

Comparative Assessment of Strengths, Weaknesses, Opportunities and Threats (SWOT) and Constraints of Public and Private Farm Advisory Services in Meghalaya

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ABSTRACT

The SWOT and constraint analysis was applied to examine the setting of organization of the public and private farm advisory services (FAS) and for determining their effectiveness, capabilities and efficiency in Ri-Bhoi district of Meghalaya. KVK, Ri-Bhoi, Umsning block as public extension organization and RRTC, Umran block as private extension organization were selected randomly for the study. Using ex-post facto research design, data were collected from a random sample of 120 farmers and 20 extension officials through personnel interview and focus group discussion with extension officials of both organisations. All the strengths, weaknesses, possible opportunities as well as threats of the two extension systems are compared, with the response received from the respondents from the prepared schedule. Constraints of the farmers and two organization Krishi Vigyan Kandra (KVK) and Rural Resource Training Centre (RRTC) official perceive constraints about the organization is analysed from the response received from the questionnaire. Further the constraints as perceived by farmers and officials in adoption of technologies were enlisted. Then respondents were asked to rank them on the basis of their perception towards the constraints. The major strengths of KVK were the quality of personnel and for RRTC was its brand name. Finance for extension activities and multiple responsibilities were the most frequently experienced constraints expressed by officials of KVK and RRTC. Both public and private organisations have their own strengths and there is need to converge their strengths for overall development of farming community.

Keywords: Constraint analysis, Farm advisory services, Meghalaya, SWOT analysis

INTRODUCTION

Over a period of time, extension services for catering to the needs of the farmers have increased. Extension services have now become an integral part of all the agricultural development efforts by the State Departments of Agriculture, various agricultural research organizations including State Agricultural Universities (SAUs), ICAR agricultural research institutes, Krishi Vigyan Kendras (KVKs), and other private non-profit organizations including NGOs, CSR institutions, input agencies and marketing agencies, etc. Indeed, there are now pluralistic extension systems operating in the country. The key objectives of both the public and private sector extension organizations is more or less the same *i.e.*, enhancing the food production, ensuring the food and nutrition security and livelihood security of the rural people (Christoplos,

2003). Yet some differences can be noticed between them. Public and private sector extension organizations differ in such aspects as nature, approach of the extension services, mode of operation, organizational structure, provision of various kinds of farm advisory services and their level of performance and impact on farmers' lives. While public sector extension organizations focused more on transfer of technology for achieving the food security of the nation, private sector extension organizations focused more on organizing the farm families and engaging themselves in socio-economic empowerment of farmers mostly with mandate of donor agency. Since there are pluralistic extension service systems catering to varied needs of farmers, new extension teaching methods and approaches are being continuously designed, tested, validated and up-scaled by both public and private sector extension service organisations there is need to understand the efficiency,

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strengths and weaknesses of each type of extension organization and constraints faced by farmers and extension personnel in that may come in the way of adoption of various technologies.

MATERIAL AND METHODS

The study was conducted in Meghalaya as very few studies have been conducted in North-East Hill region. The Ri-Bhoi district was selected purposively as presence of many NGOs, ICAR Research Complex for NEH Region Post Graduate Institute (CAU), KVK are situated in this district. From the list available for FASs available in Ri-Bhoi district, two extension service organizations: KVK, Ri-Bhoi as Public sector extension service organisation and RRTC a Non-Government organisation as Private extension service organization were selected randomly to see their comparative performance. From Ri-Bhoi district, two different blocks *i.e.*, *Umsning* where KVK as Public Sector extension services organization in delivering farm advisory services (FAS) and *Umran* where RRTC is delivering farm advisory services (FAS) were selected randomly. In next stage, from each block, one adopted and non-adopted village having similar agro-eco system for both public and private organization were selected randomly. Thus to study KVK, the Umsning block and for RRTC Umran were selected. In third stage, from the block Umsning, Nongthymnai village was selected as adopted village and Nongrah as non- adopted village having similar agro-ecological situation. Similarly, from Umran block, Nariiang village was selected as adopted village and Parila as non-adopted village having similar agro-ecological situation. Totally four villages were selected from two blocks. To select the respondents' simple random sampling technique was utilised. From each adopted and non-adopted village, 30 farmers were selected randomly for each organization, totalling 120 farmers (60 from adopted villages and 60 from non-adopted villages). Further, in order to study the extension services organization on FAS and their functionaries, 10 extension functionaries from both the organization will be selected, totalling 20 extension functionaries. So, total sample size was 140 (120+20).

