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Knowledge of Extension Services of State Department of Agriculture in Bikaner District of Rajasthan

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ABSTRACT

Extension services are crucial in facilitating the broadcasting of information, technologies, and practices to the farmers and rural communities, thereby improving agricultural output and livelihoods. Government organisation plays a key role for the transfer of technology to the agriculture sector in the country where extension services play a curtail role in technology transfer to the farming and rural community. Thus, State Department of Agriculture is the old and constant body in delivery of extension services to grassroots levels. The identified findings of the study show the knowledge level of beneficiaries of the sample of 60 farmers or beneficiaries (women and men) of Bikaner division of State Department of Agriculture in the Bikaner district of Rajasthan. The ex-post facto Research design was used for this study. Frequency percentage, arithmetic mean and standard deviation are some statistical tools used in this study. Most of them (60%) beneficiaries had medium level of knowledge, followed by those with high (23.33%) and rest (16.66%) had low levels of knowledge.

Keywords: Extension services, Technologies, Agriculture sector

INTRODUCTION

Extension services has chiefly played a responsibility in disseminating agricultural technologies and management practices and therefore to a great degree hastening agricultural growth and rural development. With enhancement in government policies, demand and supply characteristics of technology, and marketing modification, agriculture extension system is facing extra opportunities collectively with challenges (Pandey, 2015). So it is very clear that information about critical inputs agricultural development and rural development which could be efficiently converted into economically rewarding opportunities. For that extension organizations generally responsible for transforming improved agricultural technologies from the point of production to its units of utilisation. The public sector in India has been traditional instrument in playing key role in providing important services to the rural community through extension services. Therefore, with association with other organisation, agricultural extension is still simply performed under the direction of State Department of Agriculture. Hence it was aimed to access the knowledge of the farmers regarding extension services of State Department of Agriculture (Das, 2019; Shivprakash, 2018).

Objectives:

To examine knowledge of respondents regarding extension services provided by State Department of Agriculture.

METHODOLOGY

The present study was conducted in Bikaner division of State Department of Agriculture of Bikaner district of

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Rajasthan. The ex-post facto Research design was used for this study. From Bikaner district two blocks namely Kolayat and Bikaner was purposively chosen for the study as recommended by the organisation due to it is having highest number of active farmers as beneficiaries of State Department of Agriculture. A list of farmers (women and men) or beneficiaries who have direct contact and member of the organisation was collected from the organisation. Thus, from the list total sixty beneficiaries were selected for the investigation. The data were collected from 60 beneficiaries through personal interview method and with a well-structured interview schedule. The knowledge for the purpose of present investigation was operationalized as the amount of thoughtfullness or information possessed by the beneficiaries about various extension services. Five major areas as agriculture management, livestock management, health and hygiene, women empowerment and entrepreneurship development were selected. To determine the knowledge about extension services rendered by the State department of Agriculture, knowledge of the beneficiaries regarding general aspect of organisations, information provided by the organisation, consultancy and diagnosis services, input supply services, infrastructure facilities services and technical extension services was assessed based on five major areas and number of questions were especially framed for the study. Major areas and number of questions were especially framed for the study by evaluating the questions from the experts. The question was analyzed with the answer in "yes" and "no". The responses of the beneficiaries were categorized into low, medium high knowledge level on the basis of their knowledge score.

Statistical tool:

Arithmetic mean (X):

Arithmetic mean is the measure that results when all objects in the series is divided by the number of objects (N). Arithmetic mean is used to calculate results knowledge of beneficiaries regarding extension services by calculating the formula:

$$X = \frac{\sum X}{N}$$

where,

X - Mean

X - Sum of each individual score

N - Total number of items

Standard deviation:

Standard deviation is considered to be the best measure of dispersion to categories the variables. Standard deviation was measured to analyze knowledge of extension services of organization and calculated by following formula:

$$SD = \sqrt{\frac{\sum X^2 - \frac{(\sum X)^2}{n}}{n-1}}$$

Whereas,

x = Scores of knowledge

n = Total number of beneficiaries

RESULTS AND DISCUSSION

Knowledge of beneficiaries regarding general aspect of State Department of Agriculture:

