

Organic Farming: An Effective Way to Promote Sustainable Agriculture Development in India

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Abstract: *The paper addresses the scope of organic farming as an effective way to promote sustainable agriculture in India. The promotion of sustainable agriculture is a need of present day world to overcome the challenges arising from chemical fertiliser based farming. Agriculture is backbone of Indian economy with more than half of the population still depend on this sector for their livelihood. At the same time contribution of agriculture in India's GDP is less than other sectors in the Economy. This is mainly because of unsustainable farm practices. It is essential to find ways to overcome socio economic and environmental problems arising from unsustainable farm practices. The sustainable agriculture can mitigate the socio economic and environmental problems of chemical fertiliser based farming. The paper evaluates the possibility of espousing Organic agriculture as an effective strategy to promote sustainable agriculture in India. A sustainable agricultural sector strategy can contribute to a broader development of agricultural productivity, food security, generation of rural employment and poverty reduction while promoting the conservation of the natural resource base. This new strategy should be adopted with sound infrastructure, governance, the private public participation and effective implementation seeking to contribute to poverty reduction, enhance regional integration, accelerate rural development and improve productivity in agriculture.*

Key words: *Certification, Organic Farming, PGS, principles of organic farming, sustainable Agriculture.*

I. Introduction

The Farming communities in rural areas of India had been practicing sustainable agriculture practices which were got from their ancestors but as the time pass and the acquisitiveness to get more in short period through high yield variety which would consume more chemical fertilizers pesticides have bad impacts on the food chain and sustainable food security. But this trend has now been changing and farmers showing more interest towards sustainable agriculture. A collective action from the part of Government as well as all the stakeholders in the society is essential to revive this most essential basic sector. Stimulating efforts are initiated to provide livelihood security and social recognition to the farmers to lead India in to a green prosperity which will bring social, economic and environmental sustainability.

Agricultural sector of India has to find the ways to resolve the critical issues such as declining productivity in agricultural sector, increased rates of farmer suicides, rural unemployment, deteriorating fiscal position, environmental crisis arising from unsustainable use of chemical fertilisers and pesticides. All these critical issues that need resolving, necessitates adoption a new strategy that can resolve all the above mentioned problems in India.

II. Concept Of Organic Farming & Principles

As per the definition of the USDA "organic farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection".

According to FAO "Organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs". The organic farming is based on the following principles.

Principle of health: Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible. This principle points out that the health of individuals and communities cannot be separated from the health of ecosystems -healthy soils produce healthy crops that foster the health of animals and people.

Principle of ecology: Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them. This principle roots organic agriculture within living ecological

systems. It states that production is to be based on ecological processes, and recycling. Nourishment and well-being are achieved

Principle of fairness: Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities. Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings. This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties - farmers, workers, processors, distributors, traders and consumers.

Principle of care: Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment. Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions.

III. Organic Farming In India

The concept of organic agriculture is not new to India. In 2000, the Indian Government started to promote organic agriculture on various levels. Under the National Program for Organic Production (NPOP) standards, accreditation criteria and a national organic logo have been launched. In 10th five year plan about Rs. 100 Crores earmarked for the promotion of organic agriculture. The promotion of organic Agriculture gained momentum from the introduction of The National Program for Organic Production (NPOP) which was approved in May 2001 by the National Steering Committee for Organic Products (NSCOP), under the Ministry of Commerce. States like Karnataka, Maharashtra, Madhya Pradesh, Bihar, Gujarat, Tamil Nadu and Kerala are promoting organic farming. The government of India, has initiated National Project on Organic Farming (NPOF) in 2004. This project includes more than 2.79 lakh farmers and more than 1.77 lakh ha area under organic management. With more farmers shifting to organic farming and domestic consumption being low, organic food exports from India are increasing.

According to the latest FiBL and IFOAM survey 2015, India accounts 5.2 million hectares of organic land and 6,50,000 organic producers. India has largest number of organic producers in the world. More than this, India has an astounding feature of large number of organic producers are involved in PGS (5977, FiBL& IFOAM survey 2015). India accounts for the most producers certified through PGS followed by Brazil (2771), Peru (2000) and Bolivia (1310). All these figures show the possibility of promoting organic farming as an effective method for sustainable agriculture. The constraints of adopting organic farming in the initial phases can be easily overcome with PGS.

