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The significance of organic farming and market analysis

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Abstract

Organic farming also referred to as ecological farming is a sustainable agricultural production method, where farmers use organic substances and apply some special cropping techniques like crop rotation, companion planting, etc. for the purposes of consumption instead of synthetic components to maintain the ecological balance. The global market of organic foods is approximately \$ 215,350.2 million in 2023, and it is expected to grow \$ 412,927.7 million in 2027 at a CARG rate of 13.9 percent over the organic market growth rate of 16.7 percent in the coming future. Environmental awareness along with the health impacts and issues of chemical pesticides leads to growth in the organic sector. Both organic and conventional methods of production have some positive and negative impacts on the basis of the growing population in the country, which has demanded more food. This cannot be fulfilled without the use of hybrid crops and also having to use some chemical substances that help to minimize crop failure. On the other hand, it also has some negative effects on our environment. Though the organic food market is rising rapidly in both national and international markets, rural markets remain the same because farmers are focusing on quantity rather than quality to make more profit only because of their poor financial condition. To promote organic farming extensive support is required from Government for our farmers and motivate them to sell their products at the highest support price to the regional market. In our research, we try to focus on motivating the farmers at the niche level to adopt the organic farming practice in their major productions.

Keywords: Organic production, CARG, GMO, NPOF, PKVY

Introduction

Organic farming has a long history, dating back to ancient times and continuing into present times. Certain researchers, philosophers, and authors, such as Sir Albert Howard, Rudolf Steiner, J.I. Rodale, and others, developed the concept of modern organic agriculture. However, Sir Albert Howard is regarded as the father of contemporary organic farming because he was the first researcher to be inspired by and recognise the significance of traditional sustainable farming practises while working as an agriculture researcher in India in the early 1900s (Lampkin *et al.*, 2020) ^[10]. However, when Austrian philosopher Rudolf Steiner established the notion of biodynamic farming in the twentieth century, the contemporary organic farming movement began (Seufert *et al.* 2017) ^[16]. Today, the organic industry is rapidly expanding, and demand is steadily increasing in all parts of the world. Almost every country has put in place various programmes and certification programmes to regulate and encourage sustainable farming practises. Our Indian government has also developed policies and initiatives such as the "Paramparagat Krishi Vikas Yojana" (PKVY), the "Rashtriya Krishi Vikas Yojana", the "Mission Organic Value Chain Development for North Eastern Region" (MOVCDNER), the "National Project on Organic Farming"

(NPOF), and others. After the Green Revolution, Indian agriculture industrialised through the use of contemporary methods and techniques (Reddy 2010) ^[15]. It was the way to increase the productivity and fulfil the demands of the increasing population. But now it's become a reason for undesirable impact over all kind of natural resources and imbalance the biodiversity as a whole.

Concept of Organic farming

Organic agriculture is a comprehensive production management method that supports and improves agro-ecosystem health, such as biodiversity, biological cycles, and soil biological activity. It promotes the use of management practises over the use of off-farm inputs, recognising that regional conditions necessitate regionally customised solutions. This is accomplished by employing agronomic, biological, and mechanical processes, rather than synthetic materials, to perform any specific function inside the system.

Organic farming is a farming approach that opposes all traditional farming practises such as the use of synthetic chemicals, pesticides, hormones, and Genetically Modified Organisms (GMOs). The fundamental premise of organic farming is to eliminate synthetic inputs and instead employ organic inputs such as green manure, biological fertilisers,

and insect treatments to maintain soil health, overall biodiversity, and sustainability (Seufert *et al.* 2017) ^[16].

Do's and don'ts in Organic Farming

Organic farming includes not just crops and their products,

but also cattle, aquaculture, poultry products, apiculture, and other farming systems. Meanwhile, it's a large platform with various farming practises in each area, but in all cases, there are some essential things that must and must not be done.

