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Utility of KVKs as Perceived by the Farmers in Improvement of Production and Productivity in North Eastern Region of India

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Abstract—*The role of KVK in transfer and application of technology is very crucial. As KVKs functions under various administrative units, viz., State Govt., ICAR, SAUs/ CAUs and NGOs; hence an attempt has been made to measure the utility of KVKs as perceived by the beneficiaries in NE region. The purposively selected KVKs were KVK Mamit, Tirap and South Sikkim under State dept. of agriculture; KVK South Tripura, West Garo Hills and Phek under ICAR Institutes; KVK Cachar, Tinsukia and Imphal East under SAU/ CAU and KVK West Tripura under NGO. The study was conducted with 200 randomly selected beneficiaries of KVKs to find out utility of KVKs as perceived by the farmers in improvement of production and productivity in North Eastern region of India. The utility of KVKs was measured in terms of performance of KVKs in terms of KVK mandates, utility of KVKs in improvement of production and productivity of selected crops and utility of other services of KVKs. The utility of KVKs as perceived by the farmers in terms of KVK mandates KVK, West Tripura got rank I with 65.69 per cent followed by KVK, South Sikkim (56.11 %) and KVK, Tirap (50.59 %) whereas utility of KVKs in improvement of production and productivity of selected crops KVK, West Tripura got rank I with 71.00 per cent followed by KVK, South Sikkim (68.00 %), Tinsukia (65.00 %), Tirap (61.00 %), South Tripura (50.00 %), Imphal East (46.00 %), West Garo Hills (39.00 %), Phek (34.00 %), Cachar (33.00 %) and Mamit (30.00 %) with rank II, III, IV, V, VI, VII, VIII, IX and X respectively. KVK, West Tripura achieved ranked I with 68.47 per cent in terms of utility of other services of KVKs.*

Keyword*: Utility, KVK (Krishi Vigyan Kendra), NE region, Production and Productivity.*

1. INTRODUCTION

The Krishi Vigyan Kendra (Farm Science Centre) is an innovative science based institute which undertakes assessment and refinement of technologies, frontline demonstrations to promptly demonstrate the latest agricultural technologies to the farmers as well as the extension workers and conducts trainings for farmers, farm women, rural youth and extension personnel. ICAR had launched the scheme as the training institutes in the country were not sufficient to meet the training needs of the farmers and consequently the process of transfer of technology had been slowed down (Subhashchandra, 2007). Based on the recommendations of the Education Commission (1964-66) and Inter Ministrial Committee (1973), the ICAR decided to establish Krishi Vigyan Kendra in the country, as they observed the KVKs are of national importance and would help in accelerating the agricultural production and also in improving the socio-economic conditions of the farming community. On the basis of Education Commission Report, the first KVK was established at Pondicherry under the management of Tamil Nadu Agricultural University, Coimbatore in 1974 (Hansra and Das, 1999). According to the mandate of KVK, it conducts on-farm testing to identify the location specificity of agricultural technologies under various farming systems; organizes frontline demonstrations to establish production potential of various crops and enterprises on the farmers' fields; organizing need based training of farmers to update their knowledge and skills in modern agricultural technologies related to technology assessment, refinement and demonstration, and training of extension personnel to orient them in the frontier areas of technology development; creates awareness about improved technologies to larger masses through appropriate extension programmes; production and supply of good quality seeds and planting materials, livestock, poultry and fisheries breeds and products and various bio-products to the farming community; work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district (www.icar.org.in).

2. MATERIALS AND METHODS

The 74 KVKs covering all the North Eastern (NE) states and under different host institutes were the universe for the organizational level study as existed at the time of proposal of the research programme. This region consists of eight states, viz, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim. Ten KVKs under different administrative units, viz., State department of agriculture; State Agricultural University (SAU) and Central Agriculture University (CAU); ICAR institutes and Non Governmental Organization (NGO) were selected purposively to represent all NE states. Three KVKs each selected from State department of agriculture, SAU & CAU, ICAR Institutes and one from NGO. The list of selected KVKs is presented in Table 1.

