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Development of a Concept Model for Knowledge Dissemination among Livestock Based Women Self Help Groups in Kerala State, Kerala

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Abstract:

Development of a concept model for knowledge dissemination can be viewed in terms of media, dissemination of knowledge and self help groups. Recently more number of women self help groups are interested to undertake livestock production as one of their livelihood options. Many women SHGs are involved in Goat and dairying as an income generating activity under the impression that it won't need much skill. But women SHGs involved in dairying gradually realize it implies skilled work. This results in a knowledge gap among women SHGs in the areas of scientific livestock rearing practices in scientific breeding, selection of animals, housing, feeding, management, disease control, value addition and marketing of milk and milk products. Interventions, which will try to fill the above knowledge gap, must be given adequate importance. It is the duty of an extension worker to fill the knowledge gap so as to augment production. Women SHGs are interested to adopt simple technologies; that are sustainable, affordable and are available within their limits. Kerala being a state with high literacy rate in the country, farm publications and newspapers can play a key role in the transfer of appropriate technologies to livestock farmers. If properly utilized they can also influence farmers in the adoption stage and will reduce the technological gap. A study was conducted among 400 farmers selected from three regions of Kerala state with the objective of identifying knowledge pathways so as to assess the knowledge gaps and improvement of the systems. Development of a concept model for knowledge dissemination among livestock based women Self help groups will address some of the major issues affecting food security and sustainable livestock production system in the state.

1. Introduction

Among several avenues of income generation through livestock sector, dairying and goat rearing play an important role on various grounds. Income from dairying contributes nearly one third of the rural households gross income, and in the case of landless wage earning households, it is nearly half (Patel, 2004). Dairying and Goat rearing are emerging as the main and subsidiary source of income and employment in the state. The group approaches of venturing into these activities are gaining momentum in the recent past due to constant encouragement from the Government. Several government institutions and NGOs involved in livestock development are actively involved in SHG formation for socio-economic development of low-income groups.

Knowledge dissemination on scientific farming practices plays a key role in increasing production and productivity from livestock. For increasing the production of any livestock enterprise breeding, feeding, management, disease control and marketing are the key domains. Even though several Women Self Help groups are actively involved in dairy and goat farming activities in the state. Awareness on scientific knowledge and practices related to livestock production could vary based on the factors like socio educational status, income and access to resources. The magnitude of income generated by an enterprise reflected in its economic soundness and viability. Besides, income is an important indicator and the final indicator through which impact of any development programme can be measured. Therefore, with a view to assess the knowledge and practices of Women Self Help Groups in Dairying and Goat farming different concept models were used in the present study. Preliminary investigation reveals that more than 30 per cent women SHGs are engaged in dairy and goat farming activities. The members borrow credit for several livestock based activities e.g. for purchasing animals, dry fodder, green fodder, concentrates and others. They have 100 per cent repayment capacity in the area of operation.

The objectives of the present study were to (a) identify the knowledge dissemination pathways used by the livestock based women SHGs of the state with special emphasis to dairying and Goat rearing. (b) To find the existing level of functional knowledge on livestock information available with the women SHGs. (c) Find out the level of knowledge dissemination required by the SHGs

for increasing the productivity and (d) to identify the potential pathways that are not in use. Through this was developed a concept model for effective knowledge dissemination at the Grama Panchayat level.

2. Methodology

The study was carried out in Kerala, India during January 2011- August 2012. Three regions of the State were identified viz, North, Central & South for conducting the survey. One block (*A block is a local government body at the tehsil or taluka level in India*) each north and south region was randomly selected. Due to the larger size of the central region two blocks were selected from this region. Grama panchayats (*A Grama Panchayat is a local self-government institution at the village or small town level in India*) having more number of livestock based women Self Help Groups were selected purposively from the selected blocks. A total of 400 respondents were selected from the Grama panchayats identified. 100 respondents each were selected from Karivellur Peralam Grama panchayat of Kannur District(Northern Region), Mayyanad Grama panchayat of Kollam District(Southern region), Pattithara Gama Panchayat of Palakkad district and from Valappad Grama panchayat of Thrissur district (Central region).

