

## **VERTICAL INTEGRATION OF CONTRACT FARMING V/S PROCUREMENT FROM TRADERS**

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DOI: 10.46609/IJSSER.2024.v09i02.007 URL: <https://doi.org/10.46609/IJSSER.2024.v09i02.007>

Received: 7 Feb. 2024 / Accepted: 20 Feb. 2024 / Published: 28 Feb. 2024

### **ABSTRACT**

The rice export industry in India has traditionally relied on intermediary traders for the procurement of rice from local farmers. However, this study explores the hypothesis that vertical backward integration through contract farming can be a more profitable and sustainable option for rice export companies. The research involves a comprehensive analysis of the economic viability, quality control mechanisms, and supply chain transparency associated with both traditional trader-based procurement and the vertically integrated contract farming model.

The study employs qualitative data collection methods. Financial analyses will be conducted to compare the profit margins of companies adopting vertical backward integration versus those relying on traders. Additionally, qualitative assessments will explore the quality assurance mechanisms, supply chain transparency, and long-term sustainability of each model.

Preliminary findings should suggest that vertical backward integration offers export companies the advantage of direct control over the cultivation process, enabling them to enforce stringent quality standards. Furthermore, the elimination of intermediaries may result in cost efficiencies, potentially leading to higher profit margins.

**Keywords:** Basmati rice, Contract farming, Cost and returns analysis, Constraints, Garrett's ranking technique, Logistic regression mode

### **Hypothesis:**

The vertical backward integration of contract farming in the rice export industry in India is expected to yield higher profit margins and efficient quality control compared to the practice of relying on traders for rice procurement.

## **Literature Review**

India's agricultural landscape stands as a corner stone in global rice production, securing its position as the world's second-largest producer and the leading exporter of basmati rice. The year 2018-19 witnessed a formidable achievement with a total paddy production of 115.6 million tonnes, where basmati rice alone contributed a substantial 5.31 million tonnes. The basmati rice export market, particularly dominated by the renowned Pusa 1121 variety, is anticipated to reach unprecedented heights, estimated at ₹30,000 crore or approximately \$4.28 billion for the upcoming season. This surge is complemented by a notable increase in the procurement price, reaching ₹35,000-38,000 per tone in 2018-19, showcasing an 8.5% rise from the previous year.

Against this backdrop, an in-depth exploration into the dynamics of contract farming, specifically centered around Pusa Basmati 1121, has been undertaken. This study aims to unravel the economic implications of such contractual arrangements on farmers in the Ghaziabad district of Uttar Pradesh during the agricultural year 2017-18.

The study's focal point lies in evaluating the economic impact of contract farming, specifically in terms of basmati rice yield. Noteworthy findings indicate a positive correlation between engaging in contract farming and achieving higher yields of basmati rice. Contract farmers, those participating in agreements with contracting firms, demonstrated consistently superior yields compared to their non-contract counterparts. This positive association signifies that the structured nature of contract farming contributes significantly to enhanced productivity in the cultivation of basmati rice.

Delving deeper into the economic dimensions, the study scrutinized the overall income generated by farmers involved in contract farming versus those operating independently. The results revealed a substantial income disparity, with contract farmers enjoying significantly higher total incomes than their non-contract counterparts. This economic advantage can be attributed to several factors, including the assurance of a predetermined purchase price and a secure market facilitated by the contracting firms. The study thus affirms that the economic benefits of contract farming extend beyond yield enhancement to encompass more favorable financial returns for participating farmers.

Intriguingly, an analysis of input costs associated with both contract and non-contract farms uncovered unexpected results. Contrary to conventional expectations, total input costs were found to be marginally higher on contract farms than on non-contract farms. This surprising revelation challenges the prevalent notion that contract farming primarily benefits farmers by reducing their input costs. It suggests that while contract farming may incur slightly higher input

costs, the overall economic benefits derived from increased yields and enhanced income outweigh these additional expenses.

Key factors influencing farmers' participation in contract farming were also identified in the study, providing valuable insights into the motivations driving this agricultural practice. Among the prominent factors, company guidance on adopting scientific cultivation methods emerged as a significant influence. Farmers were drawn to contract farming due to the support and knowledge provided by contracting firms, signaling a shift towards more informed and modern agricultural practices.

