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Economic evaluation of Rythu Bharosa Kendras on paddy cultivation and input accessibility in Srikakulam district of Andhra Pradesh

¹M Gayatri, ¹SS Guledagudda, ¹G Basavaraj and ²SA Biradar

¹Department of Agricultural Economics, College of Agriculture, Dharwad, University of Agricultural Sciences, Dharwad, Karnataka, India

²Institute of Organic Farming, College of Agriculture, Dharwad, University of Agricultural Sciences, Dharwad, Karnataka, India

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Corresponding Author: M Gayatri

Abstract

Despite Andhra Pradesh being the rice bowl of India, a significant majority of its working population remains dependent on agriculture for their livelihood while facing critical challenges such as the lack of quality seeds, fertilizers and reliable extension advisory services, which often lead to high cultivation costs and stagnant productivity. To address these issues, the government established Rythu Bharosa Kendras as village-level integrated service centres. This study evaluates the economic impact of these centres in Srikakulam district by comparing input accessibility and farm profitability before and after their implementation. The findings reveal that these centres have successfully mitigated the problem of high input costs by providing certified seeds and fertilizers at prices significantly lower than the general market, with price variations for pulses and oilseeds ranging from forty-two to sixty-six per cent. In paddy cultivation, which dominates the study area, the intervention of these centres facilitated a five per cent increase in yield and a twenty-six per cent rise in selling prices through organized procurement at Minimum Support Prices. Consequently, despite rising labour costs, the net returns for farmers nearly doubled, and the benefit-cost ratio improved marginally from 1.10 to 1.15. The study concludes that the integrated approach of providing subsidized inputs and direct market linkages through village-level centres effectively addresses the foundational problems of input affordability on time and market access for small and marginal farmers in particular.

Keywords: Rythu Bharosa Kendras, economic impact, paddy cultivation, input affordability

Introduction

In the contemporary agricultural landscape of Andhra Pradesh, approximately 62.17 per cent of the working population remains dependent on farming and allied activities (Anuhya, 2022) ^[1]. Despite this high dependency, the sustainability of rural livelihoods is increasingly threatened by the rising costs of essential inputs and a lack of quality extension advisory services accessible at the grassroots level. Although 37.35 per cent of the state's land is under cultivation, productivity is often constrained by logistical bottlenecks in the procurement of government-certified inputs. To address these systemic challenges, the state government proposed a localized infrastructure known as Village Knowledge Centres and Agri-input shops during an Agri-mission meeting in 2019 (Anonymous, 2023) ^[2]. These centres, formally established as Rythu Bharosa Kendras (RBKs), were designed based on the strategic recommendations of the Swaminathan Commission to serve as "one-stop shops" for the farming community. Since their inception in May 2020, the network has expanded significantly. The system has grown to encompass 10,778 centres (Reddy, 2022) ^[3]. To manage these operations and provide localized technical support, the initiative is currently powered by a dedicated workforce of over 14,000

personnel (Saifuddin *et al.*, 2022) ^[4]. The international significance of this model was recognized when it was nominated for United Nations Organization awards, marking it as a global leader in agricultural service delivery (Anuhya *et al.*, 2022) ^[5].

Beyond physical inputs, RBKs provide vital digital services such as e-crop booking, which is essential for capturing accurate data on both landowners and tenant farmers to streamline crop insurance and procurement registration (Raja and Reddy, 2022) ^[6]. To facilitate these technical interventions, the department recruited 6,758 Village Agriculture Assistants to work directly within the RBKs (Babu *et al.*, 2021) ^[7]. Despite the rapid scaling of this model, empirical evidence regarding its specific impact on profitability of paddy crop in districts like Srikakulam remains limited. Therefore, this study evaluates the economic profitability of RBKs in reducing the cost of cultivation and improving the net income of paddy farmers in Srikakulam district.

