

Zero Budget Natural Farming

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Introduction:

Zero budget natural farming is the farming system in which we do farming without use of synthesised fertilizers or without spending money on purchasing fertilizers , pesticides and seeds. Crops are grown by natural methods. All inputs are to be locally resourced from in and around the village. ZBNF is purposed by Indian agricultural scientist Mr.Subash Palekar.

A popular incident is his interaction with farmers (women self-help group members) almost 10 to 15years earlier (circa 2005) as part of Velugu initiative under Society for Elimination of Rural Poverty. The two sides did not understand each other's language (Mr Palekar spoke Marathi, Hindi or English) and the women SHG members understood only Telegu), but a common medium for them was agriculture that they both understood and the event was appreciated. One of the participants went back home and had a discussion (rather, argument) with her husband of trying this method of agriculture without use of pesticides and fertilizers. The husband was furious, but finally they agreed that the wife can try the alternative method in half a plot while in the other half the husband would continue with his application of fertilizer and pesticides. The outcome was that the yield was not much different between the two approaches, but the wife's approach had a much lower cost. In the next season the couple used this zero budget natural farming approach in all their plots and now the whole village was watching and they all shifted to this approach in the third season (Mishra and Reddy, 2011). This is a classic case of a real life application of the case-control method.

Four pillars of ZBNF:

- Jivamrut
- Bijamrit
- Acchadana/Mulching

- Whapasa/Moisture

Jivamrita:

Jeevamrit is a organic manure .This is fermented microbial culture which is prepared by natural resources. Jeevamrit helps to increase the microbial activity in the soil . The 48hrs. fermentation process multiplies aerobic and anerobic bacteria present in the cow dung and urine , as they eat organic integredients and a handful of undistributed soil acts as inoculate of native species of microbes and organisms. It can be applied through irrigation water or foliar spray. While transiting from conventional input-intensive agriculture, the application of Jeevamrutha to the soils and plants is required only for the first three years because after that the system becomes self-sustaining.

Bijamrita:

This is a organic manure which is prepared from locally available natural resources for the propose of treatment for seeds, seedlings or any planting material. It reduces the possibility of seed infestation by pests and protects young roots from fungus, soil-borne diseases, and seed-borne diseases that generally affect the plants after monsoon. In the ingredients, the dung and urine from the indigenous breed cow act as a powerful fungicide, and anti-bacterial agent, respectively.

Acchadana/Mulching:

There are three types of mulching.

- Soil mulching: It protects topsoil by avoiding tilling. It facilitates aeration, and promotes water retention.
- Straw/Biomass mulching: Application of dry organic matter (dead material of any living being) along with Jeevamrutha will lead to decomposition and humus formation that will improve soil fertility.
- Live mulching: This suggests inter-cropping or mixed-cropping by combining monocots (those seedlings with one seed leaf like rice and wheat) with dicots (those seedlings with two seed leaves like legumes) in the same plot of land. This

will create a symbiotic relationship because monocots will supply elements like potash, phosphate, and sulphur, while dicots will work towards nitrogen-fixation .

Whapasa/Moisture:

It is the condition where there are both air molecules and water molecules present in the soil. Thereby helping in reducing irrigation requirement.

Other important principles of ZBNF :

- **Intercropping** – Because of this, ZBNF gets its “Zero Budget” name. small costs incurred in cropping is compensated by the additional income, making farming a close to zero budget activity. Crop and tree associations work well for the south Asian context.
- **Contour bunds** –contours bunds promote maximum efficiency for different crops.
- **Local species of earthworms:** Revival of local deep soil earthworms through increased organic matter is most recommended than vermicompost (the *Eisinea feotida* worm, exotic to India should be avoided), and to use the indigenous humped cow (*Bos Indicus*) for their dung and urine because they have a greater concentration of micro-organisms.
- **Cow dung-** Dung from the *Bos indicus* (humped cow) is most beneficial and has the highest concentrations of micro-organisms as compared to European cow breeds such as Holstein. The entire ZBNF method is centred on the Indian cow.

