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Constraints in Adoption of Livestock Development Interventions among Livestock Farmers in Davanagere District

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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

Livestock sector plays a crucial role in socio-economic development of farmers in rural areas, which in turn improves the national economy. For better productivity the rural farmers need different types of information and knowledge related to different scientific managemental practices and different interventions for different problems. In this regard, the study was undertaken to assess the constraints in adoption of livestock development interventions among livestock farmers in Davanagere district. An ex-post facto research design was employed for the study. The study was conducted in ten villages of two taluks of Davanagere district and total of 100 beneficiaries were randomly selected which included 36 beneficiaries in establishment of fodder nursery, 30 beneficiaries in establishment of rural hatchery unit. Whereas, all the 100 respondents were involved in prevention and control of Sub clinical mastitis (SCM). The data was collected from the

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respondents through interview schedule. The collected data was coded, tabulated and analysed using suitable statistical tools. The study revealed that, majority of beneficiaries reported increased annual income and employment generation. Non-availability of fertilizers, non-availability of improved desi chicks at nearest place and high cost of veterinary medicine were the major constraints in establishment of fodder nursery, establishment of rural hatchery unit and prevention and control of SCM respectively. Thus, Sujala III project had a great scope for improving productivity; profitability and facilitated an accelerated and sustainable transformation of animal husbandry activities.

Keywords: Adoption; livestock development interventions; livestock farmers; constraints.

1. INTRODUCTION

Livestock sector plays a crucial role in socio-economic development of farmers in rural areas, which in turn improves the national economy. Livestock sector is important in providing nutritious food, employment generation and also generates sustainable and regular income. Scientific management of animals plays a significant role in livestock development and the rural farmers needs different types of information and knowledge related to different scientific managemental practices and different interventions for different problems. Feed and fodder are the important aspect in livestock production. Green fodder is very essential for different livestock species but its availability is not there throughout the year. Establishment of fodder banks and nurseries plays a crucial role in livestock development.

Dairying is an effective tool for rural development, employment and sustained income and it acts as an insurance against several odds [1]. Though, India is blessed with 193.46 million cattle and 109.85 million buffaloes the productivity *per se* is very poor [2] which might be due to factors like poor availability of improved breeds and breeding services, preventive animal health care, better feeding strategies and access to formal credit facilities [3]. Among all these factors, poor health of livestock with innumerable diseases causes considerably high economic losses to predominantly poor, marginal and landless farmers.

Among various diseases affecting dairy industry in India, mastitis is one of the most important disease of dairy cattle. Further, the mastitis milk is unsuitable for consumption and affecting the economic returns of the dairy farmers.Sub-clinical mastitis (SCM) is of great economic importance to dairy farmers because it results in reduction in milk yield and undesirable changes in the milk composition, as well as increased costs associated with control strategies [4]. In SCM, there are no visible abnormalities in udder tissues except an elevated somatic cell count (SCC). However, the dairy farmers lack information about the disease and its prevention and control measures at farm level causing heavy economic losses.

Poultry plays a key role in the household economy and its increased production has the potential to improve food security, assist in poverty alleviation and mitigate the adverse economic impacts for rural people [5].Over the decade the demand for poultry products is increasing day by day and also there is potential supply of poultry products compared to any other animal products. The poultry production has been in the hands of commercial poultry farmers, whereas in rural areas, the desi chicken breeds commonly reared for household purposes as a backyard farming [6]. Backyard poultry sector is also one of the profitable low input agro-based activities, which can effectively tackle the problems of unemployment in the rural areas, particularly of small and marginal farmers. The sector also provides nutritional security and subsidiary income generation to the rural poor [7]

The rural backyard poultry in India is contributing to about 30% to the national egg production. Though its importance under the impact of commercial and contract poultry farming, modernization and industrialization, poultry farming is prevalent in the rural areas of the country [7]. Non-availability of the desi birds and eggs is also a concern among the farmers. Hence there it is necessary to introduce suitable intervention to meet the demands of the farmers.

