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Impact Assessment of Minimum Support Price (MSP) on Wheat and Cotton Cultivation: A Comparative Study of Hisar and Faridabad Districts, Haryana

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Abstract

This study examines the impact of the Minimum Support Price (MSP) on crop area, production, and yield of wheat and cotton in Hisar and Faridabad districts of Haryana. Using secondary time-series data from 2004–05 to 2021–22, the analysis compares MSP trends with physical output indicators across two contrasting agro-economic regions: the agrarian core of Hisar and the peri-urban landscape of Faridabad. Trend analysis reveals a consistent upward movement in MSP for both crops, while area, production, and yield exhibit considerable volatility. The findings indicate that MSP has a limited direct influence on productivity and output, functioning primarily as an income-support and risk-mitigation mechanism. Crop performance is largely shaped by agro-climatic conditions, irrigation availability, pest incidence, and structural factors such as urbanisation. The study highlights the spatially differentiated effectiveness of MSP and underscores the need for region-specific, integrated agricultural policy interventions.

Keywords: Minimum Support Price (MSP); Crop productivity; Regional disparity; Haryana agriculture

1. Introduction

Agriculture forms the backbone of India's economy, serving as the primary source of livelihood for nearly 58% of the population. Despite its importance, the sector has experienced a gradual decline in agricultural and rural employment, encouraging farmers to pursue alternative sources of income [1]. Over time, agriculture has evolved from a simple producer–consumer relationship into a complex system involving multiple stakeholders, each contributing to growth, employment generation, and structural transformation [2]. The performance and productivity of the sector are shaped by diverse factors, including climate variability, technological advancements, market accessibility, and rural infrastructure development [1]. Alongside major cereals and cash crops, traditional grains such as millets have also re-emerged as climate-resilient, nutrient-rich options for strengthening food security.

India's agricultural trajectory has been significantly influenced by policy interventions, among which the agricultural price policy and particularly the Minimum Support Price (MSP) mechanism plays a pivotal role. The Agricultural Prices Commission (APC), established in 1965, was mandated to advise the government on maintaining a balanced price structure. By 1980, the policy framework shifted to emphasize equilibrium between demand and supply of food grains, prompting the APC later renamed the Commission for Agricultural Costs and Prices (CACP) to transition from a focus on maximizing output to promoting a production pattern aligned with broader economic needs [3].

The CACP currently recommends MSPs for 25 major crops, including wheat, paddy, cotton, oilseeds, and pulses. While MSP has supported farm incomes by ensuring minimum remunerative prices, it has also faced criticism. Research suggests that the system disproportionately benefits food-surplus states like Punjab and Haryana, where procurement for the Public Distribution System (PDS) is heavily concentrated [4]. Moreover, MSP has historically favoured wheat and

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paddy over pulses and oilseeds, contributing to regional imbalances and skewed land allocation [4], [5]. Although MSP incentives were crucial during the Green Revolution encouraging higher food grain production the policy has since struggled to adapt to shifting agricultural realities, increasing production costs, and global market dynamics. Concerns have also emerged regarding MSP's potential role in widening income disparities [6] and its growing use as a political tool rather than an economic instrument.

Despite these limitations, MSP continues to play an essential role in price stabilization, buffer stock maintenance, and supporting food security programs [7], [8]. It remains a significant driver of crop production decisions, influencing area allocation, production levels, and farmers' willingness to invest in improved technologies [9]. The impact of MSP, however, varies across crops and regions due to agro-ecological differences, market conditions, and infrastructural disparities. Wheat, a major cereal supporting domestic food security, and cotton, a critical raw material for India's textile industry, respond strongly to MSP-supported procurement [10]. In contrast, crops like pulses and oilseeds often show a weaker MSP response due to uncertain procurement and market fluctuations [9], [11].

The state of Haryana offers a compelling context for studying MSP's impact due to its advanced agricultural infrastructure, high irrigation penetration, and long-established integration with national procurement systems. Within the state, the Hisar and Faridabad administrative divisions present contrasting agricultural environments. Hisar represents a predominantly agrarian region with substantial area under wheat and cotton, while Faridabad though rapidly urbanizing continues to cultivate cotton alongside pockets of wheat and other crops. These divisions exhibit notable differences in cropping patterns, area contraction, productivity variations, and market linkages, making them ideal for assessing how MSP influences area, production, and yield outcomes.

Existing literature indicates that while MSP may significantly influence farmers' area decisions, its impact on productivity and yield is generally indirect, shaped by irrigation access, technology adoption, input costs, and climate variability [4]. Given the mixed evidence and regional diversity, a focused analysis of wheat and cotton under MSP in Hisar and Faridabad is essential for understanding how price policy interacts with local agro-economic conditions.

2. Literature Review

Rao et al., (2021) analyse the trends in Minimum Support Price (MSP) and the cost of production of paddy in Andhra Pradesh over two decades, from 1990–91 to 2009–10, to assess the economic viability of paddy farming in the region. The study examines the growth rates of area, production, and productivity of paddy, highlighting how MSP and production costs have evolved and influenced farmers' income levels. The authors identify a significant shift in the MSP–cost relationship, noting that during the 1990s, the MSP often provided a negative margin over the cost of production (C2), while in the 2000s, this trend turned positive, reflecting improved government support for paddy farmers. By calculating the Compound Growth Rates (CGR) and analysing long-term trends, the study provides insights into how price policies and cost dynamics have affected paddy cultivation, farm profitability, and sustainability in Andhra Pradesh.

Ahmad (2017) revisited MSP policy with evidence from Bihar, analysing cost of cultivation data for major crops. The study demonstrated that farmers derived substantial gains from paddy, wheat, and maize when assessed against operational costs but experienced potential losses when considering comprehensive costs. Ahmad emphasized optimizing cost components such as labour, fertilizers, and irrigation to improve profitability. He recommended developing strong procurement systems, cooperative institutions, and supportive price policies to make farming economically viable, especially for small and marginal farmers.

Das (2021) investigated the long-run relationships between Minimum Support Prices (MSPs), yield rates, and total production quantities for various food and non-food crops in India from 1983 to 2019. Using an endogenous growth model, the study established that MSP has significant long-term associations with both yield rates and production output. It further revealed that MSP acted as a causal factor for yield improvement in pulses and groundnut, while influencing production quantity in crops such as jute and cotton. The findings emphasized MSP's role in safeguarding farmers from distress sales and market volatility, reinforcing its importance as an agricultural price support mechanism in the Indian context.

Dhawan & Singh (2019) conducted an analytic assessment of the impact of MSP on Punjab's cropping patterns. Their regression analysis indicated that increases in MSP have significantly contributed to the expansion of wheat and paddy cultivation areas, while causing declines in the acreage of pulses, maize, and oilseeds. Specifically, a one percent rise in lagged MSP led to a 0.12% and 0.48% increase in the area under wheat and paddy, respectively. However, cotton acreage declined by 0.06% due to pest issues. The authors concluded that MSP-driven incentives have led to cereal-centric cropping patterns, potentially undermining crop diversification and oilseed production.

