



26 November 2018.

Dear Mr. Saldanha and esteemed co-signatories,

Thank you all for your letter. I have immense respect for the work that all of you are doing. I initially thought I will just send a brief point to point reply, but given the fact that you are all so eminent in your work, and all of you felt concerned enough to write a long joint letter to me, I felt I should write a detailed letter to all of you, explaining the Climate resilient zero budget natural farming (CRZBNF) programme of the Government of Andhra Pradesh.

CRZBNF has been appreciated by our farmers, who have started practicing it. They are experiencing benefits from the first season itself. Those who have practiced all the components are seeing positive changes in their lives. It has won the appreciation of several civil society organizations – both from within the State and from outside the State. Many State Governments have sent teams to study the programme, and based on the positive feedback from the teams these State Governments have expressed a strong interest in replicating the programme. Representatives and Heads of various international organizations have visited us, have gone to the field and have expressed a strong interest in working with us.

Hence, we did not imagine that our CRZBNF work would be a source of concern to anyone, and specially to eminent people like you who have won national and global accolades for propagating and practicing agroecology for a very long time. I was even more surprised and anguished that, without checking the facts with all of us involved, these 'concerns' and 'research' were circulated all over India and all over the world.

I am presenting below our 3 and a half years CRZBNF work in AP.

*(The specific responses to the letter from all of you is given in the Annexure, attached to this letter).*

#### **What do we want to achieve in the State of Andhra Pradesh?**

The Government of Andhra Pradesh wants to bring about an agroecological transformation in the State. Our objective is that every farmer in our state should come out of the present chemical input-based agriculture and practice climate change resilient, low cost (zero-budget) natural farming, and the entire cropped area in the State should be under natural farming.

The results that we would like to see through the universalization of natural farming are:

- significant improvements in livelihoods of all our farmers through farming;

- positive impacts on the farm livelihoods of small and marginal farmers, women farmers, and tenants;
- food security and livelihoods security for landless agriculture labour;
- improvement in the health of our citizens; and
- improved soil health, water conservation, environment, and biodiversity.

This is not rocket science and is indeed an imperative, not a choice. Such a state-wide, system-wide, transformation is long overdue. In view of the urgency, the Government of Andhra Pradesh intends to do this as quickly as possible. Accordingly, based on the positive impacts of the programme in the last 3 and a half years, the Government of Andhra Pradesh, has made an announcement on June 2<sup>nd</sup>, 2018, that in the next 6 years it would facilitate all 60 lakh farmers to practice climate change resilient, zero budget natural farming, and thereby bring all cultivable area of the state, 80 lakh hectares, under natural farming, in due course.

Given the fact that the entire country has around 1% area under organic farming, as per official data, the common reaction to AP Government's announcement is that it is preposterous, foolhardy, not doable, crazy, etc., etc. But our response is to ask whether there is a better alternative to agroecology? And is it harmful? We are convinced the answer to both questions is 'no!', which is why we are proceeding. And as on date, 5,00,000 farmers in 3,000 villages of the State are enrolled in the CRZBNF programme, a fast growing farmers movement in AP.

#### **How does AP's effort compare with rest of India?**

In spite of the work of hundreds of civil society organizations, farmers' organizations, efforts of committed individuals and some State Governments, what kind of results are there in the country with regard to agroecology? In 2016, it was estimated that less than 1% of the total agricultural land is under 'organic farming'. This despite more than 2 decades of extraordinary work of so many eminent NGOs and other organizations in the country. We can debate the reasons for this, but surely, we agree that we are not going to transform lives and farming landscapes *if less than 1% of the country is trying to improve the way farming is done.*

In contrast, as a result of a very systematic, farmer-led, women SHG-centred and people-centred approach in Andhra Pradesh, out of our estimated 60 lakh farmers in the State, we have already enrolled 500,000 farmers, i.e. 8 % of the farmers in just 3 years.

We plan to reach 16% farmers in 2019/20, 37% by 2020/21, 58% by 2021/22, 80% by 2022/23 and almost 100% in 2023/24. The cultivable area will go up steadily and the entire 200 lakh acres should come under natural farming by 2026/27.

