

## GROWTH OF ORGANIC FOOD INDUSTRY IN INDIA

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### ABSTRACT

The organic food industry in India is in the early stages of growth. Higher disposable income and greater health awareness have resulted in an increased domestic demand for organic food. There is huge premium in selling organic products, not only to export markets but also to affluent, health conscious domestic consumers. India is endowed with an abundance of labour and has diverse agro-climatic region that is well suited to year round agriculture. It still has strong traditional agricultural practices. Can India make use of this comparative advantage to introduce sustainable agriculture practices and at the same time improve incomes of small and marginal farmers? On the supply side, small and marginal farmers realize that there is an opportunity to get higher net incomes even if yields are low in organic agriculture. This is because the price of pesticides and chemicals has increased significantly over the last few decades resulting in a significant increase in the cost of production. Organic farming cost could be 50% to 60% less when compared to inorganic farming practices. In addition to domestic demand side, globalized markets provide significant opportunities for Indian agriculture to capture a larger share of the global demand for organic food. This paper analyzes the growth of the organic food industry in relation to domestic and export demand. We also look at the supply side to determine if organic farming and sustainable agricultural practices could help improve farmers' income. Finally, this paper analyses existing policy framework towards organic agriculture and how small and marginal farmers could possibly benefit in this niche market.

**Keywords:** *food supply, organics, sustainable agriculture, India.*

### INTRODUCTION

The organic food industry has experienced astonishing growth in the past few years. Still, the total percentage of agricultural land in the world that is certified organic still remains around 1% at 43.16 million hectares. This is almost four times the area covered under organic agriculture in 1999 recorded at 11 million hectares (Lernoud and Willer 2016). A large proportion (approximately 90%) of the total organic food and drink sales take place in the developed countries of North America and the European Union (EU). There is a huge growth potential in

developing countries to increase organic production owing to the largely prevalent traditional farming techniques which are in accord with organic agricultural practices. Strong institutional support is required to further push the organic industry from a small niche market into a mainstream agricultural industry.

India has a total agricultural land of 143 million hectares, out of which only 5.2 million hectares (3.64%) of land is under organic certification. The agricultural sector in India is characterized by a large proportion of households (85%) possessing less than 2ha of land (Agricultural Census Division 2014). Only 36% of India's land uses irrigation systems, while the rest is rain-fed (Directorate of Economics and Statistics 2012-13). The rain-fed area presents many opportunities to improve the socio-economic status of the farmers by adopting organic farming methods. The state of Sikkim has the highest percentage (54.66%) followed by Madhya Pradesh (16.80%) (Lok Sabha 2014). The government has made constant efforts towards improving the institutional support to growers by introducing several policies and programmes. The present paper aims to examine the possible supply side challenges and ways to overcome them in the context of Indian agriculture.

Looking at the demand side of organic food markets, there are several factors that affect the consumer choices like certification of the products, perceived health benefits and prices of organic food. However, as noticed earlier, demand for organic food and drink is heavily concentrated in the EU and North America. The market in India is very small, estimated at around USD 100 million as compared to the United States market, valued at around USD 36 billion (Lernoud and Willer 2016)(Technopak 2012). Due to such a large foreign market for organic produce, a significant proportion of organic goods are exported. However, there is a rising growth in demand of organic produce in India due to the increasing income of the population and growing health concerns. The paper tries to look at the various aspects of demand and trade of organic food in India.

Organic agriculture is often looked upon as a sustainable alternative to chemical farming. However, there is a debate between food security and environmental sustainability aspects. This paper also looks to analyze how the sustainability of small farms involved in organic agriculture.

## **MATERIALS AND METHODS**

This paper is based on review of secondary data, official reports and previous studies relevant to the organic food industry. The majority of reviewed content is based on studies conducted in India while a few concerning Canada were chosen for comparisons. Most of the data collected is sourced from various Ministries of the Government of India and international organizations such as International Federation of Organic Agriculture Movements (IFOAM, 2016).

Estimates for costs of cultivation for paddy and income of paddy farmers in Andhra Pradesh have been taken from a previous study to conduct further analysis (Sudheer 2013). Price data for several brands of organic and non-organic food had been taken from an NGO, Gurgaon Moms, for the aforementioned purpose.

## RESULTS AND DISCUSSION

### Supply Side

There exist several challenges in the supply dimension of the organic food industry. Firstly, the yield of the two types of systems depends upon the source of water; irrigation channels or rain. Previous studies have shown that organic agriculture has potential to increase crop yield in areas with traditional rain-fed agriculture and in drought conditions. In intensive farming systems, conventional crop yields outperform the organic yields (Ramesh, Singh and Rao 2005) (Stanhill 1990). Some studies point to a reduction in yield for a small period (around 4 years) for conventional systems that are in conversion to organic, but yields are comparable thereafter due to developed soil fertility (Neera, Katano and Hasegawa 1999). Other studies did not have such an effect observed (Stanhill 1990). Since a majority of India's arable land is rain-fed, adoption of organic agriculture may enhance the productivity of those soils, leading to a higher food supply in general, and specifically, a higher supply of organic food. The farmers' incomes will increase as a result of increased produce from their lands.