Majority of rural farmers in the Davanagere district have small fragmented landholding and these marginal farmers have agriculture and animal husbandry as their occupation. The

interested farmers were selected as the beneficiaries for different livestock interventions and the constraints in adoption of the same was studied.

2. MATERIALS AND METHODS

The Davanagere district of Karnataka was selected purposively for the study since the Sujala III watershed development project on livestock support and extension activities was implemented and had been facilitated by the veterinary college, Shivamogga. A cluster of five villages from each taluk namely Harapanahalli and Jagalur taluks were purposively selected based on the number of livestock development interventions implemented i.e. establishment of fodder nursery, prevention and control of sub-clinical mastitis and establishment of rural hatchery unit under the Sujala III watershed development project. Based on this total ten villages were purposively selected for the study. A total of ten beneficiaries from each identified project village were selected by following simple random sampling technique thus making a total sample size of 100 beneficiaries for the study, which includes 36 beneficiaries under establishment of fodder nursery intervention and 30 beneficiaries under establishment of rural hatchery unit. Whereas, under prevention and control of SCM, all the 100 beneficiaries are included.

The data that was collected from the respondents using semi structured interview schedule were coded, tabulated and analysed to draw valid inferences using statistical tool i.e.Garret ranking technique.

3. RESULTS AND DISCUSSION

Constraints faced by the livestock farmers in adoption of different livestock development interventions were presented as below:

The data presented in Table 1 associated with establishment of fodder nursery revealed that non-availability of fertilizers was the major constraint which ranked first followed by scarcity of water(II), lack of labour/man power(III), lack of knowledge about green fodder(IV), non-availability of fodder seeds(V), low availability of agricultural land(VI), non-utilization of farm yard manure(VII), non-availability of power supply(VIII), preferences for cultivation of agricultural/ cash crops(IX) and lack of fencing/ protection for the fodder(X) were the constraints. Further the livestock farmers werefacing problem of small land holding pattern due to fragmentation and sub-division of land holding, which was uneconomical for cultivation and lack of credit availability were perceived as major constraints in adoption of establishment of fodder nursery. These findings are in line with the findings of Yerpude and Khare [8] and Choudhary [9].

3.1 Constraints in Prevention and Control of Sub-clinical Mastitis (SCM)

The data presented in the Table 2, indicated that high cost of veterinary medicine(I) was the major constraint followed by lack of awareness about SCM prevention methods(II), lack of awareness about sub-clinical mastitis detection test(III), lack of knowledge about clean milk production practices(IV), non-availability of regular veterinary services(V), belief that treatment reduces milk yield in animals(VI), belief that affected quarter become dormant(VII), animal not respond to treatment(VIII), low household income(IX) and reluctance of farmers to test milk sample for mastitis(X). Further the livestock farmers stated that if a cow/ buffalo were affected with mastitis, they had to spend more money for the treatment because it was costlier. These findings are in consonance with the findings of Mathialagan and Kumarasan [10] and Rathod*et al.* [11].

3.2 Constraints in Establishment of Rural Hatchery Unit

The data presented in the Table 3, indicated that non-availability of improved desi chicks at nearest place was considered as the major constraint by the livestock farmers followed by lower hatchability, non-availability of proper marketing facility, high mortality, lack of awareness about disease control, non-availability of timely vaccination and veterinary services, lack of awareness about hatching technique, predator problem, lack of funds for initial investment and access to bank for loan.

Non-availability of improved desi chicks at nearest place might be due to low hatchability in natural hatching and non-availabilityof alternative source forgetting chicks. These findings are in consonance with the findings of Singh and Jilani [12] and Devesh *et al.* [13].

Lower hatchability might be due to the infertile eggs and poor storage of eggs. These findings are in line with the findings of Garima *et al.* [14].

Non availability of proper marketing facility, the probable cause for this constraint might be no proper marketing channel, poor market information, high fluctuations in poultry product and non- availability of transportation facility. These findings are in line with the findings of Mane *et al.* [15].