Chintapalli & Tang (2020) investigate the effectiveness of credit-based Minimum Support Price (MSP) schemes in developing countries, focusing on their impact on farmer welfare, consumer surplus, and overall implementation costs. The study explores how MSP policies aim to safeguard farmers' incomes and ensure adequate crop production, thereby contributing to food security and economic stability. However, the authors find that increasing MSP does not always lead to improved farmer welfare, as the net benefits can turn negative when implementation costs exceed the gains in farmer surplus. Through their analysis, they identify the existence of an optimal MSP level that maximizes net social value, particularly in markets characterized by risk-averse farmers and uncertainties in both market prices and crop yields. This research highlights the importance of designing MSP policies that balance welfare gains with administrative and fiscal sustainability, ensuring that both farmers and consumers benefit effectively.

Dev (2023) evaluated institutional arrangements for enforcing MSP policy effectively in Punjab, focusing on wheat and paddy. The study revealed that while MSP and production costs have increased over time, the number of farmers benefiting from government procurement has remained relatively stable. The findings suggested that Punjab's institutional framework, including the Food Corporation of India (FCI), has successfully implemented MSP, promoting fair prices and encouraging agricultural investment. However, similar institutional support mechanisms are lacking for non-cereal crops like oilseeds, which restricts their growth potential.

Kumar Basantaray (2023) investigates the effectiveness of India's Minimum Support Price (MSP) policy by analysing state-wise data on paddy procurement and price deviations. The study evaluates how effectively the MSP mechanism functions across different regions, aiming to understand its impact on farmers' price realization and market participation. The findings reveal that the MSP policy has been effective in states such as Kerala, Madhya Pradesh, and Punjab, where government procurement systems are strong and accessible to farmers. However, in many other major rice-producing states, a large proportion of farmers continue to sell their produce to private agencies at prices below MSP, indicating limited policy effectiveness and weak institutional support. The study underscores the uneven implementation of the MSP policy across India, highlighting the need for better procurement infrastructure and stronger enforcement mechanisms to ensure equitable benefits for all farmers.

Kumar & Sekher (2023) explore the evolving dynamics of India's rural economy, particularly in Haryana, in the context of agricultural transformation driven by increasing food production and the influence of the Minimum Support Price (MSP) policy. The study highlights the crucial role of MSP in shaping farmers' livelihoods and the broader rural economic structure by providing income stability and influencing cropping patterns. However, the authors also point out the emerging challenges that threaten sustainable agricultural growth, such as groundwater depletion, resource overuse, and stagnating farm incomes. Their analysis emphasizes that while MSP has contributed to economic growth and rural transformation, it must be complemented by policies promoting resource conservation, diversification, and sustainable farming practices to ensure long-term agricultural resilience in Haryana.

Sharma & g d s kumar, (2023), in their paper "Is Increasing MSP Result in Increasing Area Under Annual Edible Oilseed Crops?", examined the relationship between MSP, cost of cultivation (CoC), area, and productivity of oilseed crops from 2017 to 2021. Their study identified oilseeds as the second most crucial field crop after cereals, playing a vital role in agricultural sustainability and economic stability. Despite rising MSP and productivity trends, the authors observed inconsistencies in the area under crops such as sunflower, safflower, and niger. Using secondary data, they analysed temporal trends to understand the economic responsiveness of oilseed acreage to policy interventions. The paper concludes that while MSP and productivity show positive associations, structural factors such as fluctuating input costs and limited procurement support continue to constrain expansion in oilseed cultivation areas, necessitating policy recalibration for balanced agricultural growth.

Guda et al., (2021) analyze the Guaranteed Support Price (GSP) scheme adopted by several developing countries to support farmers and ensure food security. The study outlines the GSP's three key objectives: incentivizing farm output, subsidizing consumption for the poor, and maintaining reserve stocks to manage yield uncertainty. Using a Stackelberg game framework between farmers and a social planner, the authors compare the GSP with the Direct Benefit Transfer (DBT) scheme. Their findings show that when food security is highly valued, the GSP generates greater social surplus and higher production than DBT, particularly under conditions of yield uncertainty. The study highlights GSP's effectiveness in stabilizing agricultural production and supporting both farmers and low-income consumers in developing economies.

Sharma et al., (2024) explored the interrelationship between MSP policy, irrigation, and agricultural productivity in India. The study recognized that while MSP acts as a critical tool for enhancing farm income and productivity, its effectiveness is significantly influenced by infrastructural variables such as irrigation access. The authors emphasized that a lack of irrigation infrastructure can constrain the benefits of MSP, limiting its capacity to improve output and farmer welfare. They advocated for integrated policy approaches that link pricing policies with resource management to achieve sustainable agricultural growth.

Jana & Manna (2024) examined the broader policy implications of providing a legal guarantee for MSP in Indian agriculture. Their analysis discussed how MSP ensures price stability and fair remuneration for farmers while protecting them from market fluctuations. However, they also cautioned that a legal guarantee could result in market distortions and fiscal burdens. The paper proposed complementary strategies such as improved infrastructure, price stabilization mechanisms, and income support schemes to enhance farmers' incomes sustainably. The study underscored the need for comprehensive MSP reforms incorporating global best practices and market modernization.

2.1. Research Gap

This study addresses several critical gaps in the existing literature on India's agricultural price policy. First, it moves beyond broad state- or national-level analyses to provide a disaggregated, district-level comparative assessment, capturing how sub-regional variations in agro-ecology, urbanization, and market access mediate policy impact a perspective often lacking in MSP evaluations. Second, it concurrently examines a staple food grain (wheat) and a commercial fibre crop (cotton), highlighting how the role and effectiveness of MSP differ fundamentally across crop categories with distinct procurement systems, market structures, and biological vulnerabilities. Third, the research explicitly disentangles the influence of price policy from production ecology by contrasting long-term MSP trends with volatile output indicators, empirically demonstrating that non-price factors are the dominant drivers of on-ground performance. Finally, it contributes to the understudied domain of peri-urban agriculture, systematically analyzing how MSP functions in landscapes undergoing rapid non-agricultural transition, where its relevance is significantly diminished by structural land-use changes. By filling these gaps, the study provides a nuanced framework for understanding the spatially contingent and context-specific nature of agricultural price policy effectiveness.

2.2. Research Objectives

- To analyse the long-term trends in MSP, crop area, production, and yield across the districts of Faridabad and Hisar Districts of Haryana.
- To assess and compare the extent to which changes in MSP have influenced the area, production, and yield of major crops across the two districts.

3. Research Methodology

This study examines the impact of the Minimum Support Price (MSP) on crop area, production, and yield in two districts of Haryana Faridabad and Hisar chosen for their contrasting agro-climatic conditions and cropping patterns. Faridabad represents a peri-urban agricultural landscape with relatively limited cultivation and diverse crop choices influenced by urban proximity. In contrast, Hisar forms the core agrarian belt of the state, characterized by semi-arid climatic conditions, wider cultivation of traditional crops, and greater dependence on agriculture. This dual-region framework facilitates an understanding of how MSP interacts with differing production environments and farming systems. Two representative crops were selected based on the two MSP crop categories: wheat (cereals), cotton (commercial crops),

The study is based exclusively on secondary time-series data collected from official government sources. MSP data for selected crops were obtained from the Commission for Agricultural Costs and Prices (CACP), while district-level statistics on area, production, and yield were sourced from the Department of Economics and Statistics (DES), Haryana. The analysis covers the period from 2004-05 to 2021–22, depending on data availability, enabling a comprehensive long-term exploration of policy effects.

