

Agricultural Marketing Challenges and Emerging Opportunities Among Rural Farmers: An Empirical Study of Keonjhar District

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Abstract

Agricultural marketing plays a crucial role in enhancing farmers' income, strengthening rural livelihoods, and promoting sustainable agricultural development. The present study examines the major challenges and emerging opportunities in agricultural marketing among rural farmers in Keonjhar district of Odisha. The study is based on both primary and secondary data. Primary data were collected from 211 farmer respondents through a structured questionnaire during the M.Phil. field survey conducted in 2019. Secondary data were collected from official reports of the Government of Odisha, Directorate of Economics and Statistics, Odisha Economic Survey, and Department of Agriculture & Farmers' Empowerment updated up to 2025–26. Statistical tools such as descriptive statistics, percentage analysis, reliability analysis, and regression analysis were used for interpretation of data. The findings reveal that inadequate storage facilities, transportation problems, lack of market access, price fluctuation, and low awareness regarding government schemes continue to affect rural farmers. At the same time, digital marketing platforms, Farmer Producer Organizations (FPOs), irrigation expansion, crop diversification, and government welfare schemes are creating significant opportunities for agricultural development in Keonjhar district. The study suggests strengthening market infrastructure, cold storage facilities, farmer awareness, and digital agricultural systems to improve agricultural marketing efficiency and farmers' welfare.

Keywords: Agricultural Marketing, Rural Farmers, Keonjhar District, Government Schemes, Agricultural Development.

1. Introduction

Agriculture is one of the most important sectors of the Indian economy and contributes significantly to employment generation, food security, and rural development. In Odisha, agriculture continues to be the primary source of livelihood for a large section of the rural population. Agricultural marketing forms an essential component of the agricultural system because it facilitates the movement of agricultural products from producers to consumers through various marketing channels.

Agricultural marketing includes activities such as assembling, grading, transportation, storage, financing, risk management, and distribution of agricultural produce. Efficient agricultural marketing systems help farmers obtain fair prices, reduce post-harvest losses, and improve overall agricultural profitability. However, farmers in rural and tribal regions continue to face several marketing-related problems such as inadequate infrastructure, lack of storage facilities, transportation difficulties, price instability, middlemen exploitation, and low awareness regarding modern agricultural practices.

Keonjhar district of Odisha is predominantly agrarian in nature where farmers cultivate crops such as paddy, maize, pulses, vegetables, and oilseeds. Although agricultural production has improved in recent years due to government support schemes and irrigation development, marketing inefficiencies continue to affect farmers' income and economic security. Climate variability, irregular rainfall, and inadequate irrigation facilities further intensify agricultural uncertainty in the district.

According to recent official agricultural statistics, paddy production in Keonjhar district increased from 405,646 metric tons in 2018–19 to 515,701 metric tons in 2023–24. Maize cultivation also increased substantially during the same period due to rising market demand and improved irrigation support. Despite these improvements, rural farmers continue to experience marketing-related constraints and low bargaining power.

The Government of Odisha and the Government of India have implemented several agricultural welfare schemes to strengthen farmers' income and agricultural productivity. Earlier schemes such as KALIA and Mukhyamantri Krushi Udyog Yojana (MKUY) played significant roles in agricultural support during the previous policy period. However,

after the administrative changes in Odisha in 2024, several agricultural welfare programs were revised and replaced with updated policy frameworks such as:

- CM-KISAN Yojana
- PM-KISAN Samman Nidhi
- PM Fasal Bima Yojana (PMFBY)
- Samruddha Krushak Yojana
- Krushi Vidya Nidhi Yojana
- Soura Jalnidhi Yojana

These schemes provide direct financial assistance, crop insurance, irrigation support, educational assistance, and market-related incentives for farmers.

The present study attempts to examine the major agricultural marketing challenges and emerging opportunities among rural farmers in Keonjhar district of Odisha.

2. Literature Review

Acharya (2016) examined agricultural marketing systems in India and highlighted that infrastructure development, market reforms, and institutional support are essential for improving marketing efficiency and farmers' income.

Ajani (2015) emphasized the role of agricultural development programs in reducing rural poverty and unemployment through farmer empowerment and agricultural entrepreneurship.