Table 1 regarding general aspect of organisation reveals that cent per cent of the beneficiaries of State Department of Agriculture obtain information from organisation and had knowledge on location of the organisation and weather the organisation is government or non-government, followed by 98.33 per cent of the beneficiaries who utilize the organisation for agriculture purposes, followed by 68.33 per cent of the beneficiaries who had knowledge on extension services. only 43.33

Table 1 : Distribution of beneficiaries according to their knowledge of general aspect of State Department of Agriculture (n=60)

Sr. No.	Knowledge on general aspect	f	%
1.	Extension services	41	68.33
2.	Obtaining information from organization	60	100
3.	Location of organization	60	100
4.	Government / Non government organization	60	100
5.	Utilization of organization for agriculture purposes	59	98.33
6.	Main objective of organization is extension services	26	43.33

Table 2 : Distribution of beneficiaries according to their overall knowledge on general aspect of SDA (n=60)

Sr. No.	Range	f	%
1.	Low (below 4.42)	12	20
2.	Medium (4.42-5.8)	30	50
3.	High (above 5.8)	18	30
	Mean	5.1	
	SD	0.70	

per cent of the beneficiaries had knowledge about main objective of organisation is extension services. Table 2 depicted the overall knowledge of beneficiaries regarding general aspect of organisation and stated that 50 per cent of the beneficiaries had medium level of knowledge than high (30%) and low (20%).

Knowledge on information extension services provided by State Department of Agriculture:

Data regarding knowledge of information services of agriculture management, Table 3 revels that cent per cent of the beneficiaries of State Department of Agriculture had knowledge about organization gives information on newly released and suitable varieties of agriculture for the area, gives information on soil management, water management, weed management, storage and pest and diseases management. More than ninety per cent of the beneficiaries had knowledge on organisation provide uptodate information to farmers in agriculture management (98.33%) assesses the electronic information and serves as data bank in agriculture management (98.33%) and provides information on various kinds of incentives in farming (95%). Whereas, the data also denoted that less than twenty per cent of the beneficiaries had knowledge about organisation provides information regarding prevention and cure of disease (20%), fodder management and production (18.33%), dairy management (16.66%), feeding practices (10%) and breeding practices (8.33%). The reason behind such finding is due to rare delivery of training on livestock management by the organisation. An Overview of the Table 4 reveals that 66.66 per cent of the beneficiaries had overall medium knowledge regarding information services provided by the organisation, followed by low

Table 3 : Distribution of beneficiaries according to their knowledge on information provided by State Department of Agriculture (n=60)

Sr. No.	Knowledge on information services	f	%
I.	**Agriculture management**		
1.	Organization gives information on newly released and suitable varieties of agriculture for the area	60	100
2.	Organization give information on soil management	60	100
3.	Organization give information on water management	60	100
4.	Organization give information on weed management	60	100
5.	Organization give information on storage	60	100
6.	Organization give information on pest and diseases management	60	100
7.	Organization provides up to date information to farmers in agriculture management	59	98.33
8.	Organization assesses the electronic information and serves as data bank in the agriculture area	59	98.33
9.	Organization provides information on various kinds of incentives in farming	57	95
10.	Organization provides information on credit, sources and subsidies in agriculture	45	75
11.	Organization provides information on prices of different commodities in different markets of agriculture	33	55
II.	**Livestock management**		
1.	Primary information provided by the organization regarding health and well-being of livestock	13	21.66
2.	Organization provide information regarding prevention and cure of disease	12	20
3.	Organization provide information regarding fodder management and production	11	18.33
4.	Organization provide information dairy management	10	16.66
5.	Organization provide information regarding feeding practices	6	10
6.	Organization provide information regarding breeding management	5	8.33
III.	**Health and hygiene**		
1.	Organization provide information related to menstrual health and hygiene, disease prevention and control and health education	0	0
2.	Organization provide recent information of personal hygiene, environmental hygiene and food hygiene	0	0
IV.	**Women empowerment**		
1.	Organization provides information related to processing and cooking	0	0
2.	Organization provides information related to value addition	0	0
3.	Organization provides information related to drudgery reduction techniques	0	0
4.	Organization provides information related to nutrition gardening	0	0
5.	Organization provides guidance of act and polices related to women empowerment	0	0
V.	**Entrepreneurship development**		
1.	Organization provides any training regarding entrepreneurship development	0	0
2.	Organization provides any information related to finance and subsidies	0	0