3.1 Requisite of Participatory Guarantee Systems (PGS) in India:

Participatory Guarantee Systems (PGS) are locally focused quality assurance systems. They Certify producers based on the active participation of stakeholders and are built on the foundation of trust, social networks and Knowledge exchange (IFOAM definition). The growing global demand for organic products offers great opportunity for Indian Organic farmers. At the same time, they have to fulfil quality criteria to capture international market. The certification of organic products is an essential quality criterion to be fulfilled by the organic farmers; it provides assurance for the consumers regarding the quality of organic products.

Organic Certification:

Organic certification system is a quality assurance initiative, intended to assure quality, prevent fraud and promote commerce, based on set of standards and ethics. It is a process certification for producers of organic food and other organic plant products. In India, Agricultural Processed Foods Export Development Authority (APEDA) under Ministry of Commerce is the controlling body for organic certification for export. The certification agencies have been authorized to undertake certification process under National Programme for Organic Production (NPOP). In the foreign market, the buyers are willing to pay premium prices only if the produce from growers is certified. The cost and process of certification is a difficult and costly process especially in the initial phases of organic farming. Only giant agribusiness farms are benefiting from certified organic status and market premiums more than the small scale producers. This is one of the reasons to keep away many Farmers from acquiring organic certification for their products. They get suffused by the paperwork and the complexity of the standards and regulations to get certification. As a result, certified organic products tend to be expensive, not affordable for the local population. The following table shows cost of inspection and certification.

Table No: 1
Cost of inspection and certification

Category	Details	Fees (Rs)
Small farmers and co-operatives	Travel and inspection Report preparation Certification	12000/day 5000 flat fee 5000/certificate
Estate manufacturers and exporters	Travel and inspection Report preparation Certification	19200/day 5000 flat fee 5000/certificate
Large and medium-sized processors	Travel and inspection Report preparation Certification	16800/day 5000 flat fee 5000/certificate

Source: Org-Marg, 2002

PGS is a way to assure the quality of the products that is substantially different from third-party certification systems, while equally reliable. PGS is based on the participation of various stakeholders in the certification process. The PGS enables farmers to acquire certification for their produce with more credible and effective system of quality assurance compared to third party certification. PGS makes the certification process more simple and understandable to farmers. PGS is a certification system for the whole farm, allowing farmers to sell all the crops from the farm as certified organic. It authorizes the all farmers as key decision makers of who is certified in their own local group. This means increased responsibility, but encourages social control as an important fulfilment mechanism. PGS is the only way to certify millions of small Indian farmers in a short amount of time, bringing them into a system of committed organic production. The PGS system in India is based on participatory approach with a shared vision, transparency and trust. The PGS system underlies following essential features:

3.1.1 Participation

Participation of all stakeholders (producers, consumers, retailers, traders and others such as NGOs) are the essential part of PGS. The stakeholders are engaged in the initial design, and then in the operation of the PGS and decision making. The idea of participation represents the principle of a collective responsibility for ensuring the organic integrity of the PGS. This collective responsibility embraces shared ownership of the PGS, effective communication between producers and consumers and all stakeholders and engagement in the development process.

3.1.2 Trust

The basic feature of PGS involves integrity based approach which ensures trust. An important device for promoting this trust is transparent operational processes .This includes transparency in decision making, easy access to the data base and where possible farms are open to participation and visits of consumers.

1.1.3 Shared Vision

Every stakeholder organization (or PGS group) can adopt its own vision which is in compliance to the overall vision and standards of PGS India. . All the stakeholders such as producers, facilitating agencies, NGOs, social organizations and State Governments must have a guiding principles and goals to achieve in PGS. This can be achieved initially through their shared vision.

1.1.4 Transparency

Transparency is formed on the basis of awareness about the entire system such as the standards, the organic guarantee process and guiding norms. The transparency is maintained through the active participation of the producers in the organic guarantee process .

1.1.5 National networking

The National Centre of Organic Farming is bringing all PGS groups in India under national networking with well defined policies and guidelines and undertakes surveillance through field monitoring and product testing for residues. Regional councils and facilitating agencies provides capacity building, training, knowledge broadcasting and data uploading on the PGS website.

3.2 Participatory Guarantee Systems (PGS) in India:

The development of PGS in India started in 2006, when the FAO and the National Centre of Organic Farming – NCOF, a body under the Department of Agriculture and Cooperation of the Ministry of Agriculture, facilitated a workshop in Goa, where fourteen NGOs participated. After the workshop, the organizations formed an informal and voluntary coalition. This coalition launched PGS pilot programs in various parts of the country and worked to develop standards, pledges and certification procedures appropriate to the local context.