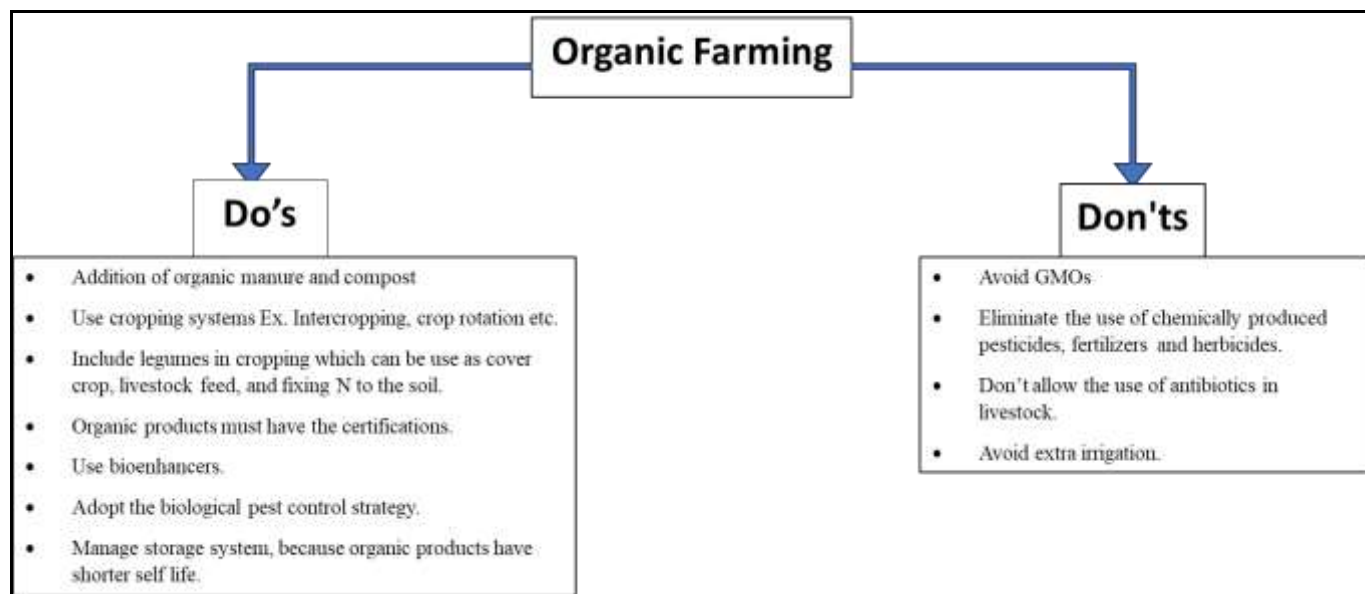


Fig 1: Do's and Don'ts in Organic Farming

Certification Process

Certification of any agricultural product benefits producers, handlers, and consumers alike. Where producers are paid a premium for their product, they can extend their market on a local, regional, and international scale, as well as get additional finance and technical assistance (Barrett *et al.* 2002) ^[3]. In the case of consumers, the certification logo is very important to know whether the products were produced in accordance with the standards or not.

APEDA provides an internet-based e-service called Trace net to gather, record, and report data on organic certification during the certification process of organic products. Trace nets are also used to track the supply chain of certified produce beginning at the farm level.

Organic Certification in India

The "India Organic Certification" label is given to all items after going through an overall process of validation (Dabbert *et al.* 2014) ^[4]. The tag ensures the customers that the product itself and all raw materials which are used in prococing all are produced organically following the protocols and keeping in mind the principles of organic farming (Kaiser & Ernst 2020) ^[9]. In order to observe the certifications National Standards for Organic Productions (NSOP) was established in India in the year 2000.

Under NPOP, organic certification process is carried out by accredited bodies. In India, there are 29 certification agencies accredited by APEDA.



