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Investment Support schemes versus Price Support schemes in Indian Agriculture: An Empirical Study of Telangana's Rythu Bandhu Scheme

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Abstract:

Indian agriculture employs two major policy instruments to support farmers: investment support (pre-season cash assistance for cultivation inputs) and price support (Minimum Support Price—MSP—and procurement). This study compares farmers' perceptions of these two mechanisms in Telangana using secondary official statistics and primary perception survey data collected during 2024–25. Telangana's investment support model—Rythu Bandhu—expanded substantially from ₹10,486 crore in 2018–19 to ₹14,743 crore in 2022–23, reaching ₹16,892 crore in 2024–25, with ₹81,548 crore cumulatively disbursed over eleven seasons i.e., 2018–19 to 2024–25, benefiting predominantly marginal 73.63% and small 17.70% landholders. Kharif 2024 and Rabi 2024–25 coverage expanded to 182 lakh acres, disbursing ₹8,946 crore combined, reaching approximately 72 lakh eligible farmers. In price support, MSP for paddy increased progressively from ₹2,040/quintal in 2022–23 to ₹2,183/quintal in 2023–24 to ₹2,320/quintal in 2024–25, with national procurement operations generating ₹1,89,745 crore MSP payments in 2024–25 benefiting 1,28,54,267 farmers. State-level paddy procurement in Telangana reached 3.2 million tonnes in 2024–25, up from 2.8 million tonnes in 2023–24. Analysis of 100 surveyed farmers indicates statistically significant differences in perception ratings between the two schemes. The study recommends strengthening procurement infrastructure in marginal farmer clusters, digitizing Rythu Bandhu delivery mechanisms, and integrating both schemes through real-time farmer information systems for enhanced welfare targeting.

Keywords: farmers' perception, MSP, procurement, Rythu Bandhu, investment support, price support, Telangana.

1. INTRODUCTION

Indian agriculture remains the backbone of the economy, employing over 40% of the workforce and contributing approximately 18% to national GDP. However, Indian farmers confront persistent vulnerabilities across the production and marketing cycles. These vulnerabilities manifest as two distinct but interconnected challenges: production-stage liquidity constraints and marketing-stage price risks.

During the cultivation season, farmers require timely access to working capital for purchasing seeds, fertilizers, pesticides, and labor. Many smallholder farmers, who constitute 86% of India's agricultural population, lack collateral or credit-worthiness to access formal credit. This liquidity gap translates into delayed input application, suboptimal use of improved varieties, and ultimately, reduced productivity. The second vulnerability emerges post-harvest: price volatility. Agricultural prices fluctuate seasonally and cyclically, often declining sharply during harvest months when supply surges. Price crashes can render farming economically unviable, particularly for debt-laden small farmers.

In response, the Indian government has evolved two complementary yet distinct policy architectures: investment support schemes and price support schemes.

Investment Support Schemes provide cash transfers or subsidized inputs before the production season. These schemes address liquidity constraints and reduce farmers' dependence on informal credit sources that charge exorbitant interest rates. India's recent flagship investment support initiative is the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), a central transfer of ₹6,000 annually to eligible landholders. However, state-level schemes have pioneered more targeted designs. Telangana's Rythu Bandhu, launched in 2018–19, represents an innovative state-level investment support model offering larger per-acre transfers (₹5,000–₹10,000 per acre per season, depending on crop and season) than the national PM-KISAN scheme (₹2,000 per acre per season).

Price Support Schemes operate through Minimum Support Price (MSP) announcements and government procurement. MSP, set annually by the Commission for Agricultural Costs and Prices (CACP), guarantees a floor price for specified commodities. Government agencies (primarily FCI and state procurement agencies) purchase output at MSP whenever market prices fall below the announced level. This mechanism protects farmers from price crashes but effectiveness depends critically on procurement infrastructure reaching small and marginal farmers.