Materials and Methods

The present study was conducted to evaluate the economic profitability of Rythu Bharosa Kendras in Srikakulam district of Andhra Pradesh through a comparative analysis

of costs and returns. The study focused on the agricultural year 2024-25 for primary data collection, while the year 2019-20 was utilized as the base period for comparative evaluation. A multi-stage purposive random sampling technique was adopted to select two taluks, namely Kotabommali and Srikakulam, based on their high concentration of paddy cultivation. From these two taluks, a total of six villages were selected at random, and from each village, 20 farmers were chosen at random, resulting in a total sample size of 120 respondents. Primary data were collected using pre-tested schedule through personal interview method from these sampled farmers, while secondary data regarding the cost of cultivation prior to the establishment of RBKs (2019-20) was obtained from the Comprehensive Scheme to ensure a reliable historical baseline.

The Commission for Agricultural Costs and Prices (CACP) under the Ministry of Agriculture and Farmers Welfare, Government of India, New Delh uses a comprehensive set of standard cost concepts like Cost A₁, A₂, B₁, B₂, C₁, C₂, and C₃ to compute the cost of cultivation to recommend the minimum support prices for important crops like paddy. The following mathematical formulations were applied to determine farm profitability:

Gross income: Calculated by multiplying the quantity of produce (Q) with respective selling prices (P).

$$\text{Gross income} = Q \times P \dots\dots\dots (1)$$

Net income: The return remaining after deducting total expenditures (TC) from gross income (GI).

$$\text{Net income} = \text{GI} - \text{TC} \dots\dots\dots (2)$$

Total cost (TC): Addition of total fixed cost (TFC) and total variable cost (TVC).

$$\text{TC} = \text{TFC} + \text{TVC} \dots\dots\dots (3)$$

Benefit Cost Ratio (BCR): The ratio of total cash inflows to total cost outflows.

$$\text{B:C Ratio} = \frac{\text{Discounted cash inflows}}{\text{Discounted cash outflows}} \times 100 \dots\dots\dots (4)$$

A BCR > 1 implies the activity is economically feasible, while a BCR < 1 indicates losses.

Additionally, price variation metrics were employed to assess input affordability by calculating the percentage variation between RBK prices and general market prices for fertilizers and seeds.

Results and Discussion

1. Price comparison of different fertilizers sold in the study area

The economic merit of the Rythu Bharosa Kendras is most visible in its price-shielding effect on essential fertilizers. As evidenced in Table 1, Urea achieved the most significant price variation at 11.29 per cent, available at ₹280.79 through RBKs compared to ₹312.50 in the open market. This is followed by DAP and MOP, which maintained a cost advantage of 4.04 per cent and 2.73 per cent, respectively. The data indicates a substantial cost advantage for farmers procuring through RBKs, particularly for widely used inputs like Urea and DAP. This confirms that the RBKs effectively stabilizes prices and improves input accessibility. These findings align with the previous observations, which attributed the consistent price differences with the highest variation in Urea (10.30%) and DAP (2.96%) (Maheshwar *et al.*, 2024) [8]. Overall, these results validate the role of RBKs as a one stop solution for enhancing input affordability and supporting sustainable farming practices.

Table 1: Price comparison of different fertilizers sold in the study area (₹/bag)

Sl. No.	Fertilizer Name	Average Price at RBK (₹)	Average price at other agencies (₹)	Price variation	Variation (%)
1.	Urea	280.79	312.50	31.71	11.29
2.	DAP	1353.67	1408.33	54.66	4.04
3.	MOP	1174.25	1206.42	32.17	2.73

2. Price comparison of different seeds sold in the study area (₹/bag)

The data presented in Table 2 reveals a substantial price gap between Rythu Bharosa Kendras and the open market, reflecting a strategic effort to lower financial barriers to quality inputs. While the district's primary staple crop like Paddy, showed a reliable 19.56 per cent price reduction (amounting to a saving of ₹180 per bag), the most substantial variations were concentrated in climate-resilient and nutrient-dense crops. Specifically, foxtail millet and ragi achieved price variations of 103.45 per cent and 98.63 per cent, respectively.

Beyond millets, the RBK model provided significant relief for high-value oilseeds and pulses. Groundnut seeds recorded the highest absolute monetary saving to the tune of

₹942 per bag (66.66% variation), which is particularly beneficial given the high initial investment required for oilseed cultivation. Similarly, a uniform 42.85 per cent price reduction was observed across green gram, black gram, and red gram, demonstrating a standardized support system for leguminous crops.

