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ORGANIC FARMING IN INDIA STATUS, ISSUES AND CHALLENGES – A REVIEW#

Gyanaranjan Sahoo[1], Afaq Majid Wani[2] and Sandeep Rout[3]

Abstract

A large number of food crops are produced in India, including cereals, pulses and oilseeds. Unsystematic application of a wide variety of chemical fertilisers, holding the health factor at bay, is practised in the name of expanded production. Therefore, in addition to providing protection against any prospective health issue, an alternative method of agriculture is of urgent need that could fulfil the wishes of increased food production. Organic farming has been shown to solve both of those problems as a strategy. Therefore, in a country like India where agriculture is highly influenced by the vagaries of various biotic and abiotic influences, organic farming is adequately capable of offering financial protection to mediocre farmers as well, because the need for pre-specifications for organic farming is much less compared to chemical farming. The 'Clean Agriculture' movement is the only way to nurture the land and stimulate the soil by returning to our traditional farming system, i.e. free of chemicals, pesticides and fertilisers. This is a likely step for sustainable development by opting not to allow sufficient use of chemicals, manufactured products, pesticides and growth hormones to supply food of excessive nutritional quality. This paper offers an overview of organic farming, its present situation in India, the core principles of organic farming and the constraints faced by the practise of organic farming in India. Organic farming has been argued to be inventive and sustainable, but there is a need for robust help in the form of subsidies, agricultural extension services and study.

Keywords: Conventional farming, organic farming, organic food industry, sustainable development.

#Review Article

[1]Krishi Vigyan Kendra, Odisha University of Agriculture & Technology, Angul, Odisha,
[2]Deptartment of Forest Biology and Tree Improvement, College of Forestry, SHUATS, Prayagraj, U.P.,[3]Faculty of Agriculture, Sri Sri University, Cuttack, Pin -754006, Odisha
Email - sandeeprout1988@gmail.com

Introduction

Agriculture is the backbone of the Indian economy backed by the fact that agriculture meets the threshold for satisfying the desires of India's improving population by almost 67 percent of our population and 55 percent of the total workforce relying on agriculture and various related activities (Chandrashekar, 2010). It has been estimated that agricultural growth of around 4 percent or more is needed for India to reach a double-digit GDP growth rate (Chandrashekar, 2010). Agriculture faces various constraints, such as land collapsing, low productivity and conversion of agricultural land to non-agricultural uses, despite having this kind of ability to aspire to fulfil the needs of the ever growing population boom. For more than a decade, sustainable improvement has stuck creativity and motion across the globe. To achieve the goal of sustainable growth, sustainable agriculture is important. Sustainable agriculture is, according to the Food and Agriculture Organization (FAO), "the effective management of agricultural assets to fulfil changing human needs while preserving or improving the quality of the environment and preserving natural resources." Both concepts of sustainable agriculture put great emphasis on sustaining the rate of growth of agriculture, which can meet the food demand of all living things without draining the fundamental resources. Over the past four decades, industrial agricultural farming practises using illogical use of chemical inputs have contributed to a loss of herbal ecosystem balance and soil health. In addition, threats such as soil depletion, decreased groundwater level, soil salinization, and fertiliser and pesticide contaminants, genetic, depletion, unwell environmental consequences, decreased excellent meals and extended cultivation value are the opposite severe manifestations that can be correlated with the irrational use of chemical inputs (Ram, 2003). As a result, farmers no longer find agriculture a possible proposition and suicides are committed by those who still practise it in the event of any natural calamity added to those woes (Deshpande, 2002). The substantially excessive rate of factory-made outside inputs and the slow withdrawal of investment by the government as well as market interventions and, more substantially, the change from subsistence farming (mainly with home-grown inputs) to business-related farming (mainly with purchased inputs) are other elements included in this tragedy. In other words, modern strategies have wiped out and replaced local indigenous farm practises, resulting in an unviable and unsustainable farm enterprise. Finally, as an option of utmost importance, the need for alternative farming techniques and strategies for cultivating vegetation was considered. This is due to the many benefits of organic farming over modern farming methods that attract the interest of farmers around the world. Essentially, without the involvement of inorganic solutions such as pesticides or biotechnological measures such as genetically modified organisms, it's a farming device that involves supportive organic techniques. Productive and sustainable organic agriculture (Reganold et al. 1993; Letourneau and Goldstein, 2001; Mader et al. 2002). As a result, several state-supported organisations, NGOs and individuals employ methodologies using organic food processing techniques.

