

Betel Leaf Farmers and Market Performance: A Review of Marketing Practices and Price Realization

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Abstract

Betel leaf (Piper betle L.) is an important commercial crop that provides income and employment opportunities to many farming households. The economic benefits of cultivation depend not only on production but also on effective marketing, price realization, and access to suitable markets. This review examines the marketing practices, price realization, and major challenges faced by betel-leaf farmers based on selected Indian and foreign studies. This study aims to examine the marketing practices and price realization of betel-leaf farmers and identify the major marketing problems affecting their returns and income. A review-based descriptive and analytical research design was used, drawing on secondary information from research journals, books, theses, government and research reports, and academic databases. The literature related to betel-leaf marketing, marketing channels, price realization, marketing costs, market efficiency, and constraints faced by farmers was considered for the review. The selected studies were screened for relevance to the objectives and compared thematically to identify common marketing practices, marketing channels, price-related issues, marketing costs, and constraints. The reviewed literature shows that farmers mainly depend on village traders, commission agents, wholesalers, and retailers for marketing their produce. Marketing channels involving fewer intermediaries generally provide better price realization and higher marketing efficiency. However, price fluctuation, high transportation and commission costs, inadequate market information, limited storage facilities, post-harvest losses, middlemen involvement, labour shortages, and increasing input costs are major problems affecting farmers' returns. The highly perishable nature of betel leaves also encourages farmers to sell their produce quickly, sometimes at unfavorable prices. The review further indicates that direct marketing, improved market information, better transportation and storage facilities, farmer groups, and stronger links with retailers and consumers can improve bargaining power and marketing efficiency. The study concludes that strengthening the marketing system is essential for improving farmers' price realization, income, and livelihood. Future research should focus on primary studies across different betel-leaf-producing regions, comparative analysis of marketing channels, digital and direct marketing opportunities, and the impact of farmer producer organizations and institutional support on price realization and farm income.

Keywords: Betel Leaf, Marketing, Price, Farmers, Income, Market, Problems.

Introduction

Betel leaf, scientifically known as *Piper betle* L., is an important commercial crop cultivated in different parts of India. It is commonly grown in states such as Tamil Nadu, West Bengal, Odisha, Karnataka, Kerala, Bihar, and Assam. Betel leaves have considerable economic, social, and cultural importance in India. They are widely used in social functions, religious ceremonies, and traditional practices. The cultivation of betel leaves also provides income and employment opportunities for many farming households, particularly small and marginal farmers. Betel leaf cultivation requires regular care, labour and investment. Farmers have to spend money on land preparation, construction, and maintenance of the baroj, planting materials, irrigation, labor, fertilizers, and plant protection measures. Diseases, pests, climatic conditions, and high labor costs can increase the cost of cultivation. Therefore, obtaining a suitable

price for the harvested leaves is important for maintaining the profitability of farmers. Marketing plays an important role in determining the income received by betel-leaf farmers. Betel leaves are highly perishable and cannot be stored for a long period under normal conditions. Farmers therefore need to sell their harvested leaves quickly. They may sell their produce directly to consumers, retailers, village traders, commission agents, or wholesalers. The selection of a particular marketing channel can influence the marketing cost, price received by farmers and farmers' share in the final consumer price. Price realization is another important issue in betel-leaf marketing. The price received by farmers may change according to season, quality, size, colour, market demand, supply and location. Price fluctuations can create uncertainty in farm income. Farmers may also have limited bargaining power when they depend on intermediaries for the sale of their produce. Lack of market information, transportation facilities, storage facilities, post-harvest losses and involvement of middlemen may further affect farmers' returns. Several studies have examined the production economics, profitability, marketing channels and constraints of betel-vine cultivation in different parts of India. Studies have shown that marketing channels with fewer intermediaries can reduce marketing costs and improve marketing efficiency. However, farmers continue to face problems related to price fluctuation, inadequate market information, transportation, storage and intermediary involvement.