Mohanty (2016) studied agricultural credit systems in Odisha and observed that lack of awareness and low literacy levels restrict farmers' access to institutional credit facilities.

Mishra (2015) analyzed agricultural marketing infrastructure in India and concluded that inadequate transportation, poor storage facilities, and absence of regulated markets significantly reduce farmers' profitability.

Nayak (2016) examined the role of Information and Communication Technology (ICT) in agricultural marketing and observed that digital platforms can improve market access, reduce middlemen involvement, and enhance price transparency.

Recent studies on Odisha agriculture indicate that Farmer Producer Organizations (FPOs), digital marketing systems, irrigation expansion, and cold chain infrastructure are gradually improving agricultural commercialization and rural entrepreneurship.

3. Research Gap

Most previous studies have focused on agricultural marketing issues at the national and state levels. However, limited empirical research has specifically examined agricultural marketing challenges and emerging opportunities among rural farmers in Keonjhar district of Odisha.

Existing studies also provide inadequate attention to:

- Farmers' perception regarding modern agricultural marketing,
- Impact of government welfare schemes,
- Digital agricultural marketing systems,
- Agricultural entrepreneurship opportunities, and
- Official agricultural production trends in Keonjhar district.

The present study attempts to fill this research gap through empirical analysis based on primary and updated secondary data.

4. Objectives of the Study

The major objectives of the study are:

1. To assess the demographic and financial condition of rural farmers in Keonjhar district.
2. To analyze farmers' perceptions regarding modern agricultural marketing practices and technological adoption.
3. To examine the impact of government incentives on agricultural growth.
4. To identify the major challenges faced by rural farmers in agricultural marketing.
5. To analyze emerging opportunities in agricultural marketing and rural entrepreneurship.
6. To evaluate recent agricultural production trends in Keonjhar district using official statistics.

5. Hypothesis

H0: There is no significant relationship between agricultural growth and government incentives.

H1: There is a significant relationship between agricultural growth and government incentives.

6. Research Methodology

6.1 Nature of the Study

The study is empirical and analytical in nature, based on field-level investigation and statistical evaluation of farmers' responses in Keonjhar district.

6.2 Sources of Data

Both primary and secondary data were used for the study.

Primary Data

Primary data were collected from 211 farmer respondents in Keonjhar district through a structured questionnaire and personal interviews conducted during the M.Phil. field survey in 2019.

Secondary Data

Secondary data were collected from:

- Directorate of Economics and Statistics, Government of Odisha
- Odisha Economic Survey (latest editions up to 2025–26)
- Department of Agriculture & Farmers' Empowerment, Government of Odisha
- Government policy reports and official publications
- Published research articles and journals

6.3 Sampling Technique

Non-probability sampling technique (convenience and purposive sampling) was used for selecting respondents from different villages of Keonjhar district.

6.4 Statistical Tools Used

The following statistical tools were applied for data analysis:

- Percentage analysis
- Descriptive statistics (mean, frequency distribution)
- Reliability analysis (Cronbach's Alpha)
- Regression analysis (to test relationship between variables)

7. Data Analysis and Interpretation

7.1 Reliability Analysis

The reliability of the questionnaire was tested using Cronbach's Alpha.

Cronbach's Alpha	Number of Items
0.992	28

The Cronbach's Alpha value of 0.992 indicates a very high level of reliability and internal consistency of the questionnaire.

7.2 Demographic Profile

Table 1: Demographic Profile of Respondents (N = 211)

Sl. No.	Variables	Categories	Percentage (%)
1	Gender Distribution	Male	61.1
		Female	38.9
2	Educational Qualification	Illiterate	34.6
		Undergraduate	31.8
		Graduate	15.2
		Postgraduate	12.3
		Others	6.2
3	Age Distribution	Below 20 Years	17.1
		20–40 Years	32.2
		40–60 Years	35.5

		Above 60 Years	15.2
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Source: Field Survey Data, Keonjhar District, Odisha, 2019.

Interpretation

The demographic analysis indicates that male respondents constituted 61.1% of the total sample, while female respondents accounted for 38.9%. The educational profile reveals that 34.6% of respondents were illiterate, indicating low educational attainment among rural farmers. The majority of respondents belonged to the age group of 40–60 years, reflecting the dominance of middle-aged farmers in agricultural activities.

