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Training Need Assessment of Officers Working in Agricultural Marketing in India

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ABSTRACT

The study was conducted with the aim to assess the knowledge and training needs of officers working in agricultural marketing across India. Data were collected from 197 officers working in different states of India. The data were analyzed using techniques such as Training Need Index, Chi square test and multiple linear regression equation. Findings of the study revealed that respondents were found to be highly qualified. Training need index for Alternative Marketing Methods was the highest followed by Infrastructure Management, Food Safety and Quality Standards and Institutions and Policies in Agricultural Marketing. The officers with high knowledge have expressed their desire to undergo training. The capacity building of officers will give an opportunity for all the stakeholders including farmers to wider range of markets for their produce and also help in total supply chain management. In view of recent changes in agricultural marketing, capacity building of the officers should be conducted regularly so that, the knowledge and skills of the officers are updated from time to time. It is also required to assess the training needs of the officers with regular intervals.

Key words : Training needs; Agricultural marketing; Knowledge level; Capacity building

Agriculture is an important sector of Indian economy as it contributes about 15% to the total GDP and provides employment to over 60 per cent of the population. Indian agriculture has registered impressive growth over last few decades. The foodgrain production has increased from 51 million tonnes (MT) in 1950-51 to 250 MT during 2011-12 highest ever since independence. Currently horticulture contributes 28 per cent of agricultural GDP. Country has emerged as the world's largest producer of mango, banana, coconut and the second largest producer and exporter of tea, coffee, cashew and spices. About 39 per cent mango and 23 per cent banana of the world are produced in India. The country has recorded highest productivity (25.4 tonnes/ha) in the case of grapes in the world. Only 2 per cent of horticulture produce is processed, 0.4 per cent is exported and about 20-30 per cent is lost or gets wasted in market chain. However, on marketing front, Indian agriculture is still facing the problems such as low degree of market integration and connectivity, accessibility of reliable and timely information required by farmers on various issues in agriculture. Also, the agricultural marketing sector is characterized by fragmented supply chain. Huge postharvest losses, multiple market intermediaries; higher transaction cost, lack of awareness and several other socio-economic factors are some of the acute problems being faced by the Indian agriculture.

Agricultural marketing occupies an important place particularly in the context of the new liberalization process and value addition requirements of the agriculture sector. The existing marketing system needs to be updated through improvement in skills, knowledge, attitude etc. The reasons for lack of returns in agriculture are traditional way of marketing through middlemen, fragmented supply chain and

absence of awareness about undergoing developments in agricultural marketing. The other reasons are unscientific and inadequate crop planning, crop husbandry, post-harvest management and inadequate alternative marketing channels.

Adequate knowledge on production and marketing aspects are key to improve the competitiveness of farmers that allow them to capture increased income generating potential associated with a number of emerging trends in Indian agriculture, including: shifting demand towards high value agriculture and higher quality of produce, greater urban demand, and the move of large corporations into agricultural marketing. Empowerment of farmers through market led extension, which is a prime mandate of officers working in agricultural marketing, is necessary to make them able to respond positively to these changes in the food market for production systems diversification, increased farm productivity, improved product quality and standards, and realization of value addition opportunities.

Traditional agricultural extension programs are only production oriented and are not sufficient for educators working with innovative, value-added agribusiness environment. Value-added businesses require a focus on business and marketing principles and skills. In meeting the needs of producers focused on value-added businesses, extension agents need to: (1) develop their own professional capacity to understand the principles and skills involved in business and marketing, and (2) develop and/or find appropriate resources and information to aid farmers in business planning and marketing (Schlough and Streeter, 2002). Knowledgeable well-trained people and effective institutions are critical for achieving growth in any of the sectors. More so in the field of agricultural marketing as it is the threshold point where in the

