

Comparative Analysis Of Public And Private Efs Interaction With The Farmers In The Core Cotton Zone Of Punjab, Pakistan

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Abstract

Farmers' interaction with the advisory services providers is much important, especially in the era when agriculture has become more challenging. In this study, we compared the use and effectiveness of different interaction methods used by the public and private sector Extension Field Staff (EFS). This study was conducted in three districts Bahawalnagar, Bahawalpur and Rahim Yar Khan of the Punjab, province. A total of 480 respondents selected at random were interviewed face to face on a structured interview schedule. Collected data were analyzed through Statistical Package for Social Sciences (SPSS). T-statistics were applied to compare the two sectors i.e. public and private EFS. Findings indicated that there was a statistically significant mean difference ($P < 0.05$) regarding interaction methods such as farmer days, field visits, group meetings, demonstrations, seminars and the use of electronic media and social media. Among the different services provided by the public and private sector EFS indicating statistically significant mean difference ($P < 0.05$) were demonstration, use of IPM, less use of pesticides, access to market, conservation of resources, access to inputs and weather forecasting services. Whereas, the public and private sectors had a non-significant mean difference regarding the clean cotton campaign and access to subsidies ($P > 0.05$). the statistics confirmed that overall, the private sector EFS were more effective as compared to the public sector. This study suggests a proper selection of interaction methods to access the farmers. Moreover, the synergy between the two sectors could be more effective in making technical advice effective and paving the way towards environment and

resource conservation. Effective integration of ICTs in the communication process is also highly recommended.

Keywords Public sector, private EFS, resource conservation, technical advice, interaction, communication

Introduction

Agriculture has become perplexed and accordingly the information needs of the farmers have changed over time. In the uncertain farming system, farmers are always in need of innovation, technical advice and access to information channels. For the facilitation of farmers, a strong set up of agricultural extension advisory system exists and performs the core function of farmers' assistance. According to Swanson et al. (1990), public sector extension had a highly promising role in 113 countries of the world. Approximately, 80% of extension work was carried out under the Ministry of Agriculture Department at the national and provincial levels.

Several studies such as Davidson et al. (2001), Muhammad (2005) and Burton et al. (2012) have accentuated that to develop the agriculture sector, the effective agricultural extension and information system is obligatory. Turning agriculture into a cost-effective, sustainable and productive sector under scarce resources has become a key challenge (Burton et al., 2012). The future of agriculture is not meant to increase the cultivated area and use more natural resources infect the adoption of modern and site-specific technologies and agricultural innovations could lead the agriculture to productivity (Rivera & Alex, 2004). Over time, agricultural innovations and different technologies are changing and the farmers are found in need of more information to enhance crop yields (Davidson et al., 2001). Betz (2009) argued that the agricultural extension service associates farming communities with basic agricultural education and has a great role in fostering the diffusion and adoption of innovations among farmers. It facilitates farmers through systematic communication (Farooq et al., 2010), assesses the needs of the farmers and strive for the best solution to the problems that farmers are dealing with (Havrland & Kapila, 2000).

An independent department of agriculture (extension) in Pakistan came into presence in 1962 (Khan et al., 1984). Before 1961, the agricultural education, extension, research and engineering activities were under the administration of the Director of Agriculture at the West Pakistan level (Khan et al., 1984). In 1962, the teaching was separated from research and extension with the establishment of West Pakistan Agricultural University Lyallpur (Currently University of Agriculture, Faisalabad). Agriculture has become a provincial chapter after the 18th amendment in the Constitution of the Islamic Republic of Pakistan. The directorate of agriculture (extension and adaptive research) is one of the key pillars of the agriculture sector. Since then, the department of extension is serving at the doorsteps of farmers by offering them technical backstopping, guidance and motivation to adopt the latest techniques to bring multifold increase to their production.

Working of extension department in a province is headed by the secretary of agriculture. The Director-general of Agriculture (Extension & Adaptive Research) is the leader of the team followed by the divisional directorates, districts officers, tehsil offices and Markaz level offices.

Director of Agriculture, (Extension), Deputy Director of Agriculture (Extension), Assistant Director of Agriculture (Ext), Agriculture Officers and Field Assistants perform their duties on Division, District, Tehsil, Markaz and Union Council levels, respectively.