Trend analysis was conducted through graphical examination of long-term movements, enabling the identification of phases of expansion, stagnation, or decline in each variable across districts. These trends were then compared both within each district and between the two districts to understand spatial disparities and different levels of responsiveness to MSP.

The primary variables used in the study included MSP, area, production, and yield. The interpretation of results involved linking observed patterns with broader contextual factors such as agro-climatic conditions, technological adoption, market dynamics, crop profitability, irrigation availability, and procurement systems. This ensured that MSP responsiveness was not evaluated in isolation but within the broader production environment. The study, however, is subject to limitations, including reliance on secondary data, limited procurement data for cereals and commercial crops, and the influence of uncontrollable variables such as weather anomalies on yield and production. Despite these constraints, the methodology provides a robust framework for assessing MSP impacts across diverse agricultural settings in Haryana.

4. Results and Interpretation

This part has been divided into two parts. Part A explains the crop wise area of cultivation, production, yield and MSP growth in the two districts. In Part B comparison has been done between the two districts in terms of area of cultivation, production and yield of the studied crops.

4.1. Part A: Crop wise analysis

4.1.1. Cotton

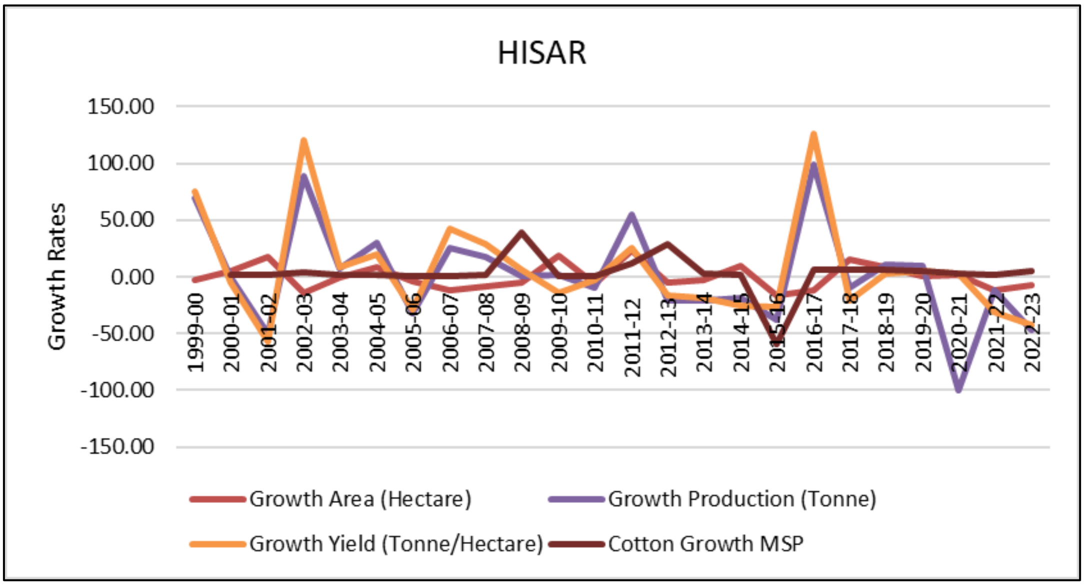

Figure 1 Cotton-Hisar

The cotton growth trends in Hisar district reveal a sharp contrast between the steady upward movement of MSP and the high volatility observed in area, production, and yield. While MSP increases predictably due to policy-driven revisions, the output indicators fluctuate widely because cotton cultivation in Haryana is highly sensitive to monsoon variations, irrigation constraints, and recurrent pest attacks such as pink bollworm. Acreage shifts correspond more closely with weather conditions and farmers' relative profitability expectations than with MSP incentives, consistent with previous studies showing weak price responsiveness for cotton [22]. Production and yield exhibit pronounced peaks and deep declines across several years due to climatic shocks and biotic stresses, indicating that productivity outcomes are largely determined by environmental and agronomic factors rather than policy signals[9], [10]. Overall, the divergence between stable MSP growth and unstable biological indicators underscores that MSP in Hisar functions primarily as an income-support mechanism rather than a direct driver of cotton area or productivity trends, aligning with national evidence on India's cotton sector.

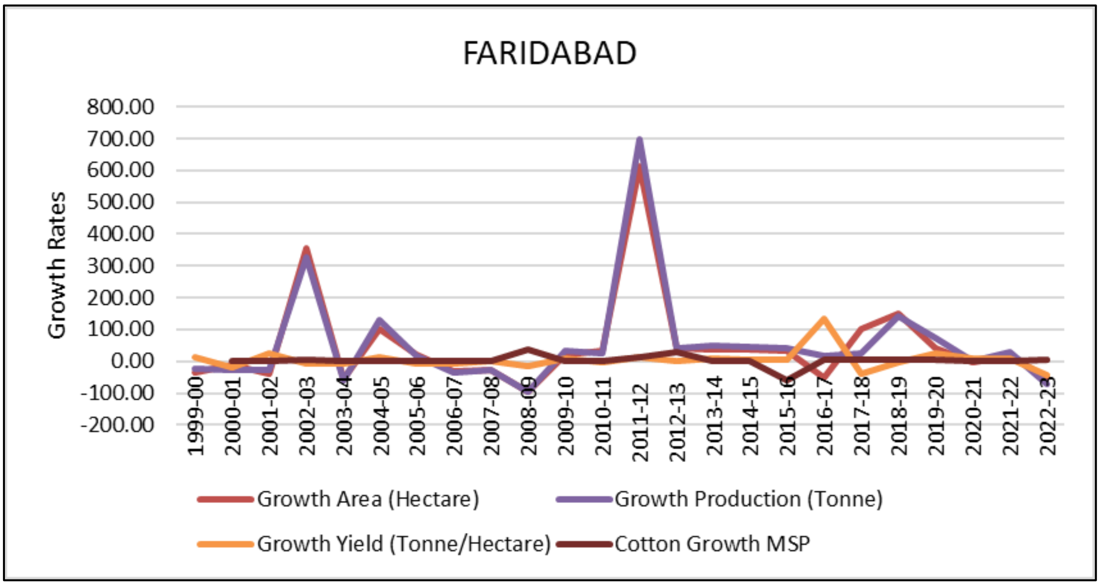

Figure 2 Cotton-Faridabad

The cotton growth trends in Faridabad district reveal pronounced instability across production, yield, and area, contrasted with the consistently rising MSP trend. While cotton area shows only mild fluctuations with occasional spikes, it lacks sustained expansion, indicating that acreage decisions depend more on agro-ecological conditions than on MSP incentives [22]. Production growth is highly erratic, with extreme peaks such as in 2002–03 and the exceptionally high surge in 2011–12 largely driven by base effects, favourable weather, or effective pest control, while negative dips reflect the crop's vulnerability to rainfall variability, pink bollworm attacks, and input shortages [9]. Yield trends follow a similar pattern, with sharp upward movements in a few favourable years and declines resulting from temperature stress, pest infestation, and late-season rainfall, underscoring cotton's sensitivity to environmental conditions [23]. In contrast, MSP displays a smooth and predictable upward trend, aligned with national price support policy, but without corresponding improvements in physical output indicators [24]. Overall, the Faridabad trends indicate that cotton performance is shaped predominantly by climatic variability, pest pressure, irrigation reliability, and input quality, while MSP functions mainly as an income-support measure rather than a driver of production or productivity consistent with broader evidence from India's cotton-growing regions [10], [22].