To us, it appears highly doable, given the State Government's earlier track record of social mobilization of poor women in the rural and urban areas. The social mobilization of rural poor women was started more than 20 years ago. We are building on this rich social capital of the strong network of women's institutions and their community professionals to take CRZBNF forward. We in AP have more than a decade long experience in involving the women's institutions in promoting agroecology through the AP Government's Community managed sustainable agriculture programme (CMSA). The involvement and support of the

women's institutions and the support of dedicated civil society organizations, had enabled us to take CMSA to lakhs of women farmers and their spouses.

It is with this rich prior experience that we are looking at universalization of CRZBNF. To achieve the objective of enrolling all 60 lakh farmers, and enabling their transition to agroecology, we are looking at a suitable policy framework, developing human resources, involving women's self-help groups and their federations, developing men farmers' institutions, raising finances (at the best possible terms), investigating into the science of CRZBNF, etc. We are facilitating farmers' institutions and women's groups to provide food and nutrition security to their own member households and eventually to all citizens of the state. We are working on capacitating mature farmers' organizations to work on post-harvest measures, value addition and market access, on terms favourable to them. I can assure you that given the magnitude of the work involved, we are planning with utmost seriousness, the policies, science, systems, resources as well as structures required for scaling-up.

We have received a lot of appreciation from farmers, civil society organizations and State Governments from across the country. Eminent civil society organizations from MP and UP have already visited us. NGOs from Karnataka and other States are planning to visit us. All civil society organizations who have visited us have spent a lot of time in the CRZBNF programme villages, interacted with the farmers, and have had discussions with me or my colleagues. They have been overwhelmed with the responses of the farmers and they are impressed with the implementation arrangements of the Government of AP. They want their State Governments to replicate this programme, by adopting the AP Government approach. In fact, in AP itself, more than 35 NGOs are partnering with us in this movement. Many of them have been with us right from inception. Their contribution to what we are doing is very significant.

We believe very strongly that there is an urgency for bringing about the Agroecological transformation. The unprecedented situation of global warming and climate breakdown brooks no delay in trying the best solutions for coping with it. The word 'crisis' is too mild to describe the present and future dangers. We strongly believe that CRZBNF offers a ray of hope to our farmers and our citizens.

**In the context of climate change mitigation, one of the key recommendations is: *Enhancing [carbon/GHG] sinks in natural ecosystems is key to limiting warming to 1.5°C: All pathways to reduce emissions, to keep the warming within 1.5°C require Carbon Dioxide Removal (CDR) in the Agriculture, Forestry and Other Land Use (AFOLU) sector in varying degrees. Sequestering CO<sub>2</sub> in AFOLU sector will require incentivizing over a billion farmers and forest-dwellers to pursue sustainable practices that enhance carbon sinks, without jeopardizing their rights to sustainably better livelihoods. The world must come together to devise a mechanism to do this. (from a recent report of Centre for Science and Environment).***

We believe and intend demonstrating to farmers, civil society organizations and State Governments of all states that it is possible to bring about a system-wide agroecological transformation, in a short period of 10 to 15 years. We as a nation cannot afford to be content with only 1% area under agroecology. All of us need to come together to achieve this.

Given the magnitude of the task, and the multiple dimensions of the problem and the solutions, we are seeking collaborations with various eminent national and international institutions to translate our vision into a reality. Our collaborations with National institutions include ICAR institutions (CRIDA, and NAARM), CESS (the Centre for Economic and Social Studies), the Indian Institute of Science, IIT, Mumbai, etc. NITI Aayog has asked all the States to study the AP programme and try it out as a pilot. We will shortly be formalizing many of these partnerships.

Our collaborations with international organizations include: United Nations Environment Programme (UN Environment), the Food and Agriculture Organization of the UN (FAO), World Agroforestry Centre (ICRAF), the Sustainable India Finance Facility (SIFF), the French Agricultural Research Centre for International Development (CIRAD), the BNP Paribas Bank, etc., are to enable us to achieve our vision of agroecological transformation of 80 lakh hectares of cropped area of the State and enable 60 lakh farmers to make a complete transition. We expect more organizations to come forward to work with us.