Public sector agriculture extension was dominant till 1988, afterwards, the effectiveness started declining gradually. The overall performance of agriculture dropped. To improve the agriculture sector, the government constituted a National Commission on Agriculture to recommend a future course of action for the improvement of the sector. The commission recommended that the development of the agriculture sector could be due to a new way out. Therefore, the private sector should be mainstreamed in the process of technology dissemination to farmers (Government of Pakistan, 1988). Taking the recommendation into account the private corporate sector was allowed to work for farmers in 1988. After the permission, the private sector started marketing inputs such as fertilizers, pesticides and seeds (Riaz, 2010). A major policy shift was witnessed as the seed supply was handed over to the private sector from the public sector (Government of Pakistan, 1988). The inclusion of the private sector expedited the extension services in Pakistan.

Pertinent to the diverse and ever-increasing information needs of the farmers, Anderson (2020) suggested that agricultural extension will be dominantly delivered by the private sector in most countries. Perhaps, the reasons would be the high level of effectiveness of the private sector as compared to the public sector. Many researchers such as Sylla et al. (2019), Rana et al. (2013), Ali (2013) and Naeem & Hassan (2014) have confirmed that the quality of extension service provided by the private sector was relatively better than the public sector. Instead of focusing on farmers individually, the private sector was more inclined toward group meetings and the use of farmers' days, and demonstrations. Davidosn et al. (2001) identified that the public sector was concentrating on small farmers whereas the private was more focused on large farmers to exacerbate the profits of the company. Davidson et al. (2001) believed that privatization may not be the best solution. But, before making any claim, the need is to compare the two sectors public and private on different aspects of agriculture and their level of contribution.

Feder et al. (2010) embarked that with the portfolio of community-based extension, there are different mechanisms available for the public and private sector extension to interact with the farmers for the technical service. Therefore, in this study researchers compared the public and private EFS with special reference to the use of different interaction methods followed by the effectiveness of different services as perceived by the farmers

Methods

Pakistan has a total of four provinces named Punjab, Sindh, Khyber Pakhtunkhwa and Baluchistan. Punjab province is prominent in terms of agricultural productivity. It has a total of 36 districts with a total population of over 110 million as per the census of 2017.

Of the total districts, three, Bahawalpur, Rahim Yar Khan and Bahawalnagar were selected purposively, because these three are prominent cotton-growing areas (PCGA, 2018). All the farmers residing in the study districts (Bahawalpur, Bahawalnagar and Rahim Yar Khan) were considered as the population for the study.

A multistage sampling technique was used to select respondents. At first state, study districts such as Rahim Yar Khan, Bahawalpur and Bahawalnagar were selected. In the second stage, two tehsils from each selected district were selected at random. Cotton is cultivated across the three districts hence the chances of being selected were given to all tehsils and selection was made random. Tehsil Liaqat Pur & Khan Pur (Rahim Yar Khan), Tehsil Bahawalpur and Ahmed Pur East (Bahawalpur), and Tehsil Fort Abbas & Chistian (Bahawalnagar) were selected at random. In the fourth stage, four rural union councils were selected at random from each selected tehsil. From each selected union council four villages were selected at random. For the selection of respondents, a benchmark survey was conducted in the selected villages with the help of local leaders and Field Assistants (FAs). This survey helped researchers to develop a list of farmers, which served as a sampling frame for this study.

The list comprises almost 6050 farmers and from each selected village ten (10) farmers were selected through a random sampling technique thereby making a total sample size of 480 farmers out of the list of 6050 farmers. The sample size was calculated by considering the formula presented by Yamane (1967). The selection was made while taking a 95% confidence interval and a 5% significance level. As result, in the sample size table, a sample of 480 was drawn.

Data were collected from the respondents on a validated and structured questionnaire through the face-to-face interview technique. Collected data were coded into an excel sheet and statistically analyzed through Statistical Package for Social Sciences (SPSS).

Results

In this section, the findings of the study are explained and interpreted. This section is divided into three sections such as (i) the demographic profile of the respondents, (ii) different interaction methods used by the EFS and (iii) a comparison of the use of different interaction methods.

Section I: Demographic attributes of the respondents

In this section, the demographic profile of the respondents is described. This profile included respondents' age, educational level, size of land, tenancy status and income sources. Demographic attributes of the respondents are regarded of great worth especially when the accusation of information, knowledge and access to different information sources is explored. In a recent study, Baraugh and Mohan (2021) have reported that demographic attributes of the respondents especially education, age, work experience and specialization or experience were significantly related to patterns of use of Information communication technologies to access the required information. Taking this importance into an account it was deemed important to explore the demographic profile of respondents (Table 1).