The most widely accepted concept of organic farming is: 'Organic farming is a holistic method of production management that promotes and complements the health of the agro environment, including biodiversity, ecological cycles and organic activity of the soil (Reddy, 2010). In preference to the use of off-farm inputs, it highlights the use of

control practises, taking into account that nearby circumstances require locally tailored systems (Reddy, 2010). This is achieved with the assistance of the use of agronomic, organic and mechanical techniques, wherever possible, to satisfy some precise characteristic inside the unit, in preference to the use of artificial materials (FAO, 1999; Reddy, 2010). On the opposite,' conventional farming' refers to a production device that uses a wide range of pre- and post-plant tillage methods, synthetic fertilisers and pesticides (i.e. plough, disc plough, and cultivator). This is characterised by the use of an unnecessary crop specialisation diploma. Natural farming, on the other hand, is characterised by the use of a variety of vegetation. One of the various techniques observed to achieve the goals of sustainable agriculture is organic farming. Many methods used in natural agriculture, such as intercropping, mulching and crop and farm animal integration, are not foreign to different agricultural systems, including traditional agriculture practised in ancient countries such as India. Organic farming, however, is based on different laws and certification schemes, which restrict the use of virtually all synthetic inputs, and the core theme of the process is soil health.

What is Organic Agriculture?

Organic farming is a holistic method of production management that supports and improves the health of the agro-ecosystem, including biodiversity, biological cycles, and biological activity of the soil. Organic production systems are based on accurate and specific production criteria aimed at achieving ideal agro-ecosystems that are socially, ecologically and economically sustainable.

Organic agriculture is described by IFOAM as: a system of production which sustains the health of soils, ecosystems and people. Instead of the use of inputs with harmful consequences, it depends on ecological processes, biodiversity and cycles adapted to local conditions. In order to support the shared environment and foster equal relationships and a good quality of life for those concerned, organic agriculture incorporates tradition, creativity and science. The International Federation of Organic Agriculture Movements (IFOAM) has formulated comprehensive natural farming principles that are the primary roots for the growth and advancement of organic agriculture in a global context.

There are:

1. Health Principle: Organic farming should conserve and improve land, plant , animal, human and planetary health as one and indivisible. The wholeness and dignity of living systems is wellbeing. It is not just the lack of disease, but the protection of physical , emotional , social and ecological well-being.

2. Principle of Ecology: Ecological balance can be achieved through organic agriculture through the design of agricultural systems, the development of ecosystems and the preservation of genetic and agricultural diversity. The common ecosystem, which includes landscapes, climate, habitats, biodiversity, air and water, should be preserved and benefited by those who grow, process, trade or consume organic goods.

3. Fairness Principle: Organic farming should draw on partnerships that ensure fairness in terms of the common environment and opportunities for life. Fairness, both

among people and in their relationships with other living beings, is characterised by equality, respect, fairness and stewardship of the shared environment.

4. Principles of Care: To protect the health and well-being of current and future generations and the climate, organic farming should be handled in a precautionary and responsible manner. By embracing suitable technologies and avoiding unpredictable ones, such as genetic engineering, major risks should be avoided.

The key theory of organic agriculture

Natural farming's core criteria are as follows:

- Paintings as a good deal inside a closed structure as possible, and draw on resources from the neighbourhood.
- To retain the soil's long-term fertility.
- This could end up arising from farming methods to stay away from all kinds of contaminants.
- To produce nutritious and adequate amounts of excessive dietary foods.
- To-the use of fossil electricity to a minimum during agricultural activities.
- To provide lifestyle circumstances for cattle that support their physiological needs.
- To make it possible for agricultural producers to obtain housing through their paintings and increase their human potential.

Natural farming's main pillars are:

- Standards for organic thresholds
- Reliable certification and regulatory affairs mechanisms
- Bundles of technology
- Effective and potential network of marketplaces

Debated Issues on Organic Agriculture

Can Organic Farming Produce Enough Food for Everybody?

There is no doubt that several studies conducted in many parts of the sector show that organic farms can be almost as successful as conventional farms (in developed countries) and often even more effective (in developing countries in particular). It is well known that our demand for food production is growing and that land resources, on the other hand, are dwindling. Therefore, in all habitats and regions, we should not put an effort into organic farming. Rather, we can rationally presume and pick only those regions that have remained organic by nature. In particular, hill regions in general and north-east regions can be easily converted to organic food production areas, primarily in order to meet domestic and global demand and higher farm incomes.

Is Organic Farming Labour Intensive than Conventional Farming?

It is true that organic farming is also more labor-intensive than conventional farming. Organic agriculture, for example, promotes the conservation of soil fertility by approaches that are labour intensive. These activities are usually carried out by hand or with minimal technology in developing countries, which implies the availability of sufficient labour. In certain parts of the world, however, the limiting factors are land and capital

(rather than labour). Labour appears to be cheaper than chemical inputs in developed countries at peak rate. In fact, there are a wide variety of technologies and methods for labour saving that can be introduced in growing countries. These include the use of cover crops to manipulate and defend weeds against soil erosion, the use of direct crop residue mulching, and reduced tillage.

