
“The Impact of Agro-Processing Units on the Financial Condition of Farmers: A Case Study of Sataras District, Maharashtra”.

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Abstract

This study investigates the impact of agro-processing units on the financial condition of farmers in Satara District, a prominent agricultural region in Maharashtra, India. The district is known for its production of fruits (especially grapes and strawberries), sugarcane, and dairy, supported by a network of processing units like sugar factories, dairy cooperatives, and wineries. The primary objective was to analyze the effect of these linkages on farmers' income, price stability, and overall financial risk. A descriptive research design was employed, collecting primary data from 40 farmers through a structured questionnaire. Secondary data was gathered from district agricultural offices and published reports. Findings indicate that farmers linked with agro-processing units experience significantly higher and more stable incomes, better access to inputs and credit, and reduced market risks compared to their non-linked counterparts. However, challenges such as delayed payments and quality standards persist. The study concludes that agro-processing units play a vital role in enhancing farmers' financial conditions and recommends policy interventions to strengthen these linkages further.

Keywords: Agro-processing, Farmers' Income, Financial Condition, Satara District, Contract Farming, Agricultural Marketing.

1. Introduction

Indian agriculture is characterized by small and marginal landholdings, making farmers vulnerable to market fluctuations and price volatility. Agro-processing, which involves transforming raw agricultural produce into value-added products, is recognized as a crucial strategy for rural industrialization, employment generation, and increasing farmers' income. By providing a ready market, ensuring price stability, and reducing post-harvest losses, agro-processing units can significantly improve the financial security of farmers. Satara district presents an ideal case study due to its diverse agricultural base and the presence of major agro-processing industries, including the renowned Sahyadri Farmers Producer Company (FPC), several sugar cooperatives, dairy plants, and a growing number of wineries.

2. Review of Literature

Previous studies consistently highlight the positive correlation between agro-processing and farmer welfare. Deshpande & Bapna (2018) found that sugarcane farmers in Maharashtra attached to sugar cooperatives had higher and more stable incomes. Similarly, studies on dairy cooperatives (Sharma, 2020) emphasize their role in ensuring regular cash flow for livestock owners. However, Kumar & Singh (2019) point out issues like monopolistic behavior and delayed payments in some contract farming models. This study builds on existing literature by providing a contemporary, multi-crop analysis specific to the dynamic agricultural landscape of Satara district.

Dhar and Lydall (1961) et.al on “Role of Small Enterprises in India’s Economic Development”. He evaluates the role of small enterprises in India’s economic development, particularly in terms of employment-oriented industrialization, and to examine capital, labor, and output relationships across industries. The study analyzed data from the Census of Indian Manufactures (1956) and a study by the Perspective Planning Division of the Planning Commission, focusing on capital, labor, and output dynamics in various industries.

Prasad (1983) in his study found that the small scale industrial sector is an integral part of not only the industrial sector, but also of the country’s economic structure as a whole. If small scale industries are properly developed, they can provide a large volume of employment, can raise income and standard of living of the people in lower income group and can bring about more prosperity and balanced economic development. Small scale industrial sector has vast potential in

terms of creating employment and output, promotion of export, expansion of base for indigenous entrepreneurship and dispersal of industries and entrepreneurship skills in both rural as well as backward areas.

Rajendran (1999) made a study to examine the various kinds of assistance given to small scale industries with the prime objective of identifying institutional assistance for the development of small scale industries and the problems faced by these industries in Tiruchirapalli district of Kerala. He concluded that the greatest problem faced by the small entrepreneurs was non availability of adequate financial assistance. Moreover, the small enterprises also face problems relating to the acquisition of raw material, marketing of products and technological and administrative problems. There were complicated procedures in availing loans from financial institutions and there is no coordination between the promotional institutions and government agencies.

3. Statement of the Problem:

Despite the establishment of agro-processing units in Satara district, which are expected to enhance farmers' income, reduce post-harvest losses, and create employment opportunities, the actual impact on the financial condition of farmers at the ground level remains unclear. There is a lack of systematic and empirical assessment to determine how effectively these units contribute to improving farmers' economic well-being, addressing challenges, and supporting sustainable agricultural development. This study seeks to bridge this gap by evaluating the real financial outcomes for farmers associated with agro-processing units in the district.

4. Objectives:

1. To assess the impact of agro processing unit on the Financial Condition of Farmers in Satara district.
2. To compare the income levels and stability of farmers linked with agro-processing units versus those who are not.

5. Hypotheses:

H1: There is a significant positive difference in the average annual income of farmers linked with agro-processing units compared to non-linked farmers.

H2: Farmers linked with processing units experience greater price stability for their produce.

6. Research Methodology

The study was conducted in Satara district, Maharashtra, focusing on two talukas Wai Karad and Phaltan where agro-processing units are highly concentrated. A descriptive and analytical research design was adopted. Primary data were collected through a field survey, while secondary data were

obtained from the District Agriculture Office, NABARD, and published journals. A multi-stage random sampling technique was employed, with a pilot survey conducted on a sample of 40 farmers to refine the questionnaire and methodology. For the main study, 40 farmers having supply agreements with agro-processing units were randomly selected, along with a control group of 40 farmers from the same region who sold primarily in APMCs or to local traders. Data were collected using a pre-tested, structured questionnaire covering demographics, landholding, crops grown, annual income, marketing patterns, and farmers' perceptions regarding agro-processing units. Data was analyzed using SPSS software. Descriptive statistics (mean, standard deviation) were used for profiling. Inferential statistics, including an independent samples t-test, were used to compare the two groups of farmers and test the hypotheses.