For the purpose of collection of information from the selected respondents, a questionnaire is it was prepared based on the input received from the pilot study and administered among the SHG members selected. An interview schedule was prepared and applied to collect the information from Veterinary Surgeons working in the Animal Husbandry Department. Dairy Extension officers of Dairy Development Department, Senior officials of Animal Husbandry & Dairy Development department, representatives from local bodies and from Kudumbasree mission.

Focus group discussions were conducted to explore the role of self Help groups in dairy farming and goat rearing with the Senior officials from Animal Husbandry Department, Dairy Development Department, Kudumbasree mission, Local self Governments, Public sector undertaking and scientists of Kerala Veterinary and Animal Sciences University.

3. Results

3.1. Training exposure

| Training exposure | Goat Farming (No:200) | Dairy Farming (No:200) |
|-------------------|--------------------------|---------------------------|
| | (%) | (%) |
| No exposure | 35.0 | 46.0 |
| Have exposure | 65.0 | 54.0 |

Table 1

65 per cent of the respondents involved in goat rearing attended the training programme whereas nearly 50 % of the respondents attended the training programme on dairy farming. Since the management practices of goats are more complex than dairy farming and the goats are more susceptible to diseases more number of respondents attended the training on goat farming.

3.2. Frequency of contact with extension agencies

| Response | Goat Farming (No:200) | Dairy Farming (No:200) |
|------------------|--------------------------|---------------------------|
| | (%) | (%) |
| Not contact | 28.0 | 17.0 |
| Daily | 9.0 | 40.0 |
| Once in a week | 17.0 | 12.0 |
| Once in two week | 13.0 | 17.0 |
| Once in a while | 33.0 | 14.0 |

Table 2

The study revealed that 33 per cent of respondents involved in goat rearing were contacting extension agencies only once in a while where as in dairying 40 per cent respondents were contacting the extension agencies on daily basis. This clearly indicates that the co-operatives are the major information sources for the dairy farmers.

3.3. Source of information on Livestock based information

| Source | Goat Farming (No:200) | Dairy Farming (No:200) |
|------------------------|--------------------------|---------------------------|
| | (%) | (%) |
| Television | 48.0 | 37.0 |
| Radio | 20.0 | 15.0 |
| Newspaper | 20.0 | 32.0 |
| Agricultural magazines | 11.0 | 7.0 |
| Journals | 46.0 | 51.0 |
| Others | - | 4.0 |

Table 3

Regarding the source of information for farming activities, among the audio visual media Television ranks first by providing information to 48 per cent of the respondents involved in goat rearing and 37 per cent of SHGs involved in dairy farming. In the case of radio it provided information only to 20 per cent and 15 per cent of the goat and dairy farming SHG members respectively. In the case of newspaper it was 20 per cent and 33 per cent respectively. These findings suggested that audio visual media like Television plays a key role in livestock based knowledge dissemination among the SHG members. It indicated that this medium should be utilized effectively for disseminating information regarding modern technological innovations and other knowledge domains for economical and sustainable livestock production and management.

Study revealed that farm magazines played a pivotal role in dissemination of information related to SHG members involved in goat and dairy farming. High literacy rate coupled with availability of more number of farm magazines facilitated the dissemination of information among the livestock farmers. This suggests the need for the more number of livestock oriented articles on various livestock farm enterprises and necessitates starting a course on Farm Journalism to orient the aspiring farm journalists to communicate the farm information in a farmer friendly manner.

