

Volatility in Vegetable Prices: Problems and Solutions

Nirankar¹, Tribhuvan Chaubey², Alina Parveen³, Surendra Narayan Singh⁴ and Yogesh Kumar⁵

¹Research Scholar, Department of Vegetable Science, C. S. Azad University of Agriculture and Technology, Kanpur, (U.P.)

²Principal Scientist, ICAR- Indian Institute of Vegetable Research, Varanasi, (U.P.)

³PG Scholar, Integral Institute of Agriculture Science and Technology, Integral University, Lucknow (U.P.)

⁴Field Assistant, ICAR- Indian Institute of Vegetable Research, Varanasi, (U.P.)

⁵Research Scholar Department of Horticulture (Vegetable Science), Sam Higginbottom University of Agriculture, Technology and Sciences Prayagraj (U.P.)

ARTICLE ID: 53

Introduction

India is the second largest producer and consumer of vegetables in the world. It is estimated that approximately 40 % of the Indian population is vegetarian and consumes vegetables as a staple food. But sometimes, for some avoidable & and unavoidable reasons, the market prices of vegetables experience a substantial surge, making it challenging to afford them. This article elucidates the potential factors contributing to abrupt price hikes of vegetables in the Indian market and suggests strategies for farmers to mitigate these fluctuations.

Background

Looking at the market prices in India the most common vegetables in which the market price suddenly fluctuate are tomato, onion, potato, chili, and coriander leaves, and garlic. (Table & Fig.1 &2).

Vegetables	Average price/(Rs/kg)	Price reached up to (Rs/ kg)	Year	Reason
Tomato	20±10	150	July, 2023	Heavy rainfall in major producing states (Karnataka,

				Maharastra and Andhra Pradesh)
		100	November, 2021	Delayed monsoon, inadequate production and extreme heat.
Onion	30±10	100	October, 2023	Hailstorming in Maharashtra
		120	November 2019	Heavy monsoon rains
Potato	20±10	80	November, 2020	Shortage of Supply due to Covid-19.
Garlic	70±10	400	December, 2023	Across the country, crop was damaged due to extreme weather conditions.
Coriander leaves	50±10	100	April, 2019	-
Brinjal	20 ±10	200	December, 201	In Karnataka

Sources: Azadpur Mandi New Delhi.

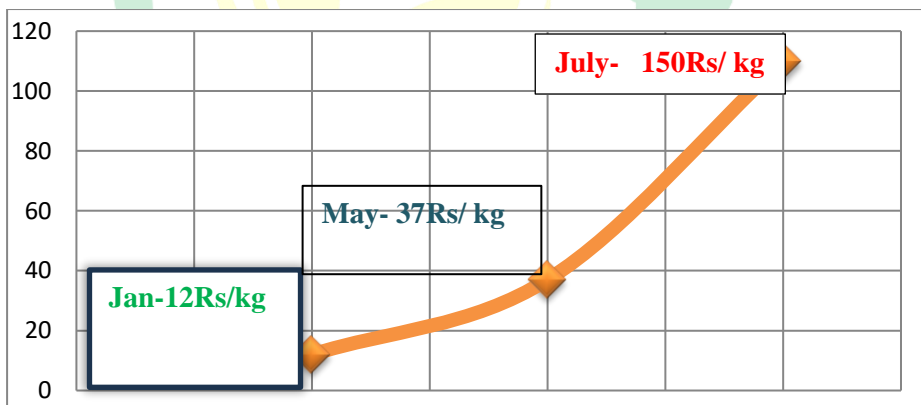


Fig. 1. Tomato Price hike from January - July 2023

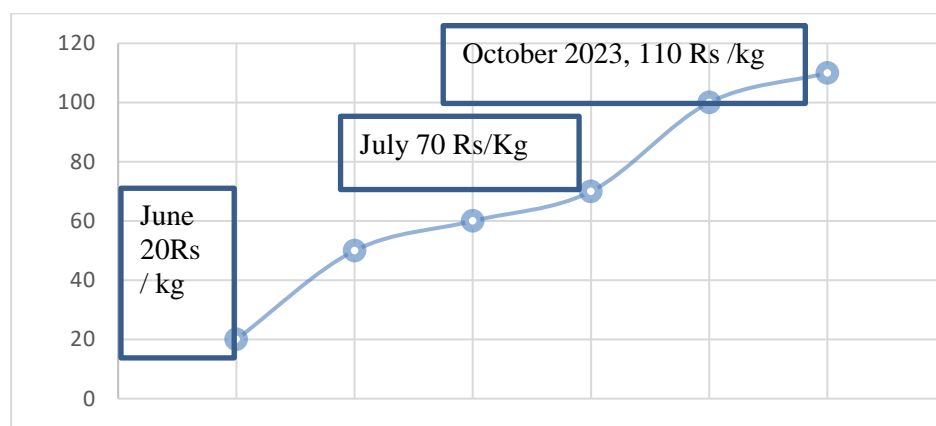


Fig 2: Onion Price hike from January - July 2023

Causes of sudden price hike

Seasonal Variations:

1. **Monsoon Impact:** India's agricultural sector heavily relies on the monsoon season. Insufficient or excessive rainfall due to climate change and global warming affect crop yields, leading to shortages and price hikes in market. (Fig 3 & 4).