Fig 2: Different Organic Certified agencies in India

Certification Process

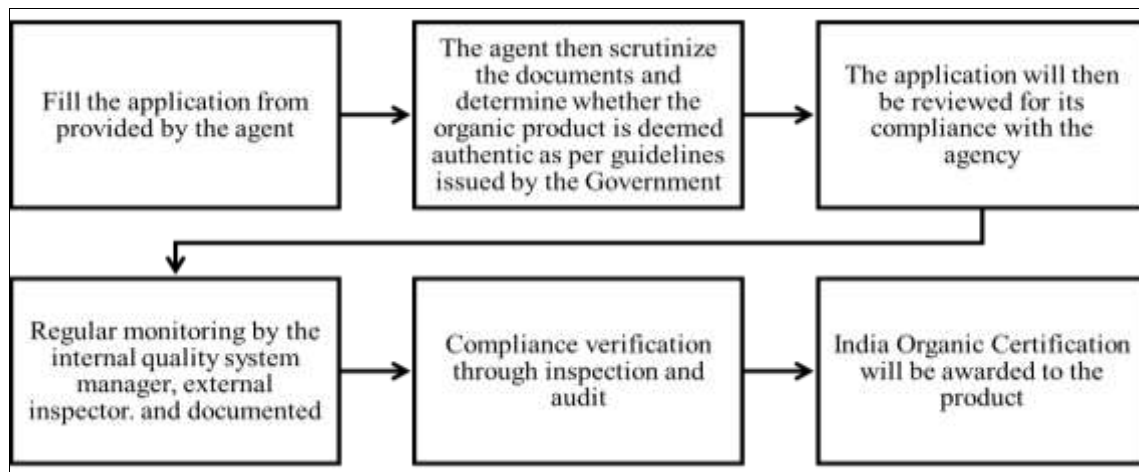


Fig 3: Certification Process

Current status of Area, Production and Market in Organic Farming Area

Organic agriculture is practice in 190 countries over 72.3 million hectares of farmland. Australia covers almost 50% (35.69 M ha) organic farmland all over the world followed

by Argentina (4.45 mha), Uruguay (2.74 mha), India (2.74 mha). From the fig. 4 it can be observed that the farmland is gradually increase at the rate of 7.6% average from 2019 (National Centre for Organic and Natural Farming 2022) ^[14].

