A Comparative Analysis of Crop Advisory Centres in Warangal District of Andhra Pradesh

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Abstract

A study was conducted to carry out a comparative analysis of Rallis Crop Advisory Centre (RCAC), District Agricultural Advisory and Transfer of Technology Centre (DAATTC) and Mahindra Samriddhi (MS) in Warangal district of Andhra Pradesh. The data were collected from 135 farmers among which 90 were users and 45 were non-user farmers. The comparison of the performance of the Crop Advisory Centres (CAC's) in technology advisory and delivery services was done by effectiveness index and rating index method. This paper also discusses the comparative impact of CAC's on farmers' income during the rice season of 2010-2011. The study revealed that the performance of extension services rendered by the RCAC was found to be better than DAATTC and MS. Even the overall rating index of RCAC was better than DAATTC and MS. The findings also revealed that the overall impact of DAATTC services was more than RCAC and MS, on farmers' income.

Introduction

Agricultural advisory (extension) services have long been recognized as an important factor in promoting agricultural and rural development. Over the years, various extension modalities have emerged to bridge the prominent gap existing between research laboratories/farms and farmers' field like T & V system, ATMA etc. Recently a variety of ways to finance extension have emerged and the tendency to privatise government services as well as the increasing role of commercial companies involved in agricultural research and extension have played a conducive role in this respect (Anne, 2000). With the commercialization of agricultural technology and research, the private sector is now playing a larger role in advisory services (Rivera and Alex, 2004; Swanson, 2008). Of late, various private players such as Rallis India Ltd., Mahindra and Mahindra Ltd. etc. have entered into crop-advisory services on a big scale.

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The contribution of public extension in attaining self-reliance in food production is very well recognized. But in the present scenario, public extension alone is not sufficient to address multi-faceted problems faced by farmers. It has to be seen as to what extent public and private players in extension services are helping in improving the farm yields and farmers' income leading to rural development.

Therefore, it is necessary to compare the performance of extension agencies working at the ground level. Keeping this in view, the study was carried out with the following objectives:

1. To compare the performance of crop advisory centres affiliated to various agencies.
2. To study the impact of crop advisory centres on farm practices and farmers' income.

Material and Methods

Warangal district of Andhra Pradesh was purposively selected for the study since Rallis India Ltd. started its crop advisory centre (RCAC) in this district. Further, there is Mahindra Samriddhi (MS) and District Agricultural Advisory and Transfer of Technology Centre of ANGRAU (DAATTC) set up in this district. This facilitated a comparative assessment and evaluation of their performance. A total sample size of 135 farmers, including 90 users and 45 non-users in the ratio of 67:33 respectively, were covered from a total of 9 villages. From each village about 15 farmers were randomly selected, representing 10 users and 5 non users. Primary data was collected from farmers using interview schedules developed specially for them. For the purpose of evaluating the performance of the selected Crop Advisory Centres, an Effectiveness Index prepared by Mukherjee *et al.* (2011) along with Rating Index Method was used after slight modification.

Results and Discussion

For the purpose of comparative analysis of RCAC, DAATTC and MS, an Effectiveness Index prepared by Mukherjee *et al.* (2011), Rating index method and impact of CAC's services on paddy farmer's income were analyzed after suitable modification. Data was collected from 30 user farmers of each selected CAC (making it a total of 90 user farmers) and 45 non-user farmers.

Effectiveness index

Table 1. Responses of Farmers with regard to Availability, Timeliness and Problem Solving Ability of Advisory Services

Parameter / Category	Availability						Timeliness						Problem solving					
	RCAC		DAATTC		MS		RCAC		DAATTC		MS		RCAC		DAATTC		MS	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Very low	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0
Low	0	0	0	0	9	30	1	3	3	10	9	30	0	0	0	0	0	0
Medium	2	7	7	23	17	57	6	20	20	67	21	70	3	10	10	33	16	53
High	23	76	21	70	3	10	21	70	6	20	0	0	18	60	15	50	11	37
Very high	5	17	2	7	0	0	2	7	1	3	0	0	9	30	5	17	3	10

The following range of services i.e. advice on seed, pesticide, fertilizers and improved farming practices offered by RCAC, DAATTC and Mahindra Samriddhi were analyzed for the availability and timeliness of services as well as problem solving ability of services on a five point continuum scale.