Secondly, comparing the costs of production between the two systems offer a few insights. Many of traditional farming practices, which have been developed over centuries, are concurrent with organic farming practices. Both these methods tend to employ as few chemicals as possible and make farming sustainable (Narayan 2005). Organic agriculture has lower variable costs, owing to reduced or non-use of industrially produced inputs like fertilizers and pesticides, in favour of farm-derived inputs like manure (Chandrashekar 2010). However, organic agriculture requires more labour than conventional systems, increasing the labour costs (Narayan 2005). Many studies have shown that costs in total reduce as a result of adoption of organic farming (Narayan 2005) (Sudheer 2013).

Finally, marketing plays a big role in the supply of organic food. The organic food market in India is still a very niche market with total organic production of 1.35 million MT as compared to total agricultural production of 253 million MT. Around 80% of the total organic consumption in India occurs in the cities classified as metros or mini-metros (Technopak 2012). But most of the production occurs in the rural areas far off from these cities. Marketing costs are high in these cases due to limited market access. One possible solution to this problem is introduction of contract farming. According to FAO, "contract farming involves an agreement between farmers and processing/marketing firms for production and supply of agricultural products under forward agreements, frequently at predetermined prices". The advantage of contract farming is that supply chains are more integrated and the products reach a larger segment of the market. The buyer firms are better at advertising and marketing than farmers, which benefits all involved parties. The consumers get access to larger amounts/varieties of products, while the buyer firm and the farmers face lower supply and price risks respectively.

A previous study conducted in the state of Andhra Pradesh in 2010-11 on 250 paddy farmers; 150 organic and 100 chemical; estimated the costs and incomes of

the farmers (Sudheer 2013). Table 1 shows the estimates of costs of cultivation, revenues and gross incomes at different premiums for rice paddy. The study assumed comparable yields on both types of farms. For simplicity, this paper assumes the yield from the two types of farms are identical. Currently, the organic products fetch lower prices than their conventional counterparts. An interesting observation is that, even though per unit price of organic food to the farmers is lower, they are getting higher gross incomes, due to lesser costs of organic food. The study found that none of the organic farmers had formal certification, leading to lower prices of organic produce. Market price of different brands of organic and non-organic rice are shown in Table 2 (Gurgaon Moms 2012). Organic products yield at least 20% premiums but farmers do not gain much due to lack of certification.

Table 1. Cost and Revenues of Rice Paddy farmers

	Organic*	Conventional*
Cost of Cultivation per acre	21,549	23,989
Gross Income per acre	30,221	28,717
Revenue per acre	51,770	52,706
Current Premium	-1.78%	
Revenue at 20% premium	63,247.2	
Gross Income at 20% Premium	41,698.2	
Increase in Profits	38.0%	
Certification Costs	20,000 to 30,000	

Source: Sudheer, 2013

\*All figures except percentages in INR

If proper marketing and certification can be gained, the profits will go up by 38%. But certification has its own costs as well. Certification costs are between INR 20,000-INR 30,000 depending upon farm size. This is enough to lower the profits overall. Therefore, farmers will benefit from organic farming if there is a cheaper method of certification or with financial assistance schemes such as PKVY wherein the government assists the farmers in getting certification. A cheaper alternative in the form of Participatory Guarantee System exists, which is a decentralized way of inspection of farms leading to lower costs (IFOAM n.d.). India currently has 19,984 farmers in 954 farmer groups participating in PGS covering an area of about 23,482 ha which is less than 1% of the total organic area in India. More areas need to be covered by PGS to improve the economic status of organic farmers.

Table 2. Prices and premiums of different brands of organic vs non-organic rice

Market Price /kg	Organic		Non-organic	Premium	
	24 Letter Mantra	N avdanya		24 Letter Mantra	Na vdanya
Basma ti Premium Brown Rice	165	110	91	81.32 %	20.88%
Basma ti Premium White Rice	164	110	87	88.51 %	26.44%

Source: Gurgaon Moms Website

\*All figures except percentages in INR

### Demand side

In India, there has been a huge growth in the consumption of organic products in the past decade. In 2002-03, the total production was estimated around 14,000 MT with total organic exports of 11,925 MT (85%) (Garibay and Katke 2003). In 2015-16, the production was 1.35 million MT with exports of 0.26 million MT (19.26%)(APEDA n.d.). It suggests that the consumption of organic products in India has grown very rapidly. The compounded annual growth rate (CAGR) of production is 46.34% and that of exports is 29.44%. The domestic consumption has been growing faster than exports, expanding the domestic market. There are several reasons for this. First, most of India's land was already being farmed according to organic agricultural practices, but it was only after proper certification standards were adopted in early 2000s that certification took place. This led to a huge rise in certified organic consumption over such a short period. The consumption in 2002-03 was estimated at around 2075 MT whereas it crossed the 1 million MT mark in 2015-16 (Garibay and Katke 2003)(APEDA n.d.).