High mortality due to non-adoption of vaccination program, predator problem and poor housing. These findings are in accordance with the findings of Mandal *et al.* [16] and Devesh *et al.* [13].

Table 1. Constraints in establishment of fodder nursery

n =36

Sl.No	Constraints	Total score	Average score	Garrett rank
1	Non availability of fertilizers	2133	59.25	**I**
2	Scarcity of water	2059	57.19	**II**
3	Lack of labour/man power	2024	56.22	**III**
4	Lack of knowledge about green fodder	1974	54.83	**IV**
5	Non availability of fodder seeds	1898	52.72	**V**
6	Low availability of agricultural land	1868	51.88	**VI**
7	Non utilization of farm yard manure	1773	49.25	**VII**
8	Non availability of power supply	1712	47.55	**VIII**
9	Preferences for cultivation of agricultural/ cash crops	1665	46.25	**IX**
10	Lack of fencing/ protection for the fodder crops	1586	44.05	**X**

Table 2. Constraints in prevention and control of sub-clinical mastitis

n=100

Sl.No	Constraints	Total score	Average score	Garrett rank
1	High cost of veterinary medicine	6525	65.25	I
2	Lack of awareness about sub-clinical mastitis prevention methods	5880	58.80	II
3	Lack of awareness about sub-clinical mastitis detection test	5677	56.77	III
4	Lack of knowledge about clean milk production practices	5537	55.37	IV
5	Non-availability of regular veterinary services	5404	54.04	V
6	Belief that treatment reduces milk yield in animals	5358	53.58	VI
7	Belief that affected quarter become dormant	5227	52.27	VII
8	Animal not respond to treatment	4564	45.64	VIII
9	Low household income	4016	40.16	IX
10	Reluctance of farmers to test milk sample for mastitis	3217	32.17	X

Table 3. Constraints in establishment of rural hatchery unit

n=30

Sl.No	Constraints	Total score	Averag e score	Garrett rank
1	Non availability of improved desi chicks at nearest place	2042	68.06	**I**
2	Lower hatchability	2008	66.93	**II**
3	Non availability of proper marketing facility	1972	65.73	**III**
4	High mortality	1926	64.20	**IV**
5	Lack of awareness about disease control	1912	63.73	**V**
6	Non availability of timely vaccination & veterinary services	1870	62.33	**VI**
7	Lack of awareness about hatching technique	1814	60.40	**VII**
8	Predator problem	1768	58.93	**VIII**
9	Lack of funds for initial investment	1705	56.83	**IX**
10	Access to bank for loan	1640	54.66	**X**

Lack of awareness about disease control, the probable cause for this constraint attributes to lack of extension services in the region and poor accessibility for the farmers to the mass media programmes and extension workers and nonavailability of timely vaccination and veterinary services was ranked sixth. This might be due to small flock size with varied age group of birds creates a difficulty for vaccination and farmers were also not aware on availability of vaccination and veterinary services. These findings are in consonance with the findings of Singh and Jilani [12].

Lack of awareness about hatching technique might be attributed to poor popularization of rural hatchery units and lack of training on operation and maintenance of hatchery units. Predator problem might be due to lack of proper housing during night and lack of funds for initial investment and access to bank for loan was ranked as ninth and tenth constraint respectively. This might be due to less initial investment and poor accessibility for the banks. These findings are in consonance with the findings of Mandal *et al*. [17].

4. CONCLUSION

The present study concluded that majority of beneficiaries reported that non-availability of fertilizers, non-availability of improved desi chicks at nearest place and high cost of veterinary medicine were the major constraints in establishment of fodder nursery, establishment of rural hatchery unit and prevention and control of SCM respectively. Apart from these there are several other constraints in adoption of these interventions by beneficiaries in project area. Thus, Sujala project had a greatly influenced the farmers for adoption of interventions and there is wide scope for improving productivity; profitability and also sustainable transformation of animal husbandry activities through addressing the constraints. Hence, there is a need for provision of technical and input support and also use of appropriate technologies and extension strategies in educating farmers will help in mitigating the constraints which in turn improves the adoption of interventions.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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