

## Assessment of Women Empowerment through Women Dairy Cooperatives in Eastern Dry Zone of Karnataka

R. S. GEETHA AND P. S. SRIKANTHA MURTHY

Department of Agricultural Economics, College of Agriculture, UAS, GKVK, Bengaluru - 560 065

e-Mail : geetharshivu@gmail.com

### ABSTRACT

The present study aimed at assessing the women empowerment through women dairy cooperatives in Eastern Dry Zone of Karnataka. The sample comprised of 240 rural women including 100 respondents from women dairy cooperatives (WDCs), 100 from general dairy cooperatives (GDCs) and 40 from private sellers (PSs). women's empowerment in livestock index (WELI) tool was used in assessing the empowerment of women in agriculture with a special focus on livestock sector. The WELI was found to be 0.64, 0.54 and 0.51 for WDCs, GDC's and PS's, respectively, indicating a positive impact of WDCs on empowerment of rural women. Decisions related to nutrition and agricultural operations were found to be the important dimensions. Control and use of income dimension were found to be contributing least in the case of WDC's and GDC's *i.e.*, 14.06 and 11.85 per cent, respectively, whereas access to and control over resources (11.96 per cent) is least in the case of PS's. PS's access to training, information and group participation was lower compared to that of women involved in cooperatives. The herd size categories were shown to be positively associated with the WELI. The study concluded that there is a need for bringing more rural women under WDCs to increase their social participation and empowering them and also for strengthening the existing policies of encouraging rural women for self-employment.

*Keywords* : Women empowerment, Women, Dairy cooperatives, Private sellers

**D**AIRY farming is an important subsidiary agricultural activity in India. It plays an important role in generating income for small farmers and agricultural labourers (Shivagangavva *et al.*, 2019). It helps them to be independent and financially stable. Dairy cooperative networks are widespread in our country which involves procuring, processing and marketing milk and its products. The dairy cooperatives are highly successful in the states of Gujarat, Karnataka, Bihar, Rajasthan, Tamil Nadu and Maharashtra due to their three tier organised structure from gross root village level to state level organisation and timely procurement and payment to milk producers. There is a need for creating awareness about the success of dairy cooperatives and their benefits to the dairy farmers in the country to bring more dairy farmers under fold of dairy cooperatives (Veeresh and Chinnappareddy, 2018). Women have been at the fore front of dairy cooperative movement, which was initially carried out under the Operation

Flood Programme and later under the Integrated Dairy Development Programme implemented by the Government as well. The baseline survey of National Dairy Plan (NDP-I) revealed that women's share in the total time spent in dairy sector was about 64 per cent.

Empowerment is the process where rural women can take control of their own lives through expansion of choices available. For further development of women, Support to Training and Employment Programme (STEP) for women was started during the year 1986 by Ministry of Women and Child Development, Government of India. NDDDB started Women's Dairy Cooperative Leadership Programme (WDCLP) on pilot basis in 1995 in Valsad, Kolhapur, Goa and Waynad. The objective was to strengthen the cooperative dairy movement by increasing the women participation and providing leadership opportunities in societies, unions and state

federations. Since October 1997, women dairy cooperatives (WDCs) have been set up and developed through STEP programme in rural areas of Karnataka, through women focussed approach. Under the scheme the women members have been trained in dairy animal management, health, nutrition, legal literacy and gender sensitization. The positive intervention by KMF along with that by the Government of India has resulted in slow emergence of movement of rural women, who have seen little beyond their immediate work athome, their farm and the village. By July 2020, the number of women dairy cooperatives in Karnataka was 4494.

STEP is a programme that aims at empowering women across the country. With such an initiative, women dairy cooperative societies (WDCs) have been setup to improve the socio-economic conditions and to politically strengthen women milk producers, especially those belonging to weaker sections in rural areas (Jyothi and Krupalini, 2019). The WDCs will not only benefit economically the women dairy farmers, but also possession and management of milch animals would enable them to learn by inferences and help in their capacity building (Niketha *et al.*, 2017). In consideration of the above mentioned research findings, the current study aimed at assessing the women empowerment through women dairy cooperatives in Eastern Dry Zone of Karnataka.

#### METHODOLOGY

The sample size constituted of 10 Women Dairy Cooperatives (WDCs) and 10 General Dairy Cooperatives (GDCs) from either milk union (*i.e.*, Kolar Milk Union - KOMUL and Bangalore Milk Union - BAMUL). Five rural women dairy entrepreneurs were selected from each dairy cooperative. The total number respondents from 20 WDCs and 20 GDCs worked out to 200. In addition, 40 respondent women selling milk in private markets were selected as control group. Thus the total sample size of the study stood at 240. The primary data was collected by conducting

personal interviews of respondents using pretested structured questionnaires.

Women's Empowerment in Livestock Index (WELI) tool developed by teams from the International Livestock Research Institute (IRLI) and Emory University was used in assessing the empowerment of women in agriculture with a special focus on livestock sector (Galie *et al.*, 2019). The WELI includes 6 dimensions and 16 indicators under these dimensions as shown in the Table 1. The answers to questions included in the WELI were converted into values *i.e.*, if only women (1), if only men (0) and if joint (0.5). A threshold value was applied to categorize each woman in each indicator as empowered or not empowered, assigning the values 1 or 0, respectively. The threshold is 0.5 for all domains, except workload and proportion of revenue generating workload.