7. Data Analysis, Results, and Discussion

The descriptive statistics provide a preliminary understanding of the impact of agro-processing units on the financial condition of farmers in Satara district. The table presents the number of respondents (N), mean values, and standard deviations for key financial parameters, including annual income, crop yield, marketing efficiency, and profitability. These statistics help summarize the central tendency and variability of the data, offering insights into how engagement with agro-processing units may influence farmers' economic outcomes compared to those who sell primarily through traditional channels. This analysis forms the foundation for further inferential statistical tests to assess the significance of observed differences.

Table:

Descriptive Statistics of the impact of agro processing unit on the Financial Condition of Farmers

S.N	Financial Factors	N	Mean	Std. Dev.
V1	How much of your annual income is influenced by agro-processing units?	40	3.17	1.43
V2	Do you feel economically empowered by associating with agro-processing units?	40	3.47	1.13
V3	How has your savings pattern changed after working with agro-processing units?	40	2.90	1.53
V4	What percentage of your income is reinvested into farming due to agro-processing benefits?	40	3.10	1.21
V5	Do agro-processing units provide financial assistance or credit facilities?	40	4.10	.67
V6	How do agro-processing units affect your borrowing needs?	40	2.60	1.42
V7	Has your financial planning improved after associating with agro-processing units?	40	3.45	1.03

V8	How reliable are the payments made by agro-processing units?	40	2.90	1.53
V9	Do agro-processing units help you mitigate market risks?	40	3.77	.919
V10	Agro-processing units have increased in number in my area over the past 5 years.	40	4.22	1.04
V11	Agro-processing units are actively engaged in purchasing farm produce directly from farmers.	40	4.27	.84
V12	The presence of agro-processing units has improved market linkages for agricultural produce.	40	4.50	.679
V14	I now receive better prices for my farm produce compared to earlier years.	40	4.025	.69
V15	The price I get for my produce is more stable and predictable due to agro-processing units.	40	4.32	.615

Source: Primary data

The descriptive statistics indicate that agro-processing units have had a generally positive impact on the financial condition of farmers in Satara district, though with some variations across different parameters. Farmers reported relatively high agreement on factors such as better market linkages (Mean = 4.50, SD = 0.679), active procurement by agro-processing units (Mean = 4.27, SD = 0.84), and more stable and predictable prices (Mean = 4.32, SD = 0.615), highlighting the crucial role these units play in strengthening market access and income stability. Similarly, financial support through credit facilities (Mean = 4.10, SD = 0.67) and economic empowerment (Mean = 3.47, SD = 1.13) suggest tangible benefits. However, areas such as changes in savings patterns (Mean = 2.90, SD = 1.53), payment reliability (Mean = 2.90, SD = 1.53), and reduced borrowing needs (Mean = 2.60, SD = 1.42) reveal moderate or mixed outcomes, reflecting that not all farmers experience uniform financial advantages. Overall, the findings suggest that while agro-processing units significantly enhance price realization, market linkages, and economic empowerment, challenges remain in ensuring consistent payment reliability, improved savings behavior, and reduced dependency on external borrowing. Agro-processing units in Satara district have positively influenced farmers' financial conditions by improving market linkages, stabilizing prices, and providing better income opportunities. However, challenges such as inconsistent payment reliability and limited impact on savings and borrowing patterns indicate the need for stronger institutional support and financial integration.

7.1. Impact on Financial Indicators:

1. **Income Level:** The average annual income of farmers linked to processing units was significantly higher (₹4.5 lakhs) than that of non-linked farmers (₹2.8 lakhs). The t-test confirmed that this difference was statistically significant (t-value = 5.23, $p < 0.01$), leading to the acceptance of **H1**.
2. **Price Stability:** Linked farmers reported minimal fluctuation in the price they received, as most had pre-agreed prices. Non-linked farmers faced high volatility, especially for perishables like tomatoes and grapes. This supports **H2**.
3. **Cost and Risk Reduction:** Linked farmers benefited from timely supply of quality inputs (seeds, fertilizers) and technical guidance from the processing companies, leading to better yields and reduced risk of crop failure.

Table 2:
Comparative Analysis of Key Financial Parameters

Parameter	Farmers Linked with Units	Non-Linked Farmers
Average Annual Income (₹)	450,000	280,000
Standard Deviation of Income (₹)	55,000	120,000
Incidence of Post-Harvest Loss (%)	5%	15%
Satisfaction with Price Received (Scale 1-5)	4.2	2.8

8. Findings of the study

1. Farmers associated with agro-processing units' experienced better price realization, stable income, and stronger market linkages compared to those selling through traditional APMCs or local traders.
2. Despite economic benefits, issues such as irregular payments, limited changes in savings patterns, and continued dependence on external borrowing highlight the uneven financial impact of agro-processing units.

9. Suggestions

1. **Promote FPOs/FPCs:** The government should actively facilitate the formation and strengthening of Farmer Producer Organizations to improve farmers' bargaining power.
2. **Infrastructure Development:** Invest in cold storage chains and packhouses near processing units to minimize post-harvest losses further.
3. **Transparent Contracts:** Ensure legal frameworks for fair contract farming agreements that protect farmers from unfair practices and ensure timely payments.

4. **Skill Development:** Train farmers to meet the quality standards required by processing industries.

10. Conclusions of the study

The study concludes that agro-processing units play a significant role in improving the financial condition of farmers in Satara district by offering better price realization, strengthening market linkages, reducing market risks, and creating opportunities for economic empowerment. Farmers associated with these units reported higher levels of financial stability and improved planning, though challenges such as inconsistent payment systems, limited influence on savings patterns, and continued reliance on borrowing remain evident. Overall, agro-processing units have emerged as a vital driver of rural economic development, but their long-term effectiveness depends on addressing financial bottlenecks, enhancing institutional support, and ensuring inclusive participation of all categories of farmers.

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