



# Effectiveness of Rythu Bharosa Kendras (RBKs) Services as Perceived by Farmers in the East Godavari District of Andhra Pradesh, India

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## Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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## ABSTRACT

Rythu Bharosa Kendram is One Stop Shop for supplying Government Certified Agri Inputs (Seeds, Fertilizers & Pesticides), Animal Husbandry & Fisheries Inputs to the farmers and has an attached workshop / Knowledge Center for giving scientific Agri Advisories to the farmers. It is integrated with a Call. The study investigated the effectiveness of services of RBK perceived by farmers in the East Godavari district of Andhra Pradesh during 2021-2022. A total sample of 120 farmers was

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randomly selected from twelve villages viz. Kadiyam, Vemagiri, Muramanda, Kalavacherla, Rajanagram, Velugubanda, Geddanapalli, Bhupalapatnam, S. thimmapuram, Bhatnavalli, Rollapalem and Nadipudi of East Godavari district of Andhra Pradesh. The data were collected with structured interview schedule. The perceived effectiveness of the services of RBKs was studied. It was observed that half (50.83%) of the farmers perceived that services rendered by RBKs were moderately effective followed by highly effective (34.17%) and less effective (15.00%) categories. It can be recommended to the government and policy makers for improvement, restructuring, reforming and modifying the services from RBKs to enhance its effectiveness further.

*Keywords: RBKs; perceived effectiveness; fertilizers and pesticides; organic farming.*

## 1. INTRODUCTION

Agriculture is the main source of livelihood for most of the population in India. Pre and post - green revolution extension systems in India played a commendable role in the dissemination of transfer of technologies [1]. On the other hand, farmers encounter numerous issues while buying inputs, selling their products and determining market prices etc. There are limited testing facilities for agricultural inputs like seeds, fertilizers and pesticides in the state. All of these lead to the supply of low-quality inputs to farmers leading to huge losses [1]. The availability of extension functionaries to farmers is very less. The present extension worker -to- farmer ratio is 1:1162 [2]. Andhra Pradesh is being an agrarian state. The government of Andhra Pradesh focuses more on the welfare of the farming community by providing hassle- free services at the village level [2]. As a result, that the government established 10,641 Rythu Bharosa Kendras (RBKs) on 30.05.2020 in all village secretariats with qualified personnel from various disciplines in agriculture and allied sectors. RBK is an innovative approach by the government for providing an integrated platform to address the needs of the farmers. Before, farmers who needed assistance had to go to the offices of agriculture, horticulture, veterinary medicine, and fisheries at the Mandal level. However, the technical staff (VAA- Village Agricultural Assistant / VHA- Village Horticulture Assistant / VSA- Village Sericulture Assistant / VFA- Village Fisheries Assistant (only in the locations where intensive fish farming is practised) are now easily accessible to the farmers at village level since implementation of RBK. These centres offer services like delivery of inputs to farmers, technical advisories, soil testing, training farmers, crop insurance crop booking, providing market intelligence, plant health clinics, interaction with scientists and other experts through audio and video conferences on the smart TV, technical advisories on best management practices of

crop, issuing health and insurance cards for livestock, vaccination for animals. Accordingly, the Agriculture Department has recruited 6758 Village Agriculture Assistants and placed them in RBKs [3]. The system of RBKs brought the extension system more closely to the farming community [2] and strengthened the farmers both economically and technologically. The RBK concept is one of the six initiatives that were nominated by the Centre for the UN Award. The initiative has revolutionised the agriculture sector by meeting farmers' needs from seed to sale [4].

The RBKs provide single window services for Agriculture and allied sector farmers as the scheme was designed to be as successful as possible in assisting the farming community in enhancing their farm income, participation from the farming community should be higher. Since its inception, the scheme had faced various challenges in its implementation. The ultimate objective of the farming community's well-being was hampered by a number of inconsistencies at both the organisational and individual levels. The value and effectiveness of any scheme can only be judged through perception and response of the beneficiaries [5]. The success of this scheme largely depends upon the knowledge possessed and effectiveness perceived by the farmers [6] towards various services and functioning of the RBKs. Therefore, a systematic study was conducted to measure the effectiveness of the services of RBKs as perceived by the beneficiary farmers.

