Andhra Pradesh Zero-Budget Natural Farming

A Transformative Program

Rythu Sadhikara Samstha, Department of Agriculture, Andhra Pradesh, India
1. Government of Andhra Pradesh (GoAP), Department of Agriculture (DoA) is implementing Zero-Budget Natural Farming (ZBNF) Program, through Rythu Sadhikara Samstha (RySS) (corporation for farmers’ empowerment), a not-for-profit organization established by GoAP. The program has been initiated in 2015-16 with multiple objectives of enhancing farmers’ welfare, consumer welfare and for conservation of environment.

2. ZBNF is a holistic alternative to the present paradigm of high cost chemical inputs-based agriculture and to address the negative and uncertain impacts of climate change. ZBNF principles are in sync with the principles of Agro-ecology, a worldwide movement. Its greatest strength is that it is based on the latest scientific discoveries in Agriculture, and, at the same time it is rooted in Indian tradition. The FAO has as recently as April 2018 urged all countries to move towards the adoption of Agro-ecology to meet the twin goals of global food security and conservation of the environment.

Four Wheels of ZBNF

3. ZBNF is pioneered by Dr Subhash Palekar, a Padma Shri Awardee, who is regarded as the “Father of zero budget natural farming” all over the country. ZBNF practices are built on four core principles, as explained below:

Core Principles of ZBNF

1. **BEEJAMRUTHAM**
   Microbial seed coating through cow urine and dung based formulations.

2. **JEEVAMRUTHAM**
   Enhance soil microbiome through application of cow dung, cow urine and other local ingredients.

3. **COVER CROPS and MULCHING**: Ground to be kept covered with crops, and also crop residues.

4. **WAAPHASA**
   Fast build up of soil humus through ZBNF leads soil aeration.

Pillars of APZBNF Program

4. The program invests heavily in building the capacities of farmers and their continuous handholding. The crucial innovation and the strength of the program is the farmer-to-farmer knowledge dissemination strategy. The trainers are the best practicing ZBNF farmers, called Community Resource Persons (CRPs). CRPs form the key pillar of ZBNF Extension. They are highly motivated and strongly committed to ZBNF as their own lives have been transformed by their practicing ZBNF in their own fields. It is their dedicated work that has resulted in new farmers in the program villages switching over to ZBNF. They are the true heroes of this unique movement.
5. The CRPs’ uniqueness is that they don’t just educate the farmers about the ZBNF practices, they help them to make the ZBNF inputs and apply them in the field. They are also available in the village for any trouble shooting.

6. The CRPs are intensively trained in various aspects of their work including video dissemination. They are provided hand held video projectors, called pico-projectors. There are almost 300 videos, of 8 to 12 minutes duration, on ZBNF practices, crop wise recommendations and case studies of successful ZBNF farmers. The CRPs conduct video dissemination in the evening and follow it up by discussions with farmers. This happens every day in different parts of the village. This has greatly helped in accelerating the ZBNF adoption rates. The CRPs are trained in using smart phones for tracking farmers practices. Around 850 CRPs are in the program across the state.

7. 3500 Internal CRPs (ICRPs) have been added this year. They work in their villages or in adjoining village providing knowledge dissemination, institution building through
women Self-Help Groups (SHGs) and technical assistance in preparing the inputs. As ICRPs have taken charge of taking ZBNF to the farmers, the Senior CRPs have taken the role of mentoring ICRPs. By December 2018, another 3500 trained ICRPs are expected to join the pool.

8. Further, best practicing volunteer Lead Farmers @ 1 per SHG, are being trained by the CRPs to provide leadership in knowledge dissemination at the group level. It is planned to have one lead farmer, a woman farmer for each SHG, and one lead farmer, a male farmer to guide the spouses of the SHG members. This ensures dissemination of relevant and high quality knowledge. The ZBNF knowledge is shared in their group meetings, and the ICRP/CRPs supplement the knowledge and address the concerns of farmers.

9. A new initiative that we took up last year is paying very rich dividends now. In order to complement the work of CRPs, 230 young agriculture graduates have joined in as Natural Farming Fellows (NFFs). The role of NFF is to be a model farmer by practicing ZBNF in a leased land in the cluster allotted to her/him for a period of three years. They are being groomed to becoming trainers, researchers and integrators of the work done in Clusters.

