



Assessment of Extension Advisory Services in Contract and Non-Contract Broiler Farming

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Poultry is one of the most important and fastest growing sectors of agriculture today in India. Poultry in India has emerged as the most dynamic and diversified subsector. Estimates from all India poultry breeders association indicates that poultry will contribute for USD 17.31 billion of the total India's gross value and satisfies the hungers of 50 million people through direct or indirect employment. Within the poultry sector, broiler and layer segment constitutes about 65.3 and 34.7 percent with the monthly turnover of 400 million chicks and 8400 million eggs respectively [1]. As per the 19th Livestock census, Karnataka ranks 5th place in both egg and meat production in India and it has about 534.42 lakh poultry (512.54 lakh in rural area and 2.19 lakh in urban areas) and

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96.60 lakh fowl in backyard poultry comprising of 17.84 lakh cocks, 43.99 lakh hens and 34.77 lakh chicken below five months. The share of backyard fowl population in total fowl population was 11%. The State stands 7th in egg production and 10th in chicken meat production in the country. The present study was conducted to assess the extent of extension advisory services in contract and non-contract broiler farming. The study was conducted in 3 districts of Karnataka and the data was collected from 60 contract and 60 non-contract broiler farmers through pretested interview schedule. The study revealed that Cent percent of the Contract Broiler Farmers (CBF) depends on Integrator for the extension advisory services, non-contract broiler farmers depend upon private poultry consultant for extension advisory services. The returns are assured and almost fixed in contract broiler farming, whereas in Non-Contract Broiler Farming (NCBF) they vary widely depending upon the market price, Establishment of regulatory bodies and expansion and strengthening of the EAS is essential for further improvement.

Keywords: Broiler farming; contract farming; advisory services.

1. INTRODUCTION

The meaning of the term 'extension' has changed over time [2] and is moving away from the dominant emphasis on technology transfer (reflected, for example, in the training and visit approach) towards a much broader concept that includes developing the skills and management capacities of farming families (through the farmer field school approach, for example) and the learning capacity of both farmers and extension organizations. Extension has been recently defined as "systems that facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agribusiness, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices" [3]. Extension and Advisory Services (EAS) consist of all the different activities that provide the information and services needed and demanded by farmers and other actors in rural settings to assist them in developing their own technical, organizational, and management skills and practices so as to improve their livelihoods and well-being'. It recognizes the diversity of actors in extension and advisory provision (public, private, civil society); much broadened support to rural communities (beyond technology and information sharing) including advice related to farm, organizational and business management; and facilitation and brokerage in rural development and value chains [4]. In India about 65-70 percent of population directly or indirectly depend on agriculture. Animal husbandry and livestock management are the integral parts of agriculture. Livestock sector contributes 4.11% GDP and 25.6% of total Agriculture Gross Domestic Product [5]. Indian Poultry Industry is 5,000 years

old whereas the poultry sector in India has undergone a paradigm shift in structure and operation. Poultry is one of the most important and fastest-growing sectors of agriculture today in India. The poultry sector majorly maintains the requirements of protein and nutrition. A significant feature of India's poultry industry has been its transformation from a mere backyard activity into a major commercial activity in just about four decades. The contract broiler farming system has played a major role in the spectacular growth especially in southern and western states with almost 80% of broiler meat being produced under contract farming. During the last three decades, there have been major changes in structure, size and number of broiler farms. Now a typical broiler farmer raises 5000 to 50,000 birds for a weekly cycle compared to few hundred in 1990s. Due to modernization of production and management practices, the body weight which was achieved at 8 weeks of age during the 1980s is now realized in 35 to 40 days of age, of course with compromise in poultry welfare. The major differences between CBF and NCBF are, in the case of CBF, an integrator provides working capital (chicks, feed, medicines, vaccines and veterinary services) and EAS including routine and emergency veterinary services, pays rearing charges along with incentives for efficiency and penalties for high mortality and assures a market for broilers. In the case of NCBF, the farmer is responsible for all costs associated with broiler production and marketing and the returns are almost fixed in case of CBF where as it is mainly dependent on market sale rate in NCBF. With these facts we set the objective to study the extension advisory services in contract and noncontract broiler farming. The value of output from poultry sector accounts for about 1% to India's GDP and 12% GDP from livestock sector. The organized poultry