4.1.2. Wheat

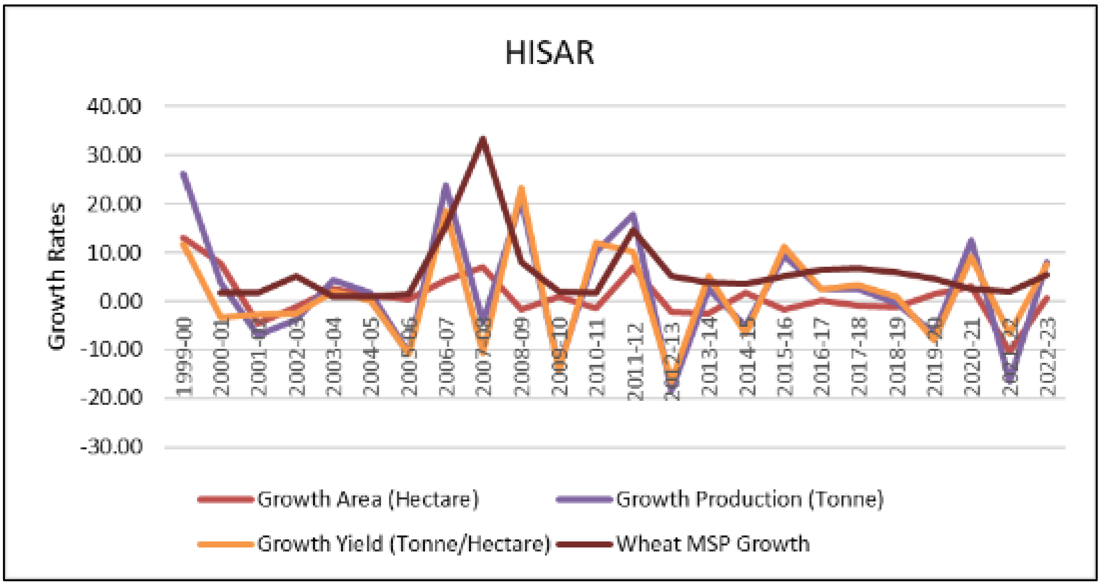

Figure 3 Wheat-Hisar

The wheat growth trends in Hisar district show a clear divergence between the stable upward movement of MSP and the fluctuating patterns of area, production, and yield. While MSP increases steadily due to policy-driven revisions, the physical indicators exhibit periodic spikes and dips that reflect wheat's sensitivity to agro-climatic and management-related factors [23], [24]. Area under wheat remains largely stable with minor oscillations, influenced more by irrigation availability, winter temperatures, and competition from other rabi crops than by MSP [22]. Production and yield display similar volatility, with peaks in years of favourable weather and adequate inputs, and declines associated with unseasonal rains, frost, temperature stress, and disease outbreaks factors well documented in North Indian wheat-growing regions [9], [10]. The smooth upward trend in MSP, contrasted with unstable output indicators, reinforces that MSP primarily serves as an income-support and risk-mitigation tool rather than a direct driver of productivity or area expansion. Overall, wheat performance in Hisar is shaped predominantly by climatic variability, resource availability, and agronomic conditions, aligning with broader evidence from India's northwestern agricultural belt.

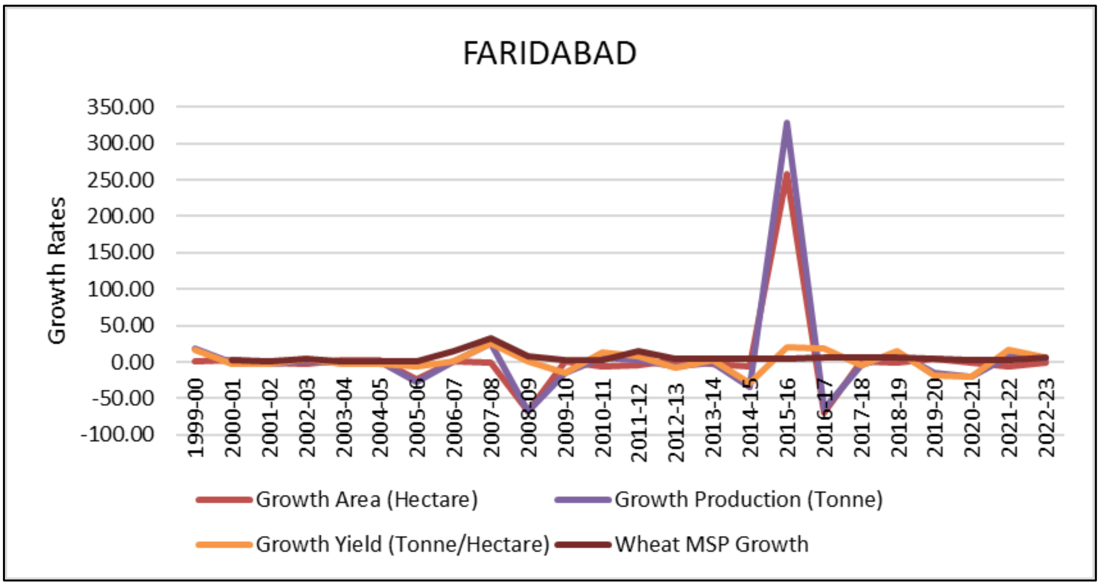

Figure 4 Wheat-Faridabad

The wheat growth trends in Faridabad district show moderate fluctuations in area, production, and yield, alongside a steadily rising MSP trend. Wheat area exhibits only mild year-to-year variation, with occasional increases driven by favourable winter temperatures, adequate irrigation, or improved local farming conditions, while declines reflect competition from other rabi crops and water-related constraints. Production growth is more volatile, with sharp dips in years such as 2008–09 and 2015–16 and strong peaks in 2007–08, 2010–11, and 2016–17, indicating wheat's sensitivity to weather variability, pest or disease pressure, and irrigation availability during critical stages. Yield growth mirrors production patterns, reaffirming that productivity rather than changes in area is the primary driver of output shifts in the district, consistent with findings for Haryana's wheat systems. In contrast, MSP follows a smooth and predictable upward path, reflecting national price-support policy rather than short-term production incentives. The absence of synchronized movement between MSP and physical output indicators suggests that MSP plays a limited role in driving wheat area, yield, or production in Faridabad. Overall, the trends show that environmental and agronomic conditions such as temperature, rainfall, water availability, and input quality largely determine wheat performance, while MSP functions mainly as an income-support mechanism rather than a key determinant of production outcomes [9], [22], [24].