Is it Possible to Meet the Nutrient Requirement of Crops Entirely from Organic Sources?

It is not possible to fulfil the entire requirement for crop nutrients from organic sources in intensive cropping areas. But the case for North Eastern Hill Zone FYM along with crop residue recycling is sufficient for a yield close to the recommended NPK from the second / third year onwards in the extensive cultivation area. Are there any major benefits to the ecosystem from organic agriculture? It can be well founded that organic farming has major environmental benefits. In organic farming, not only nutritious foods are created, but also much emphasis is put on the protection and preservation of the environment.

Is the Food Produced by Organic Farming Superior in Quality?

Data from the European Union sponsored organic farming project (10 years) showed that there are 40 percent more beneficial compounds in agricultural produce and 90 percent more in milk compared to industrial chemical-based farming (Munda et al., 2010). It is understood that organic produce is richer in micronutrients, vitamins and other parameters of quality.

Is Organic Farming Economically Feasible?

In areas where resources are available within the farm and are least dependent on external resources, organic agriculture is economically feasible. In addition, organic produce is supposed to be priced at higher rates (at least 25%) and should therefore be economical for poor farmers.

Is it Possible to Manage Pest and Disease in Organic Farming?

Pest and disease control is the most daunting job in organic farming so far. However, the issue of pests and diseases can be largely controlled with the knowledge and selection of resistant species, cultural traditions, the use of plant-based formulations, etc. The farmer's interpretation of ITK can also be used effectively.

Role of Organic Farming in Indian Rural Economy

It is possible to emphasise and exploit the role of organic farming in the Indian rural economy in order to deal with the issue of the ever growing problem of food security in India. With a large rise in the industrialization of rural land, agriculture has been in crisis. In addition, the issue of extreme importance with the hangover about the Malthus theory of population boom and insufficient supply of resources was food sufficiency. In addition, the unnecessary and indiscriminate use of inhibitors for plant growth, pesticides and fertilisers for the faster boom of agricultural products has a detrimental effect on human health and the environment as a whole. The notion of the introduction of organic farming is therefore a good opportunity to address the problem. The organic farming

technique requires the use of naturally occurring and decomposable matter for growth and the direct or indirect provision of resistance to unique crops to particular pathogens. It is not because organic farming has not been carried out days in advance. Since time in memory, the use of naturally occurring matters for enhanced efficiency, disease resistance, and pest control has been in constant use. Special significance in Rigveda has been given to the idea of organic farming. In India, the use of many natural products and by-products such as cakes, cow dungs, neem leaves, turmeric, etc. remains practised to avoid pests and to have the capacity to be used as preservatives. In the late 1850s, the use of chemical fertiliser for high productivity began.

The main reasons why organic farming should be encouraged in India rural economy are as follows:

- Organic fertilizers are completely safe and do not include the production of harmful compounds as intermediates.
- Organic fertilizers are in generally consumed in a much less quantity as compared to the chemical fertilizers.
- Moreover, chemical fertilizers require huge quantities of water to activate its molecules whereas these conditions are not a prerequisite in case of organic fertilizers.
- Furthermore, chemical fertilizers always have an adverse effect either on the farm produces or on the environment which is long- lasting.
- Chemical fertilizers always have the potential to react with the chemicals used to get rid of various pests and diseases and producing harmful chemical compounds as an outcome of the cumulative action of the combination. But this situation is ward off in case of organic fertilizers.

Organic Farming in India: Present Status and Future

Among 172 countries practising organic agriculture, India holds a unique position: 6, 50,000 organic farmers, 699 processors, 669 exporters and 7, 20,000 hectares under cultivation. But the industry has a long journey ahead, with just 0.4 percent of total agricultural land under organic cultivation (Bordolo, 2016). India developed approximately 1.35 million MT (2015-16) of certified organic products comprising all food product varieties, namely sugar cane, oil seeds, cereals & millets, cotton, pulses, medicinal plants, tea, fruit, spices, vegetables, coffee, etc. Production is not limited to the edible market, but organic cotton fibre, functional food products, etc. are also made.

India is home to 30 per cent of the total organic producers in the world, but accounts for just 2.59 per cent (1.5 million hectares) of the total organic cultivation area of 57.8 million hectares, according to the World of Organic Agriculture 2018 report. Thus, amongst the regions with the largest areas of organically managed agricultural land, India ranked 9th.

Organic farming has the potential to change the face of agriculture in India today. Currently, we have 1.2 million ha of land under organic production, which comprises only 0.7% of total area under cultivation. This produces around 1.24 million tons of organic produce. With the increase in global health consciousness, organic food is set to knock every door and make its way in healthy kitchens worldwide.