3.4. Resource persons be approached for Animal Husbandry advices

| Person | Goat Farming (No:200) | Dairy Farming (No:200) |
|-------------------------|--------------------------|------------------------|
| | Percent | Percent |
| Veterinary surgeon | 72.0 | 64.0 |
| Diary extension officer | 9.0 | 19.0 |
| Scientists | 0 | 0 |
| Others | 0 | 4 |

Table 4

Study revealed that 72 per cent of the respondents involved in goat rearing and 64 per cent involved in dairying were approaching Veterinarians of Animal Husbandry Department for health care of the animals. 19 per cent of the respondents of dairying were approaching dairy extension officers for information related to feeding and management. These finding suggests that Veterinarians of Animal Husbandry departments are the major source for providing Veterinary services and information among the livestock based SHGs due to their proximity and their perceived trustworthiness.

3.5. Membership in organization related to animal husbandry

| Training exposure | Goat Farming (No:200) | Dairy Farming (No:200) |
|-------------------|---------------------------|----------------------------|
| | Percent | Percent |
| Not have | 35.0 | 46.0 |
| Have | 65.0 | 54..0 |

Table 5

Study revealed that 65 per cent of the women involved in goat rearing and 54 per cent of women involved in dairying had membership in organizations related to animal husbandry sector other than the SHG.

3.6. Knowledge Assessment

3.6.1. Respondents and this knowledge in different aspects of Goat Farming

| Aspect | Percent of farmers having adequate knowledge |
|--------------------------|--|
| Type of shed | 72 |
| The age at breeding | 68 |
| Type of breeding | 54 |
| Awareness on AI in goats | 30 |

Table 6

Study on knowledge assessment revealed that 72 per cent of the respondents had knowledge on scientific housing for goats. 68 per cent had information on age at first breeding and 54 per cent had knowledge on scientific breeding but only 30 per cent of respondents were aware of A.I. techniques in goats.

3.6.2. Percentage of respondents having knowledge in different aspects of Dairy Farming

| Aspects | Percent of farmers having adequate knowledge |
|---|--|
| Knowledge about the different diseases | 59 |
| Knowledge about the symptoms of Mastitis) | 74 |
| Knowledge about toxic plants affecting cattle | 21 |
| Knowledge about modern Veterinary care | 72 |

Table 7

Study on knowledge assessment in Dairying revealed that respondents had very high knowledge on Mastitis (74 %). Since mastitis was directly related to milk production, members were having more knowledge about various aspects of mastitis. It was found out that respondents were having better knowledge (72 %) on efficiency of Modern medicine due to complete network of Veterinary institutions at the Grama panchayat level of the state and the interaction with the Veterinarians. With regard to the knowledge about the toxic plants only 20.5% of the respondents were aware about this. This might be due to the fewer occurrences of the incidents when compared to other diseases.

3.7. Practices

3.7.1. Area in which Training is required for goat farming

| Area | Percent |
|---------------------------|---------|
| Diseases | 44.0 |
| Feed and feeding strategy | 37.0 |
| Marketing of goat | 22.0 |
| Type of goat breeds | 22.0 |
| Disease control measures | 20.0 |
| Breeding of goat | 15.0 |
| Shed preparation | 11.0 |

Table 8

The study selected data on the areas of dairying and goat farming where the farmers needed training. Study revealed that the women SHG members involved in goat rearing necessitated training in the rank order of health care (44 %) feeds and feeding (37 %) breeds and marketing (22 %) disease control measures (20 %), breeding (15 %) and housing (11%). So the research findings

clearly revealed that the women SHG members lack knowledge in the critical areas related to breeds and breeding feeds and feeding, housing disease control and marketing. Since goat farming is becoming one of the important livelihood options among women SHGs, and any errors in the management will affect production, productivity and economic viability of the business. The results suggest that SHGs need to be given trainings in the major domains listed above to fill the knowledge gap.