UN Environment has assured us full support in achieving our objectives. They are very keen that this model is replicated all across India and across the World. We are thankful to the UN Environment for their support and their pioneering role in championing the AP programme. We are thankful to all our partners for their unstinting support and championship of the AP Government's agroecological transformation. Many eminent individuals in the country and outside are keen to work with us to make this transformation a success. We are grateful to them. We expect many more national and international institutions to work with us. We are in agreement with all our partners, that the transformations we are intending for the benefit of our farmers and our ecosystems must be carried out in a transparent and accountable manner, and precisely it is in this spirit that I write to you now.

In the next couple of sections, I will explain the agroecological transformation we are attempting, the principles governing our work, the participatory manner of our implementation, and the key innovations that have enabled this kind of rapid scaling. Our work is 3 and a half years old. It is still work in process. We are constantly learning from our experiences, and from best practices within our state and elsewhere. Our farmers, the real heroes of the ongoing transformation, are constantly innovating and evolving new practices.

#### **Agroecological transformation of the State of Andhra Pradesh ... from a pilot project in 2015 to a state-wide programme in 2018**

**Origins.** The pilot programme of Climate Resilient, Zero-Budget Natural Farming (CRZBNF) was based on the work initiated by the State Government way back in 2005 on 'non-chemical pest management' (NPM) which later evolved into Community managed sustainable agriculture (CMSA-AP). This initiative was facilitated by the Society for Elimination of Rural Poverty (SERP), Government of AP in partnership with NGOs (led by CSA and WASSAN) and implemented by women SHGs and their federations. The SERP programme was funded by the State Government through its own resources and a loan taken from the World Bank. As CEO, SERP, from 2000 to 2010, I was very closely involved in leading the programme and scaling it up across the State. Almost 24 lakh farmers were involved in the programme in 2013.

**The Pilot.** The objective of the Pilot by the Agriculture department was to establish in 700 villages, that through climate resilient Zero budget natural farming (CRZBNF) farmers' welfare could be improved very significantly and in a sustainable manner. The villages chosen were those which had performed well in the CMSA programme. Around 50 villages were taken up in each district. The CRZBNF programme was taken to the farmers by inducting master farmers from the same district or other districts as the change makers. These master farmers are best practicing farmers, called Community resource persons (CRPs), who had been nurtured under the previous SERP initiated CMSA. The CRPs were responsible for contacting farmers and motivating them to switch over from chemical farming to natural farming and to support them with CRZBNF knowledge and the package of practices. They are available in the village to answer any doubts that the farmers have in the transition process. As a result of the extraordinary efforts of the CRPs, the results of the Pilot were very positive. Farmers benefited in terms of reduction of the costs of cultivation, reduction in risks, improvement in yields. Farmers were very happy that CRZBNF enabled them to cope better with prolonged dry spells and heavy rains. All farmers reported improvements in soil health, water conservation and in biodiversity.

### **2017 – expansion and entrustment to Rythu Sadhikara Samstha**

The results of the pilot, implemented by the Agriculture Department, were very successful – in terms of the various parameters listed above. Looking at these positive results, the State Government was convinced that this initiative needs to be scaled-up. The programme was expanded to cover, in the first phase, 5,00,000 farmers in 3,000 villages, over a 6-year period (2016-21).

To enable the scaling up, the State Government decided to entrust the implementation to Rythu Sadhikara Samstha (RySS), a not-for-profit company established by the Department of Agriculture, Government of AP, for promoting welfare of farmers, and RySS has put in place a dedicated implementation mechanism at the State, District and grassroots levels.

The current programme of CRZBNF is funded by 2 Government of India schemes – Rashtriya Krishi Vikas Yojana (RKVY) and Paramparagat Krishi Vikas Yojana (PKVY). The current unit cost of the programme at Rs.25,500/- per hectare is well within the PKVY programme's unit costs.

