

## International Journal of Agriculture Extension and Social Development

Volume 9; Issue 8; August 2026; Page No. 945-949

Received: 15-05-2026  
Accepted: 22-06-2026

Indexed Journal  
Peer Reviewed Journal

### Effectiveness of the Rythu Bandhu Scheme in Telangana: Beneficiary analysis

<sup>1</sup>Chintawar Shraddha, <sup>2</sup>Basavaprabhu Jirli, <sup>3</sup>Saikiran Chintakindi, <sup>4</sup>Rayirala Rakesh and <sup>5</sup>M Chenna Madhava

<sup>1</sup>Research Scholar, Department of Extension Education, Institute of Agricultural Sciences, BHU, Varanasi, Uttar Pradesh, India

<sup>2</sup>Director, Centre for Multi-Disciplinary Development Research, Dharwad Karnataka, India

<sup>3</sup>Consultant, Centre for Climate Change and Adaptation, National Institute of Agricultural Extension Management (MANAGE), Hyderabad, Telangana, India

<sup>4</sup>Research Scholar, Department of Agricultural Extension Education, PJTAAU, Hyderabad, Telangana, India

<sup>5</sup>Ph.D. Scholar, Department of Extension Education, Institute of Agricultural Sciences, BHU, Varanasi, Uttar Pradesh, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i8m.4118>

Corresponding Author: Chintawar Shraddha

#### Abstract

**Aims:** To assess the effectiveness of the Rythu Bandhu Scheme (RBS), Telangana state's unconditional per-acre agricultural investment-support programme, as perceived by beneficiary farmers relative to the situation before its introduction.

**Study design:** Ex-post facto research design with a before-after comparison of perceived effectiveness.

**Place and Duration of Study:** Two mandals (Naroor and Gadiguda) and ten villages of Adilabad district, Telangana, India in the year 2023.

**Methodology:** 220 RBS beneficiaries were selected through proportionate random sampling. A pre-tested interview schedule was used to compare the pre- and post-implementation situation across six indicators - credit utilisation, input-utilisation pattern, level of satisfaction, continuity in farming, coping capacity and rural indebtedness - which were normalised and combined into a composite effectiveness index. A paired t-test was used to test the significance of the before-after difference.

**Results:** The composite effectiveness score increased significantly after implementation of RBS, from a mean of 89.27 (SD = 8.41) to 101.70 (SD = 7.35) ( $t = 19.632, p < .01, n = 220$ ), a positive change of 12.22 percent. Almost three-quarters of respondents (72.2%) rated the scheme as "effective" and a further 20.5 percent as "highly effective". Gains were most pronounced in credit utilization for productive agricultural investment and in reduced dependence on private moneylenders, while perceived timeliness of payment and grievance redressal improved more modestly.

**Conclusion:** Beneficiaries perceived RBS as a significant improvement over the pre-scheme situation. Findings support the continuation of unconditional, directly transferred, per-acre investment support as a credit-stress reduction instrument, while highlighting the need to protect the scheme's within-season payment schedule and to strengthen grievance-redressal responsiveness.

**Keywords:** Agricultural credit, direct benefit transfer, ex-post facto design, investment-support scheme, perceived effectiveness, Rythu Bandhu, Telangana

#### 1. Introduction

Agriculture remains central to India's rural economy: agriculture and allied activities engaged about 54.6 percent of the workforce (Census, 2011) and contributed 18.3 percent of gross value added at current prices in 2022-23 (Ministry of Statistics and Programme Implementation, cited in [pib.gov.in](http://pib.gov.in), 2023), even as food-grain output reached a record 315.7 million tonnes (Government of India, Economic Survey 2022-23). Alongside this scale, Indian agriculture continues to face structural constraints: a shrinking average operational holding, from 2.28 hectares in 1970-71 to 1.08 hectares in 2015-16, and a near-tripling of marginal holdings over the same period (Agriculture Census, 2015-16), have made it progressively harder for smallholders to access institutional credit that is often tied to clear land title. Farmers without formal titles, and small and marginal farmers more broadly, are correspondingly more reliant on informal credit

from moneylenders, relatives and input dealers. National data indicate that just over half of agricultural households in India (50.2%) carried outstanding debt, averaging Rs 74,121 per household (Government of India-National Sample Survey Office [GOI-NSSO], 2019) <sup>[5]</sup>.