Table 1: Export of Organic Agricultural Commodity from India (2014-15 to 2016-17)

Organic Agricultural Commodity (Source : APEDA)		Basmati Rice	Non-Basmati Rice	Other cereals	Fruits & Vegetables	Pulses	Processed Items	Fruits / Vegetable Seeds
2014-15	Qty (MT)	3702284	8225564	6425297	3212091	222104	721622	12498
	Rs. (Cr.)	27598.71	20336.00	10233.02	12434.95	1218.10	12195.93	124.98
2015-16	Qty (MT)	4044833	6374172	1522707	2982038	255602	728224	10684
	Rs. (Cr.)	22714.37	15085.38	2561.24	12719.60	1655.44	12738.80	106.84
2016-17	Qty (MT)	3999722	6813397	1000640	5155810	137177	1320527	11680
	Rs. (Cr.)	21605.13	17121.08	1868.49	16138.49	1281.63	13121.44	116.80

Source: APEDA

The renewed interest in organic farming in India is mainly attributable to three main reasons: the decrease in agricultural yields in some areas as a result of the unsustainable and indiscriminate use of chemical inputs, the decrease in soil fertility and environmental concerns. Promoting organic farming using organic waste and Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) activities (GOI, 2001) was advocated by the 10th Five-Year Plan. The 9th Five-Year Plan also stressed the promotion of organic crops, spices and seasonings using organic and bio-based inputs for the conservation of the environment and the promotion of sustainable agriculture.

Many states and private agencies are currently engaged in promoting organic farming in India, including many ministries and departments of government at the central and state levels. The Government of India also initiated the National Organic Production Programme (NPOP) in 2001. The European Commission and Switzerland have recognised the NPOP criteria for the development and accreditation framework as similar to the criteria of their countries. Similarly, the United States Department of Agriculture (USDA) has accepted accreditation procedures for NPOP compliance evaluation as being equivalent to those in the US. The Indian organic products duly certified by the approved certification bodies of India are recognised by the importing countries through these recognitions (Reddy, 2010).

India currently ranks 33rd in terms of total organically grown land and 88th in terms of organically grown agricultural land in terms of total agricultural area. According to the Agricultural and Processed Food Commodity Export Production Authority (APEDA),

there are approximately 2.8 million hectares of cultivated land under certification (2007-08), which covers one million hectares under cultivation and the remainder under forest (wild collection). However, an estimated 69 million hectares are historically cultivated without the use of chemical fertilisers and may be suitable for certification or with limited modifications under current practises. However, it remains a challenge to certify these farms, as many of these farms are small farms (almost 60% of all farms in India are less than one ha). Small-scale farmers and resource-poor farmers may not be able to afford certification costs, are illiterate and unable to keep the required records, or may be using indigenous farming systems that are not recognised in organic certification systems. These farms mainly produce for home consumption and supply, in the event of irregular surpluses, to the local markets. These challenges make it impossible for farms to enjoy the possible advantages of organic certification (Reddy, 2010).

In order to satisfy the increasing demand of organic products the organic farming sector in India has substantially increased over the course of year.

India ranks 33rd in world in terms of area under organic farming. India rank 88th in terms of the ratio of agriculture land under organic crop to total farming area. Madhya Pradesh has highest area under organic farming (1.1 mha or 52%). Maharashtra is at second (0.96 mha or 33.6%). Orissa is at third (0.67 mha or 9.7%). Uttrakhand and Sikkim is recognized as the organic states.

World Scenario of Organic Farming

According to the new FiBL report on certified organic farming worldwide, Australia's most organic agricultural land (22.7 m hectares), led by Argentina (3.1 m hectares) and the United States (2 m hectares), accounted for 50.9 million hectares of organic farmland in 2015. With the exception of Latin America, there has been a rise in organic agricultural land in all areas. In several African countries, such as Kenya, Madagascar, Zimbabwe and Côte d'Ivoire, a large relative increase in organic agricultural land has been observed (Willer and Lernoud, 2017).

Some Key Points

- 50.9 million hectares of agricultural land are under organic (Share of total agricultural land increased from 0.2 % in 1999 to 1.1 % in 2015).
- Oceania has highest 45 % share of total organic area, out of which 97 % are grassland.
- Increase of organic producers from 0.2 million in 1999 to 2.4 million in 2015 with highest number of producers in India (about 24 percent).
- Apart from agricultural land, 39.4 million ha represent wild collection with 3rd highest area in India (3.71 mha).
- Cereals comprise highest area under organic cultivation (3.89 mha) followed by fodder (2.51 mha), oilseeds (1.24 mha), fruits (0.99 mha), coffee (0.90 mha), olives (0.67 mha), textile crop (0.45 mha), nuts (0.41 mha), pulses (0.40 mha) and vegetables (0.35 m ha).