It is clear from Table 1 that the effectiveness index with regard to availability of services was in favor of RCAC as the maximum number of farmers (23) rated it as high. However, in case of DAATTC, the maximum number of the farmers rating it high was 21 and in case of MS the maximum number rating it medium was 17 in terms of availability of services. With respect to timeliness of services, again the effectiveness index was in favour of RCAC as majority of the farmers (21) rated it as high and in case of DAATTC and MS majority of the farmers rated them as medium with 20 and 21 farmers respectively in terms of timeliness of services. For problem solving ability, the effectiveness index was also in favour of RCAC as the maximum number of farmers (18) rated it high whereas for DAATTC and MS, the maximum number of farmers who rated it as high and medium were 50 and 53 farmers respectively.

From the above analysis, it can be interpreted that Rallis Crop Advisory Centre scores were better with regard to availability, timeliness and problem solving for different parameters as compared with the other two selected crop advisory centres i.e. DAATTC and Mahindra Samriddhi.

Rating index method

Table 2. Farmers' Response regarding Performance of Crop Advisory Centres

S. No.	Service parameters	Factors weight	RCAC rating	Factor score	DAATTC rating	Factor score	MS rating	Factor score
1	**Advice on seed**	0.05	2	0.10	4	0.20	1	0.05
2	**Provision of soil testing**	0.05	1	0.05	3	0.15	3	0.15
3	**Advice on fertilizer**	0.15	4	0.60	4	0.60	3	0.45
4	**Advice on pesticides**	0.25	5	1.25	4	1.00	4	1.00
5	**Improved farming practices**	0.15	4	0.60	5	0.75	3	0.45
6	**Farmer meetings**	0.15	3	0.45	3	0.45	3	0.45
7	**Demonstrations**	0.20	4	0.80	3	0.60	3	0.60
	Overall Rating index factor score	**1.0**		**3.85**		**3.75**		**3.15**

In this method the selected user farmers were asked to give weightage to important performance parameters. In addition, experts' advice was also taken and then the final weightage for each listed parameter was allotted. A five point scale was developed and the selected farmers were asked to evaluate each performance parameter against the five point scale for each centre individually.

Table 2 shows the ratings given by the user farmers on different service parameters for each selected CAC. Regarding RCAC, the table depicts that the farmers who have availed the services of RCAC have remarked very good (5) for advice on pesticides while for advice on fertilizer, improved farming practices and demonstrations farmers remarked as good (4). The farmers felt that RCAC was average (3) in case of farmers meetings and poor (2) and very poor (1) in case of advice on seed and soil testing provision, respectively. After analysis, the overall rating index factor score for RCAC was 3.85 out of the maximum (5.00), which is quite a good score.

Regarding DAATTC, the results (Table 2) indicated that the farmers who had availed the services of DAATTC had remarked very good (5) for improved farming practices, while for advice on seed, fertilizer and pesticides, farmers have remarked good (4). The farmers felt that performance of DAATTC was average (3) in case of soil testing, farmers' meetings and demonstrations. After analysis, the overall rating index factor score for DAATTC was 3.75 out of the maximum (5.00).

Regarding Mahindra Samriddhi, the results (Table 2) revealed that the farmers who had availed the services of Mahindra Samriddhi remarked good (4) for advice on pesticides and average (3) for advice on soil testing provision, advice on fertilizers, improved farming practices, farmers' meetings and demonstrations. The farmers felt that performance of Mahindra Samriddhi was very poor (1) in case of advice on seed. After analysis, the overall rating index factor score for Mahindra Samriddhi was 3.15 out of the maximum (5.00).

The overall rating index factor score was 3.85 for RCAC, 3.75 for DAATTC and 3.15 for Mahindra Samriddhi out of the maximum (5.00). Based on the above figures, it can be concluded that the performance of RCAC was perceived better as compared to DAATTC and MS, but there is a lot of scope for improvement in the service delivery of all these centres.

Impact on Farmer's Income

Cost and returns are the important factors influencing the adoption of any services from advisory centres. In order to assess the impact of selected crop advisory centre activities in improving the income of the user-farmers, an attempt was made to collect the cost and returns information from user and non-user farmers. Since the crop advisory centre provides advisory services to farmers only on seed, fertilizer, pesticide and PGP/SPN to be used, costs involved particularly under these heads were collected. The total fixed cost and other variable cost items were considered similarly for all the farmers (user and non-user farmers). The yield data was also collected so as to know the impact of improved cultivation practices and right use of inputs on income increase.

