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Organic farming: The future of Indian agriculture

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Abstract
Organic foods reduce the chemical side effects and increase health due to its nature. Now a day specially after pandemic the demand of organic foods continuously increasing but still we have to work a lot in this field. As our farmers have less knowledge about the organic farming. Government is focusing more on organic farming and provide training and opportunities.

Keywords: organic, farming, agriculture, training

Introduction

Organic farming reduces public health risk by minimal exposure to toxic chemicals and pesticides, and gives maximum opportunity to explore the natural things especially to children, adults, and the senior citizens. According to studies, organically produced food reduces public health risks because it is rich in multiple nutrients such as vitamins, iron, magnesium, and phosphorus. It has been observed that even the fruits, vegetables, and grains produced organically are rich in nutrients as compared to conventionally grown produce.

Organic food industry develops around one decade ago in India, use of synthetic chemicals was more in Indian agriculture due to high rates of organic chemicals. The impact of Synthesis chemicals is more in compare to organic. Now people are aware about the use of organic things in agriculture. Indian farmer adopting new methods of farming and it is a new era for organic farming in India. Most of the farmers and young brains started their own start up related to organic farming. Urban areas are now more aware about the use of organic foods in place of others. Ecommerce platform and social media is another major factor in the evolution of organic food sales and aware about the uses of organic foods. Due to this, the number of consumers is going upwards only since 2013 and now in 2021 after two years of pandemic the consumers number increasing 40 % more in comparison to 2013. India's organic food consumption has grown in recent years due to its advanced demographic dividend, improved purchasing power, and increased interest in the benefits of a particular product. The Expert Market Research report shows that the organic food market stood at a value of US$ 849.5 million (approximately Rs 6500 crore) in 2020. In the forecast period of 2021 and 2026, the market is expected to reach the value of 20.5% by CAGR that is US$ 2601 million (approximately Rs 19500 crore) by 2026.

Organic food production helps farmers in the long run. This is because the use of no pesticides and insecticides means that they end up spending lesser money on these chemicals. According to experts, soil health remains intact with the use of organic pesticides. Apart from this, the absence of pesticides ensures decreased nitrate levels in groundwater and surface water and recycling of the animal waste back into the farm. The farmers can make more money with organic farming, as the cost of this product is slightly higher than the conventionally grown produce. Following are some of the reasons why the organic food industry is expected to rise in demand:

The e-Commerce push

Due to the rise in smartphone and digitalization usage and the low-cost availability of the internet, access to information about organic products has increased. Ecommerce is like a salesperson reaching out to its consumer across the country. This is one of the reasons why the growth of organic food was harnessed by tier 1 cities, but the potential customers were reached in tier 2 and tier 3 cities. Ecommerce has increased the demand and made it competitive by encouraging more and more startups entering into the market.

Health benefits

There is an insignificant price difference between organic and conventional food. While organic food might be a little higher on the cost end, it also offers multiple health benefits and prevents our body from the needless intake of pesticides and fertilizers. During the ongoing pandemic, people realize that the higher price of healthy food also cuts down the medical expense. Consumers nowadays are ready to pay extra for a beneficial product.

Government regulations

The Indian government is also helping and promoting farmers to adopt organic farming. Multiple government awareness like National Mission for Sustainable Agriculture (NMSA), Mission for Integrated Development of Horticulture (MIDH), National Food Security Mission (NFSM), and Rashtriya

Krishi Vikas Yojana (RKVY) have been implemented to promote the sector. The government has also developed a nationwide awareness program called National Program for Organic Production (NPOP) to educate farmers about organic products and their benefits.

Greater awareness equals increased demand

The growth of organic product awareness has become a global phenomenon, and it has been receiving appreciation even on international platforms. India being an agricultural country, the weather and climate are perfect for organic agriculture; due to this, the export rate of organic foods is very high. According to reports, the demand for Indian organic food is constantly increasing worldwide. The country exported 6.38 lakh tons of organic food products valued at Rs 4,685.90 crore in 2019-20.

