Journal of Information Systems Engineering and Management

2025, 10(32s) e-ISSN: 2468-4376

https://www.jisem-journal.com/

Research Article

Sustainable Farming - A Case of Abhinav Farmers' Club

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ARTICLE INFO

ABSTRACT

Received: 29 Dec 2024 Revised: 15 Feb 2025

Accepted: 24 Feb 2025

The paper explores the potential benefits of moving to organic farming as well as the challenges faced by Indian farmers due to monocropping practices. Public health and the environment are negatively impacted by intensive farming practices that heavily rely on chemical fertilizers and pesticides because of population growth, industrialization, and increased food demands. The shift to organic farming is still taking its time due to the high upfront costs, low yields, and lack of consumer awareness, even while the demand for organic products is growing. Indian farmers frequently engage in monocropping, which damages the soil and jeopardizes their financial stability. Many small-scale farmers are in debt because of middlemen's low prices. A lot of farmers have killed themselves because of this financial difficulty.

Low prices provided by middlemen cause debt for many small-scale farmers. Many farmers have committed suicide as a result of this financial hardship. By assisting farmers in switching to organic and varied farming practices, the Abhinav Farmers' Club (AFC), established by Mr Dnyaneshwar Bodke, serves as an example of sustainable farming. AFC prioritizes giving farmers a reliable source of income, direct market access, and training. Even with its achievements, the problem still exists: how to strike a balance between farmers' financial demands and the environmental sustainability needed for long-term agricultural health? The difficulties in overcoming financial obstacles, the lack of consumer demand, and the risks of transitioning to organic farming are all covered in the study.

Keywords: Sustainable Farming; Agricultural economy, Organic farming economics.

1. Introduction

Food production systems are under much more pressure to raise crop yields as a result of industrial expansion, modernization, and population growth (Basha et al., 2015). More intensive agricultural methods have been adopted by agriculture as a result of this increase in demand. As a result, chemical pesticides and fertilizers are now widely and carelessly used, which has a detrimental effect on both human health and the environment.

These chemical residues are inadvertently consumed by consumers, endangering their health. One way to lessen these negative consequences is to eat organic food. Customers' growing health consciousness has been driving up demand for organic and functional foods (Rizzo et al., 2023; Migliore et al., 2022). Support for local farmers and the desire for organic products have increased even more because of the COVID-19 outbreak. The use of organic food is still slow in some areas, though, despite these changes.

In the meantime, monocropping is still widely practiced by Indian farmers, which has made their poverty worse. Farmers are frequently unable to repay loans or even pay interest since the prices middlemen pay are insufficient to meet production costs. Many farmers become caught in a vicious loop because of taking out new loans at outrageous interest rates. The terrible occurrence of farmer suicides has been exacerbated by this financial hardship.

2. Farming Practices in India

Small, dispersed land holdings are a defining feature of Indian agriculture, which reduces farmers' ability to compete. The 10th Agricultural Census (2015–16) found that India had 146.45 million hectares of total operational land holdings and 157.82 million hectares of total operating area. 86.2% of all operational assets are marginal or tiny holdings (0–2 hectare). Due to issues with mechanization and the ongoing use of unsustainable practices like monocropping, which degrades land and raises production costs, this fragmentation makes it difficult for farmers to make a living. Inheritance regulations that have caused land to be divided over generations have made the problem worse.

3. What is Mono-Cropping?

Growing a single crop on the same plot of land year after year without switching it up with other crops is known as mono-cropping. Crops like corn, soybeans, and wheat are typical examples. This approach carries long-term economic and environmental hazards, even though it might initially produce steady profits.

4. Disadvantages of Mono-Cropping

Repetitively cultivating the same crop on the same soil reduces the nutrients available to the land, making it less able to support the growth of healthy plants. Farmers are frequently forced to utilize chemical fertilizers as a result of this degradation, which pollutes the environment. Furthermore, the chemical cycle is made worse by a reliance on pesticides. Additionally, monocropping diminishes biodiversity, which is essential for pollination, waste management, and natural pest control. Market prices for commodities frequently decline as more farmers use this strategy, making it harder for them to pay for production and further indebted.