Table 1. Demographic attributes of the respondents.

Demographic profile	%
Age (in years)	
<30	25.20

31-50	47.1
> 50	27.7
Education	
Illiterate	28.1
Primary	34.16
Middle	9.58
Matric	20.20
Intermediate and above	7.91
Landholding Size	
Large (>25)	20.6
Medium (12.5-25)	31.0
Small (Less than 12.5)	47.7
Tenancy status	
Owner cultivator	88.31
Tenant	9.8
Owner-cum-tenant	1.7
Sources of income	
Crop Source	81.2
Livestock & Crop Source	17.91
Multiple	21.66

Table 1 shows that 47.1% of respondents were aged between 31-and 50 years followed by one-fourth of respondents (25.20%) who were considerably young (aged <30 years). Out of the 480 respondents, 27.7% were considerably old (>50 years). As for as educational level was concerned, 71.9% had formal education while 28.1% of respondents had no formal education. Out of 480 respondents, 34.16% were educated up to the primary level. One fifth (20.2%) of respondents had a matriculation level of education. Regarding land size, Table 1 confirms that 47.7% of respondents had large land size whereas one fifth (20.6%) of respondents had small landholdings. Of the total respondents, 31% had a medium level of land size. The majority of the farmers in the study area were owners of their lands. Data reflects that 81.2% of respondents had a dependence on crop sources to generate income. About 17.9% of respondents were earning income from livestock and crop sources altogether and more than one fifth (21.6%) had a dependency on multiple sources to generate income. Current findings are similar to those of Birthal et al. (2014) as they found that agriculture was the income source of 91% of the farmers. In another research work, De-Janvry et al. (2005) arbitrated those large farmers were more contingent on farming for the income generation whereas the small farmers were relying on multiple income sources yet agriculture was one of the key income sources.

Section II. Interaction methods used by the Extension Field Staff

In this section, different interaction techniques used by the extension field staff to communicate with the farmers were explored. Respondents were presented with the different techniques and farmers were asked to respond yes or no. The data in this regard are tabulated in Table 2.

Table 2. Interaction methods used by the EFS of the public and private sectors.

Public sector	Interaction methods	Private sector
(%)		(%)
93.1	Farmer days	88.3
98.5	Field visits	93
97.5	Agriculture campaigns	96.2
94.5	Group meetings/farmer meetings	93.7
87.5	Radio programs	86.2
96.8	Agriculture exhibitions	93.7
99.3	Demonstration	95.2
88.5	Sign boards/burjis	82.2
85	Use of television broadcast	94.1
92.9	Seminars	87.5
91.4	Mobile phone	90
83.5	Farmer field schools (FFS)	79.1
93.5	Literature circulation	89.1
84.1	Facebook pages and groups	84.5
68.5	Text messages	84.1
82.9	WhatsApp groups	81.4
62.6	YouTube channels	81.8

Data given in Table 2 indicates that extension field staff either from public or private sectors were using a list of interaction methods with the farmers to communicate agricultural advisory services. Data also accentuates that almost similar interaction techniques were being applied by the EFS or public and private sectors, although the frequency of use and effectiveness may differ over time. Data confirms that 93.1, 98.5, 97.5, 94.5, 87.5 and 96.8% of respondents responded yes that EFS of the public sector used farmer days, field visits, agricultural campaigns, group meetings, radio programs and agricultural exhibitions, respectively. For the same interaction techniques, 88.3, 93, 96.2, 93.7, 86.2 and 93.7% of respondents responded yes that EFS private sector had used these techniques to interact with the farmers.

Among other interaction techniques, demonstration (99.3%), signboards (88.5%), use of TV (85%), seminars (92.9%), mobile phone (91.4%), FFS (83.5%) and literature distribution (93.5%) were prominent used by the EFS of public sector. For the same methods, 95.2, 82.2, 94.1, 87.5, 90, 79.1 and 89.1% of farmers agreed that EFS of the private sector has the use of these techniques. The social media gadgets like Facebook pages (84.1%), text messages (68.5%), WhatsApp groups (82.9%) and YouTube channels (62.6%) were used by the EFS of public sectors whereas the use of

social media gadgets by the EFS of the private sector was reported by 84.5, 84.1, 81.4 and 81.8% of respondents. Data confirms that EFS had a variety of interaction techniques to apply to disseminate the information among farmers. However, the frequency of use, technical skills and access to these methods may be key factors in establishing the effectiveness of any particular technique.

