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Technological Empowerment of Rural Women of Udaipur District (Rajasthan) in Animal Husbandry through SHGs

Seema Tyagi*

Directorate of Prioritization, Monitoring & Evaluation, SKRAU, Bikaner -334006, Rajasthan, India

*Corresponding author: seemavtyagi@yahoo.com

ABSTRACT

Women in rural India play a major role with regard to care and management of livestock. The present research was taken up to find out the technological empowerment of rural women with respect to animal husbandry technologies. The study was conducted in the villages of Udaipur district of Rajasthan with one government and one non-government organization having maximum number of SHGs formed under them. Total 20 SHGs (10 from each type of organization) were studied. To see the impact of SHGs on technological empowerment of members, a third group as a control was selected from adjoining villages of identified villages of GO and NGO (40 non-beneficiaries of each type). Interview schedule was used for data collection. It was encouraging to find that majority of beneficiaries from GO and NGO (72.22% and 71.11%, respectively) had good knowledge, whereas, almost all the non beneficiaries from GO and NGO had poor knowledge of animal husbandry technologies. Beneficiaries of both GO and NGO had highest knowledge in 'clean milk production', followed by 'feeding' and 'housing' with MPS (Mean per cent score) ranging from 73.33 to 91.11. The non beneficiaries exhibited very poor knowledge on all the aspects (MPS range 3.11 to 7.63) except for 'clean milk production' as the MPS ranged from 25.18 to 29.62. There was significant difference between the beneficiaries and non-beneficiaries with regard to their knowledge on animal husbandry. The beneficiaries had higher mean score of knowledge (17.65 and 18.23 for GO and NGO beneficiaries, respectively) as compared to non-beneficiaries (3.3). Among the beneficiaries from GO and NGO, there was no significant difference in their knowledge.

Keywords: SHGs, rural women, technological empowerment, animal husbandry

Rural women must get organized into self-help groups (SHGs) to gain visibility. Group approach is a viable set-up to empower women economically, socially and technologically for improved quality of life. Role of SHGs is emerging as promising tool in this context. The SHGs are created to enable the members to reap economic benefits through mutual help, solidarity and joint responsibility towards self and sustainable development. The empowerment of women through SHGs would lead to benefits not only to the individual woman but also for the family and community as a whole through collective action for development. These SHGs have a common perception of need and impulse towards collective action. Empowering women is not just for meeting their economic needs but also more holistic social development (Vadivoo and Sekar, 2004).

In rural India, women play a major role in agriculture and animal husbandry. Though women are the main contributor in agriculture, their involvement in animal husbandry is also tremendous. Care and management of milch animals is the prime responsibility of women and is considered as a part of household work. According to Joshi (1999) women contributed 64.55 per cent labour in management of livestock.

Therefore, a study was conducted to document and analyse the technological empowerment of rural women through their participation in SHGs in Udaipur district of Rajasthan with one government and one non-government organization having maximum number of SHGs formed under them. As per the discussion with GO and NGO functionaries with regard to technological empowerment of women in SHGs, it was found that animal husbandry technologies were commonly promoted in both the organizations. Also choosing these technologies facilitated in comparing results with the control

group as women in the control group were also found to be equally involved in this activity.

METHODOLOGY

The present research was conducted in purposively selected villages of Udaipur district, Rajasthan as maximum number of NGOs are working in this region and have formed SHGs. Groups have also been formed by GOs in this area. Two organizations, one Government [District Women Development Agency] and one Non-Government [Indian Farm Forestry Development Cooperative Ltd.] having maximum number of SHGs formed under them, were taken up for study purposely. The selection of women SHGs from these organizations was purposive on the basis of maximum number of years of standing.

In all, 20 SHGs (10 from GO and 10 from NGO) were taken up. From each group, 8 members and one group leader were drawn on random basis. The respondents constituted of 10 group leaders and 80 women members from each GO and NGO. Thus, the sample size constituted of a total of 180 respondents (20 group leaders and 160 members). In order to know clear cut impact of the SHGs in terms of technological, economic and social empowerment, a matching sample of 80 rural women (40 for GO and 40 for NGO) was selected as a control group from the adjoining villages of the identified villages of GO and NGO. The purpose of selecting the adjoining villages was to avoid the possibility of difference in the socio-cultural conditions of the area.

The technological empowerment was studied in terms of knowledge possessed by women respondents. Interview schedule was used for data collection which was standardized with the help of experts and pre-tested. Reliability and validity of the tool was tested using applicable scientific methods. Data was collected with the help of personal interview. The data was analysed using appropriate statistical tools.