A PGS network was established and in April 2011, the PGSOC was formally registered as a society in Goa promoted by a coalition of NGOs. Another PGS network in India is governmental one, referred to as “PGS India” which was launched as a scheme in the framework of the National Project on Organic Farming. The launch was announced on 07.04.2011 and the system described as a “low-cost alternative certification system – Participatory Guarantee System (PGS).” According to the NCOF, PGS “empowers farmers in the group to follow all standard requirements of organic, have surveillance on each other and declare themselves as organic.” The monitoring and coordination under “PGS India” is carried out by Regional Councils, which are also responsible for endorsing the decisions of the groups at a local level. Altogether, over 5000 farmers have obtained organic guarantee for their products through PGS in the country. India is among the most advanced countries with regard to PGS development and awareness. Even though the legal framework for organic farming does not officially recognize PGS, the voluntary legal framework for the domestic market allows for organic claims without certification or with PGS.

The Farmer organizations often play a vital role in the establishment of PGS initiatives, because they can construct their own networks to bring people together and encourage their participation. Several farmer organizations and NGOs cooperated to create PGS in India According to the latest FiBL data 2015, India accounts for the most producers certified through PGS (5191). PGS is an inclusive solution for domestic markets which has an important role in ensuring organic quality in the distant global market for organic produce. A positive environment for the development of PGS initiatives can optimise the opportunities in the organic sector of India.

3.3 Scope for promoting organic farming in India:

India is endowed with large natural and human resources. In the field of agriculture India has dominance in the production certain items like tea, some spices, rice, ayurvedic herbs etc. Traditionally Indian economy is an agrarian economy and the farm practices were environment friendly. Later the Green Revolution had replaced the traditional farming practices and lead to rapid rise in pesticide and chemical fertiliser use. The rise in use of chemical inputs has created adverse environmental and health impacts. The extensive use of pesticides has also resulted in pesticide resistance in pests and adverse effects to beneficial natural predators and parasites. The adverse effect of the modern fertiliser based farming compelled large number of farmers to adopt organic farming. India being a country with strong agrarian basis and culture, still has great opportunity to promote organic farming by providing effective training, and marketing services to organic farmers.

Table No: 2

Growth of area under organic management

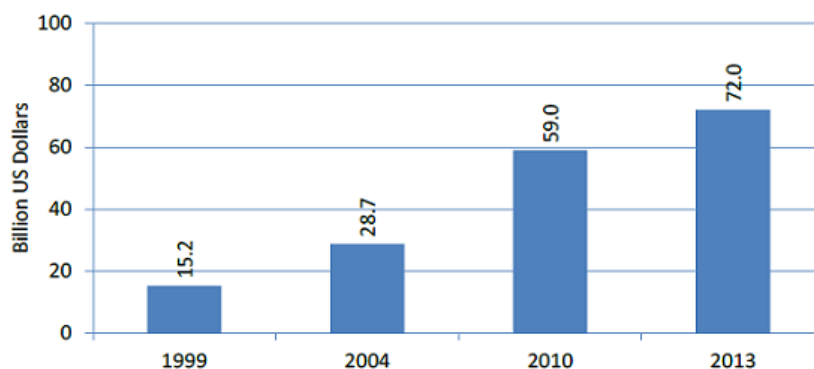
S.No.	Years	Area under Organic management in Ha
1.	2003-04	42,000
2.	2004-05	76,000
3.	2005-06	1,73,000
4.	2006-07	5,38,000
5.	2007-08	8,65,000
6.	2008-09	12,07,000
7.	2009-10	10,85,648

Source : National Centre for Organic Farming

The table illustrates the growth of area under organic management in India. The statistics shows an increasing area under organic management. The latest FiBL and IFOAM survey 2015 finds that India accounts 5.2 million hectares of organic land. The consumer demand for organic products is growing in worldwide due to concern about food safety. The following fig illustrates the growth rate of demand for organic prod

Figure No: 1

Growth of the global market for organic food and drink 1999-2013
Source: Organic Monitor



The increasing global demand for organic products offers great opportunity for Indian organic farmers. According to the 2009-10 data in the following table illustrates the opportunity to gain from export of organic products.

Table No:3

Production and Trade Statistics (2009-10)

Total Production	1.7 million MT
Total quantity exported	58,408 MT
Value of total export	USD 112 million
Share of Exports to total Production	3.5% approx.