Section III. Comparison of interaction methods

In this section, the level of use of interaction methods by the public and private sector EFS is explored. We compared the two groups through t-statistics. The value of P exceeding the 0.05 was reported as a non-significant difference whereas the P value less than 0.05 was denoted as a statistically significant mean difference. The hypothesis tested in this section is given below;

H₀= Interaction methods of the public and private EFS with farmers were different

H₁= Interaction methods of the public and private sector EFS with farmers were not different

Table 3. Comparative use of interaction methods by public and private EFS

Interaction methods	Public sector	Private sector	T-Test
	$\bar{x}\pm SD$	$\bar{x}\pm SD$	
Farmer days	3.42±0.79	3.52±0.89	3.893**
Field visits	3.34±0.72	3.48±0.85	2.942*
Agriculture campaigns	3.26±0.85	3.42±1.0	5.176**
Group meetings/farmer meetings	3.26±0.86	3.30±0.97	1.985 ^{NS}
Radio programs	3.26±0.89	3.28±0.85	2.731*
Agriculture exhibitions	3.18±0.90	3.28±0.83	-0.875 ^{NS}
Demonstration	3.20±0.90	3.25±0.93	1.236 ^{NS}
Sign boards/burjis	3.57±0.82	3.14±0.79	4.004**
Use of television broadcast	3.32±0.90	3.07±0.87	4.103**
Seminars	2.93±0.87	2.96±1.0	3.001**
Mobile phone	3.24±1.05	2.95±0.90	-0.862 ^{NS}
Farmer field schools	3.21±0.91	2.94±0.98	6.514**
Literature circulation	3.07±0.97	2.85±0.88	1.877 ^{NS}
Facebook pages and groups	3.32±0.94	2.72±0.94	4.108**
Text messages	3.29±1.03	2.72±1.13	6.552**
WhatsApp groups	3.35±0.80	2.69±0.88	4.099**
YouTube channels	3.36±0.92	2.56±0.89	5.512**

Table 3 indicates that there was significant mean difference between the public sector and private sector extension field staff (P<0.05) in context of farmer days (t=3.893), field visits (t=2.92), agriculture campaigns (t=5.176), group meetings (t=1.985), radio programs (t=2.731),

signboards ($t= .004$), use of television broadcasts ($t=4.103$), seminars ($t=3.001$), farmers field schools ($t=6.514$), face to face interaction ($t=1.218$), Face to face interaction ($t=1.218$), literature circulation ($t=1.877$), Facebook pages and groups ($t=4.108$), text messages ($t=6.552$), WhatsApp groups ($t=4.099$) and YouTube channels ($t=5.512$). The values of t-scores were considerably high indicating a significant difference. Whereas, the t-scores indicated negative values which means the private sector was ahead of the public sector in utilizing the different interaction methods appropriately. This null hypothesis was accepted.

In the case of interaction methods such as agriculture exhibitions ($t=-0.875$), demonstration ($t=1.236$) and mobile phone ($t=-0.862$), there was a non-significant difference between the public sector and private sector extension staff ($P>0.05$). The non-significant difference indicates that there was a similarity between the two sectors regarding the use of different interaction methods such as agriculture exhibitions, demonstrations and mobile phones. Agriculture exhibitions, demonstrations and mobile phones are considered an important constituent of extension services to create awareness and foster the adoption of modern technologies among farmers. Therefore, there was a similarity between the two services while using these interaction methods.

Section IV. Effectiveness of Extension services through different interaction techniques

H_0 = Effectiveness of the public and private sector extension field was perceived differently by the farmers

H_1 = Effectiveness of the public and private sector extension field was perceived as indifferent by the farmers

Table 4. Effectiveness of extension services rendered through different interaction techniques.