Source : Willer and Lernoud , 2017

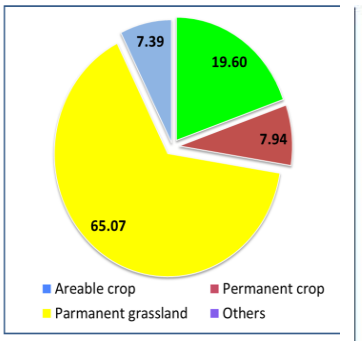


Fig 1. Distribution of Organic Land as per Use type

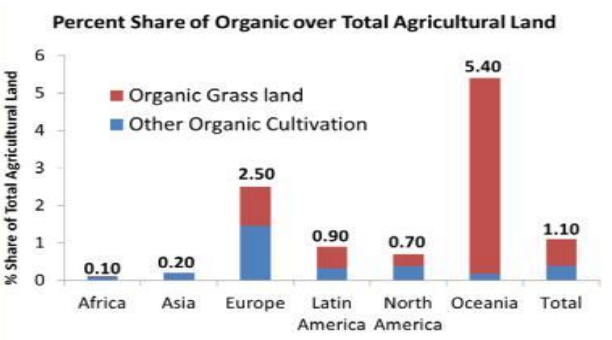
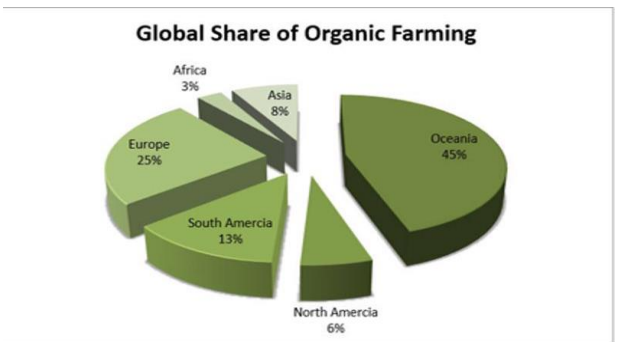


Fig 2. Percent share of organic over total agricultural land



Source: World of Organic Agriculture IFOAM& FiBL Outlook, ICREIR knowledge Report)

Prospects for Organic Farming in India

India has various forms of naturally viable organic nutrients in various regions of the world that would be useful in organic crop cultivation (Butterworth et al., 2003; Reddy, 2010b). This will greatly assist in the sustainable production of crops. In the atmosphere and eco-system, there is a wide diversity. With innovative farmers, vast drylands and the least use of chemicals, India has a strong traditional farming system. In fact, subsistence agriculture has been practised for a long time in the rainfed tribal, northeastern and hilly regions of the country where negligible chemicals are used in agriculture; such areas are organic by nature.

A combination of crops, trees, animals, and grasses is historically used by farming systems in drylands due to climatic variability. Such diversified schemes, the fundamental goals of organic farming, have been found to be successful in nutrient recycling and soil fertility restoration; they minimise the occurrence of pests as well. In addition, traditional Indian farmers have a rich body of knowledge relating to soil fertility and pest control management based on long observation and practise; this can be used to improve organic

systems (Sharma and Goyal, 2000; Adolph and Butterworth, 2002; Butterworth et al . , 2003; Reddy, 2010b). These two factors would also support the rapid development in these areas of more effective, more profitable organic farming systems. Drylands are very rich in local resources in terms of input supply, which are ideal for promoting organic farming.

Special Benefits of Organic Farming in the Dry lands of India

In dryland regions, organic farming has also assumed enormous significance. These marginal lands, with their marginal soils, do not respond properly to intensive farming practises, making them specifically ideal for organic agriculture in soil and climatic situations in India's drylands. In reality, they are best suited to low-input agricultural systems that make extensive use of biodiversity (Sharma, 2000; Pionetti and Reddy, 2002). In turn, organic farming, which focuses primarily on preserving and improving soil quality, avoiding pollution and relying on local inputs and labour, may make a significant contribution to the economic and ecological health of the drylands, as well as to the people who live there. In addition to natural matter, semiarid and arid dryland soils usually have low water-keeping capability (Sharma, 2000). The depth of the soil is another restricting problem for agricultural production in certain areas. The inclusion of organic matter, a corner stone of organic farming practises, will not dramatically improve the physical situation of these dryland soils, but will also dramatically improve their ability to provide balanced nutrients for plants. There is over-exploitation of natural resources in drylands (Reddy, 2000), largely due to inadequate technologies for improving productivity (Dhir, 1997). Tractor use, for example, increases wind erosion and harms the natural growth of trees and grasses. Water logging and salinity may be caused by over-use or excessive use of canal irrigation. In tube-well-irrigated areas, excessive groundwater pumping has significantly reduced the groundwater table. Soil fertility is declining in many countries in which intensive input agricultural systems are followed, and some serious pests are becoming resistant to synthetic pesticides (Butterworth et al., 2003). These are all signs of inappropriate land use, contributing to desertification; implementing dryland-appropriate organic farming practises will help to mitigate these conditions.