5. The Way Forward

Instead of depending only on monoculture, farmers should diversify their crop production. An alternative that shows promise is organic farming, especially when it comes to satisfying the demands of consumers who are health-conscious. However, because of the high upfront expenses and poorer yields than conventional farming, farmers are frequently reluctant to make the switch. According to Seufert et al. (2012), yields from organic farming can range from 5% to 34% lower than those from conventional farming, and organic practices often include more work and higher costs for disease and pest control.

6. Barriers to Buying Organic Foods

Despite international campaigns to promote organic food, a number of obstacles prevent consumers from adopting it. One of the main causes of avoiding organic food is ignorance (Demeritt, 2002). High costs, limited supply, mistrust, and customer dissatisfaction with traditional products are additional frequent barriers (Biemans, 2011). For example, customers in Germany mention quality, availability, and price as reasons why they don't buy organic foods (Buder, 2014). Consumption of organic food is also limited in Malaysia by a lack of government support and information gaps (Ahmad, 2010). Higher-income groups are more likely to buy organic foods, although price is still a significant barrier (Pham, 2019).

7. Dnyaneshwar Bodke: A Progressive Farmer

Born into a farming family in Man, Tal Mulshi, Dist Pune, Dnyaneshwar Bodke observed that his family's monocropping caused them to suffer with poverty even though they had 10 acres of land. In order to make finances meet, his parents frequently worked as workers on other farms. Dnyaneshwar moved to Pune after dropping out of school in the tenth grade. He first worked as an office boy there before going on to become an interior designer. But he didn't find this existence fulfilling.

Dnyaneshwar made the decision to become a farmer after reading a news report about a farmer in Sangli who made Rs. 12 00,000(1\$=Rs 88) a year from just 10 gunthas (1 guntha = 1000 sq ft). He received one year of instruction in contemporary farming, with a particular emphasis on polyhouse/greenhouse technology, and then another year of hands-on training. In the end, he used his personal funds and a Rs. 10,00,000 (1\$=Rs 88) bank loan to establish a polyhouse and cultivate flowers. Dnyaneshwar was able to sell flowers at a high price and pay back his loan in two years by determining market demand prior to harvesting and focusing on the Delhi market.

8. The Birth of Abhinav Farmers' Club (AFC)

Dnyaneshwar was motivated to assist other farmers in escaping poverty by his own accomplishment. About 300 farmers joined him in forming the Abhinav Farmers' Club (AFC) with the goal of supplying flowers to the Pune-Delhi market after he introduced polyhouse farming to his neighbours. However, the industry was upset by the rise of Chinese artificial flowers by 2005, and AFC's membership fell to just 23.

AFC responded by concentrating on producing organic veggies and supplying Magnet Hypermarket with them. Dnyaneshwar learned from the experience that direct sales to clients generate higher profits, even when competition from other suppliers caused AFC to discontinue supplying Magnet. He then created an integrated organic farming approach that allows customers to purchase fresh, packed produce directly from him.

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----Annexure -1

9. AFC's Marketing Model and AFC's Sales and Distribution Model

To identify themselves and hand out fliers about their organic vegetables, AFC members go around gated communities. In order to inform locals about the advantages of eating organic food, they regularly give product demos. Residents place repeat orders if they enjoy the merchandise. After receiving initial backing from NABARD, AFC has reached many residential communities.

AFC operates through a network of farmer groups across the country. Each group is led by a head farmer who manages orders via an app called "Abhinav Cart." Farmers prepare and deliver fresh produce to a central packing facility, where items are graded, packed, and dispatched to customers. Deliveries occur twice a week, ensuring fresh produce is delivered directly to consumers' doorsteps.

10. AFC's Mission and vision

The mission of AFC is to supply organic produce directly to households, ensuring that consumers have access to fresh, healthy, and sustainable food options. The organization also focuses on mobilizing small and marginal farmers by organizing them into farmer groups, enabling them to collectively benefit from shared resources and knowledge. A key goal is to raise awareness about protective cultivation practices for small landholders, which helps farmers optimize their land usage while maintaining ecological balance. AFC also prioritizes providing comprehensive training to farmers on organic farming techniques and dairy management, empowering them to adopt sustainable practices. Additionally, the organization works to manage production schedules based on consumer demand, ensuring a steady supply of organic products that align with market needs. Through these efforts, AFC strives to improve the livelihoods of farmers and promote healthier, eco-friendly farming practices.