Measurement of Knowledge

Based on the content covered under the trainings on animal husbandry, a number of questions related to the five major aspects of animal husbandry were framed in the knowledge test. The maximum obtainable score for knowledge test was 24, which was further divided into five major components (Breeding, Feeding, Housing, Health Management and Clean Milk Production) and questions were within the components on the basis of importance of respective component as well as the question as viewed by the judges. The components with the maximum obtainable score is given below:

Sl.No.	Component of Animal Husbandry	Score
I	Breeding	5
II	Feeding	8
III	Housing	3
IV	Health Management	5
V	Clean milk production	3
	Total	24

The total score obtained by the respondents in different components were converted into MPS for ease of comparison. On the basis of MPS, the respondents were distributed into following three equi-distance knowledge categories:

Sl.No.	Category	Score Range
1	Poor	< 33.3
2	Average	33.3-66.6
3	Good	Above 66.6

RESULTS AND DISCUSSION

(a) Overall knowledge of respondents about animal husbandry

Table 1 highlights that majority of the beneficiaries from GO (72.22 per cent) and NGO (71.11 per cent) fell in the category of good knowledge about animal husbandry, as compared to non-beneficiaries where not a single respondent from both GO and NGO was in the good knowledge category indicating that there were deficiencies in the required technical knowledge.

The table further reveals that almost all the non-beneficiaries (97.5 per cent from GO and 100.00 per cent from NGO) had poor knowledge regarding animal husbandry. It could be thus inferred that the overall knowledge of the members of SHGs of both GO and NGO was good as compared to non-members.

Table 1: Distribution of respondents by their overall knowledge about animal husbandry N = 260

Sl. No.	Categories	Beneficiaries		Non-beneficiaries	
		GO (n = 90)	NGO (n = 90)	GO (n = 40)	NGO (n = 40)
		f(%)	f(%)	f(%)	f(%)
1	Poor (< 33.3)	23 (25.55)	9 (10.00)	39 (97.5)	40 (100.00)
2	Average (33.3 – 66.6)	2 (2.22)	17 (18.88)	1 (2.5)	0 (0.00)
3	Good (Above 66.6)	65 (72.22)	64 (71.11)	0 (0.00)	0 (0.00)

(b) Component-wise knowledge of the respondents

Table-2 portrays information pertaining to the knowledge of the respondents in various components of animal husbandry. It is clear from the table that the beneficiaries of both GO and NGO had highest knowledge in clean milk production, followed by, feeding and housing with MPS ranging from 73.33 to 91.11. In the other two aspects i.e. health management and breeding too, knowledge of the beneficiaries of both GO and NGO was found to be good as the MPS ranged from 68.88 to 69.55 and 71.11 to 73.11, respectively.

Table 2: Component-wise knowledge of the respondents in animal husbandry N = 260

Sl. No.	Components	Beneficiaries		Non-beneficiaries	
		GO MPS	NGO MPS	GO MPS	NGO MPS
I	Breeding	69.55	73.11	3.11	0.66
II	Feeding	75.83	75.13	7.63	5.00
III	Housing	73.33	75.92	3.33	0.00
IV	Health Management	68.88	71.11	0.00	0.00
V	Clean milk production	82.22	91.11	29.62	25.18
	Total	73.56	75.97	7.31	4.95

In the control group from both GO and NGO, the respondents had very poor knowledge in all the components. The MPS of the respondents regarding clean milk production reveals that they had better knowledge on this aspect as compared to the other components with MPS ranging from 25.18 to 29.62. In other components, the respondents from the control group exhibited very poor knowledge with MPS range 3.11 to 7.63. Regarding Health Management, it was found that none of the respondent from control group had any knowledge regarding different aspects of health management of the animals.

(c) In-depth assessment of knowledge regarding animal husbandry

An insight into the in-depth knowledge of the respondents in various aspects of animal husbandry clearly portrays that the members of SHGs possessed more knowledge on all the aspects as compared to non-beneficiaries. Also there was not much variation in the knowledge between the members of GO and NGO. Table 3 shows that with regard to improved breeds of milch animals, nearly three-fourth of the SHGs members from GO (74.44 %) and 63.33 per cent of SHGs respondents from NGO knew about the exotic breed of cow *viz*., Jersi, whereas in case of non-beneficiaries, only 15.00 per cent respondents from GO and 7.5 per cent from NGO had knowledge. Similarly, 66.66 per cent beneficiaries from both GO and NGO were also aware of improved breed of buffalo (Murrah). Artificial insemination (A.I.) was the most important aspect which was covered during the training courses, with the result that 80.00 per cent of NGO beneficiary and nearly three fourth of GO beneficiary (73.33 to 74.44 %) could tell about the importance of A.I. in milch animals as against only 5.00 per cent non-beneficiaries from GO. While none of the respondent from NGO non-beneficiary group knew about it.

