>
<td>50%</td>
<td>1200</td>
<td>1052</td>
<td>23</td>
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<td>Jower</td>
<td>100%</td>
<td>50%</td>
<td>1200</td>
<td>668</td>
<td>14</td>
<td>1</td>
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<tr>
<td>7.</td>
<td>Karimnagar</td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>1100</td>
<td>896</td>
<td>22</td>
<td>2</td>
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<tr>
<td></td>
<td></td>
<td>Cotton</td>
<td>100%</td>
<td>50%</td>
<td>1500</td>
<td>1686</td>
<td>11</td>
<td>1</td>
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<tr>
<td>8.</td>
<td>Nizamabad</td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>950</td>
<td>1690</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>Khammam</td>
<td>Paddy</td>
<td>100%</td>
<td>50%</td>
<td>550</td>
<td>1051</td>
<td>21</td>
<td>2</td>
</tr>
</tbody>
</table>
General Observations – ANGRAU

- The crops viz paddy, Chilly, vegetables etc are very healthy
- In case of POP activities beneficiaries earned upto Rs.40,000/- from ½ acre
- POP beneficiaries were enthusiastic to cultivate SRI and NPM methods
- In some of the sample villages farmers were earning Rs.1000 per month through NPM shop
- In Sunflower seed setting was good with NPM practices
- Majority of the beneficiaries shifted from Monocropping to Mixed farming
- Increase in Nutritional status and livelihoods observed
Impact at Household level

- Reclamation of lands from mortgage
- Reduced Health risks
- Increased access to food
# Reduced Health risks

**CMSA season end reports, 2008-09**

<table>
<thead>
<tr>
<th>No. of Districts (Random Survey)</th>
<th>Severe Hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before NPM</td>
</tr>
<tr>
<td></td>
<td>Inside NPM (V)</td>
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<td>3</td>
<td>242</td>
</tr>
</tbody>
</table>
Increased food grain production – Household level

- Yadireddy pally village of Mahabubnagar district
- Earlier they all used to purchase rice from PDS shop and kirana shops

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name</th>
<th>Req of rice for family in qtls</th>
<th>Qty produced through 0.5 acre model in qtls</th>
<th>Status after 0.5 acre model implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Smt. Ramulamma</td>
<td>12</td>
<td>8</td>
<td>4 qtls deficit</td>
</tr>
<tr>
<td>2</td>
<td>Smt. Kishtamma</td>
<td>7.5</td>
<td>8</td>
<td>0.5 qtls surplus</td>
</tr>
<tr>
<td>3</td>
<td>Smt. Vineetha</td>
<td>7</td>
<td>8</td>
<td>1 qtl surplus</td>
</tr>
<tr>
<td>4</td>
<td>Smt. Balamma</td>
<td>8</td>
<td>8</td>
<td>sufficient</td>
</tr>
</tbody>
</table>
## Policy Impacts

<table>
<thead>
<tr>
<th>S.No</th>
<th>GOMs.No</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GOMs.No392 (Ministry of Rural Development, Govt of AP)</td>
<td>Radical Soil and Moisture Conservation Works through MGNREGS</td>
</tr>
<tr>
<td>2</td>
<td>GOMs.No121 (Ministry of Agriculture, Govt of AP)</td>
<td>Convergence with ATMA</td>
</tr>
<tr>
<td>3</td>
<td>GOMs.No110 (Ministry of Rural Development, Govt of AP)</td>
<td>Convergence with IWMP</td>
</tr>
<tr>
<td>4</td>
<td>Mahila Kisan Saskthikaran Pariyojanan (MKSP) (Ministry of Rural Development, Govt of India)</td>
<td>Scaling up of CMSA at National Level</td>
</tr>
</tbody>
</table>
Assessment by NIPHM

• Team of 10 scientists drawn from 5 States
• Evaluated NPM programme in Mahbubnagar and Warangal Dts (2008)
• Recommended for adoption in Farmers Field schools across the country
Steps towards Sustainability

• Service charges paid by farm family @Rs.50/year
• Service charges collected is Rs.2.95 crores against Rs.5.0 crores
• Cost of decentralised extension system – Rs.31/Acre
• Institutions: Local groups formed under PGS will develop into producer companies/Commodity interest groups
• Families have to part Rs.20/Acre from marketing premium as services charges to VO to achieve sustainability
IT initiatives

• For preparing action plans - Quick base software
• For information dissemination – Video/Audio conferences, Group mails, Bulk messages
• For Monitoring – Mobile Based application (bluefrog) with tracking farmer wise adoptions
• For capacity building - Community Video films (Digital green)
• EFMS: Monitoring budgets (TCS)
• Accessing better prices – Mobile Bazar (Intuit)
Reaching out to SHGs

• MANA TV – once in a Month – Mandal level
• **Pamphlet on program components**
• CUG connections – Upto CA and MMS subcommittee level
• Audio conference – On mobile phones with 120 members
• Way 2 SMS: Alerts
• **Bulk messaging: Upto VA/SHG level from SERP**
• Group mails
• Video Conferences: Every fortnight
• All India Radio /DD
• **CDs available at village level for screening to SHGs**
• Subcommittee trainings at DCC/Village level
Road Ahead

• **Horizontal expansion** of the program and deepen local knowledge systems.

• By 2015/16:
  – **1.0 crore acres** (40% of A.P’s cultivable area) under CMSA

• **Piloting food security Models in 300 Villages**

• **Value chain investments:** seed banks, agri-service centers, value-addition and processing and forward linkages

• **Exploring Carbon credits**

• **Organic certification process** through Participatory Guarantee System

• **Market and brand development** for organic and pesticide free agriculture commodities

• **Producer Companies / Farmer’s organizations**
Thank You