It was in 2017, that the partnership between RySS and Azim Premji Philanthropic Initiatives (APPI) materialized. The APPI appreciated the AP Government's methodology of taking CRZBNF to a large number of farmers. They were convinced that this is one of the best ways of protecting and advancing the livelihoods of small and marginal farmers. We are highly thankful to them for supporting our programme. They saw very early, the immense potential of this intervention in strengthening the livelihoods of small and marginal farmers. And, they have been our steadfast supporters ever since.

### **Results upto 2017-18 and the plan for the current year (2018 – 19)**

In the first three years of the programme, upto March 2018, we had enrolled around 163,000 farmers in 972 villages. These exemplary enrollment is attributable to good

programme management and the dedicated efforts of the master farmer trainers, the CRPs at the village level and the women SHGs. In 2018-19, the programme coverage was expanded and it is now being implemented in all the 662 rural mandals of the state, covering 3,015 villages. The programme has enrolled 5,00,000 farmers.

This enrollment process is being carried out by about 4,500 Community Resource Persons (CRPs), and they are being supported by 85,000 Women Self-Help Groups (SHGs) and the village level federations of the women SHGs in these villages. This process is facilitated by the dedicated staff of RySS at the cluster, district and state levels. The facilitation work is also being supported by more than 35 NGOs in the State.

### **Implementation at the village level and key innovations in implementation**

**Role of CRPs.** At the village level, our implementation plan calls for a 5-year support to the village and to each farmer, till s/he transits to natural farming and converts her/his entire holding to natural farming. To achieve this, RySS has positioned a spearhead team of 2-3 CRPs at the cluster level for a group of 5 villages. The CRPs stay in the allotted villages and motivate and support farm households in the village to adopt CRZBNF, and provide them with handholding support to ensure that the transition is smooth. This is the most important innovation in implementation.

**Transition management.** The other critical innovation is the **management of the transition process**. The transition process for a farmer can take anywhere from 3 to 5 years. The change happens in an incremental manner, and in an iterative manner. A farmer starts by incorporating a few critical CRZBNF practices in the 1<sup>st</sup> year. They test these practices in a portion of their field; and based on the results that they get, and in discussions with other farmers and on the advice of the CRP, they gradually increase the area under CRZBNF. In subsequent seasons, they adopt more and more CRZBNF practices. Thus, there is both a deepening process, where more and more of the CRZBNF practices are internalized, and, a horizontal area expansion process – where the entire holding of the farmer is brought under natural farming.

During the entire transition period, the farmers themselves innovate several practices. At the end of 4-5 years, they would have internalized all the relevant practices which have worked well for them. They learn not only from the literature provided by us or our trainings or from the CRPs, but, they are also learning from each other, learning from what they see on television and YouTube, the print media and work of NGOs nearby, etc. This is, therefore, an open process of (experiential) learning and participatory experimentations, founded on a few basic agroecological principles. Each farmer adopts CRZBNF practices at their own pace.

It is indeed a gradual, and, an incremental process and RySS recognizes it and respects it, and, has provisioned long-term handholding support to each farmer to make a permanent transition to CRZBNF. A period of 4-5 years is essential to make the transition irreversible.

The major expenditure in the programme is the long-term nurturing support to each farmer. This we see as the most important contribution - as this is an investment in capability development. This support to the transitioning farmers is provided at the village level by CRPs. Their credibility is very high as the farmers bond well with them. They stay in the village and

give advice to farmers based on their experiences and also what has worked in this village. Their strength is that they are available to farmers 24x7.

**Creating champion farmers in the cluster for further scaling out.** At the end of 2-3 years, a new pool of best practicing champion farmers from within these villages is identified and they are nurtured to become farmer trainers. The creation of this human resource is critical for sustaining and expanding this process. Once these internal best practitioners are positioned, the intensity of support to the new farmers increases. We are positioning one best practicing farmer, called internal community resource person (iCRP), per 100 farmers.