10. To augment the pool of NFFs for the state and outside, young agriculture and allied graduates are being offered Natural Farming Apprenticeship (NFA) of 12-15 months. Successful NFAs will be considered as NFFs subsequently.

11. Young graduate farmers are being considered as digital CRPs to provide ICT-enabled tracking support to the cluster.

12. **Existing women SHGs and their federations form the second key pillar of ZBNF Extension** and play a central role in ZBNF knowledge dissemination and extension with farmer families, farm planning for each family in kharif and rabi campaigns, meeting working capital requirements and handling community funds, and tracking the progress. Men SHGs and federations are emerging. Women SHG-centric extension is accelerating the ZBNF expansion. To facilitate this process, 220 Project Resource
Persons for Social Mobilization (PRP) have been working with women Self-help Groups and men Self-help Groups of Farmers.

13. The department’s approach is to **saturate each village** in 3 years from the year of entry into that village.

<table>
<thead>
<tr>
<th>Whole Village Approach</th>
<th>A typical farmer’s adoption pattern</th>
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<tbody>
<tr>
<td>Year 1: 25%</td>
<td>Year 1: 1/4&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Year 2: 60%</td>
<td>Year 2: ½</td>
</tr>
<tr>
<td>Year 3: &gt; 80%</td>
<td>Year 3: Full area</td>
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</table>

14. Each farmer takes 3 years to cover entire holding into ZBNF. Thus in 5 years, a village becomes a bio-village. As of now, there are 124 villages in the state, where all farmers in the village have adopted ZBNF practices in their land, either fully or in part of their lands. And there are 253 villages where more than 80% of its farmers have been practicing ZBNF.

**Emerging Models and Innovations**

15. Newer models in ZBNF are emerging. Prominent among them are:
- Dry Sowing in Pre-Monsoon period in drought-prone Ananthapuram district showing excellent results in water conservation.
- Five-layer models in Rayalaseema districts
- Annapurna model, Girilakshmi model, integrated farming in ZBNF etc., across the state.

**Pilots**

16. Community based Local Marketing interventions are being piloted in 23 clusters across the districts. Health and Nutrition pilots are being piloted in 16 clusters.

**ZBNF Cluster and Cluster Team**

17. A group of 5 Gram Panchayats/Villages, with around 2000 farmers is regarded as a **ZBNF cluster** and it is the unit of implementation. The Cluster consists of the following Human Resources:

<table>
<thead>
<tr>
<th>Roles</th>
<th>Cluster Team</th>
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<tbody>
<tr>
<td>Internal CRPs (L3) @ 2 per every Village Organization</td>
<td>20</td>
</tr>
<tr>
<td>GP-level CRPs (L2) @ 1 per GP</td>
<td>5</td>
</tr>
<tr>
<td>Cluster-level CRPs (L1) @ 1 per Cluster</td>
<td>1</td>
</tr>
<tr>
<td>Natural Farming Fellows (1 per 2 Clusters)</td>
<td>1</td>
</tr>
<tr>
<td>Thematic CRPs (Marketing, Social Mobilization, Health and Nutrition, Digital CRPs - proposed)</td>
<td>2-4</td>
</tr>
</tbody>
</table>

**RySS ZBNF HR Architecture at various levels**

18. The program is implemented and coordinated by 10-15 member District Teams led by District Project Managers, at the district level. At the state level, state team comprising State Implementation Unit and Technical Support Unit is providing the overall management support. A band of young professionals is also supporting them.
19. This RySS architecture of district teams led by District Project Managers and state teams (State Implementation Unit and Technical Support Unit) are being strengthened with full-complement of required staff. Staff on deputation are being paid 25% of Basic as incentive remuneration.

20. Further, it is proposed to strengthen the Assistant Director, Agriculture at the sub-district level to focus on the ZBNF clusters directly. There will be a 3-4 member ZBNF team to support the field. The modalities for the Integration of Department for ZBNF work are being worked out in terms of incentives of Multi-purpose Extension Officer (if s/he does ZBNF farming and extension), mobility to Mandal Agriculture Officers and Assistant Directors (Agriculture).