Policies of Government of India for Promotion of Organic Farming

Table 2: Government Initiatives to Promote Organic Farming

Programmes	Highlights
National Project on Organic Farming (NPOF)	• Central sector scheme, implemented during the 10th FYP with an outlay of Rs. 57.04 crores. • Expanded in the 11th FYP with an outlay of Rs. 101 crores. • Objective: to encourage the organic food production and promote manufacture and usage of organic and biological inputs, such as organic

	manure, bio-control agents, and biologically produced fertilizers and pesticides. • Provides financial aid up to Rs. 63 lakhs (33% of the capital cost) for constructing fruits and vegetables waste compost units, through NABARD. • Provides subsidy up to 40 lakhs (25 % of the capital cost) for the construction of biofertilizer or bio-pesticide production unit, through NABARD.
National Project on Management of Soil Health and Fertility (NPMSF)	• Implemented during the 11th FYP with an outlay of Rs. 429.85 crores. • Objective: to promote the judicious and balanced use of fertilizers and organic manure on the basis of soil test results. • Provides financial assistance of Rs. 500/hectare for promoting the use of organic manure
Network Project on Organic Farming	• Initiated by ICAR in the 10th FYP at the Project Directorate for Farming system Research at Modipuram. • Objective: to develop package of practises for different crops and farming systems for organic farming in different agro-climatic conditions of India. • Package of practises have been developed for: basmati rice, rain fed wheat, maize, red gram, chickpea, soybean, groundnut, mustard, isabgol, black pepper, ginger, tomato, cabbage and cauliflower
National Horticulture Mission (NHM) and Horticulture Mission for North East and Himalayan State	• Centrally Sponsored Scheme, launched in 2005-06. • Aim: to strengthen the growth of the horticulture sector comprising of fruits, vegetables, roots and tuber crops, mushroom, spices, flowers, aromatic plants, cashew and cocoa. • Provides subsidy of 50 % for establishing vermi-compost units

	and HDPE vermi-beds. • Provides assistance for organic certification of Rs. 5 lakh for a group of farmers covering an area of 50 hectares. • Provides Rs. 30,000 per beneficiary for adopting organic farming.
Rashtriya Krishi Vikas Yojna (RKVY)	• Provides assistance to the projects formulated and approved by the state for decentralized production and marketing of organic fertilizers.
National Mission for Sustainable Agriculture (NMSA)	• 100 % assistance by the state government for setting up of mechanization of fruit/ vegetable waste. • 100 % aid for setting up of quality control laboratory for testing bio-fertilizers, up to Rs. 85 lakhs
Paramparagat Krishi Vikas Yojana (PKVY)	• Provides Rs. 20,000 the farmers up to 3 years for performing organic farming. • Procuring packaging material, preparation of labels, holograms, printing and branding of organic produce at Rs. 2,500/acre • Provides financial aid for a cluster of 50 acres, to the tune of Rs. 1,20,000 for transporting organic produce to the market place. • In order to motivate and support marketing facilities, financial assistance of Rs. 36,330/cluster is provided to organize an organic fair.

Policy Support

For a long time, policies have concentrated on generating external options for the needs of farmers. Dependence on external inputs has been promoted, although they are more expensive, environmentally harmful, and thus economically inefficient compared to resource-conserving options (Jules, 1995). Reddy (1988) stressed that modern farming is like a broken earthen pot that can no longer be put to good use. New policies need to be able to establish development conditions focused more on the resources available locally and local expertise and knowledge. Policymakers would have to find ways to develop dialogues and partnerships with other players in order to promote the farmers' own assessments and express their coordinated needs. Dialogue and correspondence will provide immediate feedback, allowing policies to be alternatively adapted. Agricultural

policies should then focus on having the most accessible social and biological tools to be used by individuals and professionals.

Despite serious efforts of some NGOs, it appears that India is lagging far behind in the adoption of organic farming. For laying the spadework for the spread of organic agriculture in the country, certain issues require attention at the government policymaking levels. These include

(a) Substantial financial support by the governments which is absolutely necessary to promote organic farming;
(b) Market development for the organic products which is a crucial factor to promote domestic sales;
(c) Government support to the producer and consumer associations to market the organic products;
(d) Simplification of the process of certification; and
(e) Reduction in certification cost.