Extension services	Public sector	Private sector	T-Test
	$\bar{x} \pm SD$	$\bar{x} \pm SD$	
More focus on quality	2.91±1.20	3.19±1.22	-5.696**
Demonstration	3.04±1.08	3.05±1.00	-2.405*
Use of IPM	3.02±1.14	3.02±0.997	-2.700**
Access to loans	2.98±1.01	3.02±1.11	-6.063**
Provision of beneficial insects	2.65±1.23	2.98±1.27	-6.210**
Reduced use of pesticides	2.91±1.04	2.94±1.15	-4.305**
Clean cotton campaign	3.00±4.77	2.93±1.15	-0.571NS
Access to market	2.95±2.78	2.90±3.70	-3.320**
Persuading sustainable agriculture	2.66±1.02	2.89±1.16	-2.791*
Resources conservation	2.70±1.24	2.87±1.21	-7.292**
Curtailing cost of production	2.82±1.37	2.86±1.30	-6.058**
Early warning system	2.59±1.38	2.81±1.34	-7.545**

Access to subsidies	2.89±1.14	2.78±1.40	-0.978NS
Distribution of inputs	2.57±1.24	2.76±1.14	-8.352**
Access to inputs	2.78±1.49	2.74±1.45	-6.187**
Soil surveys	2.60±1.15	2.69±1.10	-4.496**
Distribution of farm machinery	2.42±1.26	2.66±1.14	-7.158**
Weather forecasting	2.60±1.40	2.51±1.22	-4.824**
Access to heat resistant varieties	2.54±1.55	2.34±1.40	-4.956**

Table 4 indicates that there was a significant difference ($P < 0.05$) regarding the effectiveness of extension services rendered by the public and private sectors as perceived by the framers. Hence the null hypothesis was accepted. The services reflecting significant difference in terms of effectiveness included more focus on quality ($t = -5.696$), demonstration ($t = -2.405$), use of Integrated Pest Management (IPM) ($t = -2.700$), access to loans ($t = -6.063$), provision of beneficial insects ($t = -6.210$), reduced use of pesticides ($t = 4.305$), access to market ($t = -3.320$), persuading sustainable agriculture ($t = -2.791$), resource conservation ($t = -7.292$), curtailing cost of production ($t = -6.058$), early warning system ($t = -7.55$), Distribution of inputs ($t = -8.352$), access to inputs ($t = -6.187$), soil surveys ($t = -4.96$), distribution of farm machinery ($t = -7.158$), weather forecasting ($t = -4.824$) and access to heat resistant varieties ($t = -956$). This indicates that both sectors were perceived effective differently by the farmers. The negative relationship indicates that private sector extension field staff was more effective as compared to the public sector.

The null hypothesis was rejected in the case of clean cotton campaigns ($t = -0.571$) and access to subsidies ($t = -0.978$) regarding the effectiveness ($P > 0.05$). There was a non-significant difference between the two sectors. This accentuates that both sectors had almost similar effectiveness regarding working on the clean cotton campaign and access to subsidies. Clean cotton campaign and subsidies are the initiatives led by the government for the farmers' welfare, hence both sectors had similar devotions for the development of farmers towards clean cotton and availing subsidies.

Discussion

We identified that different techniques were being used by the extension field staff of the public and private sectors to interact with the farmers. The prominent techniques that were being used included farmer days, field visits, group meetings, demonstrations, seminars and the use of electronic media and social media. There was a statistical mean difference between the public and private sector EFS in the context of the use of different techniques. The private sector was prominent in terms of the use of diverse interaction methods as compared to the public sector EFS. This can be said that the private sector might have more inclination towards diversification of interaction methods to communicate the innovative technologies among farmers. Agriculture has witnessed some dramatic changes over time, as a result, the information needs of the farmers have changed. In this perspective, agricultural extension has also seen a transition and undergone numerous changes over the years to meet the farmer's needs (Maulu et al., 2021). Considering the

changing needs of the farmers and the perplexing situation of farming, especially in the climatic change regime, water shortage and shrinking natural resources, an agricultural extension cannot be specified in a single dimension. Therefore, Maulu et al. (2021) arbitrated that there is no "one-size-fits-all" approach suggested for the advisory services delivery to the farmers. They believed that farmers have diverse information needs which are further influenced by the geography of the area, and cultural, economic and social structures. The agricultural extension toolbox is regarded to have different options including traditional mediums, modern media and information communication technologies (ICTs) to assist farmers and provide them with the desired information (Davis et al., 2016). The findings of this study infer that the private sector extension field has the more effective selection and use of the different interaction techniques. For instance, demonstrations and face to face interactions were preferred techniques and most effective as well for the farmers. This is accentuated by the findings of Davis et al. (2016). They suggested that the selection of the appropriate approach should be need-based and grounded on the objectives that extension agents want to accomplish. Public sector and private sector extension almost have the same agenda and goals of assisting farmers. However, private sector EFS had a more effective articulation of different techniques and approaches.