Table 4 : Distribution of beneficiaries according to their overall knowledge about information provided by State Department of Agriculture (n=60)			
Sr. No.	Range	f	%
1.	Low (below 9.63)	11	18.33
2.	Medium (9.63-12.69)	40	66.66
3.	High(above 12.69)	9	15
	Mean	11.16	
	SD	1.53	

level of knowledge (18.33%) and high level of knowledge (15%).

Knowledge on consultancy and diagnosis services provided by State Department of Agriculture:

Data pertaining to Table 5 reveals that cent per cent of the beneficiaries of State Department of Agriculture had knowledge about organization experts provide solution to specific problem of agriculture management, give consultancy on prevention and cure of pest and disease, gives advice on quality of soil, water, fertilizers, seeds etc. and have testing facilities for the diagnosis of various kinds of pest and disease while, 81.66 per cent of the beneficiaries had knowledge about organization provides diagnosis services of seed and soil and gives advice on weed management whereas, only 21.66, 16.66, 13 and 10 per cent of the beneficiaries had knowledge about organisation provides advices related to fodder management, diagnosis services related to diseases of cattle, consultancy services regarding cure of diseases of cattle and insemination technique regarding breeding management. Data in the Table 6 also depicted that 76.66 per cent of the beneficiaries of State Department of Agriculture had medium level of overall knowledge

Table 5 : Distribution of beneficiaries according to their knowledge on consultancy and diagnosis services provided by State Department of Agriculture (n=60)			
Sr. No.	Knowledge on consultancy and diagnosis services	f	%
I.	**Agriculture management**		
1.	Organization's experts provide solution to specific problems of agriculture management.	60	100
2.	Organization provides diagnosis services of seed and soil.	49	81.66
3.	Organization gives consultancy on prevention and cure of pest and disease.	60	100
4.	Organization gives advice on weed management.	49	81.66
5.	Organization gives advice on quality of soil, water, fertilizers, seeds etc.	60	100
6.	Organization have testing facilities for the diagnosis of various kinds of pest and disease.	60	100
II.	**Livestock management**		
1.	Organisation provides diagnosis services related to diseases of cattle.	10	16.66
2.	Organisation provides advice related to fodder management	13	21.66
3.	Organization gives consultancy services regarding cure of disease of cattle	8	13.33
4.	Organization provide insemination technique regarding breeding management	6	10
III.	**Health and hygiene**		
1.	Organization gives advice on menstrual health & hygiene	0	0
2.	Organization gives advice personal and environmental hygiene	0	0
3.	Organization gives advice nutritious food	0	0
4.	Organization gives advice on cure of diseases	0	0
IV.	**Women empowerment**		
1.	Organization gives consultancy services related to value addition of crops	0	0
2.	Organization gives advice on processing and cooking techniques	0	0
3.	Organization consultancy services on drudgery reduction techniques	0	0
4.	Organization consultancy and diagnosis services on kitchen gardening	0	0
5.	Organization give advice on women rights and acts	0	0
6.	Organization give consultancy on gender equality and decision making	0	0
V.	**Entrepreneurship development**		
1.	Organization give advice on capacity building training programme on different areas	0	0
2.	Organization give expert advice on enterprise establishment and market related information	0	0
3.	Organization provide consultancy on linkage with other organizations	0	0

Table 6 : Distribution of beneficiaries according to their overall knowledge about consultancy and diagnosis services provided by State Department of Agriculture (n=60)

Sr. No.	Range	f	%
1.	Low (below 5.44)	11	18.33
2.	Medium (5.44-7.06)	46	76.66
3.	High(above 7.06)	3	5
	Mean	6.25	
	SD	0.81	

regarding consultancy and diagnosis services, followed by 18.33 per cent who had low level of knowledge and 5 per cent who had high level of knowledge. The findings are due to less participation of the beneficiaries in the extension actvities.