Fig. 3 Cauliflower field in excessive rainfall conditions



Fig. 4 Hailstorm affected tomato field



Fig.5 High-temperature affected cabbage field

2. **Temperature Extremes:** Extreme temperatures, both hot and cold, can impact the growth of vegetables. Unexpected temperature variations can lead to reduced yields. (Fig 5.)

Transportation Costs:

Fuel Prices: Fluctuations in fuel prices which may be due to geopolitical tensions, taxes and duties etc, directly impact transportation costs. Since most vegetables are transported over long distances, an increase in fuel prices contributes to higher transportation expenses, which are often passed on to consumers.

Supply and Demand Dynamics:

Crop Failures and Shortages: Natural disasters, pest infestations, or diseases can lead to crop failures, reducing the overall supply of vegetables. If demand remains constant or increases, shortages can result in higher prices (Fig.6).



Fig .6 A severely late blight infected Potato field.

Sudden Demand Surges: Unexpected spikes in demand, such as during festivals or special events, can strain the supply chain and lead to temporary price hikes.

Farmers' Issues:

- **Input Costs:** Rising costs of inputs like seeds, fertilizers, and pesticides can prompt farmers to adjust their selling prices to maintain profitability.
- **Access to Credit:** Farmers facing difficulties in obtaining credit may struggle to invest in their crops, potentially affecting yields and prices.

Government Policies:

- **Minimum Support Prices (MSP):** Changes in MSPs for agricultural products can influence the pricing dynamics. If MSPs are not adjusted to cover production costs, farmers may look to recoup losses by selling at higher market prices.
- **Trade Policies:** Import/export regulations and trade agreements can impact the availability of certain vegetables in the domestic market, affecting prices.

Global Factors:

- **International Commodity Prices:** Fluctuations in global prices of commodities can affect the cost of imported goods, impacting the domestic market.
- **Global Weather Events:** Adverse weather conditions in other major vegetable-producing regions globally can lead to reduced exports, affecting the supply chain.

Inflation and Economic Factors:

- **Inflation:** General inflationary pressures in the economy can contribute to higher prices across all sectors, including agriculture.



- **Economic Conditions:** The overall economic health of the country, including income levels and employment rates, can influence consumer purchasing power and demand for vegetables.

Control measures

Monitoring and Early Warning Systems:

- Establish a robust monitoring system to track vegetable crop prices across different regions.
- Implement early warning systems to detect sudden price hikes or potential shortages in advance.

Improved Agricultural Practices:

- Provide training and support to farmers on modern agricultural techniques to increase crop yield and reduce vulnerability to weather-related risks.
- Encourage the adoption of high-yielding and disease-resistant crop varieties.
- Promote sustainable farming practices such as crop rotation and integrated pest management.

Infrastructure Development:

- Invest in rural infrastructure such as irrigation facilities, storage facilities, and transportation networks improve market access for farmers.
- Establish cold storage facilities and warehouses to store perishable crops and prevent wastage.

Market Interventions:

- Implement market interventions such as price ceilings or floor prices to stabilize vegetable prices during periods of volatility.
- Regulate the activities of middlemen and traders to prevent hoarding and speculative pricing.
- Facilitate direct farmer-to-consumer sales through farmers' markets or online platforms to eliminate intermediaries and ensure fair prices for both farmers and consumers.

Subsidies and Support Mechanisms:

- Provide subsidies on agricultural inputs such as seeds, fertilizers, and pesticides to reduce production costs for farmers.



- Offer financial assistance and insurance schemes to help farmers mitigate losses due to crop failures or adverse weather conditions.

Research and Development:

- Invest in research and development to develop climate resilient and high-yielding crop varieties that are better suited to local conditions.
- Promote the use of innovative technologies such as precision agriculture and vertical farming to increase productivity and efficiency in vegetable cultivation.

Consumer Awareness and Education:

- Educate consumers about seasonal variations in vegetable prices and encourage them to make informed purchasing decisions.
- Promote dietary diversity and the consumption of alternative nutrition sources to reduce dependence on a single crop and alleviate demand pressure on specific vegetables.

Policy Reforms:

- Review and revise agricultural policies to address structural issues such as land fragmentation, inadequate access to credit, and out-dated marketing regulations.
- Foster public-private partnerships to encourage investment in agriculture and improve market linkages between farmers and agribusinesses.

International Trade:

- Monitor international market trends and explore opportunities for importing vegetables during domestic shortages.
- Negotiate trade agreements to ensure fair market access for Indian farmers and prevent dumping of cheap imported produce that could undermine local agriculture.

Emergency Response Mechanisms:

- Establish contingency plans and emergency response mechanisms to address sudden disruptions in vegetable supply chains, such as natural disasters or disease outbreaks.
- Coordinate with relevant government agencies, NGOs, and humanitarian organizations to provide timely assistance to affected farmers and communities.

Conclusion

In conclusion, addressing sudden price hikes in vegetables in India requires a multi-faceted approach that combines agricultural reforms, technology adoption, infrastructure

development, and effective government interventions. By fostering a resilient and efficient vegetable supply chain, India can better manage price fluctuations in vegetable crops.