Economic Impact of Betel Leaf Cultivation

Betel leaf (*Piper betle* L.) is an important commercial crop that provides income and employment opportunities to many farming households, particularly small and marginal farmers. The crop supports the rural economy through cultivation, harvesting, transportation and marketing activities. Farmers can obtain regular income because betel leaves are harvested and marketed throughout the year. However, cultivation requires continuous labour, irrigation, plant protection and maintenance of the baroj, which increase production costs. High labor costs, input prices, pest and disease problems, and climatic risks can reduce farm returns.

Since betel leaves are highly perishable, farmers need to sell them quickly after harvesting. Therefore, marketing practices and price realization have a direct effect on farmers' income. The involvement of traders, commission agents, and wholesalers may increase marketing costs and reduce farmers' share in the final consumer price. Price fluctuations, inadequate market information, transportation difficulties, limited storage facilities, and post-harvest losses can further affect farmers' earnings. Improving market access, providing timely market information, reducing unnecessary intermediaries, and strengthening storage and transportation facilities can improve marketing efficiency and increase the economic benefits of betel leaf cultivation.

Reviews

The existing literature shows that the structure of marketing channels has an important influence on marketing costs, price spread, and farmers' returns from betel-leaf cultivation. Behera and Ramchandra identified four marketing channels in the Bhograi Block of Odisha, ranging from direct producer–consumer transactions to channels involving village traders, wholesalers, and retailers. The producer–consumer channel recorded the lowest marketing cost and price spread, while farmers depended mainly on intermediary-based channels because of limited access to market information. Similarly, Venkatesa Palanichamy et al. examined marketing costs, price spread, and marketing efficiency in Tamil Nadu and found that the producer–retailer–consumer channel was more efficient than channels involving a larger number of intermediaries. The study reported a price spread of 18.9% and marketing efficiency of 16.1% for the producer–retailer–consumer channel, respectively. These findings indicate that reducing the number of intermediaries can lower marketing costs and improve the share of farmers in the final consumer price.

The literature also indicates that farmers do not always select the shortest marketing channel. Padma et al. (2012), using the COM-B model among 400 betel-vine farmers in Kumbakonam, found that village-level traders were the most preferred disposal point, followed by commission agents, export organizations, and consumers. This difference

between the theoretically efficient channel and the practically preferred channel suggests that farmers' marketing decisions are influenced not only by the number of intermediaries but also by immediate cash requirements, market access, and the availability of information. Therefore, improving marketing efficiency requires attention to the practical constraints that influence farmers' channel selection rather than focusing only on reducing intermediaries.

Several studies have identified marketing costs and price fluctuations as important determinants of farmers' returns. Pavithra et al. (2014), in their study of the Tumkur district, Karnataka, reported significant differences in marketing costs between the Pavagada and Gubbi taluks. Transportation and commission charges formed important components of marketing expenditure. Farmers who sold their produce in distant markets incurred higher marketing costs but obtained better net prices, indicating a trade-off between market distance, marketing expenditure, and price realization. The study also reported seasonal variations in arrivals and prices, with leaf color and season influencing price realization.

The findings of Sathya et al. from the Thanjavur District similarly demonstrate the importance of price conditions in determining the economic benefits of betel-vine cultivation. Although cultivation was economically profitable, with a benefit-cost ratio of 2.3, price fluctuation was identified as a major marketing problem because of the highly perishable nature of betel leaves. Mandal's study in the Sundarbans also identified price fluctuation as an important constraint affecting the realization of remunerative returns, despite the financial feasibility of betel-vine cultivation. The author suggested market intelligence and price forecasting systems as possible measures for improving farmers' marketing decisions.

Taken together, these studies show that higher production profitability does not necessarily ensure stable or remunerative farm income. Price fluctuations, seasonal changes, transportation costs, and commission charges can influence the final returns received by farmers. At the same time, the findings of Pavithra et al. indicate that accessing distant markets may involve higher marketing expenditure but can sometimes provide better net prices. This

suggests that the relationship between marketing costs and price realization is not necessarily linear and requires an analysis of the net returns obtained through different marketing channels.