AFC envisions a future where both farmers and consumers are highly aware of the benefits and importance of organic farming. The organization seeks to ensure that farmers can earn a sustainable income of Rs. 1,000 per day from at least one acre of land, thus improving their financial stability and quality of life. Furthermore, AFC aims to foster stronger relationships between urban and rural communities, bridging the gap between consumers and the farmers who supply their food. Another key aspect of AFC's vision is to empower women by supporting self-help groups (SHGs) in farming, providing them with the resources, training, and opportunities needed to thrive in agriculture. Through these initiatives, AFC strives to create a more sustainable, inclusive, and interconnected agricultural ecosystem.

11. AFC's Organizational Development and AFC's Growth

AFC places a strong emphasis on capacity building and knowledge-sharing as part of its organizational development efforts. To equip aspiring farmers with the necessary skills and expertise, the organization conducts comprehensive two-day training sessions. These sessions are designed to cover key areas essential for successful farming in today's market, focusing on organic farming, poly-house management, dairy management, and direct marketing.

The training on **organic farming** educates farmers on sustainable agricultural practices, such as soil health management, pest control without chemicals, and the importance of crop rotation to enhance yields in an eco-friendly manner. The **poly-house management** segment introduces farmers to modern farming techniques that use controlled environments to grow high-value crops like vegetables and flowers. This technique helps ensure a steady, high-quality production regardless of external weather conditions. The **dairy management** module addresses the critical aspects of maintaining healthy livestock, including nutrition, breeding, and disease management, empowering farmers to expand into dairy production and improve their livelihoods.

In addition, AFC provides essential training on **direct marketing**, teaching farmers how to sell their produce directly to consumers, bypassing intermediaries and thereby securing better profits. This approach empowers farmers to build relationships with buyers and establish direct sales channels, which is crucial for maximizing income. Overall, these training sessions aim to improve the practical skills of farmers, helping them embrace modern, sustainable practices while also boosting their business acumen, ultimately fostering the growth of successful, self-reliant farming communities.

Abhinav Farmers' Club (AFC) has made remarkable strides in establishing a robust and expansive network, growing its presence nationally with over 156,000 certified organic farmers spread across multiple states. This widespread reach has allowed AFC to become a key player in the organic farming landscape in India, contributing significantly to the livelihoods of countless farmers and creating a sustainable model for agricultural growth.

One of the key factors behind AFC's impressive expansion is its ability to scale up operations while maintaining the core principles of sustainability and community empowerment. The club's turnover has witnessed an extraordinary rise, growing from an initial Rs. 1 million(1\$= Rs 88) to over Rs. 1,00 million. This exponential growth reflects the increasing demand for organic produce and the effectiveness of AFC's approach in meeting that demand.

AFC's adoption of **modern farming techniques** like polyhouses and greenhouses has been central to this growth. These advanced methods enable farmers to grow crops in controlled environments, protecting them from the adverse effects of unpredictable weather and environmental factors. This practice ensures a consistent and high-quality yield, which is vital for maintaining income stability. Polyhouses and greenhouses also allow farmers to cultivate a variety of crops that would otherwise be difficult to grow due to climatic limitations, opening up new avenues for income generation.

Furthermore, AFC's focus on **diversification** and **market-driven production** has helped farmers maintain steady incomes. By aligning their farming practices with consumer demand and market trends, AFC ensures that its members produce crops that are both in demand and of high quality. The growth of AFC's turnover is a testament to its ability to adapt to market changes and empower its farmers with the tools and knowledge needed to succeed in an increasingly competitive agricultural market.

In essence, AFC's growth has been fuelled by a combination of strategic leadership, innovation in farming practices, and a commitment to improving the economic well-being of its members, positioning it as a leader in India's organic farming sector. Annexure -2 gives detailed information on sales and profit

12. Application of theories to case for discussion:

Several theories can be applied to explain the complexities and challenges associated with the transition from monocropping to organic farming in India, as discussed in the paper:

12.1 Theory of Sustainable Development

According to this theory, development processes must balance social, economic, and environmental factors. It aids in elucidating the necessity for agricultural systems to satisfy present demands without jeopardizing the capacity of future generations to satisfy their own. The Abhinav Farmers' Club (AFC) is a prime example of the shift from monocropping to organic farming, which is consistent with sustainable development ideals by encouraging ecologically friendly farming methods and resolving farmers' financial difficulties.