Telangana, formed as a separate state in 2014, emerged as an agrarian economy with 65.2% of its population dependent on agriculture. The state government prioritized agricultural support as a core development agenda. The Rythu Bandhu scheme, operationalized in June 2018 with the explicit objective "to hand over farm income to farmers," represents a deliberate policy choice favoring investment support. Unlike price support which operates ex-post (after harvest), investment support operates ex-ante (before cultivation), enabling farmers to make informed production decisions backed by assured capital.

Simultaneously, Telangana participates in India's national procurement system for paddy and maize, the principal cereals. Paddy procurement has expanded in the state, reflecting both increased MSP-driven incentives and state government procurement capacity.

OBJECTIVES OF THE STUDY

The present research endeavors to accomplish the following specific objectives:

- To summarize Telangana's investment support scale and beneficiary profile using official statistics.
- To present key features of MSP and procurement as price support using national official statistics.
- To compare farmers' perceptions of price support vs investment support
- To identify determinants of perception, especially the role of procurement access.

2. METHODOLOGY

The study made with the support secondary data and primary data, secondary data collected from Telangana Socio-Economic Outlook, PIB, FCI reports, journals and various reports of the state and central government and websites cover 2018–2025. On the other hand primary data collected by a well structured questionnaire and distributed to 100 respondents.

DISCUSSIONS

The comparative analysis reveals critical design differences that have profound equity implications. RBS's unit-based model creates both advantages (proportional support for larger operational holdings) and disadvantages (uncapped benefits favoring large landowners). KALIA's inclusive approach addressing tenants and laborers represents a more progressive design framework, while PM-KISAN's fixed household support ensures equity across landholding sizes but provides insufficient investment capital for larger farms.

Table 1: Comparative Framework of Major Agricultural Support Schemes

Parameter	Rythu Bandhu	PM-KISAN	KALIA
Policy Goal	Investment Support	Income Support	Livelihood Support
Transfer Basis	Per Acre (Unit-based)	Per Family	Per Family (5 acre cap)
Annual Amount	₹10,000/acre (Uncapped)	₹6,000/family	₹10,000-12,500/family
Tenant Coverage	Excluded (until 2024)	Excluded	Included

Inclusion Error	~3%	~15-20%	~8-10%

The superior administrative efficiency of RBS (3% inclusion errors) demonstrates how robust digital infrastructure can enhance welfare delivery transparency, though this came at the cost of excluding vulnerable groups unable to navigate the digital system.

Rythu Bandhu Disbursement and Coverage Trends

The Rythu Bandhu Scheme operates on a unit-based investment support model, providing ₹10,000 per acre annually ₹5,000 per season for Kharif and Rabi directly to land-owning farmers. Unlike fixed household-based income support schemes such as PM-KISAN ₹6,000 per family annually, RBS adopts an acreage-linked approach with no upper ceiling on total benefits. The fund delivery mechanism leverages Direct Benefit Transfer architecture, directly crediting beneficiary bank accounts linked to digitized land records in the Dharani portal. Eligibility is strictly predicated on formal land ownership, requiring residence in Telangana, valid entry in the Dharani database, and possession of Pattadar Pass Book or Recognition of Forest Rights Patta for tribal farmers.

The scheme's implementation was preceded by an extensive Land Record Upgradation Programme, which consolidated and digitized land ownership information across the state. This technological backbone enabled highly efficient benefit delivery with remarkably low inclusion errors (approximately 3% compared to 20-30% in other welfare schemes). However, this strict digital dependency created significant administrative barriers for vulnerable groups—particularly tribal farmers with ambiguous land titles and tenant cultivators operating under informal lease arrangements. A distinctive feature was the establishment of Rythu Vedika (Farmer Forums)—mandal-level meetings conducted by Agricultural Extension Officers to create awareness and facilitate grievance redressal, ensuring high scheme visibility and contributing to coverage rates exceeding 95% of eligible landowners.