4.2. Part B: Comparison of Districts

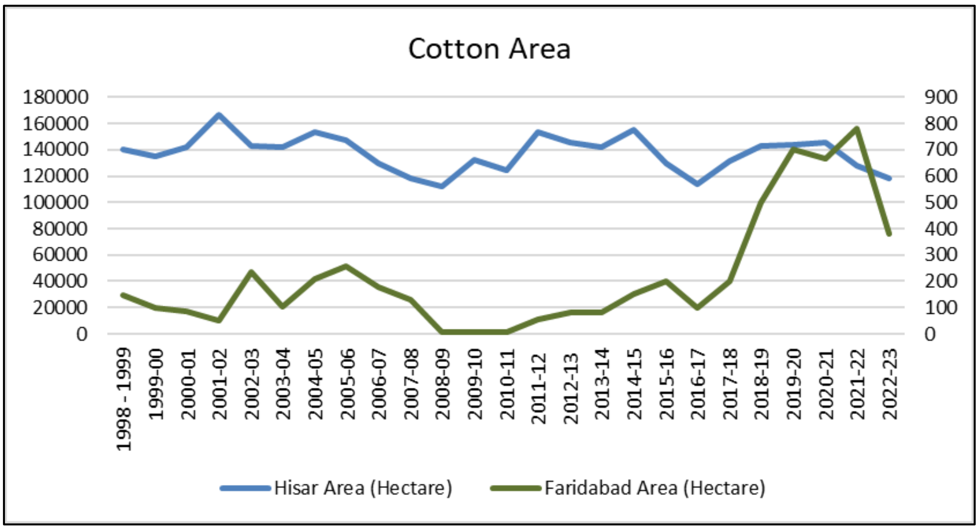

Figure 5 Cotton Area- Hisar and Faridabad

The comparison of cotton area trends between Hisar and Faridabad districts reveals a sharp contrast in both the scale of cultivation and the temporal pattern of change. Hisar consistently maintains a substantially larger area under cotton typically ranging between 120,000 and 170,000 hectares reflecting its long-established status as a major cotton-growing region supported by favourable agro-climatic conditions, deep alluvial soils, and a strong regional cotton economy [24]. Although Hisar shows periodic fluctuations, including peaks around 2001–02 and 2014–15 and declines in years such as 2007–08 and after 2020–21, the overall trend displays relative stability compared with Faridabad. In contrast, Faridabad exhibits much smaller cotton acreage, fluctuating between 10,000 and 50,000 hectares for most of the study period. Until 2016–17, cotton area in Faridabad remained low and unstable due to limited irrigation infrastructure, higher urbanisation pressure, and competition from more remunerative crops suited to the region's mixed agro-ecological conditions [22]. A notable expansion occurs after 2017–18, where cotton area rises sharply, peaking around 2020–21 before falling again in 2022–23. This surge appears to be driven by short-term favourable market conditions and improved pest management in specific years rather than structural agricultural changes [9]. Overall, while Hisar's cotton area shows long-term stability and dominance, Faridabad demonstrates a much more volatile and constrained pattern, highlighting the role of regional agro-climatic suitability, irrigation access, and farming systems in shaping cotton acreage decisions [10], [23].

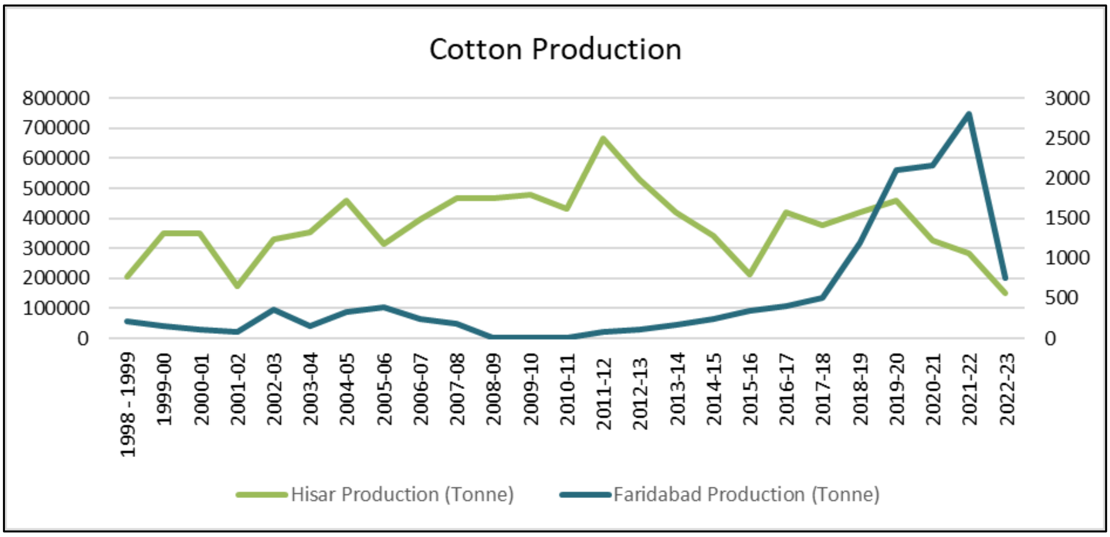

Figure 6 Cotton Production- Hisar and Faridabad

The comparison of cotton production between Hisar and Faridabad districts reveals a stark and persistent disparity, with Hisar consistently producing significantly larger quantities of cotton throughout the study period. Hisar's production levels, generally ranging between 300,000 and 700,000 tonnes in most years, reflect its established role as a major cotton-growing hub in Haryana, supported by favourable agro-climatic conditions, larger contiguous cultivated areas, and better adoption of high-yielding seed varieties [24]. Production peaks in years such as 2004–05, 2011–12, and 2018–19 align with national patterns of favourable monsoon conditions and effective pest management, consistent with documented cyclical variations in India's cotton output [9], [10]. In contrast, Faridabad exhibits much lower production levels, often below 100,000 tonnes until 2015–16, reflecting its marginal cotton area, limited irrigation intensity, and greater crop diversification towards non-cotton crops [22]. A notable surge occurs after 2016–17, with production rising sharply and peaking around 2020–21, likely driven by temporary increases in area under cotton and improved productivity during favourable weather years. However, the sharp decline in 2022–23 indicates the vulnerability of cotton in Faridabad to climatic fluctuations and pest pressures, factors widely recognized as major constraints in cotton production across north-western India [23]. Overall, Hisar maintains a clear production advantage due to its stronger agronomic base, while Faridabad's production remains highly variable and structurally limited. These contrasting trends reinforce the understanding that regional agro-ecology and production systems rather than MSP are the dominant determinants of cotton production outcomes in Haryana [9], [24].