economy of the entire farming community is dependent. Agricultural marketing scenario in the country is continuously evolving and taking a shape with the implementation of reforms to modernize the sector. Reforms in agricultural marketing are underway, as most of the states / UTs have adopted the Model APMR Act. More than 26 states and UTs have amended their Acts in respect of major areas of reforms proposed in the Model Act. Major areas of reforms include provisions like; promotion of competitive agricultural markets in private and co-operative sector, encouragement of direct marketing and contract farming programmes, promotion of dissemination of market information, grading and standardization by setting up a bureau at state level, better marketing extension by setting up of an exclusive cell for the purpose at state level, facilitate procurement of agricultural produce directly from farmer's fields, establish effective linkages between farm production and retail chains, facilitate private investment in owning, establishing and operating markets, Public-Private-Partnership to promote professionalism in existing markets, stepping-up of pledge financing and marketing credit, introduction of negotiable warehousing receipt system in rural storage projects, and IT to promote trade and market led extension services. These initiatives will help in overcoming the problems of fragmented supply chain in the field of agriculture. Marketing extension is also one of the important areas envisaged in recent agricultural marketing reforms in the country. However, these initiatives also necessitated the capacity building of the personnel involved in implementing the same.

Several Studies listed the constraints of small holders linking to the market in the changing marketing scenario to become more competitive in existing markets. The World Bank (2007) distinguished the following five issues: lack of access to these markets; weak technical capacity; difficulty in meeting quality standards; difficulty in meeting contract conditions; and exposure to additional risks. IFAD (2003) discusses three dimensions of the issue of market access: physical access to markets; market structure; and lack of skills, organization and information. Finally, Bienabe et al. (2004) in their review of projects that aim to link small holder farmers to markets distinguished the following constraints for trade: barriers to entry; risks; transaction costs; asymmetry of information or lack of information on markets; lack of bargaining power and asymmetry of negotiation; lack of economy of scale; lack of human capital; and lack of social capital.

Sharma and Mittal (2011) in a study on knowledge level of farmers on agricultural marketing in India reported that, about 72 per cent of the sample farmers were not aware on the reforms in agricultural marketing. The study further revealed that only about

30 per cent of the farmers were aware of the alternative marketing methods. This might be due to inadequate knowledge level of personnel working in agricultural marketing, who are responsible for market-led extension as per Model APMR Act. Patil and Kokate, 2011 reported that 84 per cent of the subject matter specialists of Krishi Vigyan Kendras need training on market-led extension.

An attempt to review the literature regarding training need assessment of personnel engaged in agricultural marketing/ marketing extension revealed that there were no such attempts in the past were made and thus, the focus of the present study will act as a solid basis for policy makers. In order to have the foundation to develop the human resources training plan for the agriculture marketing sector, an attempt was made in this paper to assess the training needs of officers engaged in agricultural marketing and marketing extension across the country with the following specific objectives

1. To assess the training needs of officers working in agricultural marketing
2. To examine the association between training needs and personal attributes of officers working in agricultural marketing

METHODOLOGY

For assessment of training needs, a model questionnaire was prepared incorporating all the variables relating to the policy issues and knowledge of physical infrastructures. The questionnaire so prepared was pretested for incorporating all possible issues to be addressed for assessing the training needs of the extension personnel. The resultant variables of pretest were incorporated in the final questionnaire and data were collected by mailing the same to personnel engaged in agricultural marketing/ marketing extension in different state governments. Agricultural markets in India are being managed by Agricultural Produce Market Committee (APMC). The committee is either elected body or nominated one. The official engaged in the management of markets or marketing extension are Marketing Officers/ Market Secretaries. For selection of the sample, the country was divided into four regions for fair representation. Four states in each region were selected randomly. The list of personnel engaged in agricultural marketing was collected from respective state, and the questionnaires were mailed to all the senior and middle level personnel. However, in all only 197 responses were received by the researchers. The details of samples drawn across India are as given in Table 1. The information provided by the respondent officers was analyzed using simple averages and percentages.

Table 1. Region-wise distribution of sample respondents.