**Pivotal role of women SHGs.** The involvement of women SHGs in this transformation process is critical to the scaling out and sustaining the programme. Almost 70% of the members in the SHGs in the rural areas have farm livelihoods as the major livelihoods. Another 20% are landless poor and we have planned special interventions for them. The SHGs and their federations are responsible for planning the member-wise transition to CRZBNF and providing support to individual women members and their spouses to transit to natural farming. The CRPs are greatly benefited by the involvement of women SHGs, and vice-versa. There is a great synergy between these 2 innovations.

The role of the women SHGs and their federations is critical in management of the programme and the sustaining of the programme, post project. They are responsible for preparing farmer wise plans, regular monitoring of the implementation of the farmer wise plans, and monitoring the functioning of the programme functionaries. They are responsible for identifying the poorest of the poor farmers and proposing interventions for them.

In the 5 years of programme intervention, it is planned to bring the men farmers also into farmer self-help groups and federate them at the village level. The men farmer's federations and the women SHG federations work together, as a grassroots farmers' institution, for the holistic agroecological transformation in the whole of the village. The Programme ownership and management then shifts to this Farmers' institution (of men and women SHGs) within the 5-year programme period. *The programme then becomes a programme by the farmers themselves.* The Government's role is only that of facilitation.

**Ownership of Agriculture Department.** All the Agriculture department field functionaries are trained in ZBNF, theory and practice, and they are responsible to provide all support to the real change makers, the CRPs and the iCRPs in bringing about this transformation.

**Almost the entire investment in the programme is to support these 2 processes.**

Thus, the State Government's CRZBNF Programme is a people-centred programme. It is a farmer-driven knowledge dissemination, and continuous handholding programme. The key role is played by the farmers themselves and the women self-help groups.

We expect a seamless expansion of the programme and a deepening of the programme through these democratic processes. This gives us the confidence to take this programme to all the villages and to cover all the 60 lakh farmers in the State.

## **Principles governing the programme – science & technology, social, economic and governance**

The AP Government's CRZBNF programme is governed by a set of principles that are broadly classified into 3 categories.

### **Science and technology - ZBNF or Regenerative Agriculture Principles:**

1. Four Wheels of ZBNF promoted by Dr Subhash Palekar
  - a. *Bijamrutha* - Microbial seed coating through fermented cow dung and urine based formulations;
  - b. *Jeevamrutha* - Bio-inoculant, based on fermented cow dung, cow urine, jaggery, pulses flour, uncontaminated soil, to stimulate and regenerate the soil microbiome;
  - c. *Achhadana* - Cover crops, 'live' mulch through cover crops and inter crops and mulching with crop residues, thereby keeping the ground covered at all times; and
  - d. *Waaphasa* - Soil aeration
2. The Bio-inoculants (*Bijamrutha* and *Jeevamrutha*) are made from dung and urine of an Indigenous Cow
3. Zero Synthetic Chemicals – no synthetic pesticides and no synthetic fertilizers
4. Pest management only with botanical and cow dung and urine based formulations
5. Minimum tillage
6. No GMO seeds
7. Community managed seed system
8. Appropriate cropping mix - should be such that the income from the short duration crops meets to the extent possible, the financial expenditures on the main crop, so that the net cost of the main crop is as close to 'zero' as possible.

**All these practices are to be seen from the lens of Climate Change resilience.**

### **Socio-economic Principles:**

1. Involvement of women. Collectives of women and men farmers are jointly planning, implementing, and monitoring the enrollment and the transition process. Continuous dissemination of CRZBNF principles, through regular women SHG meetings and farmer field schools (FFS).
2. Inclusion of poorest of the poor, single women and landless tenant farmers in the programme. Special thrust to promote their livelihoods and to ensure their food and health security.
3. Easily understood processes, so that semi-literate men and women can understand and implement the practices
4. Inputs from locally available materials
5. Zero or minimum purchase of inputs, by improving the capabilities of farmers to prepare inputs on their own
6. Collectivization and aggregation – to improve their bargaining power
7. Promoting a sustainable rural economy – with internal markets for surplus food over and above self-consumption
8. Food and nutrition security of all households in the village – facilitated by the women's collectives