7.3 Financial Condition

Table 2: Annual Income of Farmers

Annual Income	Number of Respondents
Below Rs. 1 lakh	127
Rs. 1–2 lakh	41
Rs. 2–3 lakh	20
Above Rs. 3 lakh	23

Source: Field Survey Data, Keonjhar District, Odisha, 2019.

Interpretation

The study found that a majority of farmers have low annual income levels. More than 60% of respondents earn below Rs. 1 lakh annually, indicating low profitability and heavy dependence on traditional agricultural practices. Limited market access, inadequate infrastructure, and price fluctuation significantly affect farmers' economic conditions.

7.4 Farmers' Perception on Modern Agricultural Marketing

The study analyzed farmers' perceptions regarding technological adoption, online marketing, cold storage facilities, and government support systems.

The findings indicate that farmers are gradually developing positive attitudes toward modern agricultural marketing systems. Respondents believed that modern agricultural technologies can improve productivity, reduce labor dependency, and strengthen market connectivity.

Farmers perceived the following benefits from technological adoption:

- Increase agricultural productivity
- Improve crop quality
- Reduce production costs
- Improve access to market information
- Minimize post-harvest losses
- Increase profitability

The study further revealed that online agricultural marketing platforms are considered beneficial for reducing middlemen exploitation and improving direct market access. Farmers believed that digital platforms such as e-NAM can provide wider market accessibility, better price transparency, and improved communication with buyers.

Respondents strongly supported the establishment of cold storage facilities because inadequate storage infrastructure leads to distress sales and post-harvest losses.

The study also observed increasing awareness regarding government schemes such as:

- CM-KISAN Yojana
- PM-KISAN Samman Nidhi
- PMFBY
- Samruddha Krushak Yojana
- Saura Jalnidhi Yojana

However, respondents reported several barriers including low digital literacy, poor internet connectivity, procedural complexity, and lack of awareness regarding government benefits.

7.5 To examine the relationship between agricultural growth and government incentives through regression analysis.

Regression analysis was conducted to examine the relationship between agricultural growth and government incentives.

Table 3: Regression Statistics

Particulars	Value
Multiple R	0.884
R Square	0.782
Adjusted R Square	0.777
Standard Error	0.16767
Significance Value (p-value)	0.000

Source: Field Survey Data, Keonjhar District, Odisha, 2019.

Interpretation

The regression analysis reveals a strong positive relationship between agricultural growth and government incentives. The R Square value of 0.782 indicates that approximately 78.2% variation in agricultural growth is explained by government support schemes and incentives.

Since the p-value is less than 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, there is a statistically significant relationship between agricultural growth and government incentives.

Recent government initiatives such as PM-KISAN, CM-KISAN, PMFBY, Samruddha Krushak Yojana, and Saura Jalnidhi Yojana have positively influenced irrigation expansion, financial support, crop protection, and agricultural productivity in Odisha.

7.6 Challenges Faced by Farmers

Table 4: Major Challenges Faced by Farmers

Sl. No.	Challenges	Percentage (%)
1	Lack of Direct Market Access	64
2	Inadequate Storage Facilities	71
3	Transportation Problems	68
4	Price Fluctuation	74
5	Lack of Awareness	57
6	Climate Change Problems	62

Source: Field Survey Data, Keonjhar District, Odisha, 2019.

Interpretation

The study identified several major challenges affecting agricultural marketing in Keonjhar district.

- Lack of direct market access forces farmers to depend heavily on intermediaries and local traders.
- Inadequate storage facilities increase post-harvest losses and distress sales.
- Poor transportation infrastructure limits farmers' access to organized markets.
- Price fluctuation significantly affects farmers' income and economic security.
- Many farmers lack awareness regarding government schemes and digital agricultural systems.
- Climate variability, irregular rainfall, and environmental uncertainty negatively affect agricultural productivity.

7.7 Emerging Opportunities

Table 5: Emerging Opportunities in Agricultural Marketing

Sl. No.	Emerging Opportunities	Percentage (%)
1	Digital Marketing and E-NAM	69
2	Farmer Producer Organizations (FPOs)	72
3	Cold Chain Infrastructure	76
4	Agricultural Entrepreneurship	63
5	Irrigation Expansion	67
6	Crop Diversification	74

Source: Field Survey Data, Keonjhar District, Odisha, 2019.