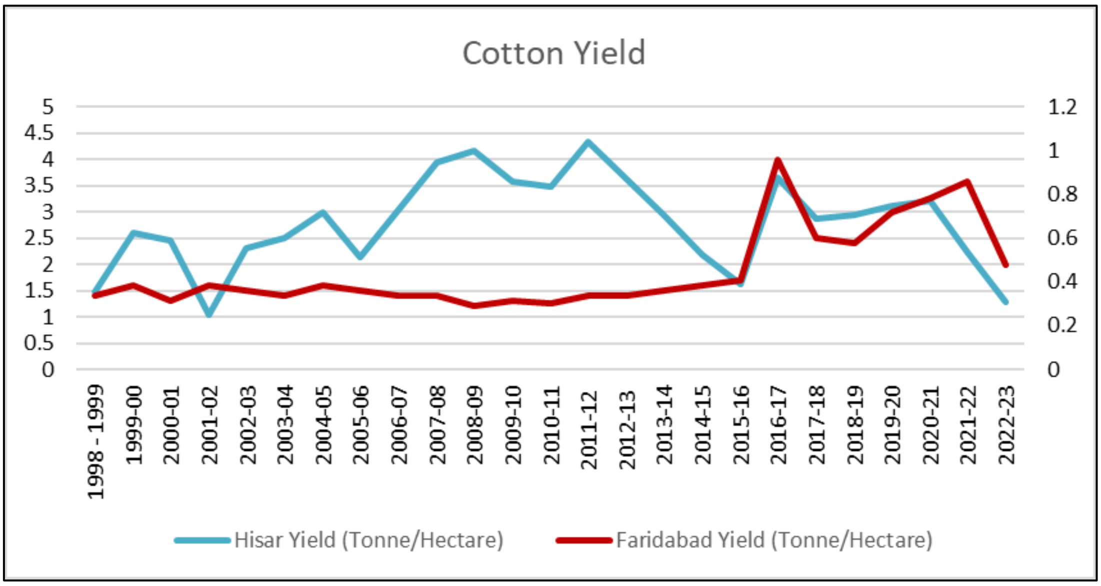

Figure 7 Cotton Yield-Hisar and Faridabad

The comparison of cotton yield trends between Hisar and Faridabad districts reveals a pronounced and persistent productivity gap, reflecting significant differences in agro-ecological suitability, production systems, and input-use efficiency. Hisar consistently records substantially higher yields ranging from 2.0 to over 4.0 tonnes per hectare during peak years indicating strong agronomic performance supported by better irrigation access, favourable soil conditions, and more intensive adoption of improved seed varieties [24]. Yield peaks around 2007–08, 2011–12, and 2016–17 highlight periods of favourable weather and effective pest management, whereas declines after 2014–15 and again in 2022–23 reflect wider regional challenges such as pink bollworm infestations and climatic stress documented in North Indian cotton belts [9], [10]. In contrast, Faridabad shows consistently lower yields generally between 1.0 and 1.5 tonnes per hectare for most of the study period suggesting structural constraints such as lower irrigation reliability, fragmented landholdings, and lower adoption of high-input cotton production systems [22]. A temporary improvement is observed around 2016–17 and 2020–21, where yields approach 1.8–2.0 tonnes per hectare, likely due to favourable seasonal conditions or short-term improvements in pest management. However, these gains are not sustained, with yields declining again in 2022–23. Overall, the sharp contrast between the two districts indicates that cotton yield performance is more strongly influenced by agro-climatic and management factors than by pricing mechanisms such as MSP, consistent with broader research on cotton productivity variability in India [23]. Hisar's consistently higher yields underscore its comparative advantage in cotton cultivation, while Faridabad's lower and more erratic yield pattern reflects greater climatic vulnerability and production risks.

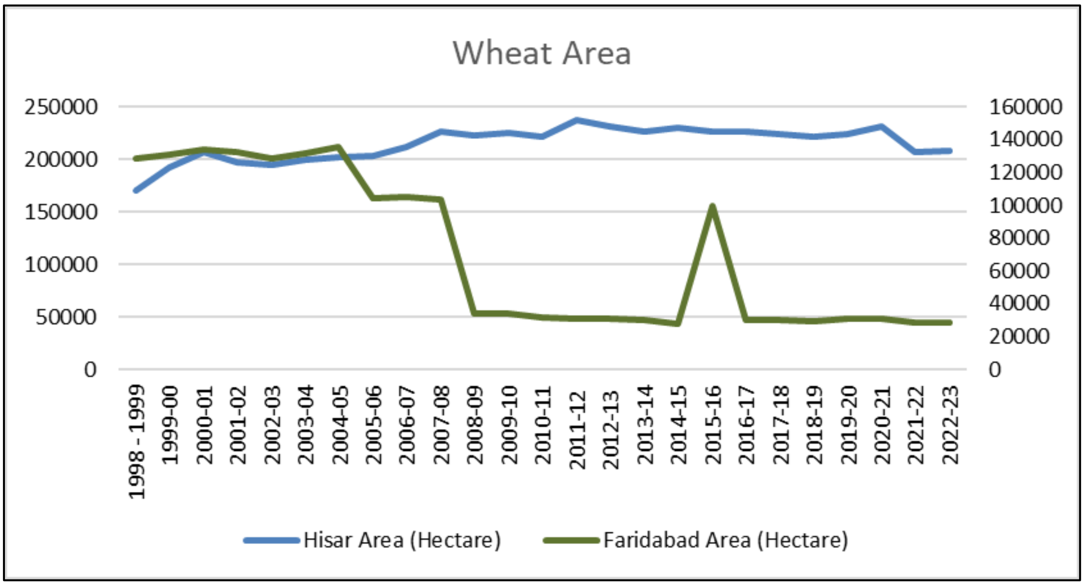

Figure 8 Wheat Area- Hisar and Faridabad

The long-term trends in wheat area under cultivation show a pronounced structural difference between Hisar and Faridabad districts, reflecting their divergent agricultural resource bases and cropping priorities. Hisar consistently maintains a substantially larger wheat area generally ranging between 200,000 and 240,000 hectares across the study period supported by fertile alluvial soils, high irrigation coverage, and its position within the high-productivity wheat belt of western Haryana [6], [24]. The stability of Hisar's wheat area, with only mild annual fluctuations, aligns with broader findings that wheat remains the dominant rabi crop in irrigated agro-climatic zones of Haryana due to assured procurement through the MSP system and widespread adoption of high-yielding varieties [9], [22]. In contrast, Faridabad demonstrates significantly lower and highly unstable wheat area throughout the period. The district records moderate wheat coverage during the early 2000s but experiences a sharp contraction after 2006–07, with sown area dropping below 60,000 hectares and at times falling even further, indicating a structural shift away from wheat cultivation. This decline is consistent with evidence that regions in southern/eastern Haryana, particularly peri-urban districts such as Faridabad, have experienced land diversification toward non-agricultural uses, horticultural crops, and urban expansion pressures [23].