It is very clear from the table that there was slight variation in the knowledge possessed by GO and NGO beneficiaries on "Feeding", while among the non-beneficiaries hardly any respondent had knowledge on the various aspects of feeding. Incorporating green and dry fodder for balanced nutrition, giving minerals and vitamin supplements, feeding colostrums to newly born calf, use of manger, chaffing fodder, addition of urea/jaggery/mineral mixture and feeding extra ration to pregnant and lactating animal were the aspects where the non-beneficiaries from both GO and NGO possessed negligible knowledge.

Giving energy feed (a ration prepared with jaggery and hot water) to animal just after parturition was the aspect where the non-beneficiaries also stood at par with the beneficiaries. The reason behind this is that to give this feed to animal just after calving is practiced traditionally in villages. Besides being a traditional practice, it is also scientifically recommended. Thus,

Table 3: In-depth assessment of knowledge of respondents in animal husbandry N = 260

Sl. No.	Component	Beneficiaries		Non-beneficiaries	
		GO (n = 90)	NGO (n = 90)	GO (n = 40)	NGO (n = 40)
		f(%)	f(%)	f(%)	f(%)
I	**BREEDING**				
1.	Major Improved Breeds of Milch Animals				
	(A) Cow				
	* Indigenous : Rathi/Tharparkar/ Gir/Haryana/Kangranj	37 (41.11)	52 (57.77)	0 (0.00)	0 (0.00)
	* Exotic : Jersey/Holstein Freshien	67 (74.44)	57 (63.33)	6 (15.00)	3 (7.5)
	(B) Buffalo				
	* Murrah/Surti/Mehsana	60 (66.66)	60 (66.66)	1 (2.5)	0 (0.00)
2.	Benefits of Artificial Insemination				
	(A) More milk production	67 (74.44)	72 (80.00)	2 (5.00)	0 (0.00)
	(B) Breed improvement	66 (73.33)	72 (80.00)	2 (5.00)	0 (0.00)
II	**FEEDING**				
1.	Feeding green and dry fodder for balanced nutrition	66 (73.33)	67 (74.44)	5 (12.5)	0 (0.00)
2.	Giving minerals and vitamin supplements	65 (72.22)	67 (74.44)	2 (5.00)	0 (0.00)
3.	Feeding colostrum to newly born calf	75 (83.33)	80 (88.88)	0 (0.00)	0 (0.00)
4.	Use of manger	66 (73.33)	55 (61.11)	1 (2.5)	0 (0.00)
5.	Chaffing fodder	67 (74.44)	68 (75.55)	4 (10.00)	4 (10.00)
6.	Improving nutritive value of dry fodder :				
	— Addition of Urea/Jaggery/Mineral mixture	66 (73.33)	62 (68.88)	0 (0.00)	0 (0.00)
7.	Feed extra ration to pregnant and lactating cow/buffalo	66 (73.33)	60 (66.66)	0 (0.00)	0 (0.00)
8.	Giving energy feed to animal just after parturition/delivery	75 (83.33)	82 (91.11)	35 (87.5)	34 (85.00)
III.	**HOUSING**				
1.	*Pucca* drainage channel for removal of urine and excreta	66 (73.33)	61 (67.77)	2 (5.00)	0 (0.00)
2.	*Pucca* floor space for animal	66 (73.33)	61 (67.77)	2 (5.00)	0 (0.00)
3.	Proper ventilation	66 (73.33)	83 (92.22)	2 (5.00)	0 (0.00)
IV	**HEALTH MANAGEMENT**				
1.	Deworming cattle	65 (72.22)	66 (73.33)	0 (0.00)	0 (0.00)
2.	Control of external parasite	65 (72.22)	66 (73.33)	0 (0.00)	0 (0.00)
3.	Proper time of vaccination for :				
	* Foot and Mouth disease	60 (66.66)	62 (68.88)	0 (0.00)	0 (0.00)
	* Haemorrhagic Septicaemia	60 (66.66)	60 (66.66)	0 (0.00)	0 (0.00)
	* Black Fever	60 (66.66)	57 (63.33)	0 (0.00)	0 (0.00)
V	**CLEAN MILK PRODUCTION**				
1.	Milking by full hand method	66 (73.33)	70 (77.77)	0 (0.00)	0 (0.00)
2.	Washing the teats/udder of animals	78 (86.66)	88 (97.77)	40 (100.00)	34 (85.00)
3.	Washing hands and utensils	78 (86.66)	88 (97.77)	40 (100.00)	34 (85.00)

there was no difference in knowledge between the beneficiary and non-beneficiary groups.