Access to reliable market information is another important factor affecting farmers' marketing decisions. Behera and Ramchandra observed that farmers' dependence on intermediary-based channels was associated with inadequate market information. Padma et al. similarly identified lack of market-price information and immediate cash requirements as important factors influencing farmers' marketing behaviour. Their analysis using the COM-B model explained 40.60% of the variation in marketing behavior, indicating that farmers' marketing decisions are influenced by a combination of behavioral and market-related factors.

Mandal also emphasized the importance of market intelligence and price forecasting in improving farmers' ability to obtain remunerative prices. These findings collectively suggest that access to timely price information can potentially strengthen farmers' bargaining position and support better marketing decisions. However, existing studies provide limited evidence on how farmers actually obtain and use market information, particularly through digital platforms and direct communication with buyers. This represents an area requiring further empirical attention.

Although several studies focus primarily on production economics rather than marketing, their findings provide an important background for understanding farmers' overall returns. Mukherjee and Kumar found that betel-vine cultivation was economically viable across different farm-size groups in Bankura District, with benefit-cost ratios ranging from 2.2–2.7. However, farm-level profitability is ultimately influenced by the prices received and the costs incurred in bringing produce to the market.

Biswas et al. in their study of 200 betel-vine growers in the Nadia District reported inadequate information about improved production practices, dependence on traditional planting materials, high boron construction costs, and inadequate adoption of plant-protection measures. Sathya et al. also identified pest and disease incidence, labor shortages, and lack of healthy planting material as important

production constraints. These production-related problems can indirectly affect marketing because variations in quality, quantity, and continuity of supply may influence farmers' ability to negotiate with buyers and obtain favorable prices.

The reviewed studies indicate that the economic performance of betel-leaf cultivation is shaped by the interaction of production conditions and marketing factors. While production profitability has been demonstrated in several regions, marketing-related issues such as intermediary dependence, price

fluctuation, transportation costs, inadequate market information, and limited storage facilities continue to affect farmers' returns. The studies also differ in their geographical coverage, methodological approaches, and analytical focus, with some concentrating on production economics, while others examine marketing channels, marketing behavior, or constraints. This variation makes direct comparison difficult and indicates the need for a more integrated assessment of production, marketing practices, price realization, and farmers' income.

Table 1 Research Gap and Need for the Study

Research Gap	Need for the Study
Limited studies have comprehensively examined the marketing practices followed by betel-leaf farmers.	To identify and analyse the major marketing practices and channels adopted by farmers.
Existing studies indicate that farmers depend considerably on intermediaries, but their effect on farmers' returns requires further study.	To examine the role of village traders, commission agents, wholesalers and retailers in betel-leaf marketing.
Price realization has not been sufficiently examined along with farmers' socio-economic characteristics.	To analyse the factors influencing the price received by betel-leaf farmers.
Limited evidence is available on marketing costs and their effect on farmers' net returns.	To estimate marketing costs and assess their impact on farmers' profitability.
Price spread and farmers' share in the consumer's price require greater location-specific investigation.	To measure price spread and determine farmers' share in the final consumer price.
Price fluctuation is reported as a major problem, but its influence on farmers' marketing decisions needs further assessment.	To examine the causes and effects of price fluctuations on marketing decisions and income.
Inadequate market information has been identified, but its relationship with marketing behaviour is insufficiently explored.	To assess farmers' access to market information and its influence on marketing behaviour.
Post-harvest, transportation and storage problems have received comparatively less integrated attention.	To identify post-harvest losses, transportation difficulties and storage constraints affecting price realization.
Few studies have examined marketing efficiency in relation to the number of intermediaries and marketing channels.	To compare different marketing channels and identify the most efficient channel for farmers.
There is limited integrated research connecting marketing practices, price realization and farmers' problems in a single study.	To develop a comprehensive understanding of marketing practices, price realization and problems and suggest measures for improving farmers' returns.

