

Training Need Assessment for Core Competencies of Agricultural Extension Personnel in Kerala: An Analytical Study

S. Aiswarya¹, Monika Wason², R. N. Padaria³, D. U. M. Rao⁴, R. Gills⁵
Priti Priyadarshini⁶ and Bishal Gurung⁷

ABSTRACT

Training need can be defined as the condition having perceived difference between 'what is' and 'what should be' in terms of knowledge, core competency skills and attitudes so that these gaps or needs can be fulfilled, in order to enable the extension personnel to perform their roles more effectively in their work organizations. Three training institutions: Community Agrobiodiversity Center (working under an NGO), SAMETI (working under State Department) and CTI (under State Agricultural University) were chosen for the study. Purposive and Random Sampling were carried out for the study. The sample consisted of trainees from three different training institutes. Four different training programmes related to core competency development being organized during 2017-18 were selected purposively from each of the three training institutes. Fifteen trainees for each training programmes were selected randomly with a sample size of sixty from each institute making one hundred eighty trainees as total sample size. Questionnaire was developed for the study. Personal interview and focus group discussion methods were also used as tools for data collection. Eight core competencies were chosen for this study *viz.*, communication skills, subject matter expertise, professionalism, programme planning and implementation, leadership skills, resource mobilization, Information Communication Technologies (ICT), and managerial ability for developing the Training Need Index (TNI) and Skill gap analysis. ANOVA test revealed that there is significant difference between core competencies in different training institutes. Post hoc test with Duncan revealed that there is significant difference between three institutes in case of five core competencies-communication ability, professionalism, programme planning and implementation, leadership skills and managerial ability.

Keywords: Anova, duncan, information communication technologies (ICT), post hoc test, training need, training need index, skill gap analysis *etc.*

INTRODUCTION

Today, educational programmes delivered by extension agents are more varied than ever and will continue to change to meet the needs of the clientele they serve. Radha Krishna and Thomson (1996) further stated that extension agents particularly require experiential learning that provides them with opportunities to relate to rural people in an interactive process that combines scientific technical knowledge with local indigenous knowledge in client-centered problem solving activities. To satisfy this requirement, there is a need to regularly analyze the technical competence and job performance of extension staff in the organization. Proficient extension personnel should stay updated with emerging technologies, be capable enough to handle challenges, tap opportunities and demonstrate competency in their services. They require a set of core competencies *i.e.*,

collective organizational skills upon which the organization bases its primary operations or services. Professional performance depends on knowledge, skill and attitude. Athey and Orth (1999) defined core competencies as collection of observable dimensions like individual skills, knowledge, attitudes, behaviours, and collective processes and capabilities, necessary for individual, organizational and program success. Therefore, extension professionals ought not be evaluated exclusively on how knowledgeable they are in their technical subject area of expertise but it should be on the basis of how competent and able they are in disseminating services to their clients. It should also be noted carefully that core competency needs are contextual and extension workers' contexts affect their competency needs and competency levels.

Training is one of the chief activities of the

¹Division of Agricultural Extension, IARI, New Delhi-110012, ² Principal Scientist, ³Professors, ⁴ Principal Scientist, ⁵ Scientist, ⁶ and ⁷ Student, Division of Agricultural Statistics, IASRI, New Delhi-110012

agricultural extension system that consumes large share of the resources. Yondewei and Kwarteng (2006) defined training need as the difference between the required level of individual competence and his present level of competence. Allo (2001) pointed out that one of the main factors limiting the development of effective training programmes for agricultural professionals in developing countries is the inadequacy of information on their training needs. In this regard, there is also the need to rationalize training to minimize repetition of the same message, more exposure to relevant technology and communication techniques, more avenues for personal career development and frequent contact between various categories of extension personnel. Hence, a systematic analysis was required to understand the training needs of the extension personnel in terms of the core competencies. In this context, the present investigation has been done with this objective so that the policy makers can be provided with this information regarding the need for training and also on how to carry out training of extension personnel. The findings of this research will also bring to limelight, the areas of competence of extension agents, and how to tap into the wealth of knowledge of training needs assessment towards better performance and improved productivity. To the agents, the findings from this study will also spur them to develop themselves as it will help them identify areas of weakness and seek for training for improved performance.