## 2. METHODOLOGY

The study was conducted in the East Godavari district of Andhra Pradesh during 2021-2022 by adopting an exploratory research design. East Godavari was purposively selected for the study as the highest number of RBKs were existing. Four mandals were selected with the highest number of RBKs. From each selected mandal, three villages were selected by a using simple

random sampling procedure viz kadiyam, vemagiri, muramanda from kadiyam mandal; kalavacherla, Rajanagaram and velugubanda from Rajanagaram mandal; Geddanapalli, Bhupalapatnam, S. thimmapuram from Kirlampudi mandal; Bhatnavilli, Rollapalem, Nadipudi from Amalapuram mandal. From each of the selected villages, ten beneficiary farmers were selected randomly, making a total of 120 respondents. The primary data were collected personally with the help of an interview schedule; the interviews were conducted in the farmer's field or in their homes through face-to-face contact. The services were categorized into five categories i.e. Capacity building services, input rendering services, veterinary services, information providing services and miscellaneous services. Various statements regarding the services of RBKs were presented to the respondents with three possible answers for each statement scored on a continuum of 3 to 1 viz. good, fair and poor. Later the responses were tabulated and analysed by using statistical tools such as frequency and percentage. The standard normal deviation (Z) test was used to measure the effectiveness of the services of RBKs. Accordingly, the ranks were given to each item based on the Z value. The formula used for the purpose was given below.

$$\bar{Z} = \frac{\sum Z_i}{n} \quad Z_i = \frac{x_i - \bar{x}}{\sigma}$$

Where  $x_i$  is the score for the  $i^{\text{th}}$  item,  $\bar{x}$  is the mean score of all items,  $n$  is the number of items and  $\sigma$  is the Standard deviation calculated on  $x_i$  values. The perceived effectiveness was categorized into three categories of the level of perceived effectiveness i.e. less effective, moderately effective and highly effective.

### 3. RESULTS AND DISCUSSION

The data on the classification of sample respondents according to their level of effectiveness of RBK services perceived by farmers was given in Table 1. The majority of the respondents (50.83%) had perceived moderately effective followed by highly effective (34.17%) and less effective (15.00%) services of RBKs. The respondents were observed in all the categories but the least proportion was found in the less perceived effectiveness category and a major proportion of respondents fell in the categories of moderately and high. The findings are accordance with the study reported by Riar and Rupinder [7] and Shrutika [8].

From Table 2, it could be concluded that more than three fourth (80.00%) of the farmers perceived the effectiveness of service in the organization of polambadi/thotabadi/pasuvigyanbadi by the VAA/VHA/VFA as good followed by fair (13.34%) and poor (6.66%). It was ranked first ( $Z = 1.32$ ). More than two third (72.50%) of the respondents perceived effectiveness in service of conduct of advisory board meeting once a month by the technical staff as good followed by fair (15.84%) and poor (11.66%). More than half (55.83%) of the farmers perceived effectiveness in service of maintenance of the digital library and information material for enhancement of farmers' knowledge as good followed by fair (23.34%) and poor (20.83%). Less than half (45.00%) of the farmers perceived effectiveness in the service of organization of capacity programs to farmers in recent advances in agriculture by scientists as good followed by fair (32.50%) and poor (22.50%). Nearly two third (65.84%) of the farmers perceived effectiveness in service of maintenance of smart TV at RBK for interaction with scientists and other experts as poor followed by fair (18.33%) and good (15.83%) [9-11].

It was clear from Table 3 that more than three-fourths (76.66%) of the farmers perceived effectiveness in maintenance of digital kiosk for booking inputs at RBKs as good followed by fair (19.16%) and poor (4.18%). It was ranked first ( $Z = 1.62$ ) among the input rendering services. The majority (72.50%) of the farmers' perceived effectiveness in RBKs are providing inputs at a lower price compared to the local market as good followed by fair (24.17%) and poor (3.33%). More than half (65.84%) of the farmers perceived the effectiveness of RBKs are working for delivery of the certified products at the right price & right time as good followed by fair (27.50%) and poor (6.66%). Nearly half (45.00%) of the respondents had perceived the effectiveness in service of multi-brand quality of inputs made available to the farmers through RBKs as fair followed by good (27.50%) and poor (27.50%). Most (43.33%) of the farmers perceived effectiveness in faming implements made available for hire from RBK custom hiring centres as poor followed by fair (30.83%) and poor (25.84%). Almost half (49.17%) of the farmers perceived effectiveness in the supply of bio- fertilizers and bio fungicides to the farmers at RBK as poor followed by fair (27.50%) and good (23.33%). More than half (53.33%) of the respondents perceived supply of organic inputs like neem cake, vermicompost, neem oil at