Investment-support transfers have emerged as one policy response to this credit stress. Telangana was the first Indian state to introduce such a scheme, the Rythu Bandhu Scheme (RBS), an agriculture investment-support programme launched in 2018-19 that transfers a fixed amount per acre per crop season directly into beneficiaries' bank accounts, irrespective of landholding size. The per-acre transfer was raised from Rs 4,000 to Rs 5,000 per season from 2019-20, bringing the annual entitlement to Rs 10,000 per acre (Telangana Socio-Economic Outlook, 2023) <sup>[15]</sup>; marginal and small farmers together made up 91.3 percent of beneficiaries (Telangana Socio-Economic Outlook, 2023)

<sup>[15]</sup>, and the kharif 2023 disbursement alone reached about Rs 7,500 crore across more than 70 lakh farmers (The Hindu, 2023) <sup>[16]</sup>.

Because RBS provides support unconditionally and through direct benefit transfer (DBT), it is frequently cited as an example of a scheme whose design choices - the choice architecture through which it is delivered - may itself shape beneficiary behaviour. Those design features, and how they function as behavioural “nudges”, are documented separately as part of the same broader investigation. The present paper instead addresses a narrower, evaluative question: how effective do beneficiaries themselves consider RBS to have been, relative to their situation before the scheme, and along which specific dimensions of their farming and financial lives has that effectiveness been most and least apparent.

Evaluations of Indian agricultural schemes typically report a mixed but generally positive picture of perceived effectiveness. In an early assessment of a watershed-development programme, Sheikh and Patel (2011) <sup>[13]</sup> found sizeable gains in employment generation, person-days of work and wages in the project area following implementation of the National Watershed Development Project for Rainfed Areas. Studying the National Horticulture Mission, Adsul (2016) <sup>[1]</sup> categorised beneficiaries into low, medium and high overall-impact groups, with most beneficiaries (70.4%) falling in the medium category. In contrast, Deepa (2019) <sup>[4]</sup> found comparatively weak uptake of a crop-insurance scheme, with most respondents reporting only partial utilisation and a majority considering the scheme not feasible for their circumstances.

More recent work has examined effectiveness alongside adoption outcomes. Kumar *et al.* (2021) <sup>[9]</sup>, studying the National Mission on Oilseeds and Oil Palm, reported a significantly higher level of adoption of mustard-crop interventions among beneficiaries than non-beneficiaries. Jagadeshwaran *et al.* (2022) <sup>[6]</sup>, evaluating the PM-KISAN scheme's effect on paddy cultivation in Tamil Nadu, found higher yield and net returns, and lower cultivation cost, among beneficiaries relative to non-beneficiaries, alongside a predominantly medium-to-high technical-efficiency profile. Working specifically on RBS, but in neighbouring Warangal district, Amitha *et al.* (2021) <sup>[2]</sup> reported a positive effect on input-purchasing power, rural indebtedness, continuity in farming, productivity and farm income, broadly consistent with the scheme's stated aims.

Studies of perceived effectiveness using categorical or index-based measures - the approach adopted here - include Shanmukh Raju *et al.* (2022) <sup>[11]</sup>, who found that just over half of e-NAM users rated its effectiveness as medium, with low and high categories roughly equally represented; Yadav *et al.* (2022) <sup>[17]</sup>, who documented a broadly positive but uneven transformation in beneficiary socio-economic status under the National Horticulture Mission in Rajasthan, tempered by concerns over subsidy adequacy and information dissemination; and Saifuddin *et al.* (2023) <sup>[10]</sup>, who found that half of Rythu Bharosa Kendra users in East Godavari district rated the service as moderately effective, with about a third rating it highly effective. Taken together, this literature suggests that perceived effectiveness in Indian agricultural-support schemes commonly clusters in a moderate range, with relatively few studies reporting a strongly skewed distribution toward high effectiveness.

What is comparatively scarce is a village-level, indicator-disaggregated assessment of RBS itself, using a validated composite index and an explicit before-after comparison of the type recommended for programmes whose stated purpose is to change a pre-existing credit-access situation. This paper addresses that gap for Adilabad district, one of Telangana's highest-cultivator districts and an area not previously covered in the published RBS evaluation literature, by assessing the effectiveness of RBS as perceived by beneficiaries using a validated multi-indicator effectiveness index and a before-after comparison.