Knowledge on input supply servics provided by State Department of Agriculture:

Data regarding to input supply services is shown in the Table 7 and the data in the table reveals that cent per cent of the beneficiaries of State Department of Agriculture had knowledge about organization provide high yielding varieties, seeds of different crop whereas, equal percentage (30%) of the beneficiaries had knowledge on organization gives seedling of fruit crops, provide insecticides, pesticides, weedicide and provide latest agriculture tools and equipment. While only 21.66 per cent of the beneficiaries had knowledge about organisation provides spray pumps and other water management equipments. In addition, none of the beneficiaries had knowledge about input services of livestock management as lack of procurement of input services in this field due to rare delivery of services provided by the organisation. An indepth analysis of the Table 8 shows that 48.33 per cent of the beneficiaries had overall medium knowledge about input services

Table 7 : Distribution of beneficiaries according to their knowledge on input supply services provided by State Department of Agriculture (n=60)

Sr. No.	Knowledge on input supply	f	%
I.	**Agriculture management**		
1.	Organization provide high yielding varieties, seeds of different crop	60	100
2.	Organization gives seedling of fruit crops	18	30
3.	Organization provide bio-fertilizers	17	28.33
4.	Organization provide insecticides, pesticides, weedicide	18	30
5.	Organization provide latest agriculture tools and equipment	18	30
6.	Organization provide spray pumps and other water management equipments	13	21.66
II.	**Livestock management**		
1.	Organization provide dairy and milking equipments to farmers	0	0
2.	Organization provide medications for cattle	0	0
3.	Organization provide nutritious supplements and balanced feed for different livestock species	0	0
III.	**Health and hygiene**		
1.	Organization provide menstrual and sanitation kit	0	0
2.	Organization provide nutritious foods	0	0
3.	Organization provide precautionary items for family planning	0	0
IV.	**Women empowerment**		
1.	Organization provide input services related to value addition of crops	0	0
2.	Organization provide input related to processing and cooking techniques	0	0
3.	Organization provide inputs or equipments of drudgery reduction	0	0
4.	Organization provide inputs or seeds related to kitchen or nutritional gardening	0	0
5.	Organization provide education facilities to women	0	0
6.	Organization provide education related to justice, property rights, inheritance rights, and protection against discrimination and violence to women	0	0
V.	**Entrepreneurship development**		
1.	Organization provide equipments for enterprises establishment	0	0
2.	Organization provides loan and funding facilities for aspiring entrepreneurs	0	0
3.	Organization provides partnerships assistance or programs facilitating the procurement of specialized inputs for innovative enterprises	0	0

Table 8 : Distribution of beneficiaries according to their overall knowledge about input supply services provided by State Department of Agriculture (n=60)			
Sr. No.	Range	F	%
1.	Low (below 1.15)	17	28.33
2.	Medium (1.15-3.71)	29	48.33
3.	High (above 3.17)	14	23.33
	Mean	2.43	
	SD	1.28	

provided by organisation than low (28.33%) and high (23.33%).

Knowledge on infrastructural facilities provided by State Department of Agriculture:

Analysed data in the Table 9 revealed that majority of the beneficiaries of State Department of Agriculture had knowledge on organization have proper transportation facilities (100%), followed by organization have proper audio-visual lab for conducting lecturers, training, demonstration, etc. (81.66%) and organization has store house facilities for keeping the farmers produce safe (70%), organization has cold storage facilities for agriculture produce (41.66%), organizations have their own laboratory for testing technology and skill equipments (40%), organization have their own packing and processing units and only 11.66 per cent of the beneficiaries had knowledge about organization have proper machinery for livestock management whereas, none of the beneficiaries reported knowledge on organization have proper demonstration labs and equipments for cooking, value addition and skilled equipments labs for increase in skills. Further Table 10 also depicted that majority (38.33%) of the beneficiaries had medium level of overall knowledge about infrastructural facilities of organisation followed by low level of overall knowledge (23.33%), followed by high level of overall knowledge (15%).