Objectives

The objectives of the study are framed to understand the existing marketing practices and price realization of betel leaf farmers. This study also focuses on identifying the major marketing problems affecting farmers' returns and marketing efficiency, thereby providing a basis for suggesting suitable measures to improve their income and market access.

- To examine the marketing practices and price realization of betel-leaf farmers
- To identify the major marketing problems faced by betel leaf farmers and suggest suitable measures for improving their marketing efficiency and income.

Methodology

This study adopted a review-based descriptive and analytical research design using secondary information. The review systematically examined published studies related to betel-leaf marketing, marketing practices, price realization, marketing channels, marketing efficiency, marketing costs, and marketing problems faced by farmers. Relevant Indian and foreign studies published in research journals, books, theses, research reports, government publications, and reliable academic databases were considered for the review. The literature was selected based on its relevance to the objectives of the study and its focus on betel-leaf production,

marketing, price realization, marketing channels, market efficiency, and constraints faced by farmers. The selected studies were reviewed, compared, and synthesized thematically to identify common findings, differences in research outcomes, methodological limitations, research gaps, and emerging issues related to betel-leaf marketing. The review also considered evidence relating to marketing costs, intermediary involvement, market information, price fluctuations, storage, transportation, and farmers' returns. The findings from the selected literature were critically examined to understand the major factors influencing marketing practices and price realization and to identify areas requiring further research.

Table 2 Methodological Aspect

Methodological Aspect	Description
Research Design	Review-based descriptive and analytical research design
Nature of Data	Secondary data
Method of Data Collection	Systematic review of published literature
Study Population	Research studies related to betel-leaf/betel-vine marketing
Sample Design	Purposive selection of relevant Indian and foreign studies
Study Sample	Selected published studies on marketing practices, price realization, marketing channels and farmers' problems
Indian Studies	Studies conducted in Tamil Nadu, Karnataka, Odisha, West Bengal, Bihar, Kerala and other Indian states
Foreign Studies	Relevant international studies on betel leaf and comparable horticultural marketing
Sources	Research journals, books, theses, government reports, research reports and authentic databases
Analysis	Comparative review, thematic analysis and identification of research gaps

Discussion

The findings of the reviewed studies show that marketing practices have a major influence on the income and price realization of betel leaf farmers. Most farmers depend on village traders, commission agents, and wholesalers because these buyers provide an easy and quick way to sell the highly perishable produce. Padma et al. (2024) reported that village traders were the major marketing link among betel vine farmers, while Behera and Ramchandra (2023) found that farmers continued to use intermediary channels mainly because of limited market information. The reviewed studies also show that marketing channels with fewer intermediaries can provide better returns to farmers.

Venkatesa Palanichamy et al. (2024) found that the producer–retailer–consumer channel had better marketing efficiency than channels involving more intermediaries. Similarly, Pavithra et al. (2018) reported that transportation and commission costs affect the returns received by farmers. Price fluctuations are also commonly reported as an important marketing problem. Sathya et al. (2022) and Mukherjee and Kumar (2024) observed that changes in market prices created uncertainty in farmers' income. The studies further indicate that inadequate market information, storage facilities, transportation and post-harvest management affect farmers' marketing decisions and price realization. The findings from Indian and foreign studies are

generally similar, showing that better market access, direct selling opportunities, improved market information, and reduced intermediary costs can improve farmers' returns. Therefore, strengthening marketing facilities and improving farmers' bargaining position are important for improving the marketing efficiency and economic benefits of betel leaf cultivation.