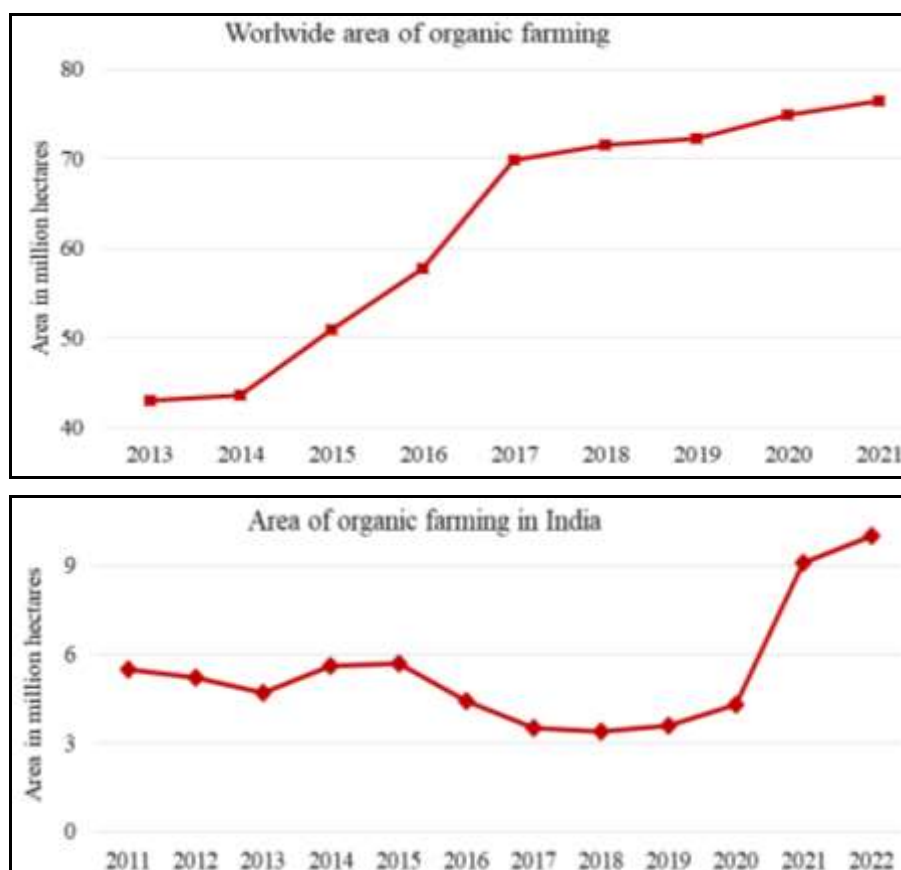


Fig 4: Area of Organic farming in world and India [Source: National Centre for Organic and Natural Farming (NCOF)]

According to the Research Institute of Organic Agriculture (FiBL) and The International Federation of Organic Agriculture Movement (IFOAM) data 2022, India ranks fourth in the world in terms of certified acreage. Sikkim became the world's first totally organic Indian state. Indian farmland is also expanding, and the government is

implementing many programmes, like the Paramparagat Krishi Vikas Yojana (PKVY) and the Mission Organic Value Chain Development for the North Eastern Region (MOVCDNER), to bring more agricultural area under certified organic agriculture.

Production

India is the highest organic food producing country measured by number of producers followed by Uganda, Ethiopia and Tanzania. India had almost 1.6 million producers, which is more compare to the other leading countries basis on their area of production and the trendline is gradually increasing till the year 2021 (APEDA 2023) ^[2]. If all areas are divided by zones, the highest CAGR % was

found for central zone (mainly Madhya Pradesh and Chhattisgarh) around 12.71% followed by western zone (7.40%), North-eastern zone (6.91%) and northern zone (5.69%). According to APEDA 2023 ^[2], State wise Madhya Pradesh is the highest in organic farm production (825626.41 MT). The overall annual increasing rate of organic production is 1.65%.

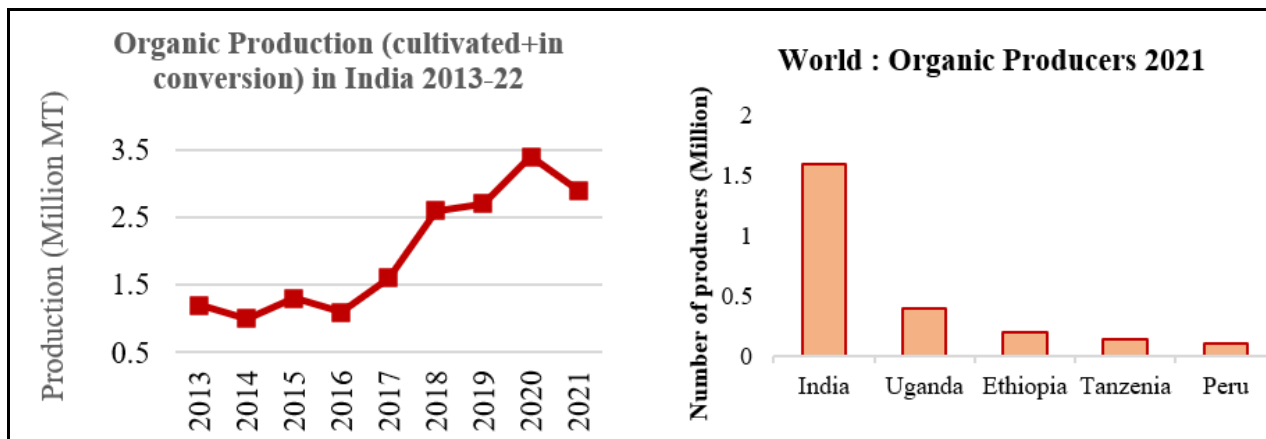


Fig 5: Area of Organic farming in world and India [Source: Agricultural and Processed Food Products Export Development Authority]

Farmers

According to the Fibl survey 2023 report, approximately 3.7 million producers globally are engaged in organic agriculture, with a 4.9% rise from 2020. To far, India has the most organic farmers, with about 1.6 million, followed by Uganda (0.4 million) and Ethiopia (0.2 million). (Trávníček *et al.* 2023) ^[18].