Knowledge on technical services provided State Department of Agriculture:

Visualization of the Table 11 shows the technical services knowledge of the beneficiaries and reveals that more than seventy percent of the beneficiaries had knowledge about organization forecast pest and diseases management (75%) and have soil testing on soil health, bio fertilizers, bio pesticide (76.66%). More than forty per cent of the beneficiaries had knowledge on organization give machineries on rent and repair (41.66%), provide value addition to crop produce

Table 9 : Distribution of beneficiaries according to their knowledge on infrastructural facilities of State Department of Agriculture (n=60)			
Sr. No.	Knowledge on infrastructural facilities	f	%
1.	Organisation has store house facilities for keeping the farmers produce safe	42	70
2.	Organisation has cold storage facilities for agriculture produce?	25	41.66
3	Organization have their own packing and processing units	23	38.33
4.	Organizations have proper transportation facilities	60	100
5.	Organizations have their own laboratory for testing technology and skill equipments	24	40
6.	Organization have proper audio-visual lab for conducting lectures, training, demonstration etc.	49	81.66
7.	Organization have proper machinery for livestock management	7	11.66
8.	Organization have proper demonstration labs and equipments for cooking, value addition and skilled equipments labs for increase in skills	0	0

Table 10 : Distribution of beneficiaries according to their overall knowledge about infrastructural facilities provided by State Department of Agriculture (n=60)			
Sr. No.	Range	f	%
1.	Low (below 2.41)	14	23.33
2.	Medium (2.41-5.22)	23	38.33
3.	High (above 5.22)	9	15
	Mean	3.83	
	SD	1.42	

Table 11 : Distribution of beneficiaries according to their knowledge on technical services provided by SDA			(n=60)
Sr. No.	Knowledge on technical services	f	%
1.	Organization provide soil & water testing facilities	30	50
2.	Organization forecast the pest and disease problems	45	75
3	Organization give machineries on rent and repair	25	41.66
4.	Organization have soil testing on soil health, bio fertilizers, bio pesticide	46	76.66
5.	Organization provide value addition to crop produce	26	43.33
6.	Organization provide technical services on livestock management	12	20

Table 12 : Distribution of beneficiaries according to their overall knowledge about technical services provided by State Department of Agriculture (n=60)			
Sr. No.	Range	f	%
1.	Low (Below 1.58)	11	18.33
2.	Medium (1.58-4.54)	36	60
3.	High (above 4.45)	13	21.66
	Mean	3.06	
	SD	1.48	

Table 13 : Distribution of beneficiaries according to their overall knowledge about extension services provided by State Department of Agriculture			(n=60)
Sr. No.	Range	f	%
1.	Low (Below 27.88)	10	16.66
2.	Medium (27.88-35.82)	36	60
3.	High (above 35.82)	14	23.33
	Mean	31.85	
	SD	3.97	

(43.33%) and provide soil and water testing facilities (50%) and only 20 per cent of them had knowledge about organization provide technical services on livestock management. The Table 12 also shows overall knowledge of beneficiaries regarding technical services provided by the organisation and found that majority of the beneficiaries (60%) had medium level of overall knowledge than high level of knowledge (21.66%) and low level of knowledge (18.33%).

The overall knowledge of the beneficiaries regarding extension services of State Department of Agriculture Table 13 reveals that with mean 31.85 and standard deviation 3.97, majority of the beneficiaries (60%) had overall medium level of knowledge, followed by high level of knowledge (23.33%) and low level of knowledge (16.66%). An overview of the above findings reveals that none of the beneficiaries of State Department of Agriculture did not respond knowledge about organisation provide information on health and hygiene, women empowerment and entrepreneurship development, this may be due to State Department of Agriculture only provide information services related to agriculture and livestock management.

Conclusion:

It was concluded from the present study that majority of the beneficiaries had medium level of knowledge about general aspect of the organisation, extension services like information services, consultancy and diagnosis services, input services, infrastructural facilities and technical services.

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