**APZBNF Program Status**

21. During the last three years, the program has been able to reach to 163,000 farmers in 972 villages until 2017-18, through program support funding from Government of India schemes – Rashtriya Krishi Vikas Yojana (RKVY) and Paramparagat Krishi Vikas Yojana (PKVY) towards program support. The program is receiving a Technical Support Grant from Azim Premji Philanthropic Initiatives (APPI). As on date, the program is present in all 662 mandals of the state, 3015 villages, working with 354,000 farm families. 500,000 farm families will be reached during this year, 2018-19 with 7,500 CRPs and 85,000 women SHGs.

22. The results of the program, both in terms of higher yields and lower costs, have been very encouraging. In all the Crop Cutting Experiments (CCEs) conducted in Kharif 2017, there has been a reduction in the cost of cultivation. Also, 88% of the CCEs have reported an increase in yield compared to a Non-ZBNF farms under similar conditions.

**Hon’ble CM’s Visionary Guidance**

23. Impressed by the results of ZBNF, Hon’ble Chief Minister has been providing visionary guidance and support to transform agriculture in AP.

a. Hon’ble CM has declared 2018 as the Year of Natural Farming in AP. (The announcement was made while inaugurating Palekar’s mega training).

b. In January 2018, Hon’ble CM addressed several international delegates at World Economic Forum in Davos about AP ZBNF Program.

c. Department of Agriculture and Rythu Sadhikara Samstha have been entrusted the work to prepare a comprehensive action plan to scale up to 6 million farmers and 8 million hectares in AP.
On 2nd June Hon’ble CM has graced the event of signing an MoU between RySS and Sustainable India Finance Facility (SIFF), promoted by UN Environment Program (UNEP) to help RySS raise resources required for scaling-up and to strengthen the program in scientific research and marketing.

**ZBNF Scaling-up Plan**

24. In line with the CM’s vision, a comprehensive plan for scaling up has been developed. AP ZBNF is planning to cover all the 6 million farm-families by 2024, and the estimated 8 million hectares of agricultural land in Andhra Pradesh by 2026 and transform AP into the first natural farming state in the country. Planned milestones in this journey:

<table>
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<tr>
<th>Timeline</th>
<th>Milestone</th>
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<td>2018-19</td>
<td>Reached all mandals (662); on the verge of reaching 500,000 farmers</td>
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<tr>
<td>2019-20</td>
<td>Reach 750,000 farmers</td>
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<tr>
<td>2021-22</td>
<td>Reach all GPs (12,924); 3.5 million farmers</td>
</tr>
<tr>
<td>2023-24</td>
<td>Reach all farm families; 6 million farmers</td>
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<tr>
<td>2025-26</td>
<td>Cover entire cultivable area in AP</td>
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</table>

“Department of Agriculture and Government of AP are fully behind this programme.”

- Shri Somireddy Chandramohan Reddy, Hon’ble Minister for Agriculture

25. RySS has been working with international scientific community including FAO, World Agroforestry Centre (ICRAF), CIRAD (French Agricultural Research Centre for International Development), Reading University (UK) etc., to establish the science behind ZBNF on various aspects from plant microbiology to soil organic carbon. ICRAF is undertaking third party Performance Evaluation. Centre for Economic Social Studies (CESS) in partnership with IASRI (Indian Agricultural Statistical Research Institute) is preparing to undertake third party Crop Cutting Experiments.

26. RySS is exploring various partnerships for facilitating marketing of ZBNF Produce.

**RySS as National Resource Organization**

27. As RySS is scaling up ZBNF in AP, it is also emerging as a National Resource Organization. States like Himachal Pradesh, Chhattisgarh, Karnataka, MP and Kerala have been taking inputs from AP in terms of planning, designing and implementation of ZBNF.

**Hon’ble CM’s Presentation at UN Event**

28. Hon’ble CM will be presenting the unique program of the Andhra Pradesh ZBNF program to world leaders, through his participation at an event in United Nations, titled - Financing Sustainable Landscapes: Global Challenges and Opportunities, to be held on 24 September 2018 at UN Headquarters in New York, USA.