12.2. Diffusion of Innovations Theory (Everett Rogers)

Theory describes how new concepts, methods, or technologies proliferate across cultural boundaries. Here, the switch to organic farming from monocropping is an example of innovation. The AFC's concept serves as an example of how

farmers may embrace advances such as organic farming through community-based support structures, social networks, and training. But the idea also points out obstacles to implementing organic farming methods, like hefty upfront expenditures and farmers' aversion to change.

12. 3. Social Capital Theory

The importance of social networks, connections, and trust in promoting collaboration and group action is the main focus of social capital theory(Agarwal et al,2023). By encouraging community-based cooperation and giving farmers access to pooled resources, markets, and knowledge, the AFC helps farmers harness social capital, which helps explain its success. This idea explains how group efforts can lower personal risks and make the shift to more sustainable farming methods go more smoothly.

12. 4. Rural Transformation Theory

This theory examines how rural communities undergo change, with a focus on how agricultural practices are altered by social, technological, and economic shifts. It fits in nicely with the Indian agricultural context, where traditional farming practices present difficulties for small-scale farmers. In addition to addressing the socioeconomic difficulties farmers confront, AFC's initiatives to diversify crops and implement organic farming methods are a revolutionary step in halting environmental damage.

13.Methods

The study examined the difficulties faced by Indian farmers who practice monocropping and their possible switch to organic farming using a mixed-methods approach. To comprehend the larger context and current findings, a thorough assessment of the literature on organic farming, monocropping, and the socioeconomic effects on farmers was first carried out (Basha et al., 2015; Rizzo et al., 2023). Insights about land holdings and farming practices in India were obtained through the analysis of secondary data from government papers, including the 10th Agricultural Census (2015–16).

Case studies of the Abhinav Farmers' Club (AFC) were investigated in order to evaluate the efficacy of organic farming practices. Mr Dnyaneshwar Bodke and other AFC farmers were interviewed in order to get primary data about their experiences switching to organic farming. The practical difficulties, advantages, and obstacles to organic farming—such as costs, labor needs, and market dynamics—were the main topics of these interviews.

Customers were also given a survey to determine their awareness and preferences about organic food, emphasizing the obstacles to adoption. Ultimately, a qualitative analysis of the survey responses and interviews was carried out in order to pinpoint important themes and offer useful suggestions for resolving the environmental and financial difficulties that farmers encounter.

14. The dilemma:

It revolves around the challenge of balancing the economic pressures on farmers with the environmental sustainability needed for long-term agricultural health.

Indian farmers must decide whether to stick with monocropping, which has historically been their main farming method, or switch to more varied, organic farming methods that promise ecological benefits but come with higher upfront costs, more labour inputs, and the potential for short-term yield reductions.

Monocropping can be profitable in the short term, but it depletes the soil, increases expenses because of the heavy reliance on chemical pesticides and fertilizers, and has poor long-term sustainability, frequently locking farmers in a vicious circle of debt, poverty, and environmental degradation. However, switching to organic farming can have more environmentally friendly and sustainable results, but there are drawbacks as well, like high upfront expenses, poorer yields, and a lack of consumer knowledge about the advantages of eating organic food.

As a result, AFC must balance assisting farmers in escaping poverty and implementing more sustainable agricultural practices with making sure they can continue to make a profit while doing so. Overcoming obstacles like low consumer demand for organic produce, the financial risks associated with making the switch to organic practices, and farmers' ignorance of contemporary farming methods that could boost their income and productivity are some of the challenges in closing this gap.

One potential solution is offered by AFC's approach of offering training, market connections, and assistance for sustainable methods; nevertheless, the problem still stands: how can we motivate farmers to make the initial transition to organic farming without risking financial ruin? The sluggish adoption of organic foods in some regions, where consumer demand does not yet completely support the shift, exacerbates this. Therefore, the challenge is in figuring out how to make organic farming a sustainable and profitable option for farmers while making sure that consumer awareness and demand for organic produce increase simultaneously.

15. Assignment Questions:

- 1. Why is mono-cropping not a good option for ensuring the prosperity of farmers?
- 2. How can awareness about organic foods be increased among consumers?
- 3. What is your opinion on the production, marketing, sales, and distribution practices of AFC?
- 4. Create a plan to bring more farmers under the aegis of AFC.