Furthermore, the promise of a higher price for produce from contracting firms served as a compelling incentive for farmers to engage in contract farming agreements. The assurance of purchase by the contracting firm offered financial security, mitigating uncertainties related to market fluctuations. Additionally, the age of the farmer emerged as a factor influencing participation, indicating that younger farmers may be more inclined to participate in contract farming, possibly due to a greater openness to innovative practices.

In conclusion, the expansive literature review underscores the pivotal role of contract farming, particularly centered around Pusa Basmati 1121, in reshaping the economic landscape for farmers in Ghaziabad, Uttar Pradesh. The positive impact on yield and overall income, coupled with the factors influencing farmer participation, emphasizes the significance of well-structured contract farming arrangements. As this form of agricultural practice continues to evolve, it is essential to recognize that agricultural marketing and agri-business systems demand ongoing innovation and institutional support.

To further increase agricultural production and ensure sustainable benefits for farmers, the development of diverse marketing strategies and the incorporation of innovative practices become imperative. The literature review encourages a holistic understanding of the multifaceted nature of contract farming, acknowledging both its positive and challenging dimensions. As the agricultural landscape continues to transform, fostering an environment conducive to the growth of contract farming can play a pivotal role in securing the prosperity of farmers and the agricultural sector as a whole.

## **Food and Agricultural Organization**

### **Advantages for sponsors**

- **Production is more reliable than open-market purchases and the sponsoring company faces less risk by not being responsible for production.**

- **More consistent quality can be obtained than if purchases were made on the open market.**

Working with contracted farmers enables sponsors to share the risk of production failure due to poor weather, disease, etc. The farmer takes the risk of loss of production while the company absorbs losses associated with reduced or non-existent throughput for the processing facility.. The use of crop insurance may be possible, and this is discussed in Chapter 4.

Both estate and contract farming methods of obtaining raw materials are considerably more reliable than making purchases on the open market. The open market is rarely an acceptable option for organizations that have significant assets tied up in processing facilities and need to have guaranteed quantities of raw material to justify their investment. For example, it is hardly ever an acceptable option for companies who make regular shipments of horticultural produce to supermarkets and for export. Companies must ensure that crops are harvested and sold on a carefully scheduled and consistent basis: a factor that is normally assured under a well-directed contract farming scheme.

### **Quality consistency**

Markets for fresh and processed agricultural produce require consistent quality standards. Moreover, these markets are moving increasingly to a situation where the supplier must also conform to regulatory controls regarding production techniques, particularly the use of pesticides. For fresh produce there is a growing requirement for "traceability", i.e. suppliers to major markets increasingly need to be confident of identifying the source of production if problems related to food safety arise.

Distinct varieties of produce in the desired quality and quantities are often not available on the open market. For example, a multinational that invested in the Indian State of Punjab found that the local varieties of rice were suitable for a niche market size. This was one of the factors that made it decide to go into contract farming.

Agribusinesses producing for markets demanding high quality standards, such as fruits and vegetables for export, often find that small-scale farmers and their families are more likely to produce high-quality products than farmers who must supervise hired labor.

### **Problems faced by sponsors**

- Contracted farmers may face land constraints due to a lack of security of tenure, thus jeopardizing sustainable long-term operations.

- Social and cultural constraints may affect farmers' ability to produce to managers' specifications.
- Poor management and lack of consultation with farmers may lead to farmer discontent.
- Farmers may sellout side the contract (extra-contractual marketing) there by reducing processing factory throughput.
- Farmers may divert inputs supplied on credit to other purposes, thereby reducing yields.

### **Farmer discontent**

A number of situations can lead to farmer dissatisfaction. Discriminatory buying, late payments, inefficient extension services, poor agronomic advice, unreliable transportation for crops, amid-season change in pricing or management's rudeness to farmers will all normally generated is sent. If not readily addressed, such circumstances will cause hostility towards the sponsors that may result in farmers withdrawing from projects. This emphasizes the importance of good management to the success of contract farming. Ways in which management can avoid such problems are addressed in Chapter 5.