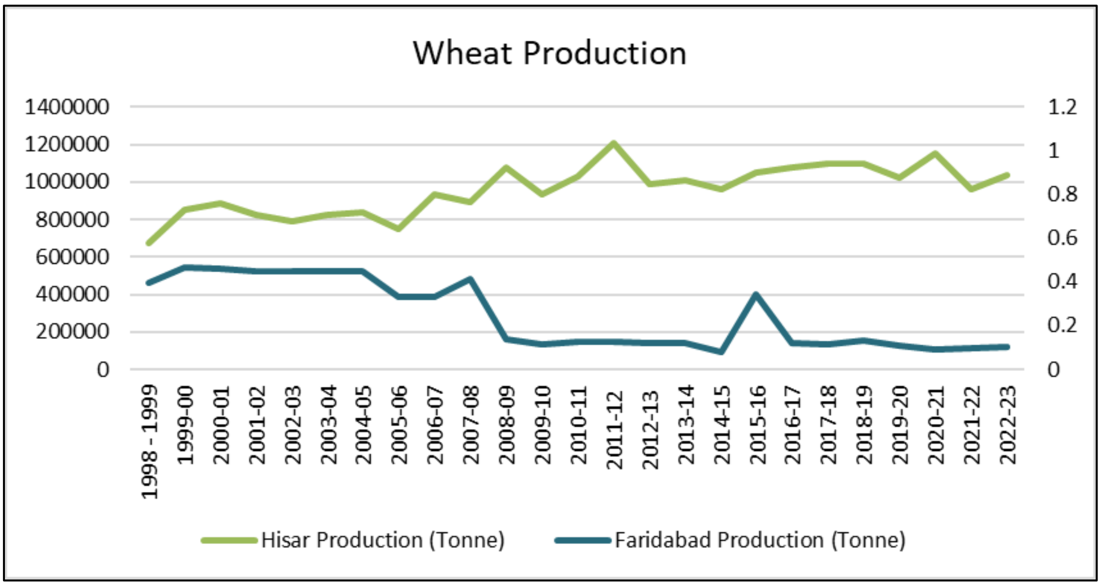

Figure 9 Wheat Production-Hisar and Faridabad

Temporary recoveries, such as the spike around 2015–16, are short-lived and suggest seasonal or policy-specific anomalies rather than sustained agronomic change. Overall, while Hisar exhibits a resilient and entrenched wheat-cultivation base, Faridabad's wheat area is characterized by volatility and structural decline, reaffirming that regional agro-ecology, land-use transitions, and urbanization not MSP alone shape wheat area dynamics in Haryana [9], [22].

Wheat production trends in Hisar and Faridabad districts show a pronounced contrast, largely driven by differences in cultivated area, agro-ecological suitability, and the intensity of agricultural practices. Hisar consistently records significantly higher production levels across the entire study period, with output steadily rising from around 700,000 tonnes in the late 1990s to peaks exceeding one million tonnes in several years, particularly between 2010–11 and 2021–22. This sustained growth corresponds with Hisar's position as part of Haryana's core wheat belt, benefitting from extensive canal irrigation, higher adoption of high-yielding varieties, and strong institutional support from nearby agricultural research infrastructure [6], [24]. In contrast, wheat production in Faridabad remains much lower and more volatile, with output declining sharply after the mid-2000s and stabilizing at minimal levels in the subsequent decade. These fluctuations reflect structural constraints, including rapid urbanisation, land diversion to non-agricultural uses, declining wheat acreage, and reliance on groundwater resources that have become increasingly stressed in the region [22]. Despite occasional short-term increases such as the temporary rise observed around 2014-15 Faridabad's production remains a fraction of Hisar's throughout the period, underscoring the central role of land availability and crop area in determining total wheat output [9]. Overall, the production dynamics reinforce that Hisar's agricultural landscape is better aligned with large-scale cereal cultivation, whereas Faridabad's production capacity is increasingly constrained by urban expansion and limited cultivable land, even though both districts show comparable yield trends [14], [23].

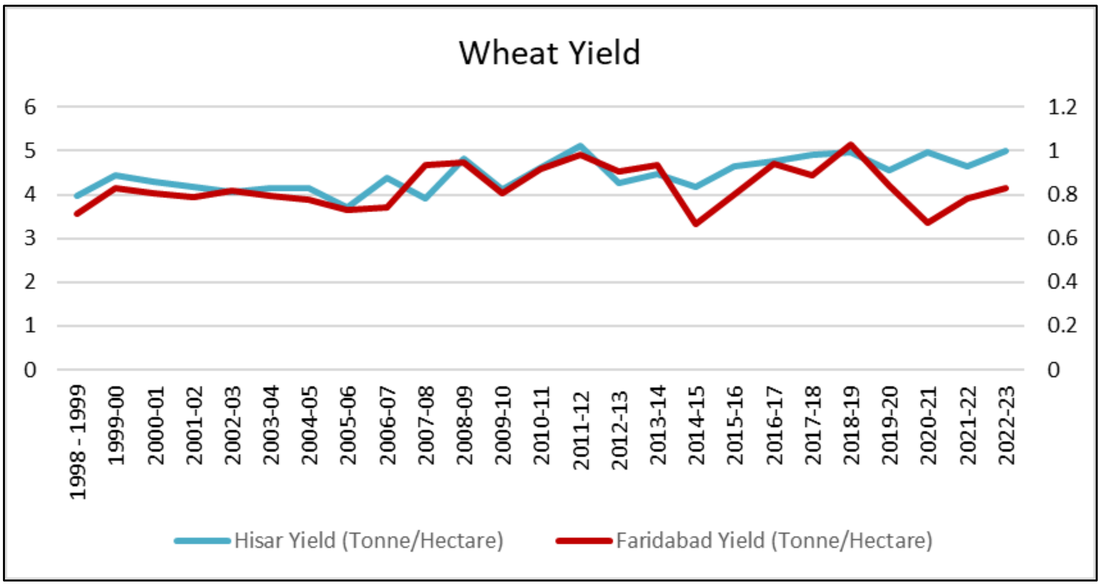

Figure 10 Wheat Yield-Hisar and Faridabad

The comparative yield trends of wheat in Hisar and Faridabad reveal a broadly similar performance pattern, with both districts demonstrating steady improvements over the 25-year period. Wheat yield in Hisar shows moderate but consistent growth, generally fluctuating between 3.8 and 5.2 tonnes per hectare, reflecting advancements in seed technology, irrigation facilities, and agronomic practices across Haryana's high-productivity wheat belt [6], [24]. Faridabad, despite having a much smaller wheat area and greater land-use pressures, records yield levels that are largely comparable to Hisar throughout the series, particularly in the mid-2000s and late 2010s when the district exhibited parity or even brief periods of higher yield. This trend aligns with findings that yield responses in peri-urban and semi-arid regions of Haryana are often driven by access to groundwater, adoption of high-yielding varieties, and localized farm-level intensification rather than total cultivated area [9], [22]. The sharp dip in Faridabad's yield around 2014–15 and again in 2020–21 appears to be associated with climatic variability and episodic production shocks, a phenomenon documented across southern Haryana's wheat-growing regions [23]. Conversely, Hisar's yield displays fewer abrupt declines, indicating a more resilient agro-ecological environment and stronger integration with the state's agricultural research and extension systems. Overall, while Hisar consistently maintains slightly higher yield stability, Faridabad demonstrates comparable productivity levels despite structural constraints, suggesting that yield outcomes are more influenced by input intensity and technology adoption than by district-level differences in wheat acreage [9].