### **Governance Principles:**

1. Government's role is as an anchor of the programme, a convenor, a catalyst, and a facilitator.
2. The programme implementation is through best practicing farmer trainers (CRPs), women self-help groups, and farmers' institutions
3. NGOs working with farmers' institutions play a facilitating role
4. The programme supports and nurtures formation of farmers' institutions, who will take over the management of the programme. The farmers' institutions will involve both women and men farmers
5. Special focus is on the most vulnerable farmers
6. Accountability to the local women's institutions and farmers' institutions, and local self-governments
7. High-level of transparency and accountability in the programme
8. Saturation. Ensuring every farmer in a village is covered and helped to transit to sustainable agriculture. And, ensuring that the entire cultivable area in the village is farmed through natural farming practices.
9. **Universalization.** Ensuring that every village in the state is covered, in a time bound manner.

These are not exhaustive. The programme is still evolving, and is learning and will continue to learn from best practices within and elsewhere. Thus, an important foundational principle of the programme is that it is open to change, welcomes learning even as it is very clear and very firm about its points of departure and the nature of public goods and services it wants to engender.

Our technical know-how in CRZBNF is time-tested, tested by thousands of farmers, but will also evolve with the kind of farmers' experimentation I have described above, as farmer practices evolve through innovations. CRZBNF has been designed to accommodate the best suitable and adaptable practices of existing regenerative or agroecological farming methods. These practices might have emerged out of various agroecology systems like ZBNF, NPM, CMSA, Permaculture, Jaivik Krishi, Go-aadharita Krishi, etc.

We have been fortunate that we are able to get Dr. Subhash Palekar to devote time for Andhra Pradesh and to conduct mega training camps for thousands of farmers. He has been a great source of inspiration to the farmers in Andhra Pradesh, even before the State Government took up this programme. The CRZBNF programme of Andhra Pradesh is largely based on ZBNF principles of Sh. Palekar. In its field level implementation, it draws from the previous programmes of GoAP, namely NPM and CMSA programmes and wherever NGOs are partnering with us, it draws from their expertise in agroecological practices.

The programme continues to evolve. We in the Government are keen to learn from the best practicing farmers and models from other parts of the country, which add value to our efforts.

To that effect, our State Resource Book for CRZBNF is a living document that evolves continuously, constantly undergoes changes to incorporate the feedback of farmers collected through an exhaustive community-led planning, monitoring and learning system. Our learning is a continuous process - we have monthly debriefing at districts, state level review meetings,

a seasonal verification of farmers and their farms, and feedback from Department of Agriculture and inputs from NGOs.

The selection of package of practices is carefully made by our technical team. However, the ultimate choice whether to implement the recommended practices or not rests completely with the farmer, without any prejudice. We are open to review and we are willing to promote any model as long as it fits into our core principles – technology, socio-economic and governance, mentioned above.


The **Socio-economic and Governance Principles** governing CRZBNF programme have emerged from 20 years of Government of Andhra Pradesh's pathbreaking work on rural poverty eradication through Society for Elimination of Rural Poverty (SERP). Women Self-help Group movement in Andhra Pradesh has grown so strong that their social capital through SHGs and their federations are now the prime movers of scaling up CRZBNF rapidly and more effectively.

These principles, the technical, socio-economic and governance principles, are critical in realizing the agroecological transformation in the State. The Government of Andhra Pradesh clearly believes that CRZBNF programme that is built on such a robust social and economic principles can motivate and inspire the farmers of Andhra Pradesh towards regenerative or Agroecological farming. Our partnerships with various organizations, civil society organizations, national and international organizations, are based on these core principles.

I would be happy to arrange a field visit for you and your colleagues to see for yourself the participatory agricultural transformation that is taking place in AP. After that, if you need any further clarifications, I would be happy to respond. We invite you to recommend improvements to what we are doing. We are ready to adopt any innovation that will significantly add value to our work.

Our responses to your specific questions are given in the Annexure, which is attached.

Yours sincerely,

  
T Vijay Kumar · 26/11/18  
Advisor to Government of AP, A&C  
Co-Vice Chairman, RySS