**Table 1. Distribution of farmers according to perception on effectiveness of services provided by RBKs****(n= 120)**

S. No.	Category	F	%
1.	Less effective (< 52.27)	18	15.00
2.	Moderately effective (52.27 – 59.37)	61	50.83
3.	Highly effective (>59.37)	41	34.17
<b>Total:</b>		120	100.00
<b>Mean = 55.82</b>			S.D = 5.55

\* F=Frequency %=Percentage

**Table 2. Effectiveness as perceived by respondents in relation to capacity building services**

S. No	Capacity building services	Good		Fair		Poor		Z Value	Rank
		F	%	F	%	F	%		
1	Organisation of polambadi/ thotabadi / pasuvigyanbadi by VAA/VHA/VFA	96	80.00	16	13.34	8	6.66	1.32	1
2	Conduct of advisory board meeting once a month by the technical staff in the RBK	87	72.50	19	15.84	14	11.66	1.07	2
3	Maintenance of digital library and information material for enhancement of farmers knowledge	67	55.83	28	23.34	25	20.83	0.54	3
4	The organisation of capacity- building programmes for farmers in recent advances in agriculture by scientists	54	45.00	39	32.50	27	22.50	0.31	4
5	Maintenance of smart TV at RBK for interaction with scientists and other experts through audio and video conferences and dissemination of technology	19	15.83	22	18.33	79	65.84	-1.07	5

**Table 3. Effectiveness as perceived by respondents in relation to Input rendering services**

S. No	Input rendering services	Good		Fair		Poor		Z Value	Rank
		F	%	F	%	F	%		
1	Maintenance of digital kiosk for booking inputs at RBK	92	76.66	23	19.16	5	4.18	1.30	1
2	RBKs are providing inputs viz; fertilizers, pesticides and seed at a lower price compared to the local market	87	72.50	29	24.17	4	3.33	1.24	2
3	RBKs are working for the delivery of the certified product at the right price & the right time	79	65.84	33	27.50	8	6.66	1.04	3
4	Multi-brand quality inputs are made available to the farmers through RBKs	33	27.50	54	45.00	33	27.50	-0.13	4
5	Farming implements shall be made available for hire from RBK custom hiring centres	31	25.84	37	30.83	52	43.33	-0.48	5
6	Supply of bio fertilizers and bio fungicides to the Farmers at RBK	28	23.33	33	27.50	59	49.17	-0.64	6
7	Supply of organic inputs like neem cake, vermicompost and neem oil at RBK	21	17.50	35	29.17	64	53.33	-0.84	7
8	Provision of IPM kits like pheromone traps, sticky traps and lures to the farmers by RBK	15	12.50	26	21.67	79	65.83	-1.19	8

**Table 4. Effectiveness as perceived by respondents in relation to Veterinary services**

S. No	Veterinary services	Good		Fair		Poor		Z Value	Rank
		F	%	F	%	F	%		
1	Provision of free vaccination to animals	84	70.00	28	23.33	8	6.67	1.12	1
2	Providing animal health cards at RBK	79	65.83	32	26.67	9	7.50	1.02	2
3	First aid for animals, deworming and semen collection	23	19.16	31	25.84	66	55.00	-0.79	3
4	Free animal insurance	26	21.66	27	22.50	67	55.84	-0.81	4

**Table 5. Effectiveness as perceived by respondents in relation to Information providing services**

S. No	Information providing services	Good		Fair		Poor		Z Value	Rank
		F	%	F	%	F	%		
1	RBKs are working towards the channelization of Govt schemes	58	48.33	45	37.50	17	14.17	0.53	1
2	The information displayed at RBKs is useful to get information on Govt schemes	47	39.16	43	35.84	30	25.00	-0.12	2
3	RBKs are working effectively for providing advisory services in integration with call centre	28	23.33	34	28.34	58	48.33	-0.63	3
4	Provision of guidance on the extent of loan eligibility through bank mitra and information on government schemes	22	18.33	16	13.34	82	68.33	-1.11	4
5	RBK channel for farmers queries and farmers - scientists interaction	11	9.16	13	10.84	96	80.00	-1.49	5