To raise consciousness of both farmers and consumers, a concerted campaign to highlight the advantages of organic farming against the traditional method is crucial (Narayanan, 2005). In the National Agricultural Policy, there is no mention of organic agriculture. Organic farming provides an alternative production process that can be appropriately used for the benefit of certain segments of farmers (Chand, 2003). However, if it is connected with high documentation, monitoring, organisational and bureaucratic effort, certification of organic goods becomes questionable (Julia et al. 2008). The government has been promoting the cultivation of medicinal, aromatic and colouring plants in Chhattisgarh through various initiatives, apart from agricultural and horticultural products. There is a great deal of potential for promoting organic farming, being an herbal state. Some of the state government agencies promoting organic cultivation of agricultural, horticultural, medicinal and aromatic crops (Rao and Larja, 2005) are the Chhattisgarh Vanoushadhi Board or the Medicinal Plants Board, the Departments of Horticulture and Agriculture and the Chhattisgarh State Minor Forest Produce Federation.

Even in places where organic farming is facilitated without any direct government initiative, the state may still have some important roles to play for the following reasons:

(1) NGOs may not always have the necessary business skills to succeed in marketing. Under such situations, collaborations between NGOs and governments may be effective. 354 Agricultural Economics Research Review Vol. 23 July-December 2010.

(2) Companies involved in contract farming arrangements with organic farmers need to be extremely effective and skilful at reaching organic markets. However, there may be a trade-off involved between the profit motives of the private companies and the best interests of the farmers. Hence, it is extremely important for the state to create an appropriate legal framework that enforces contracts and provides for a trustworthy and effective arbitration in the best interests of the resource-poor and unorganised farmers.

(3) Formation of farmers' organizations has been found to be extremely beneficial for upholding the farmers' interests. However, it requires considerable support on a

number of levels, including start-up costs, operational expenses, training and marketing. The state government or the NGO sector may assist in these respects.

(4) Organic agriculture may also flourish under direct government involvement. While it has suffered downright neglect by the central government, a number of state governments have already made significant strides in organic farming.

Major measures have been undertaken by the governments of the mountain states of Sikkim, Mizoram and Uttarakhand to make their states totally organic. In Karnataka, Madhya Pradesh, Arunachal Pradesh, Meghalaya, and Punjab, state government initiatives have also been adopted in some form. A multi-pronged strategy, the organic model, has been promoted not only as an agricultural technology but also as an integral part of many rural development projects in the "Uttarakhand Organic" initiative. Furthermore, although exports are not beyond the reach of this initiative, significant emphasis has also been put on the growth of the domestic market. Although it is too early to comment on this programme, it appears that the project might become a role model for state-driven organic growth in India if successfully implemented (Kasturi, 2007).

Major Advantages of Organic Farming as Per Indian Rural Economy

Although there are many advantages to converting from traditional farming techniques to organic farming, given the Indian rural economy, all the advantages might not be possible. Ultimately, it is imperative to shed some light on the benefits that are really realistic enough to be regarded as benefits for Indian farming conditions. Here are some of the benefits in this respect that are important.

(a) **High Premium**: Since the organic food is norm whose ally priced 20 - 30% higher than conventional food, there is ample scope for a mediocre farmer whose income is just sufficient to feed his/her family with one meal to get a high premium so that he has a chance to flourish.

(b) **Low Investment**: In comparison with conventional chemical farming techniques, the capital cost for organic farming is not so large. There is also no need for any advanced techniques for organic fertiliser production. Furthermore, because it is possible to manufacture organic fertilisers and pesticides locally, the annual costs incurred by farmers are also low. Since agriculture is highly influenced by multiple external factors such as climate, pests, diseases, and also depends on multiple climatic factors such as rain, small farmers practising organic farming have to suffer less as their investments are low in cases of natural calamity, pest or disease attack, and erratic rainfall when there is a crop failure (Thongney et al. 2018).

(c) **Less Dependence on Money Lenders**: In India, suicides committed by farmers as a result of a huge debt are widely recognised. Therefore, since chemical inputs that are too costly are not needed in organic farming, farmers are not reliant on money lenders. As a consequence, crop failure does not cause a drastic action to be taken by the farmer.

(d) **Synergy with Life Forms**: Organic farming involves synergy with various plant and animal life forms. Small farmers are able to understand this synergy easily and hence find it easy to implement them.

(e) **Traditional Knowledge**: The traditional knowledge that the farmers have can be exposed to organic farming so as to get fruitful outcomes in terms of successful methodologies in organic farming. Further, in the case of organic farming, small farmers are not dependent on those who provide chemical know-how.