When knowledge of the respondents was probed about "Housing", it is clear from Table 3 that the women members of SHGs from GO and NGO had knowledge regarding proper arrangements for disposal of urine and cowdung in/around cattle shed and a pucca floor for animals; while negligible number of non-beneficiaries from GO (5.00 %) knew about it while none of the non-beneficiary from NGO could tell about it. Regarding "Health Management", the difference in knowledge was quite clear among the members of SHG and non-beneficiaries. Here none of the respondents from both GO and NGO control group possessed any knowledge. While three-fourth of the beneficiaries from GO (72.22 %) and NGO (73.33 %) knew about deworming cattle and control of external parasite and more than half of the respondents from GO (66. %) and NGO (63.33 – 68.88 %) had knowledge regarding the vaccination time for Foot and Mouth disease, Haemorrhagic Septicaemia and Black Fever.

When questions were asked regarding "Clean Milk Production", one thing was very clear that in rural areas milking by full hand method was not known to women. Only the women members from GO (73.33 %) and NGO (77.77 %) SHGs reported about this aspect as compared to the non-beneficiaries where none of them had any knowledge. While on the other two aspects i.e. washing the teats and udder of animal and washing hands before milking, received maximum response from both beneficiaries and non-beneficiaries which was 86.66 per cent from GO and 97.77 per cent from NGO beneficiaries while it was 100.00 per cent in GO non-beneficiaries and 85.00 per cent in NGO non-beneficiaries.

The above findings lead to the conclusion that beneficiaries' knowledge towards improved animal husbandry practice was much higher than the non-beneficiaries. It indicates that the trainings imparted to the members of both GO and NGO SHGs had shown a positive impact and they have helped women to increase their knowledge in various aspects of animal husbandry. Similar findings were observed by Ashok (1997) and Solanki (2001) where the knowledge of beneficiaries about various aspects of livestock management was significantly higher than the non-beneficiaries.

This further shows the clear cut impact of SHGs in terms of technological empowerment of rural women. It seems that women due to their regular exposure to the trainings and other extension activities have acquired knowledge on this aspect. Also regular contact with field functionaries and interaction with veterinary doctors and group members has helped them to acquire knowledge.

(d) Comparison of knowledge level among different categories of respondents

As is apparent from Table 4, in case of beneficiaries and non-beneficiaries the 'F' value calculated was greater than the tabulated value in overall knowledge, which means that there was significant difference between the beneficiaries and non-beneficiaries as regards their knowledge towards animal husbandry is concerned. A comparative look of data presented in Table 5 indicate that the beneficiaries had higher mean score of knowledge (17.65 GO and 18.23 NGO) as compared to the non-beneficiaries whose mean score was 3.3. This shows that beneficiaries had higher knowledge than the non-beneficiaries regarding animal husbandry.

Further, in case of beneficiaries, no significant difference in knowledge level was observed among the respondents belonging to two different groups i.e. government and non-government. The knowledge level of beneficiaries belonging to government and non-government organizations was more or less the same.

Above findings lead to the conclusion that beneficiaries knowledge towards improved animal husbandry practices was much higher than the non-beneficiaries. It indicates that the SHGs has helped women to increase their knowledge in various aspects of animal husbandry. Similar findings were observed by Ashok (1997) and Solanki (2001) in their studies on effectiveness of Gopal Yojna and Women in Agriculture Scheme, respectively. It was concluded that knowledge of the beneficiaries about various aspects of livestock management was significantly higher than the non-beneficiaries.

Thus, this shows the clear cut impact of the self-help groups in terms of technological empowerment of rural women. It seems that women due to their regular exposure to the trainings and other extension activities have acquired knowledge on various aspects of animal husbandry. The non-beneficiaries,

on the other hand, hardly get an opportunity to acquire latest knowledge in this aspect.

Table 4 : ANOVA Table for variation in overall knowledge of respondents about animal husbandry

Sl.No.	Source	d.f.	SS	MSS	F
1	Between groups	2	11892.79	5946.39	128.35**
2	Error	257	11907.22	46.33	
	Total	259	23800.01		

** Significant at 1% level of significance

Table 5 : Mean knowledge scores of respondents in animal husbandry N = 260

Group	Mean scores
Government	17.65
Non-government	18.23
Control	3.3
SEm CD at 1%	0.7175 2.60

CONCLUSION

The SHGs had a significant impact on the knowledge of women members of both GO and NGO on the various aspects of animal husbandry. This was quite impressive as the women members from both the organizations possessed more knowledge than the members of control group. But, there is a need to be taken care by these organizations that instead of addressing one technology uniformly to all SHG members, efforts could be made to divide the women members of a village in various interest groups of farm and non-farm activities. Then only efforts be done to promote field demonstrations, providing technical guidance that, in turn, will minimize the wasteful expenditure of time and labour of the personnel of extension machinery involved in this.

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