16.Contribution:

By stressing the financial and environmental difficulties farmers confront, the study helps readers comprehend the nuances of India's shift from monocropping to organic farming. It highlights the detrimental effects of intensive agricultural methods, which frequently result in a cycle of poverty and even suicides. These effects include soil erosion, reliance on chemical fertilizers, and farmer debt. The study also lists the drawbacks of switching to organic farming, including large upfront expenses, poorer returns, and little consumer awareness.

The Abhinav Farmers' Club (AFC) case study serves as an example of a successful transition to sustainable farming practices in this paper. AFC is a key example of how farmers may increase their financial stability and environmental impact by offering training, direct market access, and assistance in implementing diverse, organic agricultural practices.

The study suggests that a mix of support networks, education, and community-based projects could help close the gap for farmers thinking about switching to organic farming. It does this by providing useful insights into overcoming obstacles like low consumer demand and financial risks. The study concludes by highlighting the necessity of concerted efforts from farmers, buyers, and market intermediaries to guarantee that organic farming emerges as a competitive and sustainable substitute in India's agricultural industry.

Declaration

Funding: Not applicable as there was no funding Conflict of interest/Competing interests: The author states that there is no conflict of interest. There is no funding and research is only for academic interest

Ethics Approval: This is a academic paper and as per university norms it is not applicable Consent letter is taken. Consent for publication: It has been taken.

Data Availability: All data available

Author Contribution: Both authors have jointly worked on the paper. It is 50% Writing of Manuscript - Dr Srivastava, Data: Dr Koshti

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Annexure 1

Profile of the organization

Abhinav Farmers Club is a national award winning group for organic farming initiative located in Mulshi Taluka, of Pune district of Maharashtra a state in India.

The Club was started by Mr.Dnyaneshwar Bodke, who is its chief volunteer also. The club started with 11 farmers in Maharashtra cultivating about 153 hectares of land & set up as on 15 August 2004. It was conceptualised by National Bank for Agriculture and Rural Development (NABARD) and ATMA (Agriculture Technology Management Agency).

Now, the club has national presence with more than 1,56,000 farmers who follow the practice of organic farming and use only deshi cows' dung, cow urine & Nimastra to grow the crop. We are certified organic farmers belonging to the states of Maharashtra, Madhya Pradesh, Gujarat , Uttar Pradesh, Andhra Pradesh, Karnataka and Telangana . They have received a national award for its activities in 2008.

Traditional farming compelled the farmers to wait for the required weather conditions to start farming. But, not to fully depend on the open cultivation only, Abhinav Club follow the practices of Greenhouses and Polytunnels too at least on small part of farm area to get assured income in worse and unfavourable climate conditions. Hence all farmer members are able to control the conditions in which the crops grow. That's the reason why the farmers are able to excel as they don't have to depend on nature for the right time to begin.

To understand the market and logistics, Club decided to market agricultural products directly to customer instead of relying on the middlemen and follow the practice of door-to-door home delivery all over Maharashtra.

Hence by using online platform and by developing mobile app "ABHINAV CART" for order taking process to serve customer better, Abhinav Farmers club provide home delivery of organic vegetables, fruits, grains and pulses, A2 milk and dairy products over 3 lacks household customers all over Maharashtra.

Proper packaging ensures that the products remain fresh and reach their destinations without any damage. The farmers are trained in the appropriate methods of sowing, planting, and handling the produce.

Organized farming has helped the club member farmers in not only clearing debts but also earning handsomely. Every farmer in the group earns around Rs. 1,000 to Rs. 2,000 per day. There are farmers who earn Rs 3,000 to 5,000 a day. Of course, they work by the sweat of their brows. It's a tough day from 7 am to 10 pm and still they have no complaints. They are ready to work harder. All they seek is a fair deal. They are implementing such project spread across India with the farmers groups. So, the life of the farmers is elevated (both financially and health wise) as a result this project and all these farmers are leading happy and satisfied life(https://www.abhinavfarmers.club/about).



Annexure 2
Performance of Abhinav Farmers' Club

| Year | No. of farmer members of the club | Turnover of the club in Rs Cr |
|---------|-----------------------------------|-------------------------------|
| 2021-22 | 1 lakh | 700 |
| 2022-23 | 1.3 lakh | 850 |
| 2023-24 | 1.56 lakh | 1,000 |

The sales proceeds go directly into the accounts of the individual farmers, and not in the accounts of the club.