Table 3. Cost of Selected Items and Yield of CAC Users and non-User Farmers for Paddy Crop

Items	RCAC user farmers	DAATTC user farmers	MS user farmers	Non-User farmers
Seed cost (Rs. ha^{-1})	1500	600	1500	1500
Soil Testing cost (Rs. ha^{-1})	0	0	100	0
Fertilizer cost (Rs. ha^{-1})	9695	9257	9389	12175
Pesticide cost (Rs. ha^{-1})	3225	3128	3635	4725
PGP/SPN cost (Rs. ha^{-1})	1200	1200	1200	0
Total cost	14100	14185	14324	16900
Yield (kg ha^{-1})	5500	5400	5250	5000
Value of Yield (Rs.)	63250	62100	60375	57500

Table 3 shows the cost of selected items for all three selected CAC's separately, along with the yield of user farmers for paddy crop. With regard to RCAC user farmers, the seed cost was the same as that of non-user farmers; the fertilizer cost was only Rs. 9695 ha^{-1} which is Rs. 2480 less than the non-users, the pesticide cost was only Rs. 3225 ha^{-1} which is Rs. 1500 less than of the non-users, the PGP/SPN cost was Rs.1200 ha^{-1}. The yield obtained by the RCAC user farmers was 5500 kg ha^{-1} which is 500 kg more than non user farmers. After taking the market price Rs. 1150 per quintal the paddy value is Rs. 63250 per ha, which shows the increment of Rs. 5750. Therefore the overall increase in returns for the user farmers of RCAC is worked out by adding reduced cost and increased yield returns which is Rs. 8550 per hectare.

In case of DAATTC farmers, the seed cost was Rs. 600 only which is Rs. 900 less than for the non-user farmers; the fertilizer cost was only Rs. 9257 ha^{-1} which is Rs. 2918 less than of the non-users, the pesticide cost was only Rs. 3128 ha^{-1} which is Rs. 1597 less than the non-users, the PGP/SPN cost was Rs.1200 ha^{-1}. The yield obtained by the RCAC user farmers was 5400 kg ha^{-1} which is 400 kg more than non user farmers. After taking the market price Rs. 1150 per quintal, the paddy value is Rs. 62100 per ha, which shows the increment of Rs. 4600. Therefore the overall increase in returns for the user farmers of DAATTC is worked out by adding reduced cost and increased yield returns which is Rs. 8815 per hectare.

For Mahindra Samriddhi farmers, the user farmers had soil testing cost of Rs. 100 for each soil sample, the seed cost was the same as that of non-user farmers; the fertilizer cost was Rs. 9389 ha^{-1} which is Rs. 2786 less than of the non-users, the pesticide cost was Rs. 3635 ha^{-1} which is Rs. 1090 less than of the non-users, the PGP/SPN cost was Rs.1200 ha^{-1}. The yield obtained by the RCAC user's farmers was 5250 kg ha^{-1} which is 250 kg more than non user farmers. After taking the market price Rs. 1150 per quintal the paddy value is Rs. 60375 per ha, which shows the increment of Rs. 2875. Therefore the overall increase in returns for the user farmers of Mahindra Samriddhi is worked out by adding reduced cost and increased yield returns which is Rs. 5451 per hectare.

From the above analysis, it is revealed that paddy farmers who have utilized the services from the three selected CACs were reported having an average incremental yield and return of 383 $kgha^{-1}$ and Rs. 7605 per hectare, respectively.

Conclusion

The results of the present investigation prompt us to the conclusion that Rallis Crop Advisory Centre has more effectiveness in terms of availability, timeliness and problem solving nature of services than DAATTC and Mahindra Samriddhi Crop Advisory Centre services and even the overall performance of RCAC was better than that of DAATTC and Mahindra Samriddhi in case of selected advisory services. However, in case of impact on farmers' income, the incremental return for DAATTC user farmers is more than that for RCAC and Mahindra Samriddhi, which could be attributed to the wide range of services offered by DAATT centre.

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