Source: 2009-10, Organic Food Production, Problems, Prospects and Opportunities, National Center for Organic Farming, Ministry of Agriculture, Govt. of India

The increasing demand for organic products and production statistics indicate that organic agriculture has potential to augment Indian Agriculture. It can utilise traditional and indigenous farming knowledge, while introducing modern technologies to enhance ecologically intensify agricultural production. The adoption of organic agriculture is emphasis on use of local resources and self-reliance. The conversion to organic agriculture definitely contributes to the empowerment of farmers and local communities. Organic farming systems can bring agronomic and environmental benefits both through structural changes and intentional management of farming systems.

IV. The Potential Of Organic Farming To Endorse Sustainable Agriculture In India:

The concept of Sustainable agriculture integrates three main goals- environmental health, economic profitability, and social and economic equity. The concept of Sustainability rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. The conservation of natural resources is critical for the agricultural sector which ensures long-term sustainability. The rigorous reliance on chemical fertilizers and pesticides always questions the concept of sustainability in its all aspect. It harms environment and the food chain. The use of chemicals in farming have serious long term effects on the environment. These chemicals contaminating soil and water sources, there by it enters in to the food chain. In addition to this, when cattle consume foliage that contains these chemicals become highly concentrated in the flesh and milk of dairy cows. Ultimately, it creates serious health problems to people who consume dairy products. Organic agriculture avoids all kinds of practices which damages agro-ecosystem. It provides healthy food while establishing an ecological balance to prevent soil fertility or pest problems. In order to alleviate all environmental and social problems arising from chemical based farming, the promotion of organic farming is indispensable.

Other than environmental problems, chemical fertilizers and pesticides based farming creating so many economic destitutions to the farmers. The unsustainable farm practices have negative impact on farmer's health and long term returns of farmers. The increase in use of pesticides and fertiliser leads to the increase in cost of

production. The only group which gets benefited by this is the corporate who manufacture these pesticides. The continuous application of chemical fertilizers reduces the fertility of soil which causes continuous decline in farm produce. It leads to the increasing cost of production and declining productivity which makes the farming economically unsustainable. Agriculture can be sustainable only if it has a long-term economic viability. Organic farming ensures long term economic sustainability than modern chemical fertilizers and pesticides based farming. Moreover organic products carry a premium price in the market which makes organic farming more profitable. An effective agricultural sector strategy can contribute to a broader development of agricultural productivity, food security, generation of rural employment and poverty reduction while promoting the conservation of the natural resource base. This new strategy should be adopted with sound infrastructure, governance, the private public participation and effective implementation seeking to contribute to poverty reduction, enhance regional integration, accelerate human development, and improve productivity in agriculture. It is thus clear that agriculture needs to undergo a drastic revamp to become more sustainable. This is important to take care of the environment and to improve the productivity of the agro ecosystem. The policy measures are important to support agriculture which reflects the long-term social and environmental sustainability. The organic farming stress on use of local resources which contributes to the empowerment of farmers and rural community.

The following possibilities are identified regarding potential of organic farming to promote sustainable agriculture in India:

- As India now in the initial stage of organic farming, the quantity produced not enough to feed the large Indian population. Under this situation, concentrating on the export aspect of organic farming is more suitable opportunity for India.
- Optimisation of the potential trade in organic products is one of the good opportunities for improving the conditions of agricultural sector of India. Through the export of organic agricultural products, India can improve the conditions of Indian farmers as well as the entire agricultural sector.
- Organic farming can be adopted as one of the strategy for sustainable agriculture promotion with a long term perspective to foster community institutions that meet employment, environmental and health needs of the society.
- Institutional barriers to the development of the organic sector are needed to be resolved with proper strategy and execution.
- The traditional and indigenous farming knowledge should be conserved, while introducing selected modern technologies to manage and enhance diversity into farming systems.

V. Conclusion

The increasing awareness about the safety and quality of foods, long term sustainability of the present farming system persuades sustainable agriculture practices. The organic farming has emerged as an alternative system of farming which not only address the quality and sustainability concerns, but also ensure profitable livelihood option for rural community of India. As India in the initial phase of Organic farming, strong institutional mechanisms and governmental support must be essential to realize its sustained growth. Strong Local institutions build up including farmers Group, Local Guidance, knowledge sharing, market linkages etc are critical to build up successful growth of organic farming. Sustainable Agricultural development in India is essential to support the farmers who are struggling to sustain in this sector. As an initial step to promote Sustainable Farming, the Governmental inventiveness to assist the unorganized frames through various means are essential to overcome the present problems faced by Organic farmers and enable them to achieve social and economic development through successful sustainable agricultural practices.

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