India is one of three countries that will boost organic farming by 2020, along with Argentina and Uruguay. Cabinet has yet to approve the Agriculture Ministry's \$2,481 million budget for the National Mission on Natural Farming (NMNF). The project is scheduled to run from the current fiscal year until 2025-26, with the goal of recruiting 7.5 lakh farmers to practise non-chemical natural farming over 7.5 lakh hectares. Farmers will receive a maximum of Rs.15000/hectare under the scheme (until 2025-26), depending on any income loss from migrating to natural farming (Trávníček *et al.* 2023) ^[18].

Export destinations

India produced 2.9 million MT (222-23) certified Organic products, which include all types of food, primarily oil seeds, cereals and millets, fibre, sugarcane, cotton, pulses, spices, dry fruits, tea, coffee, vegetables, aromatic and medicinal plants, and so on, and these products are exported to 58 countries worldwide. Only the United States and the European Union (EU) account for 87% of India's organic export market. Whereas the US has taken up to 50% and the EU has grabbed 37%. Despite COVID-19 problems, India's food product exports increase by more than 50% in 2021-21. Oil cake meal is the country's most important organic product, followed by fruit pulps and purees, cereals and millets, spices, tea, medicinal plant products, pulses, processed food, dairy products, and so on (Joseph & Ser 2021) ^[7].

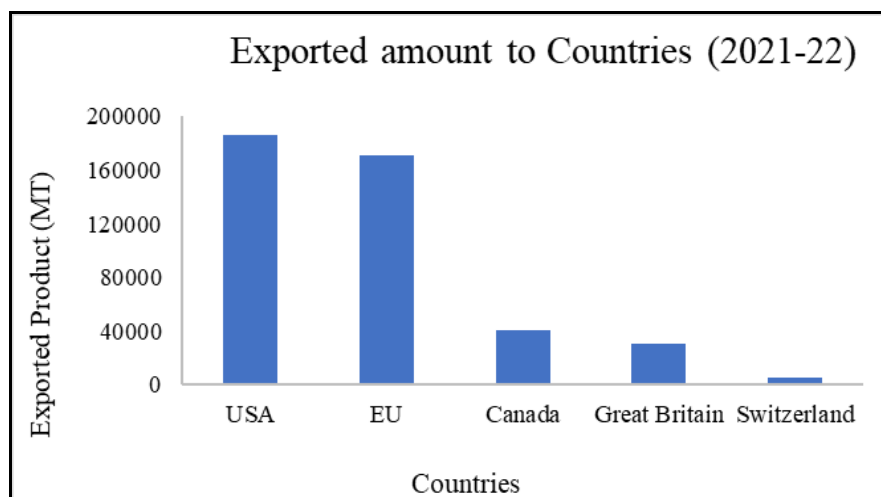


Fig 6: Exported amount to Countries Source – (Trávníček *et al.* 2023) ^[18]

Table 1: Some Major Organic Exporters of India

Company Name	Business Type	Certification & Accreditation	Product Range
Nature Bio Foods Ltd.	Producer, Exporter, Processor.	EU, NPO, NPOP, Canada Organic	Organic rice, grains, Pulses, Oil Seeds, Millets
Nature Pearls Pvt Ltd.	Exporter, Processor	NPOP, NOP, Naturland, Fairtrade.	Organic Basmati Rice, Pulses, Millets
Terra Firma Projects Pvt Ltd.	Manufacturer, Importer, Exporter, Processor.	NPOP, NOP	Organic Cereals, Pulses, Staples, Spices, Health supplements.
Elworld Agro & Organic Foods Pvt Ltd.	NPOP, NOP, EU	Manufacturer, Retailer, Exporter.	All Organic groceries including cereals, Pulses, Millets, Flours, Spices, Oil, Honey.
Aryavarta Organic Pvt Ltd.	NPOP, NOP	Manufacturer, Exporter, Retailer, Processor.	All Organic food products (Pulses, Spices, Oil, Ghee, Honey etc.) and processed products.