Household–Farm Approach: Conceptual Framework

HOUSEHOLD CHARACTERISTICS

Family Size
Education
Family Labour
Household Income



FARM CHARACTERISTICS

Farm Size
Production Cost
Labour Use
Farm Resources



BETEL LEAF PRODUCTION

Cultivation
Harvesting
Post-Harvest Handling



MARKETING PRACTICES

Marketing Channels
Market Information
Intermediaries



PRICE REALIZATION

Price Received
Marketing Cost
Price Spread
Marketing Efficiency



FARM INCOME

Net Returns
Household Earnings



HOUSEHOLD LIVELIHOOD

Food Security
Education
Social Welfare
Economic Well-being

Source: Prepared by the Researcher

Findings

- The major findings of this study are based on a review of selected Indian and foreign studies. The findings highlight the major marketing practices, price realization, marketing problems, and factors affecting the income and marketing efficiency of betel leaf farmers.
- Betel leaf cultivation provides regular income and employment opportunities, particularly for small and marginal farming households in the region.
- Farmers commonly depend on village traders, commission agents, wholesalers, and retailers for marketing their betel leaf produce.
- Marketing channels with fewer intermediaries generally provide better price realization and higher marketing efficiency for farmers.
- Price fluctuations are a major marketing problem that creates uncertainty in farmers' income and marketing decisions.
- High marketing costs, particularly transportation, commission, and handling expenses, reduce the net returns received by farmers.
- Limited market information reduces farmers' bargaining power and restricts their ability to select profitable channels.
- The highly perishable nature of betel leaves forces farmers to sell their produce quickly after harvesting.
- Inadequate storage and transportation facilities contribute to post-harvest losses and negatively affect farmers' price realization.
- Pest and disease problems, labor shortages, and increasing input costs affect the profitability of betel leaf cultivation.
- Direct marketing, better market information, improved infrastructure, and fewer intermediaries can improve marketing efficiency and farmers' income.

Conclusion

The review concludes that effective marketing plays an important role in improving the economic returns of betel-leaf farmers. The main contribution of the review is the consolidation of existing literature on marketing practices, marketing channels, price realization, marketing costs, market

efficiency, and major constraints faced by betel-leaf farmers. The reviewed studies indicate that dependence on intermediaries, price fluctuations, high transportation and commission costs, inadequate market information, limited storage facilities, post-harvest losses, labor shortages, and increasing input costs affect farmers' returns. Marketing channels with fewer intermediaries and direct links with buyers can provide better opportunities for price realization and marketing efficiency. From a policy perspective, greater attention is required to improve market infrastructure, transportation, storage facilities, market information systems, and institutional support for betel-leaf farmers. From a marketing perspective, direct marketing, farmer groups, stronger links with retailers and consumers, and improved access to market information can strengthen farmers' bargaining capacity and reduce marketing difficulties. For research, further empirical studies are required across different betel-leaf-producing regions, particularly on comparative marketing channels, digital and direct marketing, farmer producer organizations, and institutional support. The review has certain limitations. The findings are based on the available literature selected for the review; therefore, some relevant studies may not have been covered. The geographical coverage of the available literature is also limited, and differences in study locations, methods, and periods may restrict direct comparison of findings. Therefore, the conclusions should be interpreted within the scope of the literature considered in the review.

Suggestions

Betel leaf farmers should be provided with timely information on market prices, demand, and suitable marketing channels. Farmers may be encouraged to form cooperative groups or farmer producer organizations to improve their bargaining power and reduce marketing costs. Training on grading, packaging, storage, transportation, and post-harvest handling may help reduce quality deterioration and loss. Government agencies and agricultural institutions should support farmers through market infrastructure, credit facilities, training programs, and direct market linkages.

Future Research

Future research should examine betel leaf marketing practices across different districts and states to identify regional differences in marketing channels and price realization. Comparative studies may be conducted between small and large farmers and between traditional and digital marketing channels. Further studies should focus on marketing efficiency, price spread, market integration, value chain performance, post-harvest losses, and export opportunities. Primary studies with larger samples may also identify factors influencing farmers' choice of marketing channels and price realization.

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