Most of the studies show that factors like health and environmental concerns and lack of chemicals in the food are increasing the demand. Other factors like higher price and lack of availability are hindrances to demand (Hughner et. al. 2007).

A survey of households in major Indian Cities found that only 17% of the households (175) were consumers of organic food. Among the consumers, the major percentage pointed out health concerns (82%) and lack of pesticides and other chemicals (58%) as the major reasons for buying organic food. The study also noted that the major problems faced by buyers was that organic products were priced higher (64%) and limited availability of organic products in the market (60%). However, not many consumers were concerned with the impact organic farming has on the environment (21%). Of the remaining non-users, only 5% had good knowledge about organic food, with the rest having little to no knowledge. The major reasons for not buying among non-consumers was found to be limited

availability (72%) and high prices (52%). The place of purchase for organic food in most cases was either a supermarket or a speciality food stores as opposed to local markets and stores for regular food. Majority of purchasers preferred branded products (58%) with a high preference for Indian brands (78%) (Technopak 2012).

The limited availability of organic products coupled with the fact that majority of sales is concentrated in larger cities shows that the supply chains of organic food from the farms to the domestic consumers are not very well established. There is a lack of knowledge about organic products leading to a low penetration amongst potential consumers. Information dissemination campaigns can help increase the demand and lead to development of the domestic market.

### **Trade, Sustainability and Food Security**

The organic food trade in India is currently limited to only exports. Most of them are targeted towards US, Canada and EU (84.6%) (Lok Sabha 2011). These are the areas with very high demand concentration. The developed countries import both organic and regular food from developing countries. Therefore, the share of “clean agricultural goods” consumption is higher in developed countries. As a result, countries where organic food is produced are not enjoying the ecological benefits of growing organic food (Lernoud and Willer 2016). This hinders the sustainability of organic agriculture in developing countries. Domestic organic food markets need to develop to consume more and more of organic products to realize the benefits of growing organic food.

Organic agriculture is generally believed to be more environment-friendly than conventional farming methods. This is because of the fact that organic farming involves practices which do not use chemicals and also have lesser energy requirements (Pimentel et. al. 2005). Currently, agriculture forestry and other land use (AFOLU) contributes around 25% of total greenhouse gas emissions (US-EPA n.d.). There is a rising concern about the emission levels and organic farming can be a way to mitigate pollution.

There is a debate between sustainability and the food security aspects of organic farming. In intensively farmed areas, organic agriculture decreases yield but in irrigated lands, both methods have similar yields. For these cases, conversion to organic while being more sustainable, poses a threat to food security. Majority of the lands in North America and Europe are intensively farmed. This creates several problems for conversion. There is little economic incentive to convert these lands. But in traditional areas, organic agriculture increases yield. This could help improve food security issues in the developing countries like India where majority of agricultural land is traditional. The supply of food is higher, improving food security.

## CONCLUSION

A new approach is required to realize the immense potential of organic food industry in India. There are several challenges at every stage of the market which needs to be addressed in order to develop the industry further. At the production level, farmers face problems regarding certification of their products, due to very high certification costs. There have been policies introduced to assist the farmers financially for certification and also organize them into Participatory Guarantee Systems (PGS) which is a low-cost certification method. While these are very helpful measures, they are not widespread. More farmers need to be included under these schemes and organized into farmer groups which will help them get greater access to markets where their products are demanded. Further, if organized into bigger groups, agricultural inputs might be available to them at a cheaper costs due to bulk purchasing. This will reduce the production costs and increase the profit margin.

Small and marginal farmers find it difficult to get access to markets where their products fetch premiums. Most of the consumption is concentrated in a few cities currently, but production happens far away in the rural areas. Retail firms can help improve the market access for the farmers. Most of the organic consumers in India prefer branded products. This is an incentive for retail firms to improve the rural-urban linkages by purchasing organic produce from farmers and selling them in urban markets where the demand for organic produce is higher. There are many retailers but awareness is pretty low among farmers and consumers both. Partnerships between the government and private retailers could prove beneficial for both parties involved as well as the farmers. More farmers will have access to better markets and get higher price premiums, which will enable them to increase their incomes. Retailers will have access to a larger quantity and variety of organic produce driving up their profits. Increase in farm incomes arising out of organic agriculture would help government policy makers to focus attention on other needs of the rural communities. Going organic will also lead to agriculture that is more sustainable.

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