Information Needs of Small Ruminant Farmers to Develop Mobile Based Application Software – An Appraisal

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Abstract: -- Efficient dissemination of technological information from the research system to farmers and reporting of farmers' feedback is one of the critical inputs in transfer of technology. Information and Communication Technology (ICT) is one of the means whose potential can be exploited to strengthen the bridge between research system and farming system. Hence, the present study has focused to identify and prioritize the information needs of small ruminant farmers to develop mobile based application software. Data were collected from 40 researchers of Tamil Nadu Veterinary and Animal Sciences University, 60 extension personnel of the State Animal Husbandry Department and 100 small ruminant farmers of Tirunelveli Districts by well structured interview schedule which contains 48 items under five sub-heads. The responses for each item were measured on a five point continuum i.e., most needed, more needed, needed, less needed and least needed. The mean was calculated and the item above the mean i.e 24 items were considered as the identified needs that include topics on breed & breeding (three), feeding (five), management (five), disease control (six) and marketing (five). Based on the needs identified and prioritized, the content were organised, script prepared both in Tamil and English languages, video clipping, photos collected and mobile based application software is being developed in android platform.

Keywords: -- Information needs, Mobile app., Small ruminant farmers

I. INTRODUCTION

Information and Communication Technology (ICT) is one of the means whose potential can be exploited to strengthen the bridge between research system and farming system. Van den ban (1983) reported that it would be more effective to analyze first, who needs which information and how they receive and use this information at present, in order to be able to decide whether and how their information needs can be better served with the help of computers.

Modern communication technologies when applied to conditions in rural areas can help improve communication, increase participation, and disseminate information and share knowledge and skills. However it is observed that the rural population still has difficulty in accessing crucial information in order to make timely decisions. To overcome this problem, there is a need of using the available resources and technology to develop Mobile Application System as a decision support system for the small ruminant farmers in a cost effective manner. With these backgrounds, NABARD Project on "Development of mobile based technology transfer application system to empower the small ruminant farmers in Tirunelveli District" is functioning at Veterinary College and Research Institute, Tirunelveli. Hence, the present study has focused to assess and prioritize the Information needs of small ruminant farmers of Tirunelveli District, Tamil Nadu, India.

II. METHODOLOGY

An exploratory research design was used in this study. Tirunelveli district is selected as study area since, NBARD Project on development of mobile app in small ruminant is being operated in Tirunelveli District which has sheep and goat population of about 3,03,105 and 3,30,230 respectively (19th Livestock Census, 2012). Identification of needs of small ruminant farmers means that the level of information needed by the farmers as perceived by the researcher, extension personnel and small ruminant farmers on various small ruminant farming activities.

The primary data were collected from the selected respondents by using well structured pre-tested interview schedule. A schedule of information needs contained 48 items on various aspects of small ruminant farming like breed & breeding, feeding, management, disease control and marketing. The different need items were identified in consultation with the subject matter specialists and

secondary data on small ruminant rearing. The responses for each of the 48 items were measured on a five point continuum i.e., most needed, more needed, needed, less needed and least needed. The scores of 5,4,3,2 and 1 were given respectively for researchers, 10,9,8,7 and 6 for extension personnel and 15,14,13,12 and 11 for farmers as followed by Vetriselvan (2000) and Nish (2008) with slight modification in the continuum according to small ruminant farming in Tirunelveli district. The mean was calculated and the item above the mean was considered as the identified needs for the development of mobile application.

III. RESULTS AND DISCUSSION

The small ruminant rearing activity was classified under five major heads i.e breed & breeding, feeding, management, disease control and marketing were presented in Table 1. In breeding component, out of the nine topics, 14 topics viz. Indian breeds, native breeds of Tamil Nadu and local breeds of Tirunelveli region formed the information needs of small ruminant farmers as they had score a value of above mean. In feeding aspect, out of 11 topics, balanced feeding, formulation of ration, unconventional feed and fodder, fodder cultivation and need for feeding mineral mixture were identified as the major needs of small ruminant farmers. The researchers and farmers identified balanced feeding as most essential topic. All these factors contribute to the production and productivity of the small ruminants, which eventually enhanced the farmer's income. Hence, it was natural to be identified as their important needs.

In management part, out of 11 topics identified, five items formed the needs of small ruminant farmers viz., source of animal purchase, system of rearing small ruminants, summer management, management of pregnant animals and transportation of animal which score more than mean.

The researchers, extension personnel and farmers had given highest score for all seven topics considered under disease control section. This might be due to fact that the farmers are aware that regular deworming and vaccination could improve the health status of the animal which would eventually lead towards better production, while solving the problems related to breeding was essential to maintain regular and higher level of productivity.