sector is contributing nearly 80% of the total output and the rest by the unorganized sector. Within poultry sector, 2/3 rd of the output (about 66.7%) is contributed by poultry meat sector and rest 1/3rd (about 33.3%) is from egg production. This indicates that broiler production has been more vibrant than layer production in terms of annual growth. The sector is providing employment to more than 6 million people, 3 million directly and another 3 million indirectly. About 80 percent of the employment is generated directly by poultry farms, while the rest is generated by the feed, pharmaceutical, equipment manufacturing units and other services required by poultry. Another 3 million people are getting employment indirectly in several supporting activities. It is estimated that an increase in per capita availability of one egg will generate 50,000 more jobs. There have been significant developments in the poultry sector over the last four decades with each decade focusing on different sectors viz. (Sasidhar, 2020). The major differences between CBF and NCBF are, in the case of CBF, an integrator provides working capital (chicks, feed, medicines, vaccines and veterinary services) and EAS including routine and emergency veterinary services, pays rearing charges along with incentives for efficiency and penalties for high mortality and assures a market for broilers. In the case of NCBF, the farmer is responsible for all costs associated with broiler production and marketing and the returns are almost fixed in case of CBF where as it is mainly dependent on market sale rate in NCBF. In order to answer some of the questions like, Whether, EAS and Input services enable the broiler farmers to make better profits, or not? The study was taken up with an objective of assessing the extension advisory and input services in contract and non-contract broiler farming.

2. MATERIALS AND METHODS

An exploratory research design was adopted for the present study. The study was carried out in two taluks for CBF and three taluks for NCBF in Shivamogga, Davanagere and Vijayanagara Districts of Karnataka. These districts are purposively selected as a poultry hub, having dense contract and non-contract broiler poultry farmers and they are located in the centre of the Karnataka.

Purposive sampling is used for selection of the respondents from randomly selected villages of taluks of the districts. Shivamogga, Davanagere and Vijayanagara, districts consist of a total of 19

taluks, out of these, 2 taluks from each district were selected thus comprising a total 6 taluks for the study. From these selected 6 taluks 10 contract poultry farmers were selected from randomly selected villages, thus forming a total of 20 farmers from each district and total respondent size of 60 contract broiler farmers from all the three districts. Because there is a smaller number of non-contract broiler farmers in these 2 taluks of each district, one more taluk is selected from each district totally 3 taluks from each district were selected, thus arriving a respondent's size of 20 non-contract broiler farmers, from each district, and thus forming a total respondent size of 60 non-contract broiler farmers from the three districts.

The interview schedule covering all the variables was developed and pretested with 10 contract and 10 non-contract farmers in non-sample area i.e., Ballari district in Karnataka state. On the basis of the pre-testing experience, the interview schedule was modified and duplicated for data collection. In all the districts, the respondents were interviewed personally at their respective poultry farms. Researcher made sure that the respondents correctly understood the questions by repeating the questions whenever necessary. The data obtained was coded, entered into a computer spreadsheet and analyzed.

3. RESULTS AND DISCUSSION

3.1 Extension Advisory Services

3.1.1 Applicability of advisory services

Among contract broiler farmers majority (55%) felt that applicability of advisory services is applicable, followed by 45 per cent is extremely applicable, nobody having neither applicable nor inapplicable, Inapplicable and extremely inapplicable. In non-contract broiler farmers applicability of advisory services is neither applicable nor inapplicable is 45 percent, followed by 30 per cent is applicable, 21.67 per cent is inapplicable and 1.67 per cent is inapplicable as well as extremely inapplicable (Table 1). In contract broiler farming, regarding applicability of the advisory services, nearly half of the number of respondents expressed that it was applicable as they were depending on the integrator for advisory services. This finding is in line with findings of Sasidhar and Suvedi [6] and Gopala [7]. The farming experience was significantly related to the privatization of extension services [8].