SWOT is a technique for analysing the internal and external environments of an organisation through the identification and assessment of its strengths, weaknesses, opportunities, and threats (SWOT). SWOT analysis entails a distillation of the findings of an internal and external audit that draws attention, from a strategic perspective, to the critical organisational strengths and weaknesses and the

opportunities and threats facing the organisation (Kotler and Armstrong, 2011). The SWOT analysis was applied to examine the setting of the organization extension service and for determining their effectiveness, capabilities and efficiency. The SWOT analysis of KVK and RRTC was done through an interview schedule and focused group discussion with Extension officials of both organisations was used to get information on all aspects of SWOT of the two organizations.

The constraints analysis serves to identify constraints and opportunities that have the potential to either impede or facilitate achievement of objectives. Constraints analysis is done through analysing the perceived constraints that come in the way of adoption of various technologies. The perceived constraints in adopting the farm advisory services for both farmers and officials of the KVK and RRTC were analysed with the help of the Rank Based Quotient technique (RBQ) developed by Sabarathnam and Vennila (1996). The frequencies of ranks given by the farmers and officials for each of the constraints were calculated and substituted in the below mentioned formula to compute rank of the constraint 'j' (expressed in terms of percentage) as

$$RBQ_j = \sum_{i=1}^r \left[\frac{f_i(n+1-i)}{Nn} \right] \times 100$$

Where,

r = Number of ranks

i = Index of rank (i= 1,2,...,r)

f_i = Number of respondents (farmers and officials) reporting a particular constraint under rank 'i'

n = Number of constraints identified

j = Index of constraint (j= 1,2,...,n)

N = Total number of respondents

(x is the multiplication sign)

It is noted here that there are as many number of ranks as are the number of constraints hence r is equal to n, but the notations of (i and j) and that of (r and n) have been intentionally kept different in order to avoid confusion owing to the mathematical fact that once the expression on right hand side has been summed over all values of index 'i' then the result on the left hand side should be independent of 'i'.

RESULTS AND DISCUSSION

Here an attempt has been made to ascertain the strengths, weaknesses, opportunities and threats of both public and

private extension service organisations. Strength, weakness, opportunities and threats of the organization is given in the Tables 1 to 4.

Strengths: One of the major strengths of KVK, Ri-Bhoi was the quality of personnel in terms of qualification, training and experience. The quality of staff has also affected the linkage of KVK staff with farmers. KVK, Ri-Bhoi has the strength of both forward and backward linkages. The staff composition of KVK, Ri-Bhoi is such that its multidisciplinary team is capable of handling programmes at different angles. Another major strength of KVK, Ri-Bhoi is its technological backstopping. Being an ICAR organisation, it has support of research institution. Burman *et al.* (2010) found that the KVKs have good linkage with the research organizations like State Agriculture Universities (SAUs), ICAR Institutes and UP Council of Agricultural Research.

Rural Resource and Training Centre (RRTC) has a brand name in the Northeast region which provides credibility to this organisation. Its brand value also attracts quality personnel. Having well on farm demonstrations

and training facilities at its centre, farmers and other rural visitors get first-hand experience of latest technologies. Its focus on capacity building interventions has developed its credibility for imparting quality training in the region.