### **Extra-contractual marketing**

The sale of produce by farmers to a third party, outside the conditions of a contract, can be a major problem. Extra-contractual sales are always possible and are not easily controlled when an alternative market exists. The cooperative's advances to the farmers included all necessary production inputs. Unfortunately members often sold their vegetables to traders at higher prices than the cooperative had contracted. The outside buyers offered cash to farmers as opposed to the prolonged and difficult collection of payments negotiated through the cooperative.

In one case, a tobacco project diversified into off-season maize to provide farmers with additional income. In the first season some farmers sold their maize crops to traders for cash. Over 60 percent of the first season's maize crop was estimated to have been sold outside the agreement. The repayment of loans advanced for inputs was there by circumvented, making the diversification venture uneconomical for the sponsor.

This occurs when non-contracted farmers take advantage of higher prices paid by an established sponsor.

### **Input diversion**

A frequent problem is that farmers are tempted to use inputs supplied under contract for purposes other than those for which they were intended. They may choose to use the inputs on their other cash and subsistence crops or even to sell them. Clearly this is not acceptable to the sponsor, as the contracted crop's yields will be reduced and the quality affected. Steps to overcome such problems include improved monitoring by extension staff, farmer training and the **issuing of realistic quantities of inputs**. However, the knowledge that a contract has the advantages of technical inputs, cash advances and a guaranteed market usually makes the majority of farmers conform to the agreement. Unless a project is very poorly managed, input diversion is usually an annoyance rather than a serious problem.

**Gross Margin of Rice Export Companies which perform Contract Farming-**

These figures have been taken into consideration to observe the profitability of this practice in rice export with comparison to procurement of rice for milling from brokers. (Only cost of materials has been taken into consideration to compare gross profit margins as firms of differing sizes can have varying depreciation, selling and administrative expenses...)

**RBL-**

Operating Revenue-	5,45,573	(in Rs Lakh)
COGS-	4,36,776	
Gross Profit-	1,08,797	
Gross Profit Margin-	19.92%	

**LT FOODS LTD-**

Operating Revenue-	6,97,881	(in Rs Lakh)
COGS-	4,58,567	
Gross Profit-	2,39,314	

**Gross Profit Margin- 34.29%**

### Companies which Procures Rice from Traders and Brokers for Export-

These figures have been taken into consideration to observe the profitability of this practice in rice export with comparison to contract farming integration. (Only cost of materials has been taken into consideration to compare gross profit margins as firms of differing sizes can have varying depreciation, selling and administrative expenses...)

#### NavBharat Ricetec LLP-

Operating Revenue- 440,317,913 (in rs)

COGS- 371,489,964

Gross Profit- 68,827,949

Gross Profit Margin- 15.6%

### Conclusions-

1. While comparing **quality control** in both methods of procurement and contract farming, contract farming provides better control on standardization, yield and overall increased product satisfaction through sampling as compared to procurement from brokers. Direct control over production of paddy allows stringent quality standards and elimination of intermediaries reduces variation and inefficiency leading to a sustainable model in the long term for buyer retention and customer lifetime cycle. Compliance with APEDA certification and regulation of quality standards can be improved by the practice of contract farming.
2. **Profitability of this model is not consistent** as there can be various uncertainties and problems during contract farming such as land constraints, input diversion leading to inefficiency of production, extra-contractual marketing and poor management can jeopardize the *turn-around time(TAT)* in case of production gaps as compared to procurement from alternative vendors and brokers. This increase in turn around can lead to higher costs of work-in-progress goods and sell-through of finished goods. Profitability of a firm can also depend on macro-economic factors during farming and in the absence of

alternative sources, economies of scale, government regulations and quotas. Most companies performing contractual farming occupy a larger scale as compared to firms procuring rice and thus can have higher profit margins. Overall, contract farming is not a guarantee of higher margins but can increase reorder value, average ticket value and customer lifetime value through repeat business and thus may be a sustainable model to gain an advantage for growth in such a saturated market.

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