Sr No	Regions	No. of Respondents
1	Northern Region	37
2	Eastern region	94
3	Western Region	43
4	Southern Region	23
	Total	197

The training needs were assessed for more than 30 different areas of agricultural marketing. Similar approach was adopted by Zarafshani and Baygi (2008). These areas were grouped into six broader categories for assessment of training needs by working out the composite index separately for each group. Knowledge level of officers regarding all the variables addressed through questionnaire was ascertained using the five point Likert scale, i.e. 0 if unanswered, 1 if knowledge about the issue is nil, 2 if knowledge about the issue is poor, 3 if knowledge about the issue is average, 4 if knowledge about the issue is good and 5 if knowledge about the issue is excellent. Training need assessment was done using 3 point Likert scale i.e. 1 if training is not required, 2 if training is required and 3 if training is very much required.

Analytical tools used

In order to assess the training needs, responses of the respondents were rated on three point continuum viz., mostly needed, somewhat needed and least needed by assigning a score of 3, 2 and 1, respectively. The Training Need Index (TNI) was computed with the help of following formula (Kanaga 1988, Patil and Kokate, 2011).

$$TNI = \frac{\text{Total obtained score}}{\text{Maximum obtainable score}} \times 100$$

The training need index was also used to prioritize the training needs of officers working in agricultural marketing. The respondents were divided into three groups with low, medium and high level of training needs (Kanaga 1988).

Karl Pearson’s correlation (r) was employed to analyze the association between training needs and personal attributes of officers working in agricultural marketing (Bekele and Pillai, 2011; Gomez, 1984; Kothari, 2003). Apart from it, Chi square test was also used for assessing the goodness of fit. Multiple linear regression equation (MLR) was used to analyze the influence among variables with the object of using the independent variables whose values are known to predict the single dependent value (Hair et al., 1998). The linear regression equation of the following form was used.

$$TNI = \alpha + \beta_1 () AGE + \beta_2 () EDU + \beta_3 () EXP + \beta_4$$

$$TRG + \beta_5 () KNS \dots \dots \dots (1)$$

Where, TNI is the training need index, AGE is the Age of the respondent, EDU is the education level of the respondent, EXP is the experience, TRG is the number of trainings attended and KNS is the knowledge score obtained. It was hypothesized that with the higher age, education level and experience, the training needs of the respondent reduces.

RESULTS AND DISCUSSION

Training is an important process of capacity building of individuals as to improve the skills. Hence, training needs assessment is vital to the training process. It helps to identify present problems and future challenges to be met through capacity building. It is required to find out the needs of individual trainee on which professional competencies should be built to carry out the assigned job in the organizations. A training need exists when there is a gap between what is required of a person to perform competently and what he actually knows. The knowledge, skills and abilities of officials at different levels is different and hence their training needs are also different. Training needs assessment has therefore to be for different target groups for exactly knowing what training is required for each group.

In the present study, an attempt was made to ascertain “training needs’ of the officers belonging to the State Agricultural Marketing Board and the Directorate of Agricultural marketing. Most of the officers in both these organizations are engaged in market-led extension and hence, they have to be well-verse with the latest developments of agricultural marketing in the country.

General characteristics of sample respondents

The general characteristics of sample respondents were worked out and the results are presented in the Table-2. It is revealed from the Table that, the major proportion of respondents were found to be young and middle aged as about 76 per cent were less than 50 years. Only about 24 per cent of them were above the age of 50 years. The respondents were found to be highly qualified as, more than 95 per cent had an education of graduation and above. Only about five per cent of them were matriculates. Among the highly

educated, more than 50 per cent were postgraduates and Ph. D. It is also revealed from the Table that, a major proportion of the officers (43.15%) were having experience of less than three years. Only, 15.23 per cent of them had an experience of more than 10 years and 22.84 per cent had experience of 3-10 years. Similar trend was noticed as far as number of trainings attended is concerned. About a quarter of the respondents did not

attend even a single training programme while, 42.64 per cent of them had attended only one or two training programmes. Thus, it is revealed from the above findings that, majority of the officers working in the field of agricultural marketing were less experienced and hence require training to make them learn various facets of agricultural marketing.