5. Conclusion

This comparative analysis of wheat and cotton cultivation in Hisar and Faridabad districts of Haryana reveals the complex and often limited role of the Minimum Support Price (MSP) as a driver of agricultural outcomes. The study finds a clear and persistent divergence between the stable, policy-driven trajectory of MSP and the highly volatile trends in crop area, production, and yield for both crops. This volatility is overwhelmingly dictated by non-price factors: agro-climatic conditions (monsoon variability, temperature stress, pest infestations), access to critical resources (reliable irrigation), and broader structural forces (urban land conversion and crop diversification pressures). Consequently, MSP functions primarily as an income-support and risk-mitigation mechanism rather than a direct instrument for enhancing productivity or expanding cultivation area. Furthermore, its effectiveness is spatially heterogeneous. In the established agrarian core of Hisar, MSP contributes to cropping pattern stability, particularly for wheat, by providing assured market linkage. In contrast, in the rapidly urbanizing Faridabad belt, MSP's influence is minimal, as farmer decisions are dominated by constraints like land fragmentation, water scarcity, and alternative livelihood opportunities. These findings underscore that a uniform national price policy is an insufficient tool for steering agriculture. The future of agricultural policy in states like Haryana requires a differentiated and integrated approach one that strategically combines MSP with targeted investments in climate-resilient technologies, sustainable water management, and robust non-farm rural infrastructure to address the distinct challenges of core and periphery regions.

Compliance with ethical standards

Disclosure of conflict of interest

No Conflict of interest to disclose.

References

[1] G. B. Chaitra, C. Patil, and R. A. Yeledhalli, "Attracting and Retaining Youth in Agriculture – A Case of Agriclinics and Agribusiness Centres (ACABC) Scheme in India," Int. J. Curr. Microbiol. Appl. Sci., vol. 9, no. 2, pp. 1109–1115, Feb. 2020, doi: 10.20546/ijcmas.2020.902.129.

[2] Sharma Mohit and Patil Chidanand, "Recent trends and advancements in agricultural research: An overview," J. Pharmacogn. Phytochem., vol. 7, no. 2, pp. 1906–1910, 2018.

[3] S. S. Acharya, "Agricultural price policy and development: some facts and emerging issues," vol. 52, pp. 1–47, Jan. 1997.

[4] R. Chand, "Minimum Support Price in Agriculture: Changing Requirements," Econ. Polit. Wkly., vol. 38, pp. 3027–3028, Jan. 2003, doi: 10.2307/4413794.

[5] N. Singh, "Miracles and Reform in India: Policy Reflections," Asian Surv., 2002, [Online]. Available: https://www.paperdigest.org/paper/?paper_id=doi.org_10.1525_as.2002.42.5.708

[6] I. P. Singh, H. S. Bal, B. Singh, and N. Kumar, "Price Policy for Wheat and Paddy Vis-A-Vis Equity in Punjab," 10.22004/AG.ECON.271632, vol. 41, no. 4, pp. 611–616, 1986, doi: 10.22004/AG.ECON.271632.

[7] R. Chand, "MSP and Other Interventions in Wheat Market Are they Contributing to the Buffer Stock Cycles and Market Destabilization?," 2008, Accessed: Oct. 29, 2025. [Online]. Available: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.620.3112& rep=rep1&type=pdf

[8] S. Jha and P. V Srinivasan, "India -Reforming Farm Support Policies for Grains," Jan. 2006.

[9] Commission for Agricultural Costs and Prices, "Price policy for kharif crops: 2021–22 season," Ministry of Agriculture and Farmers Welfare, Government of India, 2021.

[10] Food and Agriculture Organization, "FAO agricultural outlook 2021–2030," FAO, 2021.

[11] NITI Aayog, "Agricultural transformation in India: Issues and challenges," Government of India, 2020.

[12] G. Rao, S. Kambhampaty, D. V. S. Rao, and V. Ra, "TRENDS IN PRODUCTION AND RELATIONSHIP BEHAVIOR OF MINIMUM SUPPORT PRICE AND COST OF PRODUCTION OF PADDY IN ANDHRA PRADESH," Feb. 2021.

[13] R. C. Das, "Does Minimum Support Price Have Long-Run Associations and Short-Run Interplays with Yield Rates and Quantities of Outputs? A Study on Food and Non-food Grains in India," Review of Market Integration, vol. 13, no. 1, pp. 42–65, Apr. 2021, doi: 10.1177/09749292211065192.

[14] V. Dhawan and J. M. Singh, Impact assessment of minimum support prices (MSP) on agriculture in Punjab: An analytic approach. 2019.

[15] P. Chintapalli and C. S. Tang, “The Value and Cost of Crop Minimum Support Price: Farmer and Consumer Welfare and Implementation Cost,” SSRN Electronic Journal, 2020, doi: 10.2139/ssrn.3681588.

[16] A. Kumar Basantaray, “Is Minimum Support Price Effective in India? Evidence from State-wise Paddy Procurement,” Asian Journal of Agricultural Extension, Economics & Sociology, pp. 53–65, Jan. 2023, doi: 10.9734/ajaees/2023/v41i11833.

[17] D. Kumar and M. Sekher, “Minimum Support Price and the Changing Nature of Rural Economy and Its Implications on Agriculture in Haryana,” Business Perspectives and Research, Jun. 2023, doi: 10.1177/22785337231164205.

[18] N R SHARMA and G D S KUMAR, “Is increasing MSP result in increasing area under annual edible oilseed crops?,” J. Oilseeds Res., vol. 40, no. Specialissue, Dec. 2023, doi: 10.56739/wsq5p658.

[19] H. Guda, M. Dawande, G. Janakiraman, and T. Rajapakshe, “An Economic Analysis of Agricultural Support Prices in Developing Economies,” Prod. Oper. Manag., vol. 30, no. 9, pp. 3036–3053, Sep. 2021, doi: 10.1111/poms.13416.

[20] S. Sharma, A. Kumar, and P. Khosla, “MSP AND IRRIGATION: KEY FACTORS FOR AGRICULTURAL DEVELOPMENT IN INDIA,” ShodhKosh: Journal of Visual and Performing Arts, vol. 5, no. 3, Mar. 2024, doi: 10.29121/shodhkosh.v5.i3.2024.5596.

[21] S. K. Jana and S. S. Manna, “Legal Guarantee of Minimum Support Price (MSP) and Indian Agriculture- Issues and Options,” International Journal of Innovative Research in Engineering and Management, vol. 11, no. 5, pp. 1–7, Oct. 2024, doi: 10.55524/ijirem.2024.11.5.1.

[22] A. Gulati and R. Juneja, India’s minimum support price policy: Impact on farmers and the food system. Springer Nature India, 2020. doi: 10.1007/978-981-15-4662-7.

[23] Ministry of Finance, “Economic Survey of India 2021–22,” Government of India, 2022.

[24] Ministry of Agriculture and Farmers Welfare, “Annual report 2022–23,” Government of India, 2023.