Table 1: List selected KVKs

SN	KVK	Host Institute	State	Year of Establishment
A. State dept. of Agriculture				
1.	Mammit	State Dept. of Agriculture	Mizoram	2005
2.	Tirap	State Dept. of Agriculture	Arunachal Pradesh	2004
3.	South Sikkim	State Dept. of Agriculture	Sikkim	2005
B. SAU and CAU				
4.	Tinsukia	Assam Agricultural University	Assam	2004
5	Cachar	Assam Agricultural University	Assam	1994
6.	Imphal East	Central Agricultural University	Manipur	2005
C. ICAR Institutes				
7.	South Tripura	ICAR Tripura Centre	Tripura	1984
8.	Phek	NRC on Mithun	Nagaland	2002
9.	West Garo Hills	ICAR RC for NEH region	Meghalaya	1979
D. NGO				
10.	West Tripura	Sri Ramakrishna Seva Kendra	Tripura	1979

The criteria for selection of KVKs were the year of establishment, convenience in location and accessibility of the researcher. Moreover, these ten KVKs represent different geophysical localities and different cultural, linguistic and social systems. A random selection of 20 beneficiaries from each KVK was selected for the study. Thus a total of 200 respondents were selected for the final study. The utility of KVKs was measured in terms of performance of KVKs in terms of KVK mandates, utility of KVKs in improvement of production and productivity of selected crops and utility of other services of KVKs.

a) Performance of KVKs in terms of KVK mandates: It refers to the performance of KVKs in terms of fulfillment of the KVK mandates, viz., On Farm Trial (OFT); Frontline Demonstrations (FLD); training of farmers, farm women and rural youth; training of extension personnel; production and supply of seed, planting material, livestock, poultry breeds, fish seed/ fingerlings and bio products etc. A total of 12 statements on the mandates of KVKs were prepared and responses from the beneficiary farmers for each statement were recorded on a four point continuum, viz., very much, not very much, somewhat and not at all with 3, 2, 1 and 0 scores respectively. The theoretical range of score may vary between 0- 36. For frequency and percentage analysis, the respondents were grouped into the following three categories based on their scores, viz., low (0-12), medium (13-24) and high (25-36) (Bhattacharyya, 1997).

b) Utility of KVKs in improvement of production and productivity of selected crops: This refers to the usefulness of KVKs in improvement of production and productivity of selected crop, i.e., paddy. This was measured with the help of the following five point continuum, viz., very low (0-20 per cent increase), low (21-40 per cent increase), medium (41-60 per cent increase), high (61-80 per cent increase), and very high (81-100 per cent increase) with score 1,2,3,4 and 5 respectively. For frequency and percentage analysis, the respondents were further grouped into three categories, viz., low (Below Mean-SD), medium (Between Mean ± SD) and high (Above Mean+ SD).

c) Utility of other services of KVKs: This refers to the usefulness of the other services of KVK, viz, technology showcasing, Kisan Mobile Advisory Service (KMAS), advisory services, field visit, diagnostic visit etc. This was measured with the help of four point continuum, viz., very much useful, useful, somewhat useful and not at all useful with 3, 2, 1 and 0 scores respectively. The theoretical range of score may vary between 0- 36. For frequency and percentage analysis, the respondents were further grouped into three categories based on their scores, viz., low (0-12), medium (13-24) and high (25-36) (Bhattacharyya, 1997).

To find out the critical difference within the KVKs and the administrative units (host institutes), CD value is also calculated along with frequency and percentage.

