

## Agro-ecology

# Z.B.N.F. – Disguise to Cover up the Crisis

Agroecology is a system that enhances fertility of lands, increases yields, restores soil health and biodiversity, promotes climate resilience and improves farmers' well being. It is being practiced in various forms all over the world –some of them being practiced in India are organic farming, natural farming, permaculture, biodynamics, Jivik krishi etc. One can call them as alternative agricultural models. Each system has some advantages and also disadvantages. As of now these alternative models are being practiced on less than 1% of the farm land in India. These have to be promoted with the involvement of agricultural science institutions under ICAR to correctly assess their impact on production, financial viability, adaptability to varied climatic conditions across the country and more importantly self sufficiency in food.

As opposed to the present day industry-produced-inputs-dependent agriculture, these alternatives had to seek to reduce use of chemical fertilizers and pesticides, restore soil fertility, banning of Genetically modified Organisms (GMO) and restoring the right of farmers over seeds and removing the grip of agri-MNCs on our agriculture to achieve self sufficiency in food. If we move ahead with these goals, soon we will be able to develop not a single model, but a variety of models suitable to varied conditions of climate, soil fertility and size of land holdings etc. enriched by local knowledge and experience of peasants.

For this there is a need for a coordinating agency consisting of agricultural scientists, practitioners of alternative agriculture, farmers representatives, which sums up the experience of practice over years and disseminates the data collected with recommendations to apply them in fields. This is more so because the practitioners of one kind of model are negating the other models and they also restrict their efforts to only some of the goals and not all. Thus they are landing in empiricism sometimes reflected as ego clashes. Subhash Palekar rubbished the organic farming while he did not include food self sufficiency in his goals.

Recently Zero Budget Natural Farming (ZBNF) hit the headlines. In fact, it generated interest in the country when its proponent, Subhash Palekar was awarded Padma Sree, and the government of Andhra Pradesh promoting it since then. The Finance Minister Nirmala Sitaraman announced in this year's budget that Indian agriculture will be going "back to basics" and that ZBNF needs to be adopted by farmers across the country. "Steps such as this can help in doubling our farmers' income" she said.

Natural farming has been in practice for almost 10 years. Japanese scientist Fukuoka first popularized it practicing it in his family farm. The model being practiced by Subhash Palekar, ZBNF, has 'four wheels': One, *Beejamrutam* or microbial coating of seeds using cow dung- cow urine based formulations. Two, *Jeevamrutam*, or application of concoction made with cow dung, cow urine, jaggery, pulse flour, water and soil to multiply soil microbes. Three, *achhadana*, mulching or applying a layer of organic material to the soil surface, to prevent water evaporation and contribute to soil humus formation. Four, *Waaphasa*, or soil aeration through a favourable micro climate in the soil. For insect and pest management, ZBNF propagates the use of various decoctions made from cow dung, cow urine, lilac and green chillies called *kashayams*.

Why the central government chose only ZBNF excluding other methods? Perhaps the sanscritised versions and 'sacred' cow dung and urine might have suited the political discourse of the BJP government. Leaving aside these semantics, is ZBNF beneficial?

The methods recommended by Palekar were practiced by farmers before the advent of green revolution. My maternal grand-father had five acres of land on which he used to grow paddy in the delta of river Krishna getting the yield around 15 bags. The family used to rear two oxen to plough the land and three buffalos for milk. The haystack from paddy crop used to feed the livestock. The dung and urine along with wasted haystack were allowed to putrify at one corner which was later used to fertilise the soil. After green revolution, the HYV seed increased the yield of grains, but reduced the quantity of haystack as they are shorter, the total biomass being the same. Gradually it became difficult for the small and middle peasants to rear livestock as the haystack became scarce and consequently chemical fertilizer replaced the traditional biofertiliser.

This short description reveals not only the ill effects of green revolution, but also the short comings of ZBNF. Firstly, it is not the zero budget as the farmers has to buy the biofertiliser component, which is 40% less than chemical fertilizer.

Secondly, ZBNF has not stressed on the increase of production. The production of, particularly of foodgrains will not increase by ZBNF unless a high yielding variety of seeds compatible with natural farming methods are developed. The Council for Energy, Environment and Water (CEEW) study, done between 2016 and 2017, is based on crop cutting experiments in 13 districts of AP where ZBNF was being practiced, found a decline in the input costs, an improvement in yields of horticultural crops and a decline in yields of foodgrains. As the ZBNF practice began in 2015 with GoAP support through Rythu Sadhikara Samstha (RySS), it was too short a period to assess, over the years yeild may improve as the soil fertility revives due to ZBNF yield. But to grow foodgrains to meet the needs of growing population, ZBNF has to adopt the available scientific knowledge to improve the productivity of seeds and suitability to climatic conditions. This in no way validates chemical dependent HYV seeds and GM seeds.