3.1.2 Frequency of EAS

Among contract broiler farmers majority (65.00) felt that frequency of EAS is regular, 35 per cent felt that it is highly regular and nobody has the opinion that EAS was Very irregular, irregular, neither regular nor irregular. In case of non-contract broiler farmers half (50%) felt it was irregular followed by 36.67 per cent neither regular nor irregular, 8.33 per cent it was regular, 3.33 per cent it was highly regular and in 1.67 percent it was very regular. (Table 1) Regarding frequency of providing EAS in contract broiler farming is regular or highly regular because, integrator is more concerned about the overall good production management and by good margin of profit. This finding is in line with findings of Sasidhar and Suvedi [6] and Gopala [7]. However, most farmers were not in favor of privatization; this could be related to their dissatisfaction with the frequency of visits from extension officers [8].

3.1.3 Timeliness of EAS

Among contract broiler farmers majority (55.00%) felt that EAS was timely, followed by 45 per cent was very timely and nobody felt that it was very untimely, untimely, neither timely nor untimely. Among non-contract broiler farmers half (50.00%) it was neither timely nor untimely followed by 30 percent it was untimely, in 16.67 per cent it was timely, in 3.33 percent it was very timely and nobody felt that it was very untimely (Table 1). Regarding timeliness in getting EAS more than half of the contract broiler farmers, it is timely and in nearly half of the non-contract broiler farmers getting the EAS is neither timely nor untimely. Integrator provides EAS timely in case of contract broiler farmers on regular basis where as in case of non-contract broiler farmers he has to depend on private poultry consultant by paying. This finding is in line with findings of Sasidhar and Suvedi [6] and Gopala [7].

3.1.4 Relevance of EAS

Among contract broiler farmers majority (55.00 %) felt that relevance of EAS relevant, followed by 45 percent it was highly relevant and nobody felt that it was Highly irrelevant, Irrelevant and Neither relevant nor irrelevant. Among non-contract broiler farmers half (50.00%) it was neither relevant nor irrelevant, followed by in 33.33 percent it was relevant, 13.33 it was irrelevant, in 3.33 it was highly relevant and nobody felt it was highly irrelevant (Table.1).

Regarding relevance of EAS, more than half of the contract boiler farmers felt that it was relevant and half of the non-contract broiler farmer's relevance of EAS is neither relevant nor irrelevant. This finding is in line with findings of Sasidhar and Suvedi [6] and Gopala [7].

3.1.5 Adequacy of the EAS

Among contract broiler farmers majority (61.67%) felt that adequacy of the EAS was adequate, followed by 36.67 percent felt it was highly adequate, 1.67 percent inadequate, nobody felt that it was neither adequate nor inadequate and also highly inadequate. Among non-contract broiler farmers half (51.67%) felt that adequacy of the EAS was neither adequate nor inadequate, followed by 23.33 percent was adequate and inadequate, in 1.67 it was highly adequate and nobody had felt it was highly inadequate (Table 1). Regarding adequacy of the EAS more than half of the contract broiler farmers felt it was adequate and among non-contract broiler farmers half of them felt that it was neither adequate nor inadequate. This finding is in line with findings of Sasidhar and Suvedi [6] and Gopala [7].

3.1.6 Usefulness of EAS

Among contract broiler farmers half (50.00%) felt that Usefulness of EAS is highly useful, followed by another half (50.00%) felt it was useful and nobody felt it was neither useful nor not useful, not useful, highly not useful. Among non-contract broiler farmers majority (56.67%) felt that it was useful, followed by 28.33 per cent felt it was neither useful nor not useful, in 13.33 percent it was not useful, 1.67 felt that it was highly useful and nobody felt it was highly not useful. (Table 1). Regarding usefulness of EAS for half of the contract broiler farmers is highly useful and for another half it was useful. Among non-contract broiler farmers for more than half it was useful only. This finding is in line with findings of Sasidhar and Suvedi [6] and Gopala [7] and [8].

