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## Constraints and Remedial Measures in the Marketing of Sorghum (Jowar) in Alwar District of Rajasthan: Evidence from Farm-Level Survey

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### Abstract

Sorghum (jowar) remains an important cereal crop for semi-arid regions due to its resilience and livelihood relevance. Efficient marketing is central to improving farm income, reducing price spread, and strengthening value chain performance. This study investigates the major constraints and suitable remedial measures in sorghum marketing in Alwar district of Rajasthan using primary survey data from 75 farmers across three villages of Behror (Bahrer) block. The analysis categorizes constraints into production-linked constraints affecting marketable surplus and marketing-specific constraints affecting price realization and market access. Results indicate that the most severe production-related constraints include lack of insect and disease resistant seed, canal irrigation not available when needed, and unavailability of labour/bullock at peak time. Marketing constraints are dominated by lack of proper guidance and training, lack of marketing news/information, lack of storage facilities, and lack of agencies to purchase produce. The paper proposes practical measures including strengthening extension visits, targeted training on marketing and quality, improving storage infrastructure, enhancing market information systems, and promoting collective marketing and institutional facilitation to reduce dependence on intermediaries. The findings offer actionable insights for policymakers, extension agencies, and agribusiness stakeholders seeking to improve sorghum marketing efficiency and farmer price realization in semi-arid Rajasthan.

**Keywords:** Sorghum, marketing constraints, market information, storage, extension services, Rajasthan, Alwar, price realization.

## 1. Introduction

Sorghum (*Sorghum bicolor*), popularly known as jowar in India, is cultivated widely under semi-arid and rainfed conditions due to its tolerance to heat and moisture stress. In Rajasthan, sorghum plays an important role in food and fodder needs and supports rural livelihoods. However, profitability and farmer welfare depend not only on production but also on marketing systems that determine price realization, market access, and post-harvest loss management.

In many developing agrarian regions, farmers face constraints that reduce efficiency across the marketing chain: limited market information, inadequate storage and transport, dependence on intermediaries, quality-related barriers, and weak extension support. In the Alwar district context, these constraints are especially relevant due to irrigation uncertainty, fragmented land holdings, labour constraints, and limited institutional marketing support systems. This study is derived from the thesis titled “*Marketing of Sorghum Seed in Alwar district of Rajasthan*” and focuses specifically on the objective addressing constraints and suitable measures in marketing.

## 2. Objective of the Study

**To find out constraints and suitable measures in the marketing of sorghum seeds (sorghum/jowar produce) in the study area.**

## 3. Materials and Methods

### 3.1 Study Area

The study was conducted in Alwar district of Rajasthan, specifically in Bahrer (Behror) block, selected purposively due to higher sorghum cultivation. Three villages, Basai, Fatehpura, and Hameedpur, were selected for investigation.

### 3.2 Sampling Design and Sample Size

A multi-stage sampling approach was adopted. A total of 75 farmers were surveyed with a stratified structure (25 small, 25 medium, 25 large), and constraints were recorded based on farmer responses.

### 3.3 Data Collection

Primary data were collected through personal interviews using a pre-tested schedule, supported by secondary sources such as reports and published references.

### 3.4 Analytical Approach

Constraints were compiled and ranked based on incidence/severity as reported by respondents, and suitable measures were developed corresponding to observed constraints.

## 4. Results and Discussion

### 4.1 Nature of Constraints: Why “Marketing Constraints” Must Include Production-Linked Barriers

Marketing performance is shaped by the quantity and quality of marketable surplus and the costs incurred from farm to market. Farmers reported that difficulty obtaining quality seed at reasonable prices, high labour and fertilizer costs, and lack of timely credit affected production outcomes, which ultimately reduced marketable surplus and weakened their bargaining position in markets.

In addition, structural issues, land fragmentation, water uncertainty, manual labour dependence, and post-harvest losses, create indirect marketing costs and reduce price realization.

### 4.2 Production-Related Constraints Affecting Marketing Outcomes (Table 4.11)

Although this paper’s focus is marketing, the thesis evidence shows that production constraints strongly shape marketing outcomes. Farmers ranked the following as the most severe constraints:

**Table 1. Constraints faced by sample farmers in production of sorghum (N=75)**

S. No.	Constraint	Total (N=75)	% (as reported)	Rank
1	Lack of insect and disease resistance seed	56	74.66	I
2	Canal irrigation not available when needed	55	73.33	II
3	Unavailability in peak time of labour and bullock	54	72.00	III
4	High price of labour and bullock	51	68.00	IV
5	Lack of capital	50	66.66	V
6	Lack of improved seed	49	65.33	VI
7	Costly equipment	47	62.66	VII

8	Lack of knowledge	43	57.33	VIII
9	Lack of labour	42	56.00	IX
10	Need of more irrigation	30	40.00	X
11	Lack of local supply of inputs	19	25.33	XI

The top constraints highlight that farmers face a dual challenge: (i) input quality constraints (particularly disease-resistant seed availability), and (ii) water and labour bottlenecks at peak stages. These constraints influence production stability, which then impacts marketing by forcing distress sales, weakening quality, and increasing per-unit marketing cost.