Challenges in organic farming

1. Lower yield: Because pesticides, herbicides, fungicides, and synthetic fertilisers are not permitted, organic production is low in comparison to conventional farming systems, making it impossible to meet India's food requirement of 1.42 billion people (Dayoub & Korpela 2019) ^[5]. The overuse of synthetic inputs to farms has thrown off the balance of soil nutrients and compaction, which can lead to poorer output. Because all industries are focused on profit generation, whether sustainable or conventional, low productivity is the primary driver of low adaptation.

There are numerous options and approaches for overcoming such challenges. By preserving soil fertility, organic plant nutrition management, integrated pest control, and crop-weed competition, we may use biodiversity to boost output. Crop rotation and organic manuring should be adopted to farmlands to boost soil fertility and nutrients, as they aid to increase crop diversity. New technology must be implemented to reduce tillage and promote collaboration between livestock and stockless farms. Plant nutrients can be preserved by growing legumes optimally in cropping systems and using frequent manuring and composting (Dayoub & Korpela 2019) ^[5]. False seedbed technique and cover crop techniques must be included in farming systems for weed management, crop rotation, and physical weed control strategies. To keep the pest under control. An integrated pest management system must be implemented, and physical or biological approaches like as traps and repellents must be included in this organic farming method.

2. Time consuming: Time is one of the most significant disadvantages of organic farming. Any organic processing takes longer than a conventional approach. This does not apply in all circumstances, but in the meat and dairy industries, where there is a long supply chain to reach the consumer, freshness is a major concern (Dayoub & Korpela 2019) ^[5].

To remedy this problem, a competitive market must be created, particularly for organic products, with fewer mediators, and current mechanical technologies must be used to preserve the items free of chemical additives.

3. Higher cost: Organic farming necessitated a large workforce because most practises were performed manually, hence labour costs were higher than in conventional farming. Every organic product must be certified; producers and handlers who want to sell their products to the market must pay for registration or any certifying agents to declare

their product organic. This will also increase the price of the product (Dayoub & Korpela 2019) ^[5]. As the shelf life of the products is short, money must also be spent on shipping and storage. All of the foregoing expenses add up to a high production cost.

To achieve cheap product price, cost-cutting strategies should be implemented at all levels of production. Machineries with contemporary technology should be added to the manufacturing system to reduce labour costs (Dayoub & Korpela 2019) ^[5]. The government should conduct disciplinary action in the certification procedure at a cheaper charge. Simplify the market's complex supply chain so that products can enter the market sooner.

4. Land requirement: India is first in the world in terms of total organic producers and fourth in terms of total certified farmland. It has around 3.7 million ha and total farmland is just 10.17 million ha (APEDA 2023) ^[2], therefore farm allocation among farmers is highly irregular and disorganised.

The government should implement a new scheme in the farming system to invest more cash in farmland, increase and undertake more certified lands for organic farming, and distribute farmland to farmers in an ordered manner (Jouzi *et al.* 2017) ^[8].

5. Market challenges: The most challenging task is getting the products into a competitive market. Because in this conventional society, consumers will buy the majority of things based on their appearance, and conventional products appeared more appealing than organic products. However, attitudes of organic products before and after the COVID-19 epidemic have completely shifted in the global market (Milestad & Darnhofer 2003) ^[12].

To raise consumer awareness, the worldwide organic food industry is expected to grow at a CAGR of 13.7% from \$259.06 billion in 2022 to \$294.54 billion in 2023 (Milestad & Darnhofer 2003) ^[12]. According to Research and Markets, the organic food market in India is expected to rise to \$553.87 million in FY2026, up from \$177.14 million in FY2020, with a CARG of 21% by FY2026.