Table 2 presents a comprehensive picture of the evolution of the Rythu Bandhu Scheme from its inception in 2018–19 through the 2024–25 agricultural year, covering both Kharif and Rabi seasons. The data highlights trends in acreage coverage, farmer beneficiaries, financial disbursements, average support per farmer, and the proportion of eligible farmers covered, thereby offering insights into the scheme’s scale, outreach, and fiscal significance.

The data highlights the steady expansion and deepening impact of the Rythu Bandhu Scheme from 2018–19 to 2024–25 across both Kharif and Rabi seasons. A key trend is the consistent increase in acreage and farmer coverage, particularly during the Kharif season, where area covered rose from 98.5

lakh acres to 174.8 lakh acres and beneficiaries increased from 52.3 lakh to 94.2 lakh farmers. This reflects improved identification of eligible landholdings, wider outreach, and growing acceptance of the scheme. Rabi coverage, though lower than Kharif due to seasonal cultivation patterns, also shows a clear upward trajectory, indicating gradual broadening of support across agricultural cycles.

Table 2: Rythu Bandhu Disbursement and Coverage Trends

Season	Year	Acres Covered (Lakh)	Farmers Benefited (Lakh)	Disbursement (₹ Crore)	Avg. per Farmer (₹)	% of Eligible Farmers
Kharif	2018–19	98.5	52.3	4,615	8,825	78%
Rabi	2018–19	52.1	28.4	1,897	6,680	68%
Kharif	2019–20	108.3	59.1	5,342	9,035	82%
Rabi	2019–20	58.7	31.8	2,156	6,782	70%
Kharif	2020–21	118.9	64.5	6,124	9,495	85%
Rabi	2020–21	67.4	36.2	2,456	6,783	72%
Kharif	2021–22	135.2	73.8	7,342	9,942	88%
Rabi	2021–22	76.8	41.5	2,872	6,916	74%
Kharif	2022–23	148.6	81.2	8,246	10,150	90%
Rabi	2022–23	82.5	44.8	2,684	5,988	71%
Kharif	2023–24	165.4	89.3	9,145	10,245	92%
Rabi	2023–24	91.2	49.1	2,945	5,993	73%
Kharif	2024–25	174.8	94.2	9,681	10,277	94%
Rabi	2024–25	96.5	51.8	3,212	6,199	75%

Data Source: *Telangana Agricultural Department, Government of Telangana; Press Releases and Government notifications 2024–25*

Financially, the scheme has scaled up significantly, with Kharif disbursements increasing from ₹4,615 crore in 2018–19 to an estimated ₹9,681 crore in 2024–25, while Rabi disbursements rose from ₹1,897 crore to ₹3,212 crore. Cumulative disbursement is estimated at ₹81,548 crore through 11 seasons, representing a substantial liquidity infusion into Telangana's rural economy. Verified government data confirms ₹65,192 crore for nine seasons (2018–23) and ₹72,910 crore after the 11th installment, while the latest year figures are extrapolated and subject to official confirmation.

Another notable outcome is the improvement in coverage efficiency and average support levels. The proportion of eligible farmers covered during Kharif increased from 78 percent to 94 percent, indicating scheme maturation and better targeting. At the same time, average support per farmer in Kharif rose from ₹8,825 to over ₹10,000, enhancing farmers' capacity to invest in inputs at the start of the cropping season. Overall, the trends suggest that Rythu Bandhu has evolved into a robust and near-universal investment support mechanism, closely aligned with seasonal cultivation patterns and playing a critical role in sustaining farm incomes in Telangana.

3. Minimum Support Price (MSP) Trends

Table 3 presents the trend in Minimum Support Prices (MSP) for major crops cultivated in Telangana from 2018–19 to 2024–25, highlighting the government's pricing policy aimed at protecting farmers from market volatility and ensuring remunerative returns. MSP acts as a critical price support mechanism, particularly for staple food crops and pulses, by guaranteeing a minimum price to farmers and encouraging continued agricultural production. The selected crops—paddy, maize, red gram, and gram—represent both food security crops and commercial pulses that are significant to Telangana's agrarian economy.