METHODOLOGY

The study was conducted purposively in the state of Kerala. Report by Human Development Index and extension worker to farmer ratio in Kerala is 1:300 (Sulaiman (2012)) indicated that Kerala is comparatively superior in position in comparison with other states. Three training institutions: Community Agrobiodiversity Center (working under an NGO), SAMETI (working under State Department) and CTI (under State Agricultural University) were chosen for the study. The sample consisted of trainees from the three different training institutes. Four different training programmes related to core competency development being organized during 2017-18 were selected purposively from each of the three training institutes. For each training programme, sample of 15 trainees were selected, totalling about 60 trainees for four training programmes from each training institute. Thus, the total sample size for the study was 180. The questionnaire was designed with due procedure and data collected through personal interview, questionnaire and focus group discussion.

Training Need Index was constructed using eight core competencies, including 'communication skills,

subject matter expertise, professionalism, programme planning and implementation, leadership skills, resource mobilization, information communication technologies, and managerial ability'. The obtained scores of extension personnel on all the eight core competencies and their skill gap analysis, which helps the extension personnel to contribute to excellence in extension education programmes were also calculated. Formula for calculating Training Need Index (TNI) was formulated as below: $\text{Maximum score obtained TNI} = \frac{\text{Maximum Score obtainable} - \text{Total Score Obtained}}{\text{Maximum Score obtainable}} \times 100$

RESULTS AND DISCUSSION

Eight core competencies namely *viz.*, communication skills, subject matter expertise, professionalism, programme planning and implementation, leadership skills, resource mobilization, information communication technologies, and managerial ability for developing the Training Need Index (TNI). Table 1 indicates the mean and standard deviation of eight core competencies and overall TNI scores for three institutes.

Table 1: Mean and Standard Deviation for Eight Core Competencies based on TNI scores

Core Competency	CAbC		CTI		SAMETI	
	Mean	SD	Mean	SD	Mean	SD
Communication skills	34.583	7.20	38.45	5.62	21.08	6.89
Subject Matter Expertise	42.4	11.14	39.73	7.99	18.6	7.20
Professionalism	15.33	6.69	24.58	8.14	19.66	6.81
Programme Planning and Implementation	22.58	7.89	38.33	7.84	18.33	8.31
Leadership Skills	28.91	12.38	34.25	10.92	18.25	7.46
Resource Mobilization	35.66	8.03	33.22	8.45	20	7.15
Ability to handle ICT's	54.91	8.90	54.91	8.90	23.5	8.09
Managerial Ability	57.91	6.12	29.41	12.62	23.41	8.31
Overall TNI	36.53	4.09	36.61	5.03	20.35	4.72

It is evident from the table 1 that mean value of TNI score for eight core competencies in CAbC is highest for 'ability to handle ICT's' (54.91) and lowest for 'Professionalism '(15.33). The mean value of TNI score for eight core competencies in CTI is highest for 'ability to handle ICT's' (54.91) and lowest for 'Professionalism' (24.58). In case of SAMETI, the mean value is highest for 'ability to handle ICT's'(23.5) and lowest for 'Leadership Skills'(18.25). The Overall TNI score is highest for CTI (36.61), followed by CAbC (36.53) and SAMETI (20.32)