#### 4.3 Marketing Constraints in Sorghum Marketing (Table 4.12)

The marketing-specific constraints directly explain why farmers face lower bargaining power, higher dependence on intermediaries, and difficulty accessing better prices.

**Table 2. Problems faced by sample farmers in marketing of sorghum (N=75)**

Sr. No.	Marketing Constraint	Total (N=75)	% (as reported)	Rank
1	Lack of proper guidance and training	70	93.33	I
2	Lack of marketing news/information	61	81.33	II
3	Lack of storage facilities	60	80.00	III
4	Lack of agencies to purchase product	59	78.66	IV
5	Lack of government facilities	51	68.00	V
6	Irregular visit of agricultural officers	49	65.33	VI
7	Dependence on middlemen for disposal	29	38.66	VII
8	Lack of transportation	24	30.00	VIII
9	Not getting satisfactory price	21	38.00	IX

1. The **single biggest constraint** is *lack of proper guidance and training*, indicating weak extension-market linkage and limited farmer capability in market decision-making.
2. The second key barrier is *lack of marketing news*, which directly affects farmer timing, price negotiation, and channel selection.
3. *Storage constraints* lead to forced sales after harvest and inability to wait for favorable prices, increasing price spread against farmers.
4. *Limited purchasing agencies* suggests narrow market options, which strengthens intermediary power and increases the possibility of collusion.

#### 5. Suitable Measures and Policy Suggestions

Based on the constraints observed in the thesis results, the following measures are proposed to improve

sorghum marketing efficiency and farmer price realization in Alwar.

#### 5.1 Capacity Building and Training (Responding to Rank I constraint)

Since “lack of proper guidance and training” is the top marketing constraint, the first intervention must be farmer capability enhancement. Measures include:

- Regular village-level training modules on grading, quality, storage practices, price calculation, and negotiation skills.
- Exposure visits to regulated markets, processing units, and successful producer groups.
- Simple farmer-friendly guides in local language explaining market channels, costs, and margin logic.

#### 5.2 Market Information Systems (Responding to Rank II constraint)

To address lack of marketing news:

- Disseminate daily/weekly price information through WhatsApp groups, local notice boards, Panchayat offices, and Krishi Vigyan Kendra networks.
- Encourage farmers to record market prices and build “reference pricing habits” to reduce information asymmetry with intermediaries.

### 5.3 Storage and Post-Harvest Infrastructure (Responding to Rank III constraint)

To reduce distress sales and post-harvest losses:

- Promote community-level storage (small warehouses/godowns) and scientific storage practices.
- Link storage creation with collective marketing so that farmers can hold produce and sell in bulk.
- Encourage basic drying, cleaning, and safe bagging practices to preserve quality and weight.

### 5.4 Strengthening Market Linkages and Purchasing Agencies (Responding to Rank IV constraint)

To address lack of agencies:

- Facilitate tie-ups with traders, processors, and bulk buyers using institutional platforms.
- Promote Farmer Producer Organizations (FPOs)/groups to aggregate produce and attract buyers.
- Encourage direct marketing models where feasible to reduce dependence on intermediaries.

### 5.5 Improve Extension Presence and Government Facilities (Rank V and VI constraints)

Since farmers report irregular officer visits and lack of government facilities:

- Schedule fixed extension days in villages during sowing and peak marketing season.
- Strengthen market-yard services such as weighing, transparent display of prices, and grievance mechanisms.
- Improve credit facilitation so farmers can avoid distress selling due to cash needs.

### 5.6 Addressing Intermediary Dependence and Price Dissatisfaction (Rank VII and IX constraints)

To reduce exploitation risk and price dissatisfaction:

- Promote collective selling through producer groups.
- Encourage transparent pricing and receipts in market transactions.
- Build farmer awareness on marketing costs, margins, and price spread to improve negotiation power.

### 5.7 Transport Facilitation (Rank VIII constraint)

To address transport constraint:

- Community/shared transport arrangements (pooled tractor/trolley services).
- Coordination-based bulk movement to reduce per-unit transport cost.

## 6. Conclusion

The study identifies that sorghum farmers in Alwar district face multiple constraints that limit efficient marketing and reduce price realization. While production constraints such as disease-resistant seed availability and irrigation gaps reduce stable marketable surplus, marketing constraints are dominated by weak training and guidance, lack of market information, inadequate storage, and limited purchasing agencies. The evidence strongly indicates that marketing improvement requires a combined strategy: strengthening farmer capacity, improving market information access, building storage infrastructure, improving extension frequency, and enabling stronger institutional market linkages. These measures can reduce distress sales, improve bargaining power, and support more equitable distribution of benefits across the sorghum value chain.

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