3.1.7 Technical know-how of EAS provider

Among contract broiler farmers majority (55.00%) felt technical know-how of EAS provider was satisfied, followed by the 43.33 percent are extremely satisfied, 1.67 percent are neither useful nor not useful, none of them are dissatisfied and extremely dissatisfied. among non-contract broiler farmers majority (56.67%) are satisfied, 40.00 percent felt neither useful nor

not useful, 3.33 percent are extremely satisfied, 1.67 percent felt highly useful none of them felt it was highly not useful (Table 1). Regarding technical know-how of EAS provider more than half of the contract broiler farmers and same percent of the non-contract broiler farmers are satisfied with the EAS provider. Advisory services are provided by the integrator for which he is charging which comes under overheads as per live weight of the birds produced, so he

provides advisory services on regular basis. Whereas in case of the non-contract broiler farmers he has to pay extra money as cash, or he will manage with his experiences so in case of the noncontract broiler farmers EAS is less applicable, frequency is irregular, neither timely nor untimely, neither relevant nor irrelevant, neither adequate nor inadequate, useful, satisfied with the technical know-how of EAS provider, message was understandable.

Table 1. Extension advisory services in contract and non-contract broiler farming

Advisory Services	Applicability	CBF (n=60)	NCBF (n=60)
		Frequency (Percentage)	
Applicability of advisory services	Extremely Applicable	27(45.00)	01(1.67)
	Applicable	33(55.00)	18(30.00)
	Neither Applicable nor Inapplicable	00	27(45.00)
	Inapplicable	00	13(21.67)
	Extremely Inapplicable	00	01(1.67)
Frequency of EAS	Very irregular	00	01(1.67)
	Irregular	00	30(50.00)
	Neither regular nor irregular	00	22(36.67)
	Regular	39(65.00)	05(8.33)
	Highly regular	21(35.00)	02(3.33)
Timeliness	Very untimely	00	00
	Untimely	00	18(30.00)
	Neither timely nor untimely	00	30(50.00)
	Timely	33(55.00)	10(16.67)
	Very timely	27(45.00)	02(3.33)
Relevance of EAS	Highly irrelevant	00	00
	Irrelevant	00	08(13.33)
	Neither relevant nor irrelevant	00	30(50.00)
	Relevant	33(55.00)	20(33.33)
	Highly relevant	27(45.00)	02(3.33)
Adequacy of the EAS	Highly adequate	22(36.67)	01(1.67)
	Adequate	37(61.67)	14(23.33)
	Neither adequate nor inadequate	00	31(51.67)
	Inadequate	01(01.67)	14(23.33)
	Highly inadequate	00	00
Usefulness of EAS	Highly useful	30(50.00)	01(1.67)
	Useful	30(50.00)	34(56.67)
	Neither useful nor not useful	00	17(28.33)
	Not useful	00	08(13.33)
	Highly not useful	00	00
Technical know-how of EAS provider	Extremely dissatisfied	00	00
	Dissatisfied	00	00
	Neither satisfied nor dissatisfied	01(01.67)	24(40.00)
	Satisfied	33(55.00)	34(56.67)
	Extremely satisfied	26(43.33)	02(3.33)

3.1.8 Sources for EAS

In CBF, the integrator was the only source of EAS (100%). About 91.67 and 8.33 percent of contract farmers received EAS from the integrator very frequently and frequently, respectively and only 3.33 per cent received EAS from any other KVK very rarely. Private poultry consultants were the primary source of EAS for NCBF (75%), other poultry farmers (21.67%) government veterinary doctor (6.67%), Govt. Extension personnel (1.67%), any other like KVK (1.67%) EAS is lacking in the NCBF but they are managing with self-experience (Table 2). Company supervisors visited contract farms from time to time to give EAS services, advise on medications, and check the performance/growth of the birds, and record key performance metrics such as body weight, FCR, mortality and so on, according to contract farmers. The company's supervisors are trained poultry technicians, not poultry veterinarians, according to the FGD and discussions with contract farmers. Only when a disease outbreak or unusual mortality was recorded did veterinarians from the contract company visit the farms. In the case of NCBF, private poultry consultants were a significant