Table 2: Distribution of Trainees According to their Core Competencies

Core Competency	Level of Competency	CAbC		CTI		SAMETI	
		f(n=60)	%	f(n=60)	%	f(n=60)	%
Communication skills	Less competent (<24.80)	7	11.66	0	0	36	60
	Moderately competent(24.80-37.94)	33	55	33	55	24	40
	Highly competent (> 37.94)	20	33.33	27	45	0	0
Subject matter expertise	Less competent (<24.8)	5	8.3	2	3.3	51	85
	Moderately competent (24.8-42.4)	21	35	33	55	9	15
	Highly competent (> 42.4)	34	56.67	25	41.67	0	0
Professionalism	Less competent (<12.64)	19	31.67	3	5	7	11.67
	Moderately competent (12.64-27.08)	32	53.33	37	61.67	46	76.67
	Highly competent (> 27.08)	9	15	20	33.33	7	11.67
Programme Planning And Implementation	Less competent (<18.39)	16	26.67	0	0	22	36.67
	Moderately competent (18.39-34.43)	43	71.67	15	25	34	56.67
	Highly competent (> 34.43)	1	1.67	45	75	6	10
Leadership Skill	Less competent (<24.80)	25	41.67	9	15	44	73.33
	Moderately competent (24.80-37.94)	17	28.33	26	43.33	16	26.67
	Highly competent (> 37.94)	18	30	25	41.67	0	0
Resource Mobilization	Less competent (<21.74)	3	5	6	10	41	68.33
	Moderately competent (21.74-37.51)	20	33.33	34	56.67	19	31.67
	Highly competent (>37.51)	37	61.67	20	33.33	0	0
Ability To Handle ICT	Less competent (<35.81)	0	0	0	0	58	96.67
	Moderately competent (35.81-53.08)	23	38.33	24	40	2	3.33
	Highly competent (> 53.08)	37	61.67	36	60	0	0
Managerial Ability	Less competent (<27.89)	0	0	31	51.67	42	70
	Moderately competent (27.89-45.93)	1	1.67	24	40	18	30
	Highly competent (> 45.93)	59	98.33	5	8.33	0	00

Overall TNI	Low (<26.55)	0	0	1	1.66	53	88.33
Medium (26.55-35.78)	30	50	24	40	7	11.67	
High (>35.78)	30	50	35	58.33	0	0	

It is evident from table 2 that majority (55%) of trainees were moderately (24.80-37.94) competent in terms of communication skills in the case of CAbC (55%) while less competent in the case of CTI (36%) and SAMETI (60%).Majority (56.67%) of trainees were highly competent (> 42.4) in subject matter expertise in the case of CAbC while majority of trainees were moderately competent (24.8-42.4) for CTI (55%) and less competent (<24.8) in the case of SAMETI (85%). Majority of the trainees were moderately competent (12.64-27.08) in professionalism in all the three institutes i.e CAbC (53.33%), CTI (61.67%) and SAMETI (76.67%).Most of the trainees(75%) were highly competent (> 34.43) in programme planning and implementation in the case of CTI while moderately competent (18.39-34.43) in the case of CAbC (71.67%) and SAMETI (56.67%).It is evident from the table 2 that majority of the trainees from CAbC (46.67%) and SAMETI (73.33%) were found to be less competent (<24.80) in leadership skill while majority (43.33%) of the trainees were moderately competent (24.80-37.94) in the case of CTI.It is drawn from Table 1, that majority of trainees (62%) from CAbC were highly competent (> 37.51) in resource mobilization while majority of trainees from CTI (56.67%) and SAMETI (68.33%) were found to moderately (21.74-37.51) and less competent (<21.74) in resource mobilization respectively. In terms of the Ability to handle ICT's, majority of trainees (96.67%) from SAMETI were less competent (<35.81) while majority of trainees from CAbC (61.67%) and CTI (60%) were highly competent (> 53.08). Majority of the trainees (98.33%) from CAbC were highly competent (> 45.93) in managerial ability while less competent (<27.89) in the case of CTI (51.67%) and SAMETI (70%).

The result (table 2) indicates that the TNI score of trainees of CAbC were between medium (26.55-35.78) to high range (>35.78). Majority (58.33%) trainees of CTI fall under high range (>35.78) and trainees of SAMETI (88.33%) had low range (>26.55) of TNI.