These findings confirm the efficiency of RBKs in promoting crop diversification by eliminating the inflationary markups of private intermediaries. By delivering certified, high-quality seeds at subsidized rates, the RBK network serves as a one stop solution for smallholders in Srikakulam district. This institutional support is a primary driver in helping marginal farmers transition toward more diverse and sustainable cropping patterns.

Table 2: Price comparison of different seeds sold in the study area (₹/bag)

Sl. No.	Seed Name	Price at RBK (₹)	General Price (₹)	Price variation (₹)	Variation (%)
1.	Black gram	392	560	168	42.85
2.	Green gram	364	520	156	42.85
3.	Red gram	392	560	168	42.85
4.	Foxtail millet	87	175	90	103.45
5.	Ragi	73	145	72	98.63
6.	Sesamum	204	340	136	66.66
7.	Paddy	920	1100	180	19.56
8.	Groundnut	1413	2355	942	66.66

3. Comparative economic analysis of paddy cultivation

The comparative study of the cost structure and profitability of paddy cultivation before and after the establishment of RBKs is depicted in Table 3. The comparison between the

base year (2019–20) and the current year (2024–25) reveals a transformative impact on farm economics in terms of optimum utilisation of inputs and substantially realizations of net income at lowest cost.

Table 3: Cost and returns of paddy crop (after and before RBK) in the study area

Sl. No.	Particulars	After RBK (2024-2025) (₹/ha)	Before RBK (2019-2020) (₹/ha)	Percent change (after and before RBK)
1.	Human labor	26,204.42	23,868.13	9.79
2.	Bullock labor	223.24	786.67	-71.62
3.	Machine labor	15,739.76	13,814.36	13.94
4.	Seeds	1,841.67	2,214.16	-16.82
5.	Fertilizers	8,198.9	8,557.19	-4.19
6.	Manures	2,131.25	2,227.44	-4.32
7.	Plant protection chemicals	4,022.69	3,977.71	1.13
8.	Depreciation	182.42	159.44	14.41
9.	Interest on working capital	1,948.55	1,565.46	24.47
10.	Other miscellaneous expenses	120.32	380.47	-68.36
11.	Cost A ₁	60,613.22	57,551.0	8.70
12.	Cost A ₂	63,313.34	60,393.06	8.43
13.	Cost B ₁	62,166.89	59,680.57	9.68
14.	Cost B ₂	96,241.26	79,796.37	20.61
15.	Cost C ₁	89,277.51	83,497.77	9.55
16.	Cost C ₂	1,31,286.97	1,04,913.57	25.14
17.	Cost C ₃	1,44,415.667	1,15,404.927	25.14
18.	Cost of Production (per quintal)	2111.40	1767.11	19.48
19.	Value of by- product (₹/ha)	6,812.32	6,137.04	11.00
20.	Value of main product (qt/ha)	62.18	59.37	4.73
21.	Main product selling price (₹/qt)	2,320	1,835	26.43
	Gross returns	1,51,069.92	1,15,080.99	31.27
	Net returns	19,782.95	10,167.42	94.57
	B:C Ratio	1.15	1.10	-

During Post-RBKs intervention, a notable redistribution in cost components was observed. While the total cost of cultivation (Cost C₂) rose by 25.14 per cent, i.e., increasing from ₹1,04,913.57 to ₹1,31,286.97. The primary drivers were exogenous factors such as human labour cost increased by 9.79 per cent while machine labour cost increased by 13.94 per cent. These rising operational costs are consistent with findings which attributed such trends to prevailing wage rate hikes and accelerated mechanization (Bakthavathsalum *et al.*, 2014) ^[9]. Conversely, the RBK model successfully reduced direct material expenses. Expenditure on seeds declined by 16.82 per cent (from ₹2,214.16 to ₹1,841.67), while fertilizer and manure costs reduced by 4.19 per cent and 4.32 per cent, respectively. The most dramatic shift occurred in traditional power sources, with bullock labour costs declined by 71.62 per cent, signalling a decisive move towards mechanical operations. Additionally, miscellaneous expenses observed a sharp reduction to the extent of 68.36 per cent, further