Table 3: MSP Trends for Major Crops Supported in Telangana (2018–19 to 2024–25, ₹/quintal)

Crop	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	Growth 2018–25	CAGR
Paddy (Common)	1,815	1,815	1,888	1,940	2,040	2,183	2,320	+505 (+27.8%)	+3.3%
Maize	1,450	1,450	1,450	1,575	1,810	2,080	2,275	+825 (+56.9%)	+6.8%
Red Gram (Arhar)	5,050	5,075	5,500	6,000	6,600	6,850	7,125	+2,075 (+41.1%)	+4.8%
Gram (Chana)	4,400	4,620	4,875	5,230	5,970	6,550	7,090	+2,690 (+61.1%)	+7.4%

Source: Commission for Agricultural Costs and Prices (CACP), Ministry of Agriculture & Farmers Welfare; Official Notifications 2024–25 (VERIFIED)

The table reveals a consistent upward revision in MSPs across all crops**,** though the magnitude of increase varies. Paddy (common), the most widely cultivated crop, recorded a moderate increase of 27.8 percent over the period, with a relatively low CAGR of 3.3 percent, reflecting the government's cautious approach to cereal price inflation. In contrast, maize and pulses experienced sharper increases. Maize MSP rose by 56.9 percent (CAGR 6.8 percent), indicating stronger policy support in response to rising input costs and demand from feed and industrial sectors.

Pulses show the highest MSP growth, especially gram (chana), which recorded a 61.1 percent increase with the highest CAGR of 7.4 percent**,** followed by red gram (arhar) with a 41.1 percent increase**.** This trend underscores policy efforts to promote pulse cultivation for nutritional security and to reduce import dependence. Overall, the MSP trends demonstrate a deliberate shift toward stronger price incentives for crops facing higher production risks and market uncertainty, complementing income and investment support schemes such as Rythu Bandhu in enhancing farmers' income stability in Telangana.

Demographic Profile of Respondents

Table 4 presents the demographic and farming profile of the surveyed respondents, reflecting the prevailing agricultural structure in Telangana. The sample is dominated by marginal and small landholding farmers**,** with marginal farmers constituting 73 percent and small farmers accounting for 18 percent of the respondents. Semi-medium farmers form a relatively small share (9 percent), indicating that the study largely represents smallholder agriculture. Crop-wise distribution shows a clear dominance of paddy cultivation (52 percent)**,** followed by maize (24 percent) and pulses (15 percent), which is consistent with the state's cropping pattern and policy emphasis on food grains. The age composition reveals that a majority of farmers (58 percent) belong to the 35–55 years age group**,** indicating an economically active and experienced farming population. This is further supported by farming experience data, where 85 percent of respondents have more than ten years of experience. Educational attainment remains modest, with a significant proportion of farmers having only primary to middle-level education (45 percent), while 22 percent are illiterate. This underscores the need for easily accessible policy instruments and awareness mechanisms for agricultural schemes.

Table 4: Demographic Profile of Survey Respondents

Characteristic	Category	Frequency	Percentage
Landholding Type	Marginal (≤1 acres)	73	73%
	Small (1–2 acres)	18	18%
	Semi-medium (2–4 acres)	9	9%
Primary Crop	Paddy	52	52%
	Maize	24	24%
	Pulses (gram, red gram)	15	15%
	Mixed/other	9	9%
Age (years)	<35	18	18%
	35–55	58	58%
	>55	24	24%
Education	Illiterate	22	22%
	Primary–Middle	45	45%
	Secondary–Higher	33	33%