3.7.2. Area in which Training is required for Dairy Farming

| Source | Percent |
|---------------------------------------|---------|
| Disease Prevention measures | 31.0 |
| Feed and feeding strategy | 12.0 |
| Shed preparation | 10.0 |
| Services | 8.0 |
| Marketing | 7.0 |
| Preparation of value added production | 6.0 |
| Type of breed | 2.0 |

Table 9

Study revealed that 31 per cent of respondents required training in disease control measures. Respondents required training in the area in the descending order of feeds and feeding (12%) management of cattle shed (10%), various services (8%), marketing (7%), preparation of value added products (6%) and breeds and breeding (2%)

3.7.3. Problems in the breeding of dairy animals

| Source | Percent |
|-----------------|---------|
| Repeat breeding | 22.0 |
| anoestrus | 36.0 |
| sub oestrus | 11.0 |
| other problems | 6.0 |

Table 10

Study revealed that anoestrus was the major problem faced by one-third of the dairy women self help group members with respect to dairying. 21 per cent reported that repeat breeding affected profitability in dairy farming followed by suboestrus (11%). The results highlight frequent monitoring of breeding problems and infertility.

4. Discussion

4.1. Knowledge Dissemination Pathways

Study revealed that the major extension agencies involved in knowledge dissemination among livestock based self help groups are Veterinary institutions followed by Dairy Co-operatives and Dairy extension offices. With respect to dairying Dairy co-operatives are providing information on day to day basis.

Television and farm magazines play a pivotal role in dissemination of livestock based information among self help groups. These sources ranked first and second with respect to the mass media sources utilized for seeking information by the members. Radio and News papers are also used to receive information by considerable proportion of the members for livestock rearing. So it implies that electronic media using information and communication technology are to be used effectively for dissemination of livestock based knowledge among the stakeholders.

4.1.1. Existing level of functional knowledge

As part of the study knowledge level of the livestock based self help groups and their practices of goat rearing and dairying were studied. In goat rearing respondents have comparatively high level of knowledge on housing and breeding practices. Regarding breeds of goats reared, the study revealed that high proportion of respondents was rearing Malabari goats. They were practicing feeding of colostrum to the newborn kids, feeding of concentrate to the goats and vaccination against various contagious diseases. Nearly one-third of the respondents were practicing periodical deworming and feeding green leaves to the goats. The analysis of respondents of dairy farming showed that they had high level of knowledge on Mastitis, Veterinary care and disease control measures but had low level knowledge on toxic plants. The reason might be the disease like mastitis having direct impact on the

economy of the farmers and the symptoms are more typical but the animals affected by the toxic plants are comparatively less and diagnosis and attribution of symptoms to toxic plants in majority of cases are difficult.

Regarding adoption of scientific management practices, dairy women self help group members were adopting more of housing and feeding practices but adoption of practices related to scientific milking methods were not satisfactory. Since the relative advantages of good feeding and housing are more directly observable in adoption of scientific practices than milking practices and consequently their adoption level was high.

4.2. Level of knowledge dissemination and potential pathways

The findings of the study indicated that high to moderate level of knowledge were required in Dairying and goat rearing for adopting scientific breeding, management and marketing measures. Even though respondents had high level of knowledge on disease control and feeding, they reported that they were not satisfied with the present level of knowledge and required more training on disease control and feeding.

Potential pathways that are not commonly used by the members of women SHGs are the research and extension activities of Veterinary and Agricultural Universities. Even though Farm publications of the Veterinary and Agricultural universities, Farm Information Bureau, Animal Husbandry information centres and Livestock Management Training Centres (LMTCS) of Animal Husbandry department and training centres of Dairy development department are facilitating dissemination of knowledge and adoption scientific livestock production practices, it has to be further strengthened to meet the interest of stake holders.

Since Kerala is a totally literate state potential use of Farm feature columns of newspapers and farm journals should be further improved to disseminate scientific knowledge related to Livestock production. Mass media like Television, Radio (particularly FM radios), etc may be effectively outsourced for the dissemination of newer technologies. In the era of Information and Communication Technology (ICT) it's appropriate applications can be effectively utilized for the knowledge transfer among stake holders.