Table 2. General characteristics of sample respondents. (N=197)

Sr No	Particulars	Frequency	Per cent
I	Age (years)		
1	Young (up to 30)	28	14.21
2	Middle age (30-50)	122	61.93
3	Old age (50 and above)	47	23.86
	Total	197	100.00
II	Educational qualification		
1	Under Graduate	9	4.57
2	Graduate	74	37.56
3	PG & Ph. D.	114	57.87
	Total	197	100.00
III	Experience (years)		
1	Less than 3	85	43.15
2	3-10	45	22.84
3	10-20	30	15.23
	Total	197	100.00
IV	Training attended (No)		
1	0	51	25.89
2	1 to 2	84	42.64
3	3 to 4	37	18.78
4	5 to 6	25	12.69
	Total	197	100.00

In Indian agriculture, inefficient marketing system has lead to an avoidable waste of around Rs 50,000 crores every year. A major part of this can be saved by introducing scale and technology in agricultural marketing. Milk and eggs marketing are two success stories of role of scale and technology in marketing. The extent to which the farmer-producers will benefit (out of saving of avoidable waste) depends on the orderly marketing adopted by the different stakeholders. Having said that, in order to promote orderly marketing, there is a desperate need to have an appropriate policy measures moving away from the regime of controlled marketing of agri produce.

In this direction an effort was made by the Government of India, by initiating the reforms in agricultural marketing during 2003. The reforms provide for different policies for orderly marketing of agriculture produce. The task of implementing these policies is vested with the personnel working in agricultural marketing department. Hence, it is apparent that, the field personnel must be aware of these issues. For the purpose of identifying the training needs, six major areas such as Alternative Marketing Methods, Institutions and Policies in Agricultural Marketing, Supply Chain Management, Infrastructure Management, Market Information System and Food Safety and Quality Standards were identified.

Table 3. Area specific training need index of agricultural marketing officers.

Sr No	Areas of training need assessment	Index	Rank
1	Alternative Marketing Methods	77.59	I
2	Institutions and Policies in Agricultural Marketing	72.18	IV
3	Supply Chain Management	64.72	VI
4	Infrastructure Management	76.99	II
5	Market Information System	68.83	V
6	Food Safety and Quality Standards	73.48	III
	Overall Training Need Index	72.20	

The area specific training need index was worked out based on the responses received from the officers working in agricultural marketing and the results are presented in the Table-3. It is apparent from the Table that, training need index for Alternative Marketing Methods was the highest (77.59%) followed by Infrastructure Management (76.99%), issues in Food Safety and Quality Standards (73.48%) and Institutions and Policies in Agricultural Marketing. The training need index was the least for Supply Chain Management (64.72%) followed by Market Information System (68.83%). The extent of overall training need was 72.20 per cent. Patil and Kokate, 2011 reported that training need index of subject matter specialists of Krishi Vigyan Kendras was 82.08 per cent. Schlough and Streeter, 2002 reported that a majority of respondents place “moderate” to “high importance” on training in business planning (78%) and marketing analysis (82%). A cross-tabulation of educational support with those who have more experience reviewing business and marketing plans revealed that; offering business plan training is considered more important by those who have reviewed more business plans, offering marketing training is considered more important by those who have reviewed fewer marketing plans. Cho and Boland, 2004 also assessed training needs of extension workers and ranked them in Myanmar, and reported that market information service and post harvest technology ranked third and fifth, respectively in terms of training needs. Thus, it can be concluded from the above results of analysis that, even after a decade of reforms being introduced, the training need index is on higher side ranging from 65-78 per cent. The trends of the results indicated that, an optimum combination of short duration and long duration training to the officers working in the agricultural marketing is required to update knowledge of them with regard to various aspects of agricultural marketing. This in turn will help the officers to pass on knowledge to different stakeholders to have orderly marketing. The efficient and orderly marketing will help farmers get better price for his produce and at the same time, the consumer will get the commodities at a reasonable price. It will also help in reducing the avoidable postharvest losses. Hence, there is need to develop appropriate training modules to impart training to the officers working in the department of agricultural marketing. Hence, the apex training institutes in agricultural marketing should be given adequate support for extensive training on agricultural marketing reforms and to address other issues for the officers of department of agricultural marketing and line departments.