## 2. Methodology

### 2.1 Research design and study area

An ex-post facto research design was adopted, appropriate where the independent variables under study have already occurred and cannot be manipulated by the researcher (Kerlinger, 1964, 1973) <sup>[7, 8]</sup>. Telangana state was selected as the universe of the study because RBS is implemented across all its districts and because of the researchers' familiarity with the local language and context. Within Telangana, Adilabad district was purposively selected: it is among the state's ten highest-cultivator districts, with 1,26,363 cultivators recorded in the 2011 Census, and is predominantly agrarian, with roughly four-fifths of its population dependent on agriculture and allied activities.

### 2.2 Sampling

Two mandals, Narnoor and Gadiguda, were selected from Adilabad district using simple random sampling. Five villages were then randomly selected from each mandal, giving ten villages in total. Within each village, proportionate random sampling was used to draw 10 percent of the beneficiary population, yielding a total sample of 220 respondents (Table 1).

**Table 1:** Selection of mandals, villages and respondents

| Mandal   | Villages selected                             | Beneficiaries | Respondents |
|----------|-----------------------------------------------|---------------|-------------|
| Narnoor  | Umri, Malangi, Kothapalli-H, Gundala, Narnoor | 1,192         | 118         |
| Gadiguda | Lokari(B), Khadki, Jhari, Gadiguda, Lokari(K) | 1,032         | 102         |
| Total    | 10 villages                                   | 2,224         | 220         |

**Source:** field survey.

### 2.3 Measurement of effectiveness

Effectiveness of RBS was operationalised as the degree to which the scheme was perceived by respondents to have succeeded in addressing their investment-support needs, relative to the pre-RBS situation in which institutional and non-institutional credit sources served that role. A composite effectiveness index, adapted from Shashikanth (2020) <sup>[12]</sup>, was built from six indicators whose content-relevancy ratings exceeded the 0.80 threshold used for indicator selection: credit utilisation, input-utilisation pattern, level of satisfaction, continuity in farming, coping capacity, and rural indebtedness. Five of the six indicators were measured on a three-point agree-undecided-disagree continuum (scored 3, 2 and 1); credit utilisation was measured on a two-point yes-no continuum (scored 2 and 1). Because the indicators carried different numbers of statements and different score ranges, each was normalised to a common 0-1 scale using min-max

normalisation before the six normalised scores were averaged into the composite effectiveness score, separately for the before- and after-implementation situations. Respondents were then classified into three effectiveness categories - less effective, effective, and highly effective - using the observed range of the composite score (0.24 to 0.69).

## 2.4 Data collection and analysis

Data were collected through a pre-tested, structured interview schedule administered in Telugu after being drafted in English, following a pilot study in the selected villages that informed final wording and item selection. Both the pre- and post-implementation situations were assessed retrospectively within the same interview, relying on respondents' recall of their circumstances before RBS was introduced. A paired t-test was used to test whether the mean composite effectiveness score differed significantly between the before and after situations, and frequency, percentage, mean, standard deviation and class-interval procedures were used to summarise the indicator-level and composite results. The null hypothesis tested was that there is no significant difference between the effectiveness of investment support before and after the implementation of RBS; the alternative hypothesis was that a significant difference exists.

## 3. Results and Discussion

### 3.1 Overall change in perceived effectiveness

The composite effectiveness score rose from a mean of 89.27 (SD = 8.41) before RBS to 101.70 (SD = 7.35) after its implementation, a statistically significant increase (paired  $t = 19.632$ ,  $p < .01$ ) (Table 2), representing a 12.22 percent positive change. On this basis, the null hypothesis of no difference between the pre- and post-implementation situations was rejected.

**Table 2:** Paired t-test comparing effectiveness before and after implementation of RBS (n = 220)

| Situation             | n   | Mean   | S.D.  |
|-----------------------|-----|--------|-------|
| Before implementation | 220 | 89.27  | 8.406 |
| After implementation  | 220 | 101.70 | 7.352 |

<sup>a</sup> Significant at the 0.01 level of probability (paired  $t = 19.632$ ,  $p < .01$ ).