Interpretation

Despite several challenges, agricultural marketing in Keonjhar district presents significant opportunities.

The study found that digital agricultural marketing platforms and e-NAM can improve market access and reduce middlemen involvement.

Farmer Producer Organizations (FPOs) were viewed positively because they improve collective bargaining power, reduce marketing costs, and strengthen market linkage.

Respondents strongly supported the development of cold storage facilities and warehouse infrastructure for reducing wastage and improving profitability.

The study further revealed growing interest in:

- Agricultural entrepreneurship,
- Poultry and dairy farming,
- Mushroom cultivation,
- Organic farming,
- Fishery, and
- Agro-based rural industries.

Irrigation expansion through schemes such as Soura Jalnidhi Yojana and increasing crop diversification are also creating new opportunities for agricultural commercialization and sustainable rural livelihoods.

7.8 Agricultural Production Trends

Table 6: Agricultural Production Trends in Keonjhar District (2018–19 to 2023–24)

Crops	2018–19 (MT)	2023–24 (MT)	Increase/Decrease	Percentage Change
Paddy	405,646	515,701	+110,055	+27.13%
Wheat	419	486	+67	+15.99%
Maize	39,987	72,360	+32,373	+80.96%
Mung	6,311	4,323	-1,988	-31.50%
Biri	7,275	8,680	+1,405	+19.31%

Source: Directorate of Economics and Statistics, Government of Odisha (2024–25).

Interpretation

The official agricultural statistics indicate significant improvement in paddy and maize production in Keonjhar district during the study period.

- Paddy production increased by 27.13% due to irrigation expansion, government support, and scientific farming methods.
- Maize production recorded remarkable growth of 80.96% because of improved profitability and market demand.
- Wheat production showed moderate growth.
- Mung production declined due to climatic uncertainty and price instability.
- Biri production increased gradually, indicating continued importance of pulse cultivation.

8. Major Findings

1. More than 60% of farmers earn below Rs. 1 lakh annually.
2. Farmers face major challenges related to transportation, storage, and market access.
3. Price fluctuation and middlemen exploitation significantly affect farmers' income.
4. Online agricultural marketing and digital technologies are gradually gaining acceptance.
5. Government schemes significantly influence agricultural growth and farmers' welfare.
6. Cold storage infrastructure and irrigation expansion are considered important opportunities.
7. Paddy and maize production have increased significantly in recent years.
8. Crop diversification and agricultural entrepreneurship are emerging trends among rural farmers.

9. Suggestions and Policy Implications

Suggestions

1. The Government should establish more cold storage and warehouse facilities in rural areas.
2. Rural transportation and road infrastructure should be improved.
3. Regulated markets and procurement centers should be developed near production zones.
4. Digital literacy and awareness programs should be conducted regularly.
5. Farmer Producer Organizations (FPOs) should be strengthened.
6. Institutional credit and crop insurance facilities should be simplified.
7. Agricultural entrepreneurship and youth participation should be encouraged.
8. Awareness regarding government welfare schemes should be increased.

Policy Implications

The findings of the study suggest the need for:

- Strengthening agricultural infrastructure,
- Expanding irrigation systems,
- Promoting digital agricultural marketing,
- Improving post-harvest management,
- Encouraging collective marketing through FPOs,
- Enhancing climate-resilient agricultural practices, and
- Increasing government outreach programs in rural areas.

Effective implementation of these policy measures can improve agricultural marketing efficiency and enhance rural livelihoods in Keonjhar district.

10. Conclusion

Agricultural marketing remains one of the most important components of rural economic development in Keonjhar district of Odisha. Although farmers continue to face significant marketing-related challenges such as poor infrastructure, inadequate storage facilities, transportation problems, low awareness, and price instability, the agricultural sector also presents considerable opportunities through digital marketing, irrigation development, Farmer Producer Organizations, crop diversification, and government support schemes.

The study reveals that government incentives have a statistically significant positive impact on agricultural growth. Official agricultural statistics also indicate steady improvement in paddy and maize production in recent years.

The study concludes that strengthening market infrastructure, improving digital connectivity, expanding cold storage facilities, promoting agricultural entrepreneurship, and increasing farmer awareness can significantly improve agricultural marketing systems and rural livelihoods in Keonjhar district.

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