Cross tabulation of knowledge and need for training in agricultural marketing

Knowledge of officers regarding all the variables addressed through questionnaire was ascertained using the five point Likert type scale, i.e. 0 if unanswered, 1 if knowledge about the issue is nil, 2 if knowledge about the issue is poor, 3 if knowledge about the issue is average, 4 if knowledge about the issue is good and 5 if knowledge about the issue is excellent. The training needs assessment was done using three point Likert type scale i.e. 1 if training is not required, 2 if training is required and 3 if training is very much required. The respondents were divided into three groups with the low, medium and high level of knowledge and training need based on mean \pm standard deviation of the respective scores obtained.

The results on cross tabulation of knowledge and need for training in agricultural marketing are presented in the Table-4. It is revealed from the table that, higher proportion of officers with low and medium knowledge (77.16%) desired to participate in the training programmes on various issues of agricultural marketing. Only about 12 per cent of the respondents were of the opinion that, training is very much required. It is interesting to note that, among the officers with high knowledge, more than 50 per cent of them have expressed their desire to undergo training. It is apparent that even though most of the respondents were highly qualified and with high knowledge level, they were willing to undergo training to know the latest developments in agricultural marketing. The reason being, in some of the eastern states like Orissa and northern states like UP, there is no specialized cadre service meant for agricultural marketing. Often personnel from cooperatives and line department are deputed to work in the APMCs and marketing boards for limited period. Hence, they find very limited time to understand the different facets of agricultural marketing. While in the southern states like Karnataka, they have separate cadre for serving agricultural marketing department. Hence, they will be working throughout their service in the department of agricultural marketing. In spite of having an exclusive cadre of services, the capacity building of the officers is required to update the latest development in the field of agricultural marketing as opined by the respondents in southern region. All the issues covered under study are dynamic in nature and hence necessitated knowledge updation. This is also supported by the higher level of significance of χ^2 test (Rimawi, 2003). The goodness of fit was highly significant as indicated by the p value.

Table 4. Cross tabulation of knowledge and need for training in agricultural marketing.

Sr No	Knowledge Level	Need for training on agricultural marketing			
		Low	Medium	High	Total
1	Low	1 (3.03)	24 (72.73)	8 (24.24)	33 (100.00)
2	Medium	7 (5.15)	113 (83.09)	16 (11.76)	136 (100.00)
3	High	13 (46.43)	15 (53.57)	0 (0.00)	28 (100.00)
4	Overall	21 (10.66)	152 (77.16)	24 (12.18)	197 (100.00)
Test of Independence $\chi^2=49.37$, df= 4, p= 00004					

Association between training needs and personal attributes

The association between training needs and

personal attributes were worked out using the Karl Pearson’s correlation method and the results are presented in the Table-5.

Table 5. Correlation between training needs and personal attributes.

Sr No	Variables	Correlation coefficient	
		Training need score (r)	p-value
1	Age	-0.0448	0.256
2	Education	0.027558	0.350
3	Total experience	-0.15345	0.015
4	Trainings attended	-0.21546*	0.001
5	Knowledge score	-0.46343*	0.000

* Significant at 1% level of probability

In this study, five independent variables as presented in the Table-5 were tested for their association with training needs (Bekele and Pillai 2011). It is revealed from the Table that, out of five variables, only one variable i.e. education was found to be positively associated but was not statistically significant (r=0.028 and p=0.350). This indicated that, even though, the level of education increases, the need for training increases moderately. The association of variables apparently indicated that, though the respondents had higher qualification, desired to undergo training in order to update their knowledge with respect to recent developments in agricultural marketing sector. This is in conformity with findings quoted above in the cross tabulation of training needs and knowledge level. It is apparent that with the increase in number of trainings attended (-0.215) and increased knowledge scores (-0.463), the desire to have training come down as evident from the significant negative association of these variables. This implies that the training needs of the respondents who have undergone more number of trainings was less. Obviously, the training needs of the respondents with increased knowledge score was also less. The correlation between training needs and experience (-0.15) and age (-0.044) were also negative with a lower magnitude, but not significant. In other words as the experience and age of the respondents increases, the

training needs decrease. The officers nearing retirement age were not inclined to go for training.