Consistent with this composite result, most respondents rated RBS positively on the overall effectiveness classification: 72.2 percent considered the scheme effective, 20.5 percent highly effective, and only 7.3 percent less effective (Table 3). This distribution compares favourably with perception-based assessments of other extension and support services in the region - for instance, medium-effectiveness ratings reported for e-NAM (54.2%; Shanmukh Raju *et al.*, 2022) <sup>[11]</sup> and Rythu Bharosa Kendras (50.8% moderately effective; Saifuddin *et al.*, 2023) <sup>[10]</sup> - suggesting that RBS's beneficiaries perceive comparatively stronger effectiveness

than users of some other extension-linked services in the same broad region, plausibly reflecting the directness and predictability of a per-acre cash transfer relative to services that depend more on infrastructure, staffing or market conditions.

**Table 3:** Overall perceived effectiveness of RBS (n = 220)

| Category         | Class interval | Frequency | Percentage |
|------------------|----------------|-----------|------------|
| Less effective   | 0.24-0.39      | 16        | 7.3        |
| Effective        | 0.39-0.54      | 159       | 72.2       |
| Highly effective | 0.54-0.69      | 45        | 20.5       |
| Total            | -              | 220       | 100.0      |

## 3.2 Indicator-level findings

### 3.2.1 Credit utilization

Before implementation of RBS, the majority of respondents (71.8%) fell in the poor category of credit utilization, followed by average and good (14.1% each). After implementation, this shifted markedly, with 42.3 per cent of respondents falling in the average category, followed by poor (37.3%) and good (20.5%) (Table 4). Purpose-wise analysis showed that investment in agriculture as a purpose of credit use rose from 72.7 to 80.5 per cent, while use of credit to clear debts fell from 50.5 to 24.1 per cent and use for household consumption, education, and religious/social ceremonies also declined proportionately indicating a shift of the credit support away from consumption uses and towards productive, agriculture-related investment. A notable rise in reported use for consumption of alcohol (26.8% to 49.1%) was also observed and may warrant closer monitoring in scheme implementation.

**Table 4:** Distribution of respondents based on credit utilization, before and after RBS (n=220)

| Category | Class interval | Before (f) | Before (%) | After (f) | After (%) |
|----------|----------------|------------|------------|-----------|-----------|
| Poor     | 9-12           | 158        | 71.8       | 82        | 37.3      |
| Average  | 12-15          | 31         | 14.1       | 93        | 42.3      |
| Good     | 15-18          | 31         | 14.1       | 45        | 20.5      |

### 3.2.2 Input utilization pattern

The proportion of respondents in the average category of input utilization increased from 50.0 to 59.1 per cent after implementation, with a corresponding rise in the good category from 4.5 to 28.2 per cent (Table 5). Item-wise analysis of the twelve component statements showed increased agreement across nearly all practices, most markedly for the use of herbicides (75.9% to 89.5%), timely application of the recommended dose of fertilizer (67.7% to 84.1%), and use of high-yielding varieties (71.4% to 80.9%). The use of micro-irrigation (5.0% to 16.4%) and adoption of contingency crop planning (15.9% to 42.3%) also improved but remained comparatively low, suggesting continued scope for extension support in these areas.

**Table 5:** Distribution of respondents into categories based on Input utilization pattern (n=220)

| S. No. | Category | Class interval | Before    |            | After     |            |
|--------|----------|----------------|-----------|------------|-----------|------------|
|        |          |                | Frequency | Percentage | Frequency | Percentage |
| 1      | Poor     | 16-22          | 100       | 45.5       | 28        | 12.7       |
| 2      | Average  | 23-29          | 110       | 50.0       | 130       | 59.1       |
| 3      | Good     | 30-36          | 4.5       | 4.5        | 62        | 28.2       |
| Total  |          |                | 220       | 100.0      | 220       | 100.0      |

### 3.2.3 Level of satisfaction

The proportion of respondents reporting a high level of satisfaction increased sharply from 5.0 to 38.6 per cent after implementation of RBS, while the proportion reporting low satisfaction fell from 33.6 to 3.6 per cent. Among the individual statements, the largest gains in agreement were recorded for convenience of procedures for obtaining investment support (26.8% to 82.3%) and absence of nepotism or bias (36.8% to 85.0%), reflecting the perceived benefit of the direct benefit transfer mechanism in removing intermediaries. Agreement on the timeliness of the financial support, however, declined slightly (42.7% to 35.0%), consistent with respondents' reports of recent delays in the release of instalments.