**Table 6. Effectiveness as perceived by respondents in relation to miscellaneous services**

S. No	Miscellaneous Services	Good		Fair		Poor		Z Value	Rank
		F	%	F	%	F	%		
1	Marketing of produce at the village made easy by RBK through procurement centres	87	72.50	24	20.00	9	7.50	1.14	1
2	Purchase of surplus produce at MSP when the market price falls below MSP	73	60.83	29	24.17	18	15.00	0.74	2
3	Free crop insurance	47	39.16	43	35.84	30	25.00	-0.12	3
4	Promotion of organic farming /natural farming / ZBNF	23	19.16	31	25.84	66	55.00	-0.79	4
5	Grouping of farmers into Farmer Producer Organizations (FPO), Cooperative societies, Farmer Interest Groups etc	9	7.50	13	10.83	98	81.67	-1.55	5

RBK as poor effectiveness followed by fair (29.17%) and good (17.50%). The majority (65.83%) of the farmers perceived effectiveness in the provision of IPM kits like pheromone traps, sticky traps etc to the farmers through RBKs as poor followed by fair (21.67%) and good (12.50%) [12-15].

The data presented in Table 4 revealed that most (70.00%) of the farmers perceived effectiveness in the provision of free vaccination to animals as good (70.00%) followed by fair (23.33%) and poor (6.67%). It was ranked first ( $Z= 1.12$ ) among the veterinary related services. The majority (65.83%) of the farmers perceived effectiveness in providing animal health cards at RBK as good followed by fair (26.67%) and poor (7.50%). More than half (55.00%) of the farmers perceived effectiveness in service of first aid for animals, deworming and semen collection as poor followed by fair (25.84%) and good (19.16%). Less than three-fifth (55.84%) of the farmers perceived effectiveness in providing free animal insurance as poor (55.84%) followed by fair (22.50%) and good (21.66%).

A bird's eye view of Table 5 showed that nearly half (48.33%) of the farmers perceived effectiveness in the service of RBKs are working towards channelization of Government schemes as good followed by fair (37.50%) and poor (14.17%). It was ranked first ( $Z= 0.53$ ) among the information- providing services. Nearly two-fifths (39.16%) of the farmers perceived effectiveness regarding information displayed at RBK are useful to get the information of Government schemes as good followed by fair (35.84%) and poor (25.00%). Nearly half (48.33%) of the farmers perceived effectiveness RBKs were working effectively for providing advisory services in integration with call centre as poor followed by fair (28.34%) and good (23.33%). The majority (68.33%) of the respondents perceived effectiveness in the provision of guidance on the extent of loan eligibility through bank mitra and information on government schemes as poor followed by good (18.33%) and fair (13.34%). More than three fourth (80.00%) of the farmers perceived effectiveness in the RBK channel for farmer queries and farmers-scientists interaction as poor followed by fair (10.84%) and good (9.16%).

A cursory look at Table 6 depicts that the majority (72.50%) of the farmers perceived effectiveness in the marketing of farm produce at the village made easy by RBK through procurement centres as good followed by fair

(20.00%) and poor (7.50%). Three fifth (60.83%) of the farmers perceived effectiveness in the purchase of surplus produce at MSP when the market price falls below MSP as good followed by fair (24.17%) and poor (15.00%). Nearly two-fifths (39.16%) of the farmers perceived the effectiveness of providing free crop insurance as good followed by fair (35.84%) and poor (25.00%). More than half (55.00%) of the farmers perceived effectiveness in the promotion of organic farming/natural farming/ZBNF as poor followed by fair (25.84%) and good (19.16%). More than three fourth (81.66%) of the respondents perceived effectiveness in the grouping of farmers into Farmer Producer Organizations (FPO), Cooperative societies, Farmer Interest Groups etc as poor followed by fair (10.83%) and good (7.50%).

#### 4. CONCLUSION

It can be concluded that the majority of the respondents had perceived overall moderately to highly effective services of RBKs. The focal point of this research study was to assess the effectiveness of RBK services as perceived by the farmers in enhancing their farm income. The findings revealed that farmers perceived RBKs were moderately effective. This serves as an indication for the policy makers/ researchers/ extension functionaries that there was a wider gap between the intent and execution of program. This finding throws light on the government and policy makers while drafting the plans for improvement, restructuring, reforming and modifying the services from RBKs. Thus, various strategies should be implemented to enhance the effectiveness of the services of RBKs further.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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