signifies the efficiency of the input procurement system. Despite the increase in total expenditures, the profitability of paddy farming reached new heights in the study area. The yield improved by 4.73 per cent with 62.18 quintals per hectare, while the realized selling price grew by 26.43 per cent (from ₹1,835 to ₹2,320 per quintal). This price growth is largely credited to RBK-facilitated e-crop booking and direct market linkages that ensure procurement at Minimum Support Prices (MSP), thereby bypassing involvement of traditional middlemen. Consequently, gross returns expanded by 31.27 per cent, but more significantly, net returns almost doubled, jumped from ₹10,167.42 to ₹19,782.95 per hectare, a staggering 94.57 per cent increase. This massive surge in profit margins aligns with observations which reported that institutionalized input supply and advisory services extended through RBKs significantly lower the cultivation expenses while maximizing resource use efficiency (Prasanna *et al.*, 2024) ^[10]. The marginal improvement in the Benefit-Cost Ratio

(1.10 to 1.15) confirms that RBK interventions have successfully transitioned paddy cultivation into a more economically robust enterprise in Srikakulam district.

Conclusion

The findings of this study demonstrate that the RBKs are highly effective institutional model for transforming smallholder economics in Srikakulam district. By functioning as a one stop solution, RBKs have significantly lowered the financial barriers to quality inputs, with seed price variations showing a consistent cost advantage over the general market. Most importantly, the research highlights a major leap in farm profitability. Despite rising operational costs, the integration of subsidized inputs, expert advisory services and direct market linkages nearly doubled net returns realised by paddy farmers, resulting in a 94.57 per cent increase in profit. The marginal increase in the benefit-cost ratio (1.10 to 1.15) confirms that RBKs interventions have boosted paddy cultivation into a more economically viable enterprise in the study area. Ultimately, this model provides a scalable framework for improving livelihood security farming communities.

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References

1. Anuhya P. Rythu Bharosa Kendra-Andhra Pradesh's revolutionary step to fulfil the farmer's needs. Just Agric Multidiscip e-Newsletter. 2022;3(3):1-5.
2. Anonymous. Rythu Bharosa Kendras: A novel initiative of Andhra Pradesh. Andhra Pradesh: AP Agrinet, Department of Agriculture, Government of Andhra Pradesh; 2023.
3. Reddy K. Awareness of farmers towards Rythu Bharosa Kendras (RBKs) products and services in Prakasam district of Andhra Pradesh. Journal of Research ANGRAU. 2022;50(3):144-148.
4. Saifuddin MD, Devy MR, Rao MS, Suseela K. Profile of the beneficiary farmers of Rythu Bharosa Kendras (RBKs). Andhra Agricultural Journal. 2022;69(2):288-294.
5. Anuhya P, Khare NK, Bisht K, Nahatkar SB. Extent of adoption of Rythu Bharosa Kendra's technologies and services in Ananthapuram district of Andhra Pradesh. Asian Journal of Agricultural Extension, Economics and Sociology. 2022;40(10):51-55.
6. Boopathi Raja A, Raghunadha Reddy G. RBK – One stop solution at farmers' doorstep in Andhra Pradesh. SSRN Electronic Journal. 2022;50(Special Issue):205-209.
7. Babu GP, Jayalakshmi M, Chaitanya BH, Mahadevaiah M, Srinivas T. Effectiveness of season long training programme on knowledge levels in Kurnool district of Andhra Pradesh. Indian Journal of Extension Education. 2021;57(4):44-48.
8. Maheswar RB, Guruva RK, Purnima KS, Kumari PL. A comparative study of fertilizer prices purchased by farmers from Rythu Bharosa Kendras (RBKs) and other agencies in Andhra Pradesh. Asian Journal of Agricultural Extension, Economics and Social. 2024;42(6):157-161.
9. Bakthavathsalam CG, Raghu PT, Aditi N, Kalaiselvan NN. Comparative trend analysis in cost of paddy cultivation and profitability across three states of India. European Scientific Journal. 2014;10(3):271-280.
10. Prasanna DE, Aparna B, Sitarambabu V, Ramesh D. Impact of Rythu Bharosa Kendras (RBKs) intervention on cost of cultivation of maize farmers in Guntur district of Andhra Pradesh. International Journal of Agricultural Extension and Social Development. 2024;7(8):510-515.