The respondents of this study selected all topics as most essential topics under marketing components. This might be due to the fact that the farmers had livestock shandies in the study area like Reddiyarpatti, Melapalayam, Vallivoor and Pampukovil are very popular in trading of sheep and goats and felt need to insure their animals only during crisis.

Thus, a total of 24 items were considered as the identified needs that include topics on breed & breeding (three), feeding (five), management (five), disease control (six) and marketing (five). Based on the needs identified and prioritized, the content were organised, script prepared both in Tamil and English languages, video clipping, photos collected and mobile based application software is being developed in android platform.

Table 1 : Respondents' perception on the information needs of small ruminant farmers(N=206)

Sl. No.	Needs	Mean score value			
		Researcher (46)	Extension personnel (60)	Farmers (100)	Total (206)
I	**Breeds and breeding**				
1	Difference between Sheep & Goat	3.2	7.9	12.6	23.6
2	Indian Breeds	4.1	9.0	14.0	**27.0**
3	Native breeds of Tamil Nadu	4.5	9.3	14.2	**27.9**
4	Local Breeds of Tirunelveli region	4.4	8.9	14.3	**27.5**
5	Breeds – Phenotypic characters	3.8	8.9	13.2	26.0
6	Selection of sheep & Goat	4.3	9.1	13.6	26.9
7	Breeding age	4.2	8.8	12.7	25.7
8	Breeding of Sheep & Goat	4.1	8.9	13.6	26.7
9	Heat symptoms	4.1	8.9	12.8	25.8
10	Advantages of AI in goat	3.6	8.7	13.8	26.0
11	Pregnancy diagnosis	3.8	8.8	13.1	25.7
12	Gestation period	3.8	8.7	12.7	25.2

13	Importance of inter kidding period	4.2	8.8	13.4	26.4
14	Infertility problems in Sheep & Goat	4.2	8.8	14.0	26.9
II	**Feeding**				
1	Feeding schedule	4.3	9.2	14.4	28.0
2	Balanced feeding	4.4	9.2	14.4	**27.9**
3	Formulation of ration	4.3	9.4	14.6	**28.2**
4	Unconventional feed and fodder	4.2	9.3	14.1	**27.6**
5	Fodder cultivation	4.3	9.1	13.8	**27.2**
6	Grazing of animal	3.9	8.9	13.1	25.9
7	Conservation of fodder	4.0	9.0	13.9	26.9
8	Chaffing of fodder	4.0	9.0	12.7	25.7
9	Need for feeding mineral mixture	4.4	9.2	14.2	**27.8**
10	Water requirement	4.0	8.8	12.9	25.7
11	Source of procurement of feed and fodder input	4.2	9.1	13.1	26.3
III	**Management**				
1	Source of animal purchase	4.2	8.9	14.1	**27.1**
2	System of rearing sheep & Goat	4.0	9.0	14.0	**27.0**
3	Housing - Type of animal sheds, Orientation	4.1	9.0	13.3	26.3
4	Culling of animal	3.7	8.7	13.7	26.1
5	Slaughtering of sheep and goat	3.5	8.7	13.1	25.3
6	Manure handling	3.8	8.9	14.2	26.9
7	Summer management	4.2	9.2	13.7	**27.0**
8	Management of pregnant animals	4.2	9.0	14.3	**27.5**
9	Management of sheep and goat	3.8	9.0	13.3	26.0
10	Transportation of animal	3.9	8.9	14.4	**27.2**
11	Record keeping	4.7	7.8	14.4	26.8
IV	**Disease**				
1	Deworming schedule	4.7	9.5	14.4	**28.6**
2	Vaccination schedule	4.5	9.5	13.1	**27.1**
3	Disinfection of shed	4.5	9.4	13.1	**27.0**
4	Control of external parasite	4.4	9.5	13.4	**27.3**
5	Isolation of sick animal	4.3	9.3	13.9	**27.5**
6	Disposal of dead animal	4.2	9.2	14.6	**28.0**
7	Animal quarantine	4.2	9.4	13.6	**27.3**
V	**Marketing**				
1	Marketing channels	4.3	9.0	14.1	**27.4**
2	Value added meat products	4.0	9.0	14.4	**27.4**
3	Sources of credit	4.2	8.9	14.2	**27.4**
4	Animal Insurance	4.4	9.1	14.4	**27.8**
5	Economic of rearing Sheep & Goat	4.2	9.1	14.6	**27.9**
	Mean Score value	**4.1**	**9.0**	**13.7**	**27.0**

Technological booming in this Information Era, native and hybrid based mobile applications software is commonly

used in the development of mobile app. Among these, Android based mobile application software was selected since android is one of the smart phone operating system whose most applications are available freely on an android market. An android user can easily and freely download android applications. Android is an operating system for mobile device and also a platform to develop key application for the smart phone. Java programming language is used to develop android application by using Android SDK tools and API (Patel et a.l, 2014).

IV. ACKNOWLEDGEMENT

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