The Karnataka Experience:

It was in 2002 that a senior leader of Karnatka Rajya Raith Sangha (KRRS) invited Mr Subhash Palekar for an interaction leading to a series of workshops and training camps in the method of ZBNF. It is said that about a lakh of farmer households may be practising it in Karnataka and all of them need not be necessarily linked to KRRS. The spread of this initiative has been discussed in *La Via Campesina* (2016) and *Khadse et al* (2017). Further, *Khadse et al* (2017) survey 97 farmer households who are practising ZBNF and the reasons (not mutually exclusive) that the farmers ascribe to adoption of ZBNF are family health (54 per cent), food self-sufficiency (46 per cent), environmental reasons (42 per cent), reduce cost of production (38 per cent), reduce dependency on corporations (33

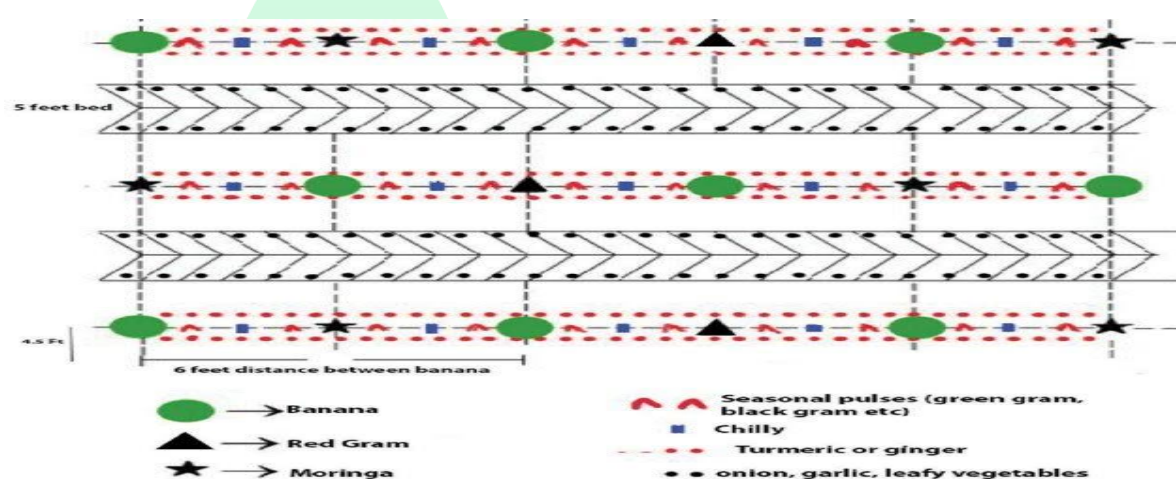
per cent), reduce debt (30 per cent), and spiritual reasons (30 per cent) among others. The study of Khadse et al (2017) points the positive impact on various agroecological indicators from among the farmer households they surveyed. Health has increased for all households; soil conservation, seed autonomy, and quality of produce has increased for more than 90 per cent of the households; household food autonomy, and income has increased for more than 85 per cent of the households; yield, and seed diversity has increased for more than 75 per cent of households; and selling price has increased for 58 per cent of households. At the same time pest attack has decreased for 84 per cent of households, production costs decreased for 91 per cent of the households, and need for credit has decreased for 93 per cent of the households. The impact has been positive and affirms the claims that the method can reduce risk. There is ,however, an independent need to evaluate the adverse experiences, even if they are few in number, so as to help us understand the reasons and if possible to address them so that the efficacy of the method can be further improved. There are criticism against ZBNF because to follow that one has to adhere to strict guidelines of do's and don'ts. But, its application in the field points to the existence of different layers of adherence, which implies a process involving diálogo de saberes.

Efficacy of some Agroecological Indicators among Farmers Surveyed, Karnataka, 2012 :

Indicators	Increased	Not change	Decreased
Health	100.0	0.0	0.0
Soil conversation	93.6	4.3	2.1
Seed autonomy	92.7	4.9	2.4
Quality of produce	91.1	4.4	4.4
Household food autonomy	87.7	7.3	4.9
Income	85.5	9.5	4.8
Yield	78.7	8.5	12.8
Seed diversity	76.9	10.3	12.8
Selling price	57.9	34.2	7.9
Pest attack	11.4	4.5	84.1
Production cost	6.8	2.3	90.9
Need for credit	3.8	3.8	92.7
Source : Khadse et al (2017)			

A version of the five-layer Subash Palekar model:

Subash Palekar’s most popular model is the five-layer model . It is a type of agroforestry model which integrates trees with various levels of plant canopies, each layer at an optimum level to harvest the sunlight. It includes various crop and tree combinations, including living fences on the edges, and trenches for water harvesting. Farmers have further adapted this model according to their needs and in many states and many local versions have been found.



Reference:

Mishra.S (2018) , Zero Budget Natural Farming: Are This and Similar Practices The Answers ,working paper no.70 ,(12-16)

Kumar.S , Kale.P and Thombare .P(2019/11) , Zero budget natural farming : Securing smallholders farming from distress , Volume 1 –Issue 3 , (2) www.agriallis.com