**Table 6:** Distribution of respondents based on level of satisfaction, before and after RBS (n=220)

| Category | Class interval | Before (f) | Before (%) | After (f) | After (%) |
|----------|----------------|------------|------------|-----------|-----------|
| Low      | 8–13           | 74         | 33.6       | 8         | 3.6       |
| Moderate | 13–19          | 135        | 61.4       | 127       | 57.7      |
| High     | 19–24          | 11         | 5.0        | 85        | 38.6      |

### 3.2.4 Continuity in farming

The proportion of respondents falling in the very likely to continue farming category rose from 15.0 to 32.5 per cent, with a corresponding decline in the not likely category from 41.8 to 17.7 per cent (Table 7). Respondents also reported improved perceptions of government prominence to agriculture (32.7% to 63.6% agreement) and access to quality inputs (42.3% to 55.0%), suggesting that the scheme contributed to a more favourable outlook towards farming as a livelihood.

**Table 7:** Distribution of respondents based on continuity in farming, before and after RBS (n=220)

| Category    | Class interval | Before (f) | Before (%) | After (f) | After (%) |
|-------------|----------------|------------|------------|-----------|-----------|
| Not likely  | 7–12           | 92         | 41.8       | 39        | 17.7      |
| Likely      | 12–17          | 95         | 43.2       | 109       | 49.5      |
| Very likely | 17–21          | 33         | 15.0       | 72        | 32.5      |

### 3.2.5 Coping capacity

The proportion of respondents in the high coping-capacity category more than doubled, from 7.7 to 18.2 per cent, following implementation of RBS (Table 8). The largest gains in agreement were recorded for the ability to withstand risks associated with the adoption of new technology (50.9% to 66.4%) and credit uncertainty (48.2% to 59.1%), indicating that the timely availability of investment support strengthened beneficiaries' resilience to production-related risks.

**Table 8:** Distribution of respondents based on coping capacity, before and after RBS (n=220)

| Category | Class interval | Before (f) | Before (%) | After (f) | After (%) |
|----------|----------------|------------|------------|-----------|-----------|
| Low      | 8–14           | 48         | 21.8       | 17        | 7.7       |
| Moderate | 14–20          | 155        | 70.5       | 163       | 74.1      |
| High     | 20–24          | 17         | 7.7        | 40        | 18.2      |

### 3.2.6 Rural indebtedness

A clear positive shift away from indebtedness-related distress was observed, with the moderate category rising from 38.2 to

61.4 per cent and the high category also rising marginally from 2.3 to 15.5 per cent, largely reflecting a shift of respondents out of the low-indebtedness (subsistence) category as they gained greater access to formal credit (Table 9). The largest gains in agreement were recorded for decreased dependence on private moneylenders (14.1% to 75.9%) and decreased dependence on credit from input dealers (22.7% to 45.5%), indicating that RBS substantially reduced beneficiaries' reliance on informal and often high-cost sources of credit.

**Table 9:** Distribution of respondents based on rural indebtedness, before and after RBS (n=220)

| Category | Class interval | Before (f) | Before (%) | After (f) | After (%) |
|----------|----------------|------------|------------|-----------|-----------|
| Low      | 6–10           | 131        | 59.5       | 51        | 23.2      |
| Moderate | 10–15          | 84         | 38.2       | 135       | 61.4      |
| High     | 15–18          | 5          | 2.3        | 34        | 15.5      |

## 4. Conclusion

The study establishes that the Rythu Bandhu Scheme has brought about a statistically significant and practically meaningful improvement in the perceived effectiveness of investment support among beneficiaries in Adilabad district, Telangana, with the composite effectiveness score rising by 12.22 per cent and nearly 93 per cent of respondents rating the scheme as effective or highly effective. Gains were most pronounced in credit utilization for productive purposes, satisfaction with the transparency and convenience of the direct-transfer mechanism, and reduced dependence on informal credit sources, while improvements in micro-irrigation adoption, processing and storage, and timeliness of instalments remained comparatively modest. Strengthening the timeliness of fund disbursement and the grievance redressal mechanism, along with targeted extension support on micro-irrigation and post-harvest management, could further enhance the effectiveness of the scheme as perceived by its beneficiaries.

