

Organic Farming

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Since organic farming not only adequately addresses issues of soil, ecology and human health but also gives impetus to sustainable agriculture, it received the attention of the Government of India. In view of this, in 2005, Organic Farming Policy was introduced by the Government of India. The Organic Farming Policy intends to promote technically sound, economically viable, environmentally non-degrading, and socially acceptable use of natural resources for organic farming.

In spite of all odds, registering 3.6 percent growth rate of agriculture and allied sectors (crops, livestock, forestry and logging and fishing and aquaculture) in 2020-21 is a significant achievement. But at the same time, other realities may be kept in view. For instance, the growth rate of agriculture and allied sectors which was 6.8 percent in 2016-17 came down to 3.6 per cent within four years in 2020-21. Higher growth in the agriculture and allied sector could happen due to buoyancy in livestock and fisheries sub-sectors. For example, in 2018-19 the growth of the sector as a whole was buoyed due the performance of livestock and fisheries, otherwise Gross Value Added (GVA) for crops was -1.6 percent (Economic Survey, 2021-22). Formation of the Gross Capital Formation is also an issue. For instance, public investment has remained stable between 2-3

percent from 2011-12 to 2019-20 and the private investment truncated to 14.30 percent in 2019-20 from 15.90 percent in 2011-12 (ibid). The budget allocation for the current year (2022-23) of this sector vis-à-vis crop sector may also be looked into. The allocation for the fisheries, animal husbandry and dairying sectors have increased by Rs. 1,714 crore (40 percent) in 2022-23(BE) as compared to 2021-22(BE). Conversely, allocation for the crop sector have been reduced by Rs.2,049 crore (4 percent) in BE(2022-23) as compared to 2021-22(BE).

In this background where crop sub-sector is in fix, the idea of organic farming and its sustenance are to be examined from the point of view of the benefits and challenges and how to address the challenges. Broadly, organic farming or natural farming denotes farming without using chemical fertilisers, insecticides and pesticides.



Meaning and Concept of Organic Farming

There are many cheers for Indian agriculture during past 75 years. Food grain production which was 50.82 million tonnes in 1950-51 has ascended to 295.5 million tonnes in 2019-20 and to 308.6 million tonnes in 2020-21. Green Revolution and other research and development in the field of crops cultivation played an important role in this regard. However, indiscriminate and excessive use of chemicals and fertilisers coupled with insecticides and pesticides has put a question mark on the sustainable agriculture. This is not only spoiling soil but also jeopardising future of coming generation. Lives of children has been put into peril. For instance, a Report of the Standing Committee of the Parliament (2016) highlighted the problem by its findings as "A study of Haryana on 283 pregnant women has shown 65 percent of have Zinc deficiency (SCP,p.22)". Thus in order to provide better health to humans, animals and finally to entire ecosystem, we should move towards integrated management system of agriculture. The Standing Committee of the Parliament defined the organic farming in these words: "Organic Farming is based upon sound agronomic practices, crop rotation, use of farm land manure for bio-fertilisers and bio-pesticides for enhancing soil productivity and use of natural methods and bio pesticides to control pests and weeds are important ways to avoid harmful impacts associated with chemical fertilisers and pesticides on agriculture and allied sectors in the country" (ibid, p.42). Since organic farming not only adequately addresses issues of soil, ecology and human health but also gives impetus to sustainable agriculture, it received the attention of the Government of India. In view of this, in 2005, Organic Farming Policy was introduced by the Government of India. The Organic Farming Policy intends to promote technically sound, economically viable, environmentally non-degrading, and socially acceptable use of natural resources for organic farming. The Policy seeks to actualise the area and crop potential for organic farming, sustaining soil fertility, conserving bio-resources, strengthening rural economy, promoting value addition, accelerating the growth of agrobusiness and securing a fair standard of living for the farmers and agricultural workers and their families. On the basis of above premises, objectives of the Organic Farming Policy are given in box-1.

Box-1

Objectives of the Organic Farming Policy, 2005

- Maintenance of soil fertility by encouraging and enhancing the biological cycle within farming systems involving micro-organisms, soil flora and fauna, plants and animals
- Identification of areas and crops suitable for organic farming
- Development of organic package of practices
- Setting up of model organic farms for getting seed material for organic cultivation.
- Assurance of production and supply of quality organic input
- Adoption of biological methods for pest and disease control
- Adoption of biological and mechanical methods for weed management
- Harnessing of traditional and indigenous knowledge relating to organic farming
- Creation of awareness among farmers towards organic agriculture
- Development of domestic market for organic produce
- Improvement in farmers' income through quality produce
- Generation of rural employment opportunities
- Simplification of certification system and recognition of adequate certification agencies, especially for domestic market
- Promotion of group certification
- Maintaining a diversity of plant and animal species as a basis for ecological balance and economic stability
- Improvement in conditions of livestock that allow them to perform all aspects of their innate behaviour
- Development of regulatory mechanism for various organic inputs and produce.