3. RESULTS AND DISCUSSION

a) Performance on KVK mandates: The performance of KVKs on the basis of KVK mandates at beneficiary level is presented in the Table 2. The Table shows that KVK, West Tripura got rank I with 65.69 per cent followed by KVK, South Sikkim (56.11 %); KVK, Tirap (50.59 %), KVK, South Tripura (50.55 %), KVK, Tinsukia (49.17 %), KVK, Imphal East (45.42 %), KVK, Cachar (41.53 %), KVK, West Garo Hills (38.19 %), KVK, Phek (37.22 %) and KVK, Mamit (34.72 %) with rank II, III, IV, V, VI, VII, VIII, IX and X respectively. It is mentioned that there was a difference (CD=

64.21 at 10 % level) among the KVKs in terms of utility as perceived by the farmers in improvement of production and productivity. It is observed from the Table 2 that among the all host institutes, NGO got highest percentage (65.69 %) followed by State dept. of Agriculture, SAU & CAU and ICAR Institutes with 47.17 %, 45.36 % and 40.14 % respectively. The host institute was difference (CD= 71.34 at 10 % level) was also observed. This may be due to the flexible operational rules and procedures of NGO KVKs which help in promoting overall performance based on KVK mandates.

Table 2: Distribution of respondents on Performance on KVK mandates (N= 200)

SN	Name of KVK	Category			Average	Rank
		Low (0-11)	Medium (12-24)	High (25-36)		
Sate dept. of Agriculture						
1.	Mamit	12 (60)	6 (30)	2 (10)	12.50 (34.72)	X
2.	Tirap	6 (30)	5 (25)	9 (45)	18.25 (50.69)	III
3.	South Sikkim	4 (20)	6 (30)	10 (50)	20.20 (56.11)	II
Average					**16.98 (47.17)**	
SAU and CAU						
4.	Cachar	9 (45)	6 (30)	5 (25)	14.95 (41.53)	VII
5.	Imphal East	9 (45)	5 (25)	6 (30)	16.35 (45.42)	VI
6.	Tinsukia	7 (35)	7 (35)	6 (30)	17.70 (49.17)	V
Average					**16.33 (45.36)**	
ICAR Institutes						
7.	South Tripura	6 (30)	6 (30)	8 (40)	18.20 (50.55)	IV
8.	West Garo Hills	10 (50)	6 (30)	4 (20)	13.75 (38.19)	VIII
9.	Phek	11(55)	6 (30)	3 (15)	13.40 (37.22)	IX
Average					**14.45 (40.14)**	
NGO						
10.	West Tripura	1 (5)	6 (30)	13 (65)	23.65 (65.69)	I
Average					**23.65 (65.69)**	

Max possible score= 36, Figures in parentheses is percentage

KVK	***Host***
F=2.09	*F=3.1*
*P=0.07**	*P=0.56*
CD value at 10% =5.76	

***b)*Utility of KVKs in improvement of production and productivity:** The utility of KVKs in improvement of production and productivity is presented in Table 3. Data presented in the Table reveals that KVK, West Tripura got rank I with 71.00 per cent followed by KVK, South Sikkim (68.00 %), Tinsukia (65.00 %), Tirap (61.00 %), South Tripura (50.00 %), Imphal East (46.00 %), West Garo Hills (39.00 %), Phek (34.00 %), Cachar (33.00 %) and Mamit (30.00 %) with rank II, III, IV, V, VI, VII, VIII, IX and X respectively. It is also mentioned that there was difference in performance amongst the KVKs (CD= 32.02 at 5 % level). Table 3 also reveals that the NGO got highest percentage (71.00 %) followed by State dept. of Agriculture, SAU & CAU and ICAR Institutes with 53.00 per cent, 48.00 per cent and 41.00 per cent respectively.

Table 3: Distribution of respondents on utility of KVKs in improvement of production and productivity of selected crops (N= 200)