Organic Farming and Unnat Bharat Abhiyan

With the increase in population our compulsion would be not only to stabilize agricultural production but to increase it further in sustainable manner. The scientists have realized that the 'Green Revolution' with high input use has reached a plateau and is now sustained with diminishing return of falling dividends. Thus, a natural balance needs to be maintained at all cost for existence of life and property. The obvious choice for that would be more relevant in the present era, when these agrochemicals which are produced from fossil fuel and are not renewable and are diminishing in availability. It may also cost heavily on our foreign exchange in future. The solution lies in organic farming. Organic farming is a method of crop and livestock production that involves much more than choosing not to use pesticides, fertilizers, genetically modified organisms, antibiotics and growth hormones. The key characteristics of organic farming include

- Protecting the long term fertility of soils by maintaining organic matter levels, encouraging soil biological activity, and careful mechanical intervention
- Providing crop nutrients indirectly using relatively insoluble nutrient sources which are made available to the plant by the action of soil micro-organisms
- Nitrogen self-sufficiency through the use of legumes and biological nitrogen fixation, as well as effective recycling of organic materials including crop residues and livestock manures
- Weed, disease and pest control relying primarily on crop rotations, natural predators, diversity, organic manuring, resistant varieties and limited (preferably minimal) thermal, biological and chemical intervention
- The extensive management of livestock, paying full regard to their evolutionary adaptations, behavioural needs and animal welfare issues with respect to nutrition, housing, health, breeding and rearing
- Careful attention to the impact of the farming system on the wider environment and the conservation of wildlife and natural habitats Organic farming system in India is not new and is being followed from ancient time. It is a method of farming system which primarily aimed at cultivating the land and raising crops in such a way, as to keep the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (bio fertilizers) to release nutrients to crops for increased sustainable production in an eco-friendly pollution free environment. As per the definition of the United States Department of Agriculture (USDA) study team on organic farming "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".

The world has already tasted the ill effects of chemicals based agriculture in terms of land pollution, water pollution, air pollution and even worst like causing deadly diseases like cancer in different parts. In India, Punjab and Haryana are major examples of such degradations taking place in the name of green revolution over the past few decades. The world is looking now to organic products from agriculture even at premium prices, where no chemicals are used in agriculture practices. This offers a large scope for building rural enterprises, right from testing, certification, training to production and processing in pre and post agriculture practices. This requires all kinds of skills, right from high level modern scientific expertise available in laboratories and universities to traditional agricultural practices already available with people. Animal husbandry is closely linked with agriculture. There are several inputs that the animal husbandry shall have to provide to practices of organic agriculture like organic manure from cow dung, natural pest repellents from cow urine and many other combinations from animal husbandry products. In fact, there are many products these days being prepared from cow urine and cow dung which are capable of being commercially exploited. Other than agriculture, there are several applications in medicines, utility items etc. All these provide huge opportunities for start-ups and entrepreneurship. In addition, the food products from animal husbandry including milk, curd, ghee which are traditionally and culturally highly desirable and consumed in large quantities in India are not easily available in adequate quantity and with assured quality. The statistics say that only 10 percent of the milk produced in India is handled by the organized sector through cooperatives etc. Rest remains as unorganized sector with no control of quality. Increasing production, assuring quality, regular supply and freshness desired in such products.

Challenges Towards Organic Farming

Soil scientist Rattan Lal's Law of Marginality states, "Marginal soils cultivated with marginal inputs produce marginal yields and support marginal living". What this means is that poor soil needs some inputs, especially as we lose old practices of annual soil flooding and replenishing. Maybe India can start with semi-organic farming, i.e., immediately losing pesticides, but gradually phasing out chemical fertilisers. A variant mentioned in the 2019 Budget by the Finance Minister is Zero Budget Natural Farming, which also

focuses on breaking input cost burdens. While it has potential, current studies are too small to examine scalability and variation.

Organic farming might cost a little more, but a there are several more serious challenges that deserve policy attention. First, there is a fallow period where traditionally farmed soil is left to recover, and even the initial yields are low. How will a farmer survive? Second, farmers need a lot of education and hand-holding in this process. Lastly, there are issues of trust – Indians are famous for bending the rules. I have family that isn't against organic, or even willingness to pay, they just believe they are being taken for a ride – paying more for regular produce. Establishing organic as a true offering needs innovative thinking, beyond just labelling and certifications. The state of Sikkim is reportedly 100% organic, proving this can work at scale. This represents a great case study to examine how they did it. If they're producing organics to "export" especially to Bengali elite, that is not a sufficient model across the country, especially not in the short run.

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