## Acknowledgement

I would like to express my heartfelt gratitude to the Bayer Fellowship-MEDHA for their generous financial support, which greatly contributed to the successful execution of this research. I am also deeply thankful to Banaras Hindu University for offering an excellent academic environment, research facilities, and guidance, which were instrumental in the progress of this study.

## Conflict of Interest

“The authors declare no conflict of interest”.

## References

1. Adsul GB. Socio-economic impact of National Horticulture Mission on its beneficiaries in Marathwada region. Parbhani, Maharashtra, India: Vasantrao Naik Marathwada Krishi Vidyapeeth; 2016.
2. Amitha CD, Karthikeyan C, Nirmala Devi M. Assessing the impact of Rythu Bandhu Scheme in Warangal District of Telangana. Asian Journal of Agricultural Extension, Economics & Sociology. 2021;39(11):335-340.
3. Chintawar S, Jirli B, Rakesh R, Kruparani P, Abhilash Reddy K, Tripathi S. Problems and suggestions from

- various stakeholders in the use and implementation of the Rythu Bandhu scheme. *International Journal of Agricultural Extension and Social Development*. 2025;8(4):458-460.  
doi:10.33545/26180723.2025.v8.i4g.1812.
4. Deepa N. A study on awareness and extent of utilization of crop insurance scheme in Chitradurga district. Hyderabad, India: Professor Jayashankar Telangana State Agricultural University; 2019.
  5. Government of India, National Sample Survey Office. Situation assessment of agricultural households and land and livestock holdings of households in rural India. New Delhi: Ministry of Statistics and Programme Implementation; 2019.
  6. Jagadeshwaran P, Ashok KR, Vidhyavathi A, Devi MN, Patil SG. Impact of PM-KISAN scheme on production and efficiency of paddy cultivation in Tamil Nadu, India. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2022;40(11):94-100.
  7. Kerlinger FN. *Foundations of behavioral research*. New York: Holt, Rinehart and Winston; 1964.
  8. Kerlinger FN. *Foundations of behavioral research*. 2nd ed. New York: Holt, Rinehart and Winston; 1973.
  9. Kumar A, Bareth LS, Yadav JP, Ghaswa R. Effectiveness of National Mission on Oilseed and Oil Palm on adoption of mustard crop interventions. *Indian Journal of Extension Education*. 2021;57(3):109-111.
  10. Saifuddin M, Devy MR, Rao MS, Suseela K. Effectiveness of Rythu Bharosa Kendras (RBKs) services as perceived by farmers in the East Godavari District of Andhra Pradesh, India. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2023;41(4):34-41.
  11. Shanmukh Raju M, Rama Devy M, Sathya Gopal PV. Farmers' perceived effectiveness of e-NAM. *Indian Research Journal of Agricultural Extension and Social Sciences*. 2022;19(3):43-48.
  12. Shashikanth MA. Study on effectiveness of Rythu Bandhu Scheme in Warangal District of Telangana. Telangana, India: Professor Jayashankar Telangana State Agricultural University; 2020.
  13. Sheikh AS, Patel BT. Impact of National Watershed Development Project for rainfed areas in Banaskantha district of Gujarat. *Gujarat Journal of Extension Education*. 2011;22(1):53-55.
  14. Shraddha C, Jirli B, Madhava MC. Effectiveness of the Rythu Bandhu Scheme: an analysis of beneficiary profile and determinants in Telangana. *Gujarat Journal of Extension Education*. 2026;41(2):136-142.  
doi:10.56572/gjoe.2026.41.2.0020.
  15. Telangana Socio-Economic Outlook. Hyderabad: Government of Telangana, Planning Department; 2023.
  16. The Hindu. Telangana disburses Rythu Bandhu investment support for kharif season. 2023 Jun 26.
  17. Yadav S, Sharma KC, Yadav JP, Kumar V. Impact of National Horticulture Mission on the status of beneficiary farmers in Rajasthan District of India. *Indian Research Journal of Extension Education*. 2022;22(1):134-137.