The problems of adoptability of alternative farming methods can be surmounted through experi-mentation if there is will and tenacity. But what about the stratification among so-called farmers? Nearly 86% of ‘farmers’ have less than one hectare of land, who are poor peasants often working as agricultural labour. These are the ones who bears the brunt of the crisis, in debt trap and committing suicides. Are these alternative methods within the reach of these small peasants?

A case study conducted by *La Via Campesina*, a coalition of 182 farmers organizations across 81 countries, has shown that most of the farmers collaborating with Palekar’s ZBNF in Karnataka came from “middle peasantry” - having 2 to 4 hectares of land. The same report cited the ‘marketability’ of ZBNF produce as a major limitation. There are many media reports about several instances where farmers using ZBNF method have returned to old input-intensive farming on the ground of profitability.

A look into GoAP’s programme of ZBNF, being implemented through Rythu Sadhikara Samstha (RySS), translated as farmers empowerment organization, reveals the same. Most of the success stories shown in the website are of the middle and above middle peasants who had non-farm income to fall back. One farmer used his 5 acres of land to rise 64 varieties of fruit trees for consumption by his family and relatives and leased in 2 more acres to raise paddy crop. Unless these alternative methods adopted to be availed by the small peasants, they will remain at the fringes of the present agricultural system.

Niti Aayog in its agricultural policy statement has stated, without evidence or data in support, that GMOs are required in Indian agriculture for food security. Curiously, it is supporting ZBNF. According to a report by “The Wire”, it was in February that Niti Aayog approached ICAR and National Academy for Agricultural Research Management (NAARM) to study the effect of natural farming. When the scientists wanted two years time to submit a report, it insisted that the study should be completed in six months, which duration is not

enough time to be able to scientifically assess the effectiveness of natural farming. The study covered 295 farmers practicing ZBNF and another 170 who are not, has been conducted in Karnataka, Maha-rashtra and AP for a single crop season.

Keep aside this wasteful exercise; studies are being conducted in various universities, including ICAR, to understand the methods, value and viability for farmers in various agro-climatic regions. None has reached any definite conclusion so far.

The GoAP ZBNF programme began in 2015 and in two years got 1,38,000 farmers and 1,50,000 acres into ZBNF. In the next two years the numbers swelled to 5,23,000 farmers and 5,04,000 acres in 3015 villages of 13 districts. The programme depended on SHGs to enroll and used Rythu Mitra groups, which are formed in the place of defuncted agricultural extension services. There is no information available from the official sources as to how many farmers opted out of the programme.

It is being financed by Centre's Rashtriya Krishi Vikas Yojana and Paramparagat Krishi Vikas Yojana. By the end of November 2018, the RySS spent Rs.290 crore. The target set by the RySS is universalisation of ZBNF in AP by bringing all 60,00,000 farmers into ZBNF, in 10 years, that is by 2024. It is estimated to cost Rs. 17,000 crore.

How to raise these finances? The RySS says it is in negotiations with national and international institutions and it had collaboration with UN Environment Programme, FAO, World Agroforestry Centre (ICRAF), Sustainable India Finance Facility (SIFF), French Agri-research Centre for International Development (CIRAD) and BNP Paribas Bank. It had not clarified on what form of collaboration it had with these organizations. It only said that all MoUs are put in its website, But none of it is there.

When 24 eminent environmentalists wrote letter of RySS asking for the source of finance and intentions of financiers, naming BNP Paribas Bank and Milinda and Bill Gates Foundation (MBGF), the Deputy chairman of RySS denied any relation with them as on the date. Moreover, he asserted that RySS is ready to collaborate with anyone who agrees to its core principles and in the same breath he said that RySS is in the process of engaging BNP Paribas Bank as its financial advisor.

Out of the six collaborations RySS had, one with SIFF is crucial. It is established with the aim of coordinating public and private investment to develop climate resilience. It is funded by UNEP, ICRAF, CRAF, CIRAD and BNP Paribas Bank and had its branch office at Amaravati, capital of AP. The last two organizations belongs to France, financed by French government and private foundations.

In this context, RySS brushed aside the concerns expressed by eminent environmentalists, hiding the facts of its collaboration with global finance. Here many apprehensions arise – is the global forces designing the ZBNF to suit their interests? Is government-sponsored ZBNF seen by international finance as a tool to prepare ground for contract farming by agri-MNCs?

The alternative agricultural methods should be promoted only after applicability was established on scientific basis. Instead, the central government chose to promote one of the methods being practiced without any scientifically analysed data – Subhash Palekar's ZBNF – as a panacea for all the ills of agriculture. With huge finances coming from foreign banks and institutions, some of it through climate bonds, the very intention behind this programme has become questionable. Precisely because the core principles of ZBNF goes against the very interests of global finance.

Placating ZBNF as a tool to double the income of farmers is only meant to assuage the wounded feelings of rich farmers by showing them an alternative farm method to create illusion that the BJP government is doing something for them, as well as diverting the attention of peasants and people from its failure to address the crisis in agriculture.

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