Source: Organic Farming Policy, 2005, Ministry of Agriculture, Department of Agriculture and Cooperation, p.2

Evidence-based Research on the Practices of Organic Farming and Outcomes

The Indian Council of Agricultural Research (ICAR) through the Institute of Farming System Research (IIFSR), Modipuram, Meerut District, UP conducted studies on the impact of organic approach, integrated approach, and inorganic approach on yield, soil and quality of food. The study was done

during 2004-05 to 2019 at 13 centres in 12 states. Presently, going on at 20 centres in 16 states in five ecosystems namely arid, semi-arid, humid, sub-humid and coastal. The approaches and methods adopted in the study given in Table-1, which are self-explanatory.

Table -1 : Approaches and Methods of Studying Organic/Natural Farming

Three Approaches	Six Methods
Organic approach (ORG)	Organic method (OF), with 100 percent of the nutrients from organic sources and complete organic management
	Organic innovative method (OIN), with 75 percent of the nutrients from organic sources + innovative inputs 25 percent [any two of cow urine (10 percent), panchgavya, plant growth-promoting rhizobacteria and vermiwash (10 percent)]
Integrated approach (INT)	Integrated method (IN75) - with 75 percent organic + 25 percent inorganic nutrients and management
	Integrated method (IN50) - with 50 percent organic + 50 percent inorganic nutrients and management
Inorganic approach (INO)	Inorganic method (IOF), with 100 percent inorganic nutrients and management
	State recommended (SR) method or farmers package (choice given to centres)

Source: Presentation made by Abhay Kumar Singh, 'Centre for Science and Environment' on the theme "Evidence(2004-20) on holistic Benefits of Organic and natural Farming in India" in a webinar organised by AGRASRI, Tirupati on February 02, 2022.

Findings of the Study are summarised below:

- i. Net returns are highest in 64 percent with organic approach at 12 centres, 11 percent with integrated approach at four centres and 25 percent with inorganic approach at five centres.
- ii. The five year mean net returns with organic approach are higher than inorganic approach in 67 percent cropping systems.
- iii. The long-term trends revealed that net returns are much better with organic approach than inorganic approach.
- iv. Organic/Natural farming increase soil health and fertility.

- v. Organic farming improves sustainability index and increases carbon sequestration and overall resilience.
- vi. Higher yield is produced with organic/natural farming.
- vii. Cost of inputs is comparatively low in organic farming as these are locally and naturally available.

It is clear from the findings of a comprehensive study that organic/natural farming is far better than the inorganic farming because inputs costs are less in organic than that of inorganic farming as they are locally and naturally available.

Programmes and Policies for Organic Farming

As mentioned above after the adverse impact of Green Revolution, agro-ecological issues and concerns started surfacing because of the use of chemicals and fertilisers in farming. In the year 2005, the Organic Farming Policy was also announced but put into practice half-heartedly as its implementation reveals. However, toward this end, in 2015-16, Paramparagat Krishi Vikas Yojana (PKVY) was initiated, which has been implemented on a very limited scale. Two more small components of the sustainable agriculture have also been initiated which are known as Mission Organic Value Chain Development for North-eastern Region and Integrated Nutrient Management of Organic Farming. A review of these is given as follows.

Paramparagat Krishi Vikas Yojana (PKVY)

PKVY was implemented as Centrally Sponsored Scheme initially for three years (2015-2017) but subsequently revised for the next 3 years. The Scheme is implemented in a cluster fashion in size of 1000 ha in plain areas and 500 ha in hilly areas for better facilitation and marketing of organic produces. All farmers are eligible but within a group, a farmer can avail benefit up to a maximum of 2 ha. and the limit of assistance is Rs.50,000 per ha, out of which 62 percent i.e., Rs. 31,000 is given as incentive to a farmer for organic conversion, organic inputs, on farm inputs, production infrastructure, etc. The broad components of the scheme are (i) implementation, handholding, capacity building and certification (ii) Participatory Guarantee System Certification (iii) Incentive to farmers (iv) Value addition, marketing and publicity.

Financial Progress under PKVY

The financial progress of the scheme from 2015-16 to 2020-21 has been given in Table 2. It shows that during last six years BE was Rs. 2,132 crore, of

which Rs. 1,363.61 crore has been spent.

In six years, maximum funds were used in 2018-19 (91.52 percent) followed by 2019-20 (87.28 percent) and 2015-16 (75.40 percent).