Both public and private sectors had an effort to facilitate farmers. Although, the effectiveness of disseminated services may not be the same for all farmers. Similarly, the technique applied might have inherent weaknesses that could reduce the effectiveness as well. Public and private sector extension has use of demonstration and this technique despite its usefulness has several disadvantageous. Lack of self-confidence among farmers to execute the demonstrated activity due to lacking necessary resources and the jeopardize that they do not have enough skills to apply the particular technique is one of the different disadvantageous of demonstration (Davis et al., 2016). To reach the demonstration side farmers imposing travelling costs on farmers was another disadvantage of demonstration (Davis et al., 2016). This is related to the findings of Ahmad et al. (2007) as they reported that only 3.75% of farmers preferred to get benefits through the demonstration technique, and this percentage of respondents is just nominal. Around 88% of respondents reported having not visited the local agricultural extension office. And among different reasons for being distant, the inflicting cost of travelling could be the possible reasons as well. This could be deducted that; the use of different interaction techniques might not have resulted in the desired outcomes for many reasons like access, cost and understanding.

This is a reality that both public and private extension EFS have certain limitations in their working. Limited staff, lack of resources, high transaction costs, financial disruption and undue workload were the key restriction in applying the traditional techniques like face-to-face interaction. For these reasons, EFS was compelled to disseminate generic advice through any possible interaction technique and consider the suitability of a particular technique (Feder et al., 2010; Taylor & Bhasme, 2018). This situation put EFS towards biased advisory services to the influential and large farmers (Ahmad et al., 2007; Taylor & Bhasme, 2018).

Among the different services provided by the public and private sector EFS indicating statistically significant mean difference ($P < 0.05$) were demonstration, use of IPM, less use of

pesticides, access to market, conservation of resources, access to inputs and weather forecasting services. Whereas, the public and private sectors had a non-significant mean difference regarding the clean cotton campaign and access to subsidies ($P>0.05$). Subsidies are the portfolio of the incumbent government and the Agriculture Department, and EFS have a role to just make farmers aware of the potential benefits of the subsidies. Somehow, the public sector has started giving farmers technical services to avail of the subsidies. Whereas, the private sector does not have a prominent contribution in allowing subsidies for the farmers. However, the role of private sector EFS was more significant regarding the use of group contact methods to educate the farmers (Yaseen et al., 2016). Umeh et al. (2018) found public sector extension failing in employing the proper teaching methods. Overall, the private sector EFS was more effective as compared to the public sector EFS on some avenues (Abbas et al., 2021).

Public sector EFS were more influential in terms of lesser use of pesticides and conservation of the environment and other essential resources. Abbas et al. (2021) found that the public sector had the upper hand over the private sector in curtailing the use of pesticides. Excessive use of pesticides is not only injurious to the environment but also equally harmful to the farmer and crops resulting in resistance among different insects and pests. Public sector extension had implemented numerous approaches and schemes to familiarize Integrated Pest Management (IPM) (Ahmad et al., 2005), as the sector believed that overuse of pesticides is a serious threat to the environment (Ali et al., 2013). This debate elucidates that private sector EFS has an edge over public sector EFS in the overall system of technical advice. However, public sector EFS are more inclined towards the environmental safety and cost conservation of farmers. Moreover, both sectors are different in their capacities, objectives and working scenario.

Conclusion

We conclude that public and private sector EFS are more or less similar in their objectives and agenda of assisting farmers. Concerning farmers' information needs, both sectors have a pivotal role and multiple options to interact with the farmers. The sole purpose of the interaction remains the dissemination of agricultural innovations and solutions to the farmers' problems. The private sector has an edge over private sector EFS because of inflicting constraints on the public sector especially being information-driven. Conversely, the private EFS has an inputs driven approach followed by technical backstopping. The public sector might be working and aiming at controlling the cost of production but at the same time, private EFS has to ensure the timely result by providing inputs to the farmers irrespective of the outcomes of the cost of production. This study urges the synergistic role of public and private EFS with the mutual objectives of farmer facilitations. The public sector needs more focus from the Government to develop enabling environment while the private sector should switch its working from a business approach to a facilitative approach. As for interaction methods were concerned it is recommended to integrate Information Communication Technologies (ICTs) in the communication and technology transfer process.

Acknowledgements

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