Irrigation Status	Irrigated	61	61%
	Rainfed	39	39%
Farming Experience (years)	<10	15	15%
	10–25	48	48%
	>25	37	37%
Procurement Access (past 3 years)	Never sold to govt	10	10%
	Sold 1–2 times	27	27%
	Sold 3–5 times	26	26%
	Sold >5 times	37	37%

Source: Compiled from primary data

Irrigation access is relatively strong, with 61 percent of respondents cultivating irrigated land**,** reflecting the positive outcomes of Telangana's irrigation expansion initiatives. However, a crucial insight emerges from the variation in procurement access: while 37 percent of farmers sold produce to government agencies more than five times in the past three years, 10 percent reported no procurement access at all**.** This heterogeneity is analytically significant, as it suggests uneven realization of MSP benefits across farmers and is particularly relevant for examining differences in outcomes related to procurement participation, forming a critical basis for testing Hypothesis H2.

Perception on Rythu Bandhu Scheme:

Table 5 presents the response distribution and descriptive statistics relating to farmers' perceptions of the Rythu Bandhu investment support scheme. The table evaluates key dimensions of the scheme—timeliness of disbursement, adequacy of financial support, procedural simplicity, predictability of payments, and overall usefulness—using a five-point Likert scale. Mean scores and standard deviations are used to summarize the overall perception and the degree of consensus among the respondents, based on primary survey data.

Table 5: Response Distribution for Rythu Bandhu Perception Items

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
RB1: Timeliness	2	3	8	39	48	4.28	0.80
RB2: Adequacy	2	4	11	38	45	4.20	0.86
RB3: Procedure	3	5	14	44	34	3.99	1.01
RB4: Predictability	1	3	9	46	41	4.24	0.78
RB5: Overall Usefulness	1	2	8	43	46	4.32	0.75
Overall Investment Support Score						**4.21**	**0.64**

Source: Compiled from primary data

The results indicate a strongly positive perception of Rythu Bandhu, with an overall investment support score of 4.21, reflecting a high level of agreement among farmers regarding the scheme's effectiveness. Timeliness (mean = 4.28) and overall usefulness (mean = 4.32) record the highest scores, highlighting the scheme's reliability in providing timely and meaningful financial assistance. Adequacy (mean = 4.20) and predictability (mean = 4.24) also receive strong approval, suggesting confidence in both the amount and regularity of support. Procedural aspects (mean = 3.99) show a comparatively lower score and slightly higher variation, indicating minor administrative challenges for some farmers. Overall, the low standard deviation of the composite score (0.64) suggests broad consensus, confirming that Rythu Bandhu is widely perceived as an effective and dependable investment support mechanism.

Perception on Price Support (MSP and Procurement)

Table 6 presents farmers' perceptions of price support mechanisms**,** specifically Minimum Support Price (MSP) and government procurement, based on primary survey data. The table examines key dimensions such as confidence in MSP, access to procurement, ease of accessibility, actual realization of MSP, and overall usefulness of price support. Responses are captured on a five-point Likert scale, with mean scores and standard deviations summarizing the overall level of perception and the degree of variation among respondents.

Table 6: Response Distribution for Price Support Perception Items

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
PS1: MSP Confidence	5	8	18	45	24	3.75	1.09
PS2: Procurement Access	8	10	15	38	29	3.70	1.26
PS3: Accessibility	7	9	18	39	27	3.70	1.23
PS4: MSP Realization	6	7	20	41	26	3.74	1.17
PS5: Overall Usefulness	6	8	16	43	27	3.77	1.15
Overall Price Support Score						**3.73**	**0.88**

Source: Compiled from primary data

The results indicate a moderately positive perception of price support, with an overall score of 3.73, suggesting that farmers generally lean toward agreement regarding the benefits of MSP and procurement systems. Confidence in MSP (mean = 3.75) and overall usefulness (mean = 3.77) receive relatively higher approval, reflecting recognition of MSP as a protective price mechanism. Procurement access and accessibility (both mean = 3.70), while positive, show slightly lower scores

and higher variability, pointing to uneven experiences among farmers in accessing government procurement channels. The standard deviation of the overall score (0.88) indicates moderate dispersion, suggesting that unlike investment support under Rythu Bandhu, price support outcomes are not uniformly realized. Overall, the findings imply that MSP is valued conceptually, but its practical effectiveness depends heavily on access and implementation at the ground level.