The influence of independent variables on training needs

The analysis of important variables, that are expected to have influence on knowledge and training needs of members were discussed. For this purpose, the independent variables were entered into multiple linear regression (MLR) models so as to pick the factors influencing training needs of personnel working in agricultural marketing. As a matter of fact, the model was fitted to estimate the influence of each independent variable through utilizing SPSS for the analysis. Using bivariate analysis, in the methodology section, age, education, total experience, trainings attended and knowledge score were selected for assessing their influence on the training needs of personnel working in agricultural marketing.

As indicated in Table 6, among five independent variables entered in MLR analysis, only two independent variables were significantly influencing the training needs of the personnel engaged in agricultural marketing. These variables include, trainings attended and knowledge score. The remaining three independent variables do not have statistically significant influence on training needs of the officers. As hypothesized, with the more number of trainings

attended, knowledge score improved leading to a negative influence on the dependent variable, i.e., need for training of the respondents.

It is revealed from the results presented in the Table-6 that, as seen from the value of coefficient of determination (R²), only about 26 per cent of the total variance could be explained by the independent variables included in the function. This implies that, the training needs are largely determined by the factors not included in the function. Similar findings were found by Lu, 2002 in his findings on influence of different independent factors on the area sown where in only to the extent of 20-25% variation was explained by the variables included in the function. The factors which may have influence on training needs not included in the function may be the information seeking behavior, extension participation, level of motivation, perception on various issues, etc.

Among the factors influencing the training needs of the officers, number of trainings attended and knowledge score exerted negative influence and significant at 10% and 1% level of probability. The

variables like total experience and age of the respondents also had negative but non-significant influence on training needs. Thus, it can be inferred that, with the increase in number of trainings attended and knowledge score, there is a decline in the training needs. However, education had positive influence on training needs indicating that, training need would be more among the respondents with higher level of education, which is in conformity with the findings in this study presented in the Table-4.

The results of Multiple Linear Regression model implied that, the imparting training to officers engaged in agricultural marketing will lead to increase in the knowledge score so that, a better marketing extension can be carried out by the officers. The low coefficient of multiple determination was observed in the study, suggesting that apart from the variables included in the equation, the impact of other variables like information seeking behavior, extension participation, level of motivation and continuance of the personnel in agricultural marketing may be explored for further research.

Table 6. Coefficients of regression function for training needs

S. No.	Variables	Coefficients	t Stat	P-value
1	Intercept	97.18317	7.574763	1.5E-12
2	Age	-0.06692	-0.53505	0.59324
3	Education	0.593976	0.894987	0.371921
4	Total experience	-0.12921	-1.11811	0.264925
5	Trainings attended	-1.159**	-1.88508	0.060937
6	Knowledge score	-0.48973*	-7.25435	9.83E-12
	R ²	0.26		
	Adj R ²	0.24		
	F	13.36 (significance 0.0000)		

*Significant at 1% level of probability, ** Significant at 5% level of probability

CONCLUSIONS

Findings of the study revealed that, the training need index was on higher side for all the issues addressed in the study. It is also revealed that, even though most of the respondents were highly qualified and with high knowledge level, they were willing to undergo training to know the latest developments in agricultural marketing. Agriculture, being dynamic in its nature and with the changes in policies and programs of the government, the personnel working in marketing extension are required to cope up with the changes. In view of recent changes in agricultural marketing,

capacity building of the officers should be conducted regularly so that, the knowledge and skills of the officers are updated from time to time. It is also required to assess the training needs of the officers with regular intervals. This will give an opportunity for all the stakeholders including farmers to wider range of markets for their produce and also help in total supply chain management.

Paper received on : September 25, 2012

Accepted on : October 27, 2012

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