Table 3: ANOVA for Training Need for Eight Core Competencies of Trainees

Core Competency	Mean Square		F	Significance
	Between Institutes	Within Institutes		
Communication skills	12.47	0.11	114.25	
Subject Matter Expertise	25.50	0.20	127.41	
Professionalism	3.21	0.13	24.46	
Programme Planning and Implementation	16.65	0.16	103.50	<0.01

Leadership Skills	9.95	.27	36.35
Resource Mobilization	10.65	0.15	68.27
Ability to handle ICT's	49.35	0.18	264.41
Managerial Ability	50.96	0.22	229.91

Significant F-test ($p < 0.01$) showed that there was significant difference between means of three training institutes in case of all the three training institutes, *i.e.* Communication Skills, subject matter expertise, professionalism, programme planning and implementation, leadership skills, resource mobilization, information communication technologies, and managerial ability of trainees.

Table 4: Post Hoc Test for Training Need for Five Core competencies, *i.e.*, Communication Skills, Professionalism, Programme Planning and Implementation, Leadership skills and Managerial Ability of Trainees

Core Competency	Subset for alpha=0.05		
	CAbC	CTI	SAMETI
Communication Skills	3.27	3.07	3.94
Professionalism	4.01	3.77	4.23
Programme Planning and Implementation	3.87	3.08	4.08
Leadership Skills	3.55	3.28	4.08
Managerial Ability	3.52	2.10	3.82s
Significance	1	1	1

Post-hoc test (Table 4) showed that there was significant difference between means CTI, CAbC and SAMETI in case of these five core competencies, *i.e.*, Communication Skills, Professionalism, Programme Planning and Implementation, Leadership skills and Managerial Ability.

Table 5: Post Hoc Test for Training Need for three Core Competencies *i.e.*, Subject Matter Expertise, Resource Mobilization, Ability to handle ICT's of Trainees

Core Competency	Subset for alpha=0.05		
	CAbC	CTI	SAMETI
Subject Matter Expertise	2.88	3.01	4.07
Resource Mobilisation	3.21	3.33	4
Ability to Handle ICT's	2.25	2.25	3.82
Significance		0.09	1

Post-hoc test (table 5) showed that there is no significant difference between CTI and CAbC institutes but they differ significantly from SAMETI in case of three core competencies *i.e.* Subject Matter Expertise, Resource Mobilization, Ability to handle ICT's

CONCLUSION

Training is the vital and incessant prerequisite for agricultural development. Considering the importance of training for capacity building of extension personnel, their preferred area of perceived training need was identified. Training need of trainees is found to be highest in CTI followed by CAbC and very low in case of

SAMETI. This indicates that trainees of CTI and CAbC are less competent compared to trainees at SAMETI. From the study, it has been concluded that majority of the trainees were less competent in terms of their "ability to handle ICT's and Communication skills". Hence an emphasis should be made to strengthen the above competencies, which helps in building competent extension personnels.

Paper received on : January 11, 2018

Accepted on : January 18, 2018

REFERENCES

- Allo, A. V. (2001). Professional requirements of the extension worker in training the extension worker. *FFTC extension bulletin*, (173).
- Athey, T.R. and Orth. M.S. (1999). Emerging competency methods for the future. *Human Resource Management*, 38(3), 215-225.
- Radhakrishna, R.B and J.S. Thomson (1996). "Extension agents' use of information sources. *Journal of Extension*. 34(1):12-17.
- Sulaiman, R. (2012) Agricultural Extension in India: Current Status and Ways forward. Centre for Research on Innovation and Science Policy (CRISP). Background paper to the Beijing Syngenta Roundtable on extension in Asian countries, 2012. Hyderabad, India
- Youdeowei, A and Kwarteng, J. (2006). Tool Kit for the production of agricultural extension materials. Guide book. CTA Wageningen, The Netherlands. 50pp