4.3. Concept model for knowledge dissemination at Grama panchayat level

Based on the study findings, women Self Help Group members require knowledge on scientific practices in the areas of breeding, feeding, management, disease control and marketing. A concept model to disseminate knowledge on the above factors was designed. Since Kerala is implementing decentralized planning programme at the grama panchayat level the concept model at the Grama panchayat level will be an ideal platform for knowledge transfer, Veterinary institutions at the grama panchayat have acquired the appropriate strength for developing a concept model.

4.4. Market led production programme

In majority of livestock production enterprises while much emphasis was given to the production aspects like Scientific breeding, feeding, management and disease control, the marketing of the livestock products were not given due attention. When the issue of sustainability in production of livestock enterprise arises the marketing cannot be treated as a separate entity which is an integral component of the production activity. Livestock products, with the exception of around 15 % of the milk, produced are mainly marketed through unorganized sector which results in non-remunerative price to the producer and unreasonably cost to the consumer. In order to explore the rural market for livestock products, production strategy must be oriented towards marketing of the produce. It should be regulated with local, regional and international market while producing the commodity. Production of traditional livestock products, which fetches good price should be promoted by exhibiting its inherent strengths and proper branding strategies. Changes in the extension approaches, market forecasting system, value addition, awareness on diseases affecting trade of livestock products, changes in the consumer behavior, production of livestock products based on the demographic characteristics of the population, good manufacturing and retail practices, best production practices and implementation of food safety norms, branding, etc need to be given more importance. Value addition of livestock products should be based on consumer needs, taste and preferences like fat free milk for cardiac patients, chocolates for children, quality cheese while considering for international market, etc.

4.5. Knowledge Dissemination

Considering the efficient decentralized administrative setup of the state, the livestock delivery and the knowledge dissemination pathway can be studied at the Panchayat, district and state level. All the Veterinary institutions are having Animal husbandry information centers. Print and electronic media in the state are regularly publishing, telecasting/broadcasting information required for the livestock farmers in their Agriculture column/journals/programmes. Based on different pathways for knowledge transfer which already exist in the system, existing level of livestock information gained by the farmers, level of knowledge required for sustainable results and level of existing knowledge gap a concept model to fill the knowledge gap was designed.

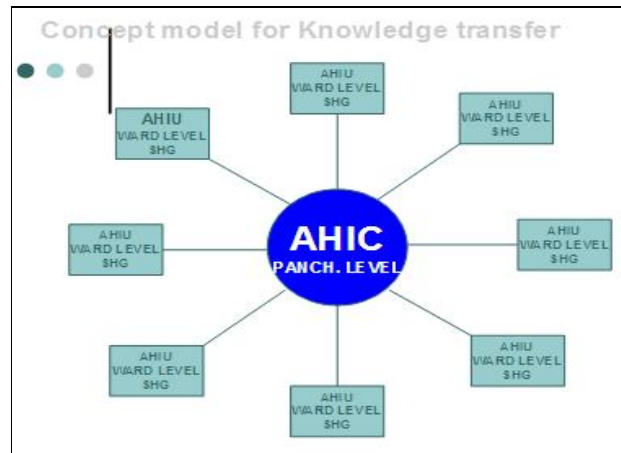


Figure 1

AHIC- Animal Husbandry Information Centre
 AHIU - Animal Husbandry Information Unit

4.6. Executive Summary

The study helped to identify different pathways for knowledge transfer which already exist in the system, existing level of livestock information gained by the farmers, Level of knowledge required for sustainable results, Level of existing knowledge gap and Formulated a concept model to fill the knowledge gap. Data collected helped to find out the existing knowledge pathways used desired level of knowledge, its strength and weaknesses and helped in developing a concept model for effective dissemination of livestock information. It will include information related to different variables to be identified with the various stakeholders involved in livestock development.

4.7. Keywords

- SHG- Self Help Groups
- Kudumbasree- Women oriented, community based, State Poverty Eradication Mission of Government of Kerala

5. Acknowledgement

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