Weaknesses: One of the major weaknesses of KVK, Ri-Bhoi was lack of financial resources for operational costs as major part of budget allotted goes to meeting expenses for salary of staff, leaving little for operational costs. Vacancies of posts and turnover were also other weaknesses. Anderson and Feder (2003) in their study recorded that there is a need for funding of public extension but due to financial issues and poor extension delivery lead to less role of public service providers. Other weaknesses are related to logistic support and long chain of communication within the system for financial communication and other decisions. Though KVKs have sufficient staff strength, hardly all positions are filled up. Being situated in difficult area, there is high turnover of staff which not only affects the completion of projects and programmes but also existing staff lack confidence in various disciplines. Whereas, major weaknesses perceived

Table 1: Comparison of Strengths of KVK, Ri-Bhoi and RRTC

Krishi Vigyan Kendra (KVK), Ri-Bhoi	Rural Resource and Training Centre (RRTC)
<ol style="list-style-type: none"> Highly qualified, competent and experienced personnel at KVK for all activities. Good training programmes have produced credible staff. Good communication among farmers and KVK staff Multidisciplinary team of KVK with more holistic approach. KVK attached with the headquarters for research and scientific backstopping 	<ol style="list-style-type: none"> Presence of highly qualified personnel. Farmers received first-hand experience of the improved technology Brand name of the RRTC Presence of abundant facilities. Quality training given to the farmers and building their capacity

Table 2: Comparison of Weaknesses of KVK and RRTC

Krishi Vigyan Kendra (KVK), Ri-Bhoi	Rural Resource and Training Centre (RRTC)
<ol style="list-style-type: none"> Lack of financial resources, more than 75 percent budget of the organization goes on salaries, very little amount is left for operational costs. Lack of logistic support and no transport and equipment facilities. Presence of long channel for financial communication with much loss to the organization Bureaucracy and long channels of communication in the organization. Conflicts within the organization and intended beneficiaries. Lack of full staff strength with high staff turnover leaves some Projects/ programmes unfinished. Lack of confidence on subject without supervision 	<ol style="list-style-type: none"> Lack of financial support for the organization Lack of man power Lack of proper management in the organization Lack of coordination among the staff and the farmers

by RRTC officials were lack of financial support and problems related to human resource management and lack of coordination among farmers and extension personnel.

Opportunities: The opportunities of KVK, Ri-Bhoi and RRTC were analysed and summarized in Table 3. With respect to opportunities available, KVK, Ri-Bhoi has the opportunity for collaboration with ICAR, line departments and other public sector extension Service organisations. There is also potential for improved effectiveness and efficiency of ginger and turmeric for organic commercialization. RRTC also have good brand name and can have collaboration with all stake holders including public research and extension organisations. These collaborations provide RRTC with technologies required for trainings and their transfer to ultimate users. Reardon *et al.* (2011) in Uttar Pradesh observed that public sector extension sources (State extension staff, KVKs, All-India Radio, university extension, and plant protection units) were utilised as a source by 25 per cent of farmers. In Madhya Pradesh, 37 per cent of the farmers had contacted State extension staff (Reardon *et al.*, 2011) for services. Other farm service providers in Madhya Pradesh were All-India Radio and television (21 per cent), and KVKs (12%). Private sector sources total 25 per cent of all information sources.

Threats: Major threats as perceived by KVK officials related to untimely availability of budget and undue delay in supply of inputs which may lead to loss of credibility of KVK, Ri-Bhoi services among farmers. KVK, Ri-Bhoi being a resource centre at district may have to face increasing workload of staff and they have to report too many and tend to deviate from objectives and purpose of KVK, Ri-Bhoi. This finding is in line with study of Nath *et al.* (2016).

The major threat as perceived by RRTC officials arise out of their dependency on donor agencies. Moreover, there is competition with other private extension service organisations in the area. RRTC is focused in capacity building of rural people, their scope of activities and use of extension methods is limited.