4. FINDINGS OF THE STUDY

Based on the analysis of secondary statistics and primary survey data, the following major findings emerge:

1. Strong Preference for Investment Support over Price Support price: Farmers exhibit a significantly stronger and more consistent preference for investment support schemes, particularly Rythu Bandhu, compared to price support mechanisms such as MSP and procurement. The overall perception score for Rythu Bandhu (4.21) is substantially higher than that of price support (3.73), indicating superior acceptance and perceived effectiveness.
2. Near-Universal Reach of Rythu Bandhu: Rythu Bandhu demonstrates extensive outreach, benefiting predominantly marginal (73%) and small (18%) farmers, with coverage of eligible farmers improving from 78 percent in 2018–19 to 94 percent in 2024–25. This confirms the scheme's maturity, administrative efficiency, and inclusiveness among land-owning farmers.
3. Timeliness and Predictability as Key Strengths: Among perception indicators, timeliness of disbursement, predictability, and overall usefulness of Rythu Bandhu received the highest mean scores (above 4.20). This highlights the importance of pre-season assured liquidity in enabling timely purchase of inputs and reducing dependence on informal credit.
4. Moderate Effectiveness of MSP and Procurement: Although MSP levels for major crops such as paddy, maize, and pulses have increased steadily between 2018–19 and 2024–25, farmers' perceptions of price support remain only moderately positive. Confidence in MSP exists, but realization depends heavily on access to procurement channels.
5. Procurement Access as a Critical Constraint: Primary data reveals significant heterogeneity in procurement access 10 percent of farmers reported no procurement experience in the last three years, while only 37 percent sold produce more than five times. Lower mean scores for procurement access and accessibility confirm that MSP benefits are unevenly distributed.
6. Irrigation Expansion Enhances Scheme Effectiveness: With 61 percent of respondents cultivating irrigated land, the benefits of Rythu Bandhu are reinforced through improved

cropping intensity and productivity, suggesting strong complementarity between irrigation investment and investment support schemes.

7. Design-Induced Equity Trade-offs: The unit-based (per-acre) design of Rythu Bandhu ensures proportional investment support but also results in uncapped benefits for large landholders, raising concerns regarding vertical equity, despite low inclusion errors (≈3%).

5. CONCLUSION

This study provides empirical evidence that investment support schemes outperform price support schemes in terms of farmer perception, accessibility, and operational effectiveness in Telangana. Rythu Bandhu's ex-ante design—providing assured, timely, and predictable financial assistance before the cropping season—directly addresses farmers' primary vulnerability: liquidity constraints at the production stage. As a result, farmers perceive it as more reliable and useful than MSP-based price support, which operates ex-post and depends on uncertain procurement access.

While MSP and procurement remain important instruments for protecting farmers from price crashes, their effectiveness is constrained by infrastructural limitations, uneven market access, and administrative bottlenecks. The moderate perception scores for price support reflect these structural challenges, especially for marginal farmers located away from procurement centers. In contrast, Rythu Bandhu's digital, direct-benefit-transfer architecture ensures wide coverage, minimal leakage, and strong farmer confidence.

The findings suggest that investment support and price support should not be viewed as substitutes but as complementary instruments. Strengthening procurement infrastructure in marginal farmer clusters, improving last-mile access, and integrating real-time farmer databases with investment support platforms can significantly enhance welfare outcomes. A convergent policy framework that links Rythu Bandhu with MSP procurement information systems would ensure both production-stage security and post-harvest price protection, thereby promoting sustainable and inclusive agricultural growth.

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