(Rs in crore)			
Year	Budget Estimate (BE)	Revised Estimate (RE)	Release
2015-16	300.00	249.60	226.19 (75.40%)
2016-17	297.00	165.96	152.82 (51.45%)
2017-18	350.00	250.00	203.46 (58.13%)
2018-19	360.00	335.91	329.46 (91.52%)
2019-20	325.00	299.36	283.67 (87.28%)
2020-21	500.00	-	168.01 (33.60%)
Total	2132.00	1300.83	1363.61(64.00%)

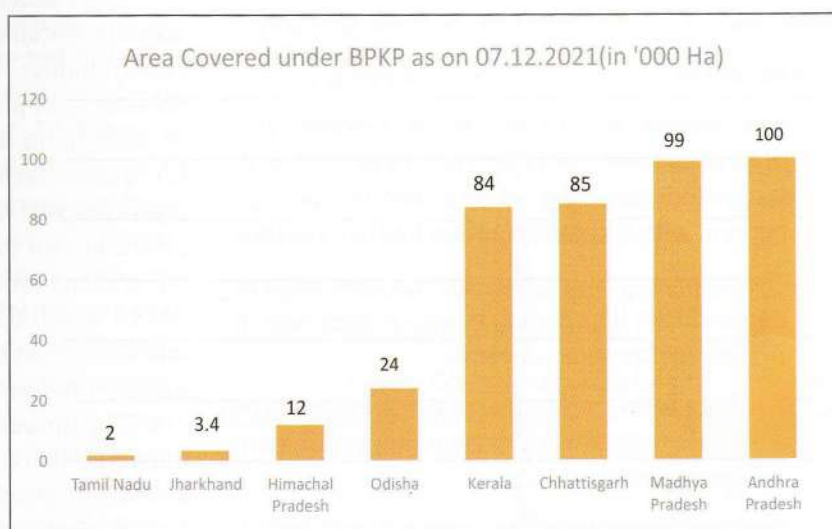
Source: Annual Report 2020-21, Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture and Farmers Welfare, p.95

Bharatiya Prakritik Krishi Paddhati (BPKP)

BPKP or Natural farming has been designed to enhance farmers' profitability, access to quality food and restoration of soil fertility and farm land ecosystem as well as employment and contribute to rural development (Economic Survey, 2021-22, p.250). BPKP is a sub-mission under the PKVY which falls within umbrella of the National Mission on Sustainable Agriculture. It aims at promoting traditional indigenous practices, which give freedom to farmers from externally purchased inputs. It focuses on on-farm biomass recycling with major stress on biomass mulching; use of cow dung-urine formulation and exclusion of all synthetic chemical inputs either directly or indirectly. The outlay of the scheme is Rs. 4,635.69 crore for the period of six years from 2019-2020 to 2024-25 (NITI Aayog Website naturalfarming.niti.gov.in/bharatiya-prakritik-krishi-paddhati-bpkp/). Under BPKP, financial assistance of Rs.12,200 per ha for three years is provided for cluster formation, capacity building and continuous handholding by trained personnel, certification and residue analysis with a vision of covering 12 lakh

ha. in 600 major blocks. Although this scheme was launched in 2019-20, only eight states namely Andhra Pradesh, Chattisgarh, Kerala, Himachal Pradesh, Madhya Pradesh, Odisha, Tamil Nadu, Jharkhand have implemented it. Among these states, in four states namely Tamil Nadu, Jharkhand, Himachal Pradesh and Odisha progress is shown in the figure -1. It appears that lack of awareness among farmers and their lack of interest are the causes of such dismal progress of the scheme. Perhaps, where civil society presence in the form of SHGs is in existence, the scheme might have progressed well there.

Figure 1: Area Covered under BPKP as on 07.12.2021 (in '000)



Source: Economic Survey 2021-22, Ministry of Finance

In the current year Budget (2022-23), schemes of agriculture like Pradhan Mantri Krishi Sinchai Yojana (PMKSY), Paramparagat Krishi Vikas Yojana (PKVY), National Project on Soil and Health Fertility, Rainfed Area Development and Climate Change, Sub-Mission on Agriculture Mechanisation, including Management of Crop Residues, etc. have been subsumed in Rashtriya Krishi Vikas Yojana (RKVY). As PKVY and other schemes related to organic farming have been merged in RKVY, it is not clear at present how much budget has been provided for the PKVY scheme for 2022-23.

Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)

It is a Central Sector Scheme with an outlay of Rs. 400 crores. Under the scheme, 169 Farmer Producer Companies have been formed and registered including 83,096 farmers and 79,445 ha area. In NE States organic farming progressed better as evident from the fact that out of total RE funds available (Rs. 667.93 crore), about 90 percent (Rs. 593.09 crore) was spent indicating better outcomes (Annual Report 2020-21, MoA&FW, pp 101-102).