Inadequate funding for extension activities was perceived the most serious constraint by KVK, Ri-Bhoi staff with the highest RBQ value of 98.33. Improper planning of extension program (96.6%), farmers' resistance to adopt new technology (93.0%) and shortage of extension staff (92.0%) were the other constraints expressed by the KVK officials in the order of seriousness. Administrative and bureaucratic bottlenecks were perceived as the least ranked constraint. multiple responsibilities of

Table 3: Comparison of Opportunities of KVK, Ri-Bhoi and RRTC

Krishi Vigyan Kendra (KVK), Ri-Bhoi	Rural Resource and Training Centre (RRTC)
1. Improved collaboration with all division of ICAR for effective transfer of technologies	1. Good opportunities for collaboration with public research and extension organizations
2. Collaboration opportunities among line departments, ministries, and other system actors in the organization.	2. Sufficient amount of technologies for the training as well as delivery
3. Potential for improved effectiveness and efficiency of ginger and turmeric for organic commercialization.	3. Great opportunities for collaboration with all stakeholders.
4. There are great opportunities for collaboration and convergence with stakeholders	4. Use of ICT in delivering of technologies

Table 4: Comparison of Threats of KVK and RRTC

Krishi Vigyan Kendra (KVK), Ri-Bhoi	Rural Resource and Training Centre (RRTC)
1. Inadequate and untimely budgets	1. Possibility of retirement with fatigue and withdrawal of investments from donors.
2. Farmers loss of faith for KVK due to untimely supply of inputs	2. Misunderstanding of the major role of the RRTC by the farmers
3. Workload besides the mandates activities	3. Competition from other private organization and other extension agencies.
4. Lack of single line of command in the KVK system	4. Limited use of alternative extension method in the organization.
5. Deviation from objectives and purpose of the KVK	
6. Weak feedback from research	

the extension personal as the most important constraint in RRTC (95.0%) followed by shortage of extension staff (93.3%), Limited information on improved technology (92.0%) and Administrative and bureaucratic bottlenecks (91.6%). Non availability of audio-visual aids and other facilities as the least important constraints as the organization is well equipped with these facilities with RBQ value of 70.

Constraints perceived by adopted farmers of Extension Service Organizations:

The perceived constraint of the farmers under the KVK, Ri-Bhoi is given in the Table 5. Lack of technically skilled extension workers was the top most constraint felt by 65.5 per cent KVK adopted farmers. The major technology related constraints *i.e.*, new improved technology is difficult to understand and use (57.4%), incompatibility of new technology with social value (56.6%), high cost of input to adopt new technology (54.8%) and lack of ready market to sell produce of improve technology (53%) were expressed as constraints by the farmers. Lack of timely extension

services and delay in input delivery (51.6%) and insect and pest problem (34.8%) were the least ranked constraints by the farmers under KVK, Ri-Bhoi.

The results of constraints as perceived by farmers of RRTC are given in Table 6. The constraints given in Table 6 show that 63.7 per cent of farmers of village adopted by RRTC felt that officials contact only the progressive farmers. Also 63.7 per cent of farmers expressed that new improved technology is difficult to understand and use and about 60.7 per cent of farmers opined lack of timely extension services and delay in input delivery. Incompatibility of new technology with social value (49.6%) and high cost of input to adopt new technology (22.9%) were ranked as the eighth and ninth constraints by the farmers of RRTC. Ayansina *et al.* (2015) stated that the private extension services were doing better and were more liked by the beneficiaries. The authors also reported that there existed a significant difference in the benefits achieved by respondents between public and private organisations. The increased yield, farm income, skill acquisition, and

Table 5: Constraints perceived by adopted farmers of KVK, Ri-Bhoi

S.No.	Constraints perceived by Farmer Respondents	RBQ value	Rank
1.	Lack of technically skilled extension workers	65.5	I
2.	New improved technology is difficult to understand and use	57.4	II
3.	Incompatibility of new technology with social value	56.6	III
4.	High cost of input to adopt new technology	54.8	IV
5.	Lack of ready market to sell produce of improve technology	53.0	V
6.	Failure of extension services to match in accordance to farmers needs	52.9	VI
7.	Officials Contact only the progressive farmers	51.8	VII
8.	Lack of timely extension services and delay in input delivery	51.6	VIII
9.	Insect and pest problem	34.8	IX