SN	Name of KVK	Category			Average	Rank
		Low	Medium	High		
Sate dept. of Agriculture						
1.	Mamit	14 (70)	6 (30)	0 (0)	1.50 (30.00)	X
2.	Tirap	0 (0)	19 (95)	1 (5)	3.05 (61.00)	IV
3.	South Sikkim	0 (0)	17 (85)	3 (15)	3.40 (68.00)	II
Average					**2.65 (53.00)**	
SAU and CAU						
4.	Cachar	13 (65)	7 (35)	0 (0)	1.65 (33.00)	IX
5.	Imphal East	7 (35)	13 (65)	0 (0)	2.30 (46.00)	VI
6.	Tinsukia	0 (0)	19 (95)	1 (5)	3.25 (65.00)	III
Average					**2.4 (48.00)**	
ICAR Institutes						
7.	South Tripura	1 (5)	19 (95)	0 (0)	2.50 (50.00)	V
8.	West Garo Hills	10 (50)	10 (50)	0 (0)	1.95 (39.00)	VII
9.	Phek	13 (65)	7 (35)	0 (0)	1.70 (34.00)	VIII
Average					**2.05 (41.00)**	
NGO						
10.	West Tripura	0 (0)	16 (80)	4 (20)	3.55 (71.00)	I
Average					**3.55 (71.00)**	

Maximum possible score=5, Figures in parentheses is percentage

KVK	***Host***
F=2.62	*F=1.23*
P=0.34	*P=0.53*

c) Utility of other service of KVKs: The utility of other services is presented in Table 4. Data presented in Table 4.35

reveals that KVK, West Tripura achieved rank I with 68.47 per cent. The other KVKs, viz., Tirap (65.42 %), South Sikkim (61.39 %), South Tripura (60.83 %), Tinsukia (52.92 %), Imphal East (49.44 %), Cachar (47.78 %), West Garo Hills (44.72 %) , Mamit (41.52 %) and Phek (40.55 %) got rank II, III, IV, V, VI, VII, VIII, IX and X respectively. It is observed from the Table 4 that highest percentage (68.47 %) was achieved by NGO followed by Sate dept. of Agriculture, SAU & CAU and ICAR Institutes with 56.11 %, 50.05 % and 48.69 % respectively.

Table 4: Distribution of respondents on utility of other services (N=200)

SN	Name of KVK	Category			Average	Rank
		Low (0-11)	Medium 12-24)	High (25-36)		
Sate dept. of Agriculture						
1.	Mamit	10 (50)	7 (35)	3 (15)	14.95 (41.52)	IX
2.	Tirap	1 (5)	9 (45)	10 (50)	23.55 (65.42)	II
3.	South Sikkim	2 (10)	9 (45)	9 (45)	22.10 (61.39)	III
Average					**20.2 (56.11)**	
SAU and CAU						
4.	Cachar	6 (30)	7 (35)	7 (35)	17.20 (47.78)	VII
5.	Imphal East	4 (20)	10 (50)	6 (40)	17.80 (49.44)	VI
6.	Tinsukia	2 (10)	10 (50)	8 (40)	19.05 (52.92)	V
Average					**18.02 (50.05)**	
ICAR Institutes						
7.	South Tripura	2 (10)	8 (40)	10 (50)	21.90 (60.83)	IV
8.	West Garo Hills	9 (45)	7 (35)	4 (35)	16.10 (44.72)	VIII
9.	Phek	12 (60)	7 (35)	1 (5)	14.60 (40.55)	X
Average					**17.53 (48.69)**	
NGO						
10.	West Tripura	0 (0)	8 (40)	12 (60)	24.65 (68.47)	I
Average					**24.65 (68.47)**	

Maximum possible score=36, Figures in parentheses is percentage

KVK	***Host***
F=0.06	*F=0.04*
P=0.87	*P=0.68*

4. CONCLUSION

Comparative performance of ten KVKs revealed that KVKs managed by NGO were performing better, due to its commitment and flexibility in simple operational procedure, hence the KVKs under State dept. of Agriculture, SAU & CAU and ICAR Institutes need to have greater operational flexibility. A follow up workshop of the trained farmers may be conducted once in every two years to identify and tackle operational difficulties. KVK should emphasize on conduct of quality on farm trial and trainings. Considering the growing importance of KVKs as a vital extension and development institution, there is a need to strengthen those in terms of man power, financial resources and infrastructural facilities for effective functioning. As the host institute wise performance of KVKs has been found to differ, it is right time to considr bringing all the KVKs under one authority for execution, reporting and monitoring.

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