Integrated Nutrition Management (INM) and Organic Farming

The INM and organic farming financial assistance is provided for mechanisation, promotion of bio-fertiliser testing laboratories, support of research, and establishing teaching institute (ibid, p.92).

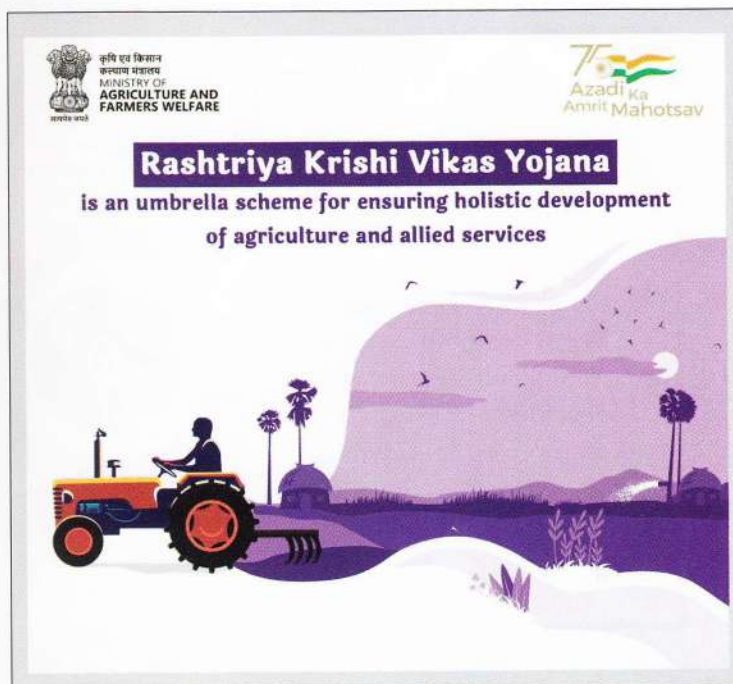
DAY-NRLM and Organic Farming

Organic farming is being implemented with the women farmers of the Self-Help Groups (SHGs) under DAY-NRLM. It has strengthened livelihoods of women. Till December 2021, about 2,41,961 SHG of women have been organised into 23,692 Local Groups. Under value chain development, promotion of Producers Groups and Producers Enterprises has been initiated. In this regard, upto December, 2021, 183 numbers of producers groups have been promoted by the 16 State level-DAY-NRLM (Annual Report, 2021-22, MoRD).

Way forward

Seeing the seriousness of deteriorated condition of soil and its impact on nutritional level in grains and non-grain produces, Organic Farming policy was announced about two decades ago and subsequently, schemes for organic farming have also been announced by the Government of India. Food grains are essential for the growing population in the country. Completely banking upon on organic or natural farming is not an appropriate solution. The Parliament Committee rightly observed that “fertilizers are going to be crucial input in future as well, given the increasing food demands of growing population and insufficient availability of alternative nutrient sources. The country will require about 300 MT of food grains by 2025 to feed its teeming millions. This would necessitate use of about 45 MT of nutrients. While about 6-8 MT of nutrients could be supplied through existing organic sources, the rest has to come from chemical fertilizers” (Standing Committee on Agriculture, 2015-16, p.11). So, following suggestions are offered in this regard.

1. Awareness building about the benefits of organic farming may be done among different stakeholders. Extension component of agricultural development has to be very effective.
2. Continuous training, capacity building and handholding support to farmers is indispensable for this venture.



3. Those farmers who are motivated to shift from non-organic to organic should be adequately compensated to meet out their yield gap.
4. Marketing facilities should be arranged at local level where farmers could sell their produces without any problem. There should be separate counters for organic produces.
5. Value addition in the organic produces should also be taken up at local level. For this, effective convergence of various schemes at decentralised level should be operationalised.
6. The shift of agriculture from inorganic to organic should be a component of larger strategy of betterment of health. People have to be communicated with effective IEC (Information, Education and Communications) that grains lack organic micronutrients is like 'hidden hunger'. Such IEC package will have impact on masses.

Conclusion

The study conducted by the ICAR-Institute of Farming System Research revealed that organic/natural farming is better than inorganic farming. This finding of the study must be like a household name among farmers. But rarely farmers are aware about it. An effective IEC strategy is required for the

propagation of organic farming in the countryside. In philosophical terms organic farming denotes 'farming in spirits of organic relationship between/ amongst soil, water, plants'. The spirit of organism has to be propagated in systematic and sustained basis for better outcomes.

References

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Kurukshetra Logo

A new logo of Kurukshetra is being used from this issue of the journal. The logo has been designed keeping in mind the growth and development in different sectors. The symbol of plants in the logo depicts agriculture and



the growth in the sector while the WiFi depicts information technology and data collection. The gear portrays industrial growth and production. We congratulate the winner for designing the logo.