Constraints in Practicing Organic Agriculture

The major problems faced while practicing organic agriculture are:

- **Lack of Awareness**: Lack of awareness among the government policy makers and the practicing farmers is the major cause of restricting the growth of organic agriculture. The lack of awareness among the consumers about organic food products also holds back the growth.
- **Marketing Problems**: It is found that their marketability must be ensured before the start of production of organic crops and that they must also be guaranteed at a premium over conventional goods. The inability to obtain a premium price would be a setback, at least during the time necessary to achieve the degree of productivity of conventional crops. Organic wheat farmers in Rajasthan have been found to have lower prices than traditional wheat.
- **Shortage of Manure**: Organic manure (Biomass) availability is less than the required quantity also the available nutrient is less than the conventional manure.
- **Less Yield Production**: The production availability of organic farms is less as compared with farm producing products by using conventional methods. the conventional farming system (Khare et al. 2016).
- **High Input Cost**: The costs of the organic inputs are higher than industrially produced chemical fertilizers and pesticides, including other inputs used in the conventional farming system.
- **Inadequate Supporting Infrastructure**: Despite the adoption of the NPOP (National Program on Organic Production) in 2000, policies and a reliable mechanism to enact them have yet to be formulated by state governments. Just four accreditation organisations exist and their expertise is limited to fruit and vegetables, tea , coffee and spices. The certifying agencies are insufficient.

Suggestions and Recommendation

- The farmers' should be made aware with the scientific information about organic agriculture.
- Government should provide subsidies in organic produce to the farmers and facility of easy credit with lower rate of interest.
- Higher prices should be determined by the government for organic produce than the conventional produce.
- Agriculture universities should encourage the research in the field of organic farming.
- Government, NGO's and extension workers should organize various workshops, seminars, conferences, etc. with the help of subject matter specialist for farmers.

- Private companies should invest in the project of producing organic food products free from harmful chemicals.
- At an individual level, should promote the use of organic produce by going for organic agriculture in their kitchen garden, buying organic products available in the market.

Future of Organic Farming in India

With a rising domestic market, India is poised for faster growth. Success of organic movement in India depends upon the growth of its own domestic markets. With the sizeable region under organic / default organic cultivation, India has enormous potential to organically grow crops and emerge as a major supplier of organic goods in the organic market worldwide. With this increasing demand, more and more technological advances such as IRF Technology and their implementation in the field of farmers will ensure economically viable organic farming and enable the popular farmers to embrace it, even without any subsidy scheme or guaranteed premium prices. In view of the understanding of food safety and quality, long-term system sustainability and the accumulation of evidence that organic farming is equally efficient, organic farming has emerged as an alternative farming system that can not only resolve the issues of quality and sustainability, but also ensure a debt-free, profitable livelihood choice (Yadav et al. 2019).

Conclusion

Ecologically and economically viable organic farming is a prerequisite for facilitating broader adoptability, safeguarding livelihoods and ensuring market affordability. The literature review has shown that organic farming reviews are divergent, most of the experts in particular. Profitability disagreements and yield increases in organic farming are serious, but there is a clear consensus on its eco-friendly nature and intrinsic ability to protect human health. Organic agriculture is a holistic method of food production that operates through the sustainable use of herbal resources that are available regionally. A holistic approach to the promotion of organic farming needs to be implemented by collaboration between all stakeholders, environmentally sustainable technology, marketing infrastructure and economic support for the production of organic food in terms of quality and quantity. In particular, there are strong views against organic farming because of the feeding potential of a billion people, its financial and economic feasibility, the availability of organic inputs and the dissemination of know-how. Many studies have shown, however, that organic farming is efficient and sustainable. There are also individuals who support a conservative conversion of farms into organic farming when accepting organic farming, so that yield loss is taken care of to the extent possible. In order to make conversion to organic popularity less difficult or cheaper, there is currently a shortage of government subsidies or funding. Questions about the yield and financial feasibility of organic farming are critical and there is no empirical study that compares the economic and ecological returns of natural farms to conventional farms in the Indian context. Given the right encouragement, natural agriculture, especially in the drylands of the country, will grow incredibly in India, taking advantage of the different soil and climate conditions.

Perceptions of organic agriculture are very divergent. There is, however, a clear consensus on its eco-friendly qualities and its intrinsic ability to protect human health. Within developing countries, organic food production prices are better because organic farming is labour intensive and labour is highly priced in these countries. But organic farming is an excellent possible solution to the problem created by the chemical farming system for the environment and human health in a country such as India, where labour is very extensive and relatively inexpensive. The Government of India has made efforts to inspire organic agriculture on an overall basis. Even numerous organisations for the promotion of organic farming goods were installed. In addition to the policies adopted by the Indian authorities to promote the export of organic agricultural products, the growing call for organic food products within the advanced nations are the driving factors responsible for the uprising of the Indian organic food industries that have the potential to improve the Indian economy as well as the health standards of the Indian masses.

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