source of EAS on a payment basis. Observations from interactions with non-contract farmers revealed that farmers handled the majority of day-to-day problems using their experience, but sought the advice of poultry consultants during disease outbreaks. The findings of the study with respect to extension advisory services are in agreement with that of the findings of Kathirchelvan and Senthilkumar [9], Singh et al. [10] and Sultana et al. [11]. Despite limitations, public EAS providers still play an important role in cementing all EAS providers in a pluralistic extension system and reaching out to the unreached [12].

3.1.9 Difference in adoption of technical advice in CBF and NCBF

Results presented in (Table 3) indicate that technical advices related to chicks, housing and feeding were adopted more in CBF, but in NCBF advice on medication practices were more often adopted. The findings of the study with respect to adoption of technical advice in contract and non-contract broiler farmers are in agreement with that of the findings of Sasidhar and Suvedi, [6] and Gopala [7].

Table 2. Sources of EAS provision in contract and non-contract broiler farming

EAS source	Frequency of utilization - Frequency (%)					
	Very Rarely	Rarely	Occasionally	Frequently	Very frequently	Total
CBF						
EAS by Integrator	-	-	-	5 (08.33)	55 (91.67)	60 (100)
Any other	2 (3.33)	-	-	-	-	2 (3.33)
NCBF						
Private Poultry Consultants	30 (50)	1 (1.67)	12 (20)	2 (3.33)	-	45 (75)
Other poultry Farmers	5 (8.33)	5 (8.33)	2 (3.33)	-	1 (1.67)	13 (21.67)
Govt. Veterinary doctor	1 (1.67)	-	2 (3.33)	-	1 (1.67)	4 (6.67)
Govt. Extension personnel	-	1 (1.67)	-	-	-	1 (1.67)
Any other	1 (1.67)	-	-	-	-	1 (1.67)

Table 3. Difference in adoption of technical advice in contract and non-contract broiler farming

Technical advice#	CBF (n=60)		NCBF (n=60)		't' value
	Mean	SD	Mean	SD	
Chicks	3.78	0.51	3.60	0.85	6.249*
Housing	3.96	0.25	3.83	0.42	14.227*
Feeding	3.85	0.43	3.83	0.49	11.442*
Medication	3.52	0.72	3.58	0.77	7.484*

Scale values: 1=not adopted, 2=discontinued 3= partially adopted, 4=fully adopted.

Note: - The 't' value of the parameter with * as super script are significant at 5%. The unmarked 't' values are non-significant

4. CONCLUSION

In this study it was found that majority of the contract farmers perceived the extension advisory services are timely available and they are useful, whereas in case of noncontract broiler farmers only half of the respondents perceived it as useful and they perceived it is not timely available. Regarding satisfaction both the farmers are satisfied with the services, but still they demand for the improvement of the services. Hence care need to be taken by the concerned authority to provide need-based services to the farmers. From the findings of the study by survey and Focused Group Discussion, it is concluded that the value chain development and provision of inputs and EAS by large private poultry companies did not really result in a win-win situation for both integrators and farmers. However, findings revealed that, with private sector participation, poultry EAS and other input services reached every individual commercial poultry farmer with efficiency and effectiveness. This is an effective and successful model of modernization of EAS and related input delivery as a complete package through the private sector, which needs to be encouraged elsewhere. Important four specific policy interventions suggested for making the CBF profitable for both the companies and farmers are as follows (1) Establishment of Regulatory body for promotion of CBF. (2) Revision and enhancement of rearing charges and rate incentives. (3) Financial support from the government for overall development. (4) Expansion and strengthening of EAS in CBF and NCBF

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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