Impact on livelihood

All projects related to organic farming have a favourable impact on livelihood and capital assets. NGO's and private organisations in developing nations encourage long-term initiatives. Farmers are given proper training and understanding about how to employ modern technologies (Manna *et al.* 2021) ^[11].

By eliminating all chemical compounds used in agriculture, these activities help to increase skills, capacity, and health (Udin 2014) ^[19]. Through training and group certification, it helps to strengthen social networks and credit availability. The most significant advantage is the increase in financial capital due to the price premium.

Organic farming frequently improves human capital by increasing societal skills, knowledge, awareness, and employability. According to a survey, organic projects increase labour opportunities in rural areas. According to a Greenpeace survey in China, the employment rate in organic farming is 30-40% greater than in conventional farming since organic farming requires a large number of labourers and women in the production (Udin 2014) ^[19]. Agriculture and associated sectors employed 54.6% of the total workforce in India, according to the Lok Sabha standing committee (2019-20).

On the other hand, it has a favourable impact on children's schooling. Because of their barbarism and low financial situation, small households will be unable to pay tuition for their children's education (Jouzi *et al.* 2017) ^[8]. Many projects that promote organic agriculture training may enhance parents' interest in their children's schooling (Jouzi *et al.* 2017) ^[8].

Market Analysis

Market analysis is critical for every industry to analyse all elements. There are numerous ways for identifying and analysing all market elements that influence a company's future. SWOT analysis is a market analysis tool or framework that is used to analyse an industry's strengths, weaknesses, opportunities, and threats. It comprises both external (opportunities and threats) and internal (strengths and weaknesses) variables that contribute to an industry's overall position. SWOT analysis in the Organic industry aids in strategic planning based on considerations and staying ahead of market trends.

Strengths: Strength is an intrinsic aspect in every sector. This is a benefit when it comes to making money online. (Aghasafari *et al.* 2020) ^[1]. Industry has already established in this region, which may provide additional support for market development.

Example, India already has the biggest number of organic producers, and this number is steadily expanding, which may assist to enhance the country's overall production. India is the world's largest provider of organic products, accounting for the lion's share of organic exports.

Weakness: Another internal underperforming negative aspect that is bad to any industry is weakness (Aghasafari *et al.* 2020) ^[1]. This will result in market losses. It only helps to improve those initiatives after identifying the issues.

Example – The main drawback of the Indian organic market is low production. Without the use of chemicals, crop failure is more likely, and production is often lower than in traditional farming. Storage facilities in the Indian market are inadequate due to an ineffective management structure. Farmers in rural areas are accustomed to conventional farming and are completely unaware of the organic method.

Opportunities: Opportunities is the external initiatives that

can put the industry in a strong competitive position (Murry *et al.* 2019) ^[13].

Examples – Conducting more awareness programmes among farmers may influence them to adopt farming practises that will improve organic produce. The implementation of new government policies pushes farmers towards organic farming.

Threats: Threats is also an external factors for what a industry should definitely worry about. Because this factor cannot be regulated and it is the main reason for market fall (Tashi & Wangchuk 2016) ^[17].

Examples - Agrochemical businesses are the greatest danger to the organic industry because of their high production rate, cheap maintenance cost, and overall high profit. Irregular rainfall and uncontrollable irrigation due to climate change are also threats to organic industry.

Conclusion

In conclusion, this review paper has underscored the profound significance of organic farming in the contemporary agricultural landscape and its close relationship with market dynamics. Organic farming not only promotes environmental sustainability and biodiversity conservation but also addresses growing consumer concerns about food safety and quality. Through an in-depth market analysis, we have demonstrated that the demand for organic products continues to rise steadily, reflecting a fundamental shift in consumer preferences towards healthier and more environmentally friendly choices. Furthermore, this paper has illuminated the challenges and opportunities inherent in the organic farming sector, emphasizing the need for continued research and policy support to foster its growth. As we move forward, it is evident that the synergy between organic farming practices and market forces will play a pivotal role in shaping the future of agriculture, offering a promising path towards a more sustainable and resilient food system.

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