Table 6: Constraints perceived by adopted farmers of RRTC

S.No.	Constraints perceived by Farmer Respondents	RBQ value	Rank
1.	Officials Contact only the progressive farmers	63.7	I
2.	New improved technology is difficult to understand and use	63.3	II
3.	Lack of technically skilled extension workers	61.0	III
4.	Lack of timely extension services and delay in input delivery	60.7	IV
5.	Failure of extension services to match in accordance to farmers needs	56.2	V
6.	Lack of ready market to sell produce of improve technology	54.8	VI
7.	Insect and pest problem	54.0	VII
8.	Incompatibility of new technology with social value	49.6	VIII
9.	High cost of input to adopt new technology	22.9	IX

improved education in private extension organizations were observed.

Constraints perceived by Officials of Extension Service Organizations: In case of the two organizations KVK, Ri-Bhoi and RRTC, twelve different constraints were listed and ranking of the constraint was done according to their perceived importance. Responses of officials were collected and ranked accordingly.

The results in Table 7 enlist constraints relating to the officials of KVK, Ri-Bhoi. Inadequate funding for extension activities was perceived the most serious constraint by KVK staff with the highest RBQ value of 98.33. Improper planning of extension program (96.6%),

farmers' resistance to adopt new technology (93.0%) and shortage of extension staff (92.0%) were the other constraints expressed by the KVK officials in the order of seriousness. Administrative and bureaucratic bottlenecks were perceived as the least ranked constraint. Nath *et al.* (2016) also reported that majority of the KVK scientists (100%) of NE Region of India has problem of insufficient and irregularity of fund flow to carry out their activities followed by more work load due to some external schemes (90.74%) and insufficient staff (81.48%).

The results in Table 8 indicate that multiple responsibilities of the extension personnel as the most important constraint in RRTC (95.0%) followed by shortage of extension staff (93.3%), limited information

Table 7: Constraints perceived by Officials of KVK

S.No.	Constraints perceived by Officials	RBQ value	Rank
1.	Inadequate funding for extension activities	98.33	I
2.	Improper planning of extension program	96.60	II
3.	Farmers resistance to adopt new technology	93.00	III
4.	shortage of extension staff	92.00	IV
5.	Problem of transportation	91.66	V
6.	Multiple responsibilities	86.66	VI
7.	Farmers unwillingness to participate in extension activities	85.00	VII
8.	Non availability of audio-visual aids and other facilities	83.30	VIII
9.	Limited information on improved technology	78.33	X
10.	Scope of work is limited only to project activities	78.00	XI
11.	Lack of training opportunities for extension personnel	81.66	IX
12.	Administrative and bureaucratic bottleneck	71.66	XII

Table 8: Constraints perceived by Officials of RRTC

S.No.	Constraint perceived by Officials	RBQ value	Rank
1.	Multiple responsibilities	95.0	I
2.	Shortage of extension staff	93.3	II
3.	Limited information on improved technology	92.0	III
4.	Administrative and bureaucratic bottleneck	91.6	IV
5.	Farmers unwillingness to participate in extension activities	90.0	V
6.	Problem of transportation	88.3	VI
7.	Farmers resistant to adopt technology	86.6	VII
8.	Lack of training opportunities for extension personnel	85.0	VIII
9.	Scope of work is limited only to project activities	75.0	X
10.	Improper planning of extension program	73.3	XI
11.	Inadequate funding for extension activities	76.6	IX
12.	Non availability of audio visual aids and other facilities	70.0	XII

on improved technology (92.0%) and administrative and bureaucratic bottlenecks (91.6%). Non availability of audio-visual aids and other facilities as the least important constraints as the organization is well equipped with these facilities with RBQ value of 70.

Thus, major constraints in adoption of technology as perceived by farmers of KVK adopted villages were lack of technical expertise and new technology difficult to understand and use and their incompatibility with their social values. Whereas farmers of the adopted village by RRTC felt that officials contact only the progressive farmers and technology do not reach everyone. Other constraints to adopt technology were new improved technology is difficult to understand and use, lack of timely extension services and delay in input delivery. As far as officials' perceptions were concerned, inadequate funding for extension activities was perceived the most serious constraint by KVK staff followed by improper planning of extension program and farmers' resistance to adopt new technology. Multiple responsibilities of the extension personnel as the most important constraint in RRTC followed by shortage of extension staff, limited information on improved technology and administrative and bureaucratic bottlenecks.

CONCLUSION

It was found that the Major strengths of KVK lie in its multidisciplinary teams of qualified personnel with adequate training and experience, and in its research and technological backstopping from ICAR Research Complex for North-Eastern Region located at Umiam. Major strength of Rural Resource and Training Centre (RRTC) is the very good brand name in the Northeast region and its credibility for providing *capacity building interventions* to villagers for livelihood security. Having several livestock demonstration units on its farm and excellent training facilities at its centre is another strength. Major weakness of both organisations was related to financial resources. KVK, Ri-Bhoi and RRTC have the opportunity for collaboration with to improve the transfer of technology programme. Major threats as perceived by KVK, Ri-Bhoi officials was untimely availability of budget and undue delay in supply of inputs while major threat as perceived by RRTC officials arise out of their dependency on donor agencies. Major constraints for the adoption of technology as perceived by the respondents' farmers of KVK, Ri-

Bhoi adopted villages were lack of technical expertise and new technology difficult to understand and use and their incompatibility with their social values. Whereas farmers of the adopted village by RRTC felt that officials contact only the progressive farmers and technology do not reach everyone. As per officials' perceptions, inadequate funding for extension activities was perceived the most serious constraint by KVK, Ri-Bhoi staff. Multiple responsibilities of the extension personnel are the most important perceived constraint of RRTC. Thus it can be concluded that analyzing the organization strength, weakness, opportunity and threat timely can help to improve the efficiency of the organization.

REFERENCES

- Anderson, J.R. and G. Feder. 2003. Rural extension services. The World Bank Policy Research Working Paper 2979. The World Bank, Washington, D.C.
- Ayansina, S.O.; R.A. Oyeyinka and A.F.O. Ayinde. 2015. Farmers' Participation in the Services of Public and Private Extension Organizations in Southwestern Nigeria. *British Journal of Applied Science & Technology*, 8(3): 238-245.
- Burman, R.R., L. Singh and A.K. Singh. 2010. Analysis of Linkage Mechanism of Krishi Vigyan Kendra. *Journal of Community Mobilization and Sustainable Development*, 5(1): 28-33.
- Christoplos, I. 2003. Common framework for supporting poor extension. Neuchatel Group Publication. Printed by Swiss Centre for Agricultural Extension and Rural Development (AGRIDEA), Lindau, Switzerland. 24pp.
- Nath, D.; P.K. Jain; R.K. Talukdar and B.S. Hansra. 2016. A Study on Constraints Faced by KVK Scientists of NE Region of India and Suggestion for Improvement. *Journal of Community Mobilization and Sustainable Development*, 11(2): 169-172.
- Reardon, T.; B. Minten; M. Mehta; S. Das Gupta; S. Rajendran; A. Sarawgyi and B. Beohar. 2011. Synthesis - Agri-Services in Madhya Pradesh for Inclusive Rural Growth: Baseline Survey Findings and Implications, submitted April 2011 to USAID New Delhi, International Food Policy Research Institute (IFPRI), New Delhi.
- Sabarathnam, V. E. and S. Vennila. 1996. Estimation of Technological Needs and Identification of Problems of Farmers for Formulation of Research and Extension Programmes in Agricultural Entomology. *Experimental Agriculture*, 32: 87-90.