The maximum value of WELI is 1. As there are 6 dimensions, each dimension is weighted maximum of 1/6. Similarly, the dimension having two indicators, the weight divides by 2 working out to maximum weight of 1/12 for each indicator. Likewise the dimension with three indicators, assumes the weight of 1/18 for each indicator under it.

#### RESULTS AND DISCUSSION

##### Source of Livelihood and Livestock Possession

The primary and secondary livelihood sources of sample respondent households belonging to WDCs, GDC's and PS's are presented in Table 2. The results have shown that in general crop production was the major source of income activity for sample respondent households with 32.50 per cent of total sample size, followed by dairying (27.50 per cent), agricultural labour work (20.00 per cent) and sericulture (15.42 per cent). In case of WDC, similar was the situation. In case of GDC and PS, dairying stood as major primary activity with 30 and 37.50 per cent share, respectively.

It is evident from Table 2 that dairying is the major supplemental income activity for the sample respondent households across selected groups

TABLE 1  
Empowerment dimensions, indicators, weights and adequacy indicators used in the WELI

Dimension	Indicator	Weights	Adequacy Indicators
Decisions about agricultural production	Inputs in productive decisions	1/12	4 out of 11 questions
	Autonomy in production	1/12	1 out of 4 questions
Decisions related to nutrition	Inputs in nutrition decisions	1/12	3 out of 8 questions
	Autonomy in nutrition	1/12	1 out of 3 questions
Access to and control over resources	Ownership and control over livestock assets	1/18	2 out of 7 questions
	Ownership of land and crop assets	1/18	2 out of 7 questions
	Credit access	1/18	1 out of 1 question
Control over and use of income	Control over farm income	1/18	3 out of 8 questions
	Control over non-farm income	1/18	3 out of 8 questions
	Control over expenses	1/18	1 out of 4 questions
Access to and control over opportunities	Access to markets	1/18	2 out of 7 questions
	Access to non-farm income opportunities	1/18	2 out of 5 questions
	Access to training, information and group activities	1/18	1 out of 2 questions
Extent of and control over work time	Total workload	1/18	≥ 10.5 h/d
	Proportion of revenue generating workload	1/18	> 20 %
	Control over own time	1/18	6 out of 17 questions

TABLE 2  
Sources of livelihood of sample respondent households

Particulars	Unit in numbers			
	WDC (n=100)	GDC (n=100)	Private (n=40)	Total (n=240)
<i>Primary</i>				
Crop production	48 (48.00)	22 (22.00)	8 (20.00)	78 (32.50)
Dairy	21 (21.00)	30 (30.00)	15 (37.50)	66 (27.50)
Agri. Labour	17 (17.00)	21 (21.00)	10 (25.00)	48 (20.00)
Sericulture	12 (12.00)	19 (19.00)	6 (15.00)	37 (15.42)
Others	2 (2.00)	8 (8.00)	1 (2.50)	11 (4.58)
<i>Secondary</i>				
Crop production	21 (21.00)	36 (36.00)	9 (22.50)	66 (27.50)
Dairy	72 (72.00)	61 (61.00)	29 (72.50)	162 (67.50)
Agri. Labour	0 (0.00)	2 (2.00)	1 (2.50)	3 (1.25)
Sericulture	4 (4.00)	0 (0.00)	0 (0.00)	4 (1.67)
Others	3 (3.00)	1 (1.00)	1 (2.50)	5 (2.08)

Figures in parentheses indicate percentage to total sample respondents

TABLE 3  
Details of livestock possessed by dairy farmers

Type of animal	WDC (n=100)		GDC (n=100)		Private (n=40)	
	No. of animals	% of farmer	No. of animals	% of farmer	No. of animals	% of farmer
Indigenous Cows	39 (4.51)	31	32 (3.22)	20	9 (2.63)	12.50
Crossbred Cows	357 (41.32)	100	384 (38.59)	100	164 (47.95)	100.0
Buffaloes	24 (2.77)	15	18 (1.81)	10	10 (2.92)	17.50
Sheep	180 (20.83)	33	307 (30.85)	41	73 (21.34)	30.00
Goats	71 (8.22)	20	82 (8.24)	10	26 (7.60)	22.50
Poultry	193 (22.34)	25	172 (17.29)	32	60 (17.54)	22.50
Total	864 (100.00)		995 (100.00)		342 (100.00)	

Figures in parentheses indicate percentage to total livestock

(varying from 61 to 72.50 per cent of total sample respondents, respectively). The crop production stood at second place in secondary sources of income with 21, 36 and 22.50 per cent of total sample respondents across WDC, GDC and PS, respectively.

Table 3 represents the livestock possession of sample respondents across selected groups. The percentage of indigenous cows and buffaloes to total livestock varied from 2.63 per cent to 4.51 per cent and 1.81 per cent to 2.92 per cent, respectively, across selected groups. The percentage of farmers owning indigenous cows was 31, 20 and 12.5 in WDC, GDC and PS, respectively. The number of crossbred cows possessed by WDC, GDC and PS respondents was 357, 384 and 164 with average size of 3.57, 3.84 and 4.10, respectively. The sheep and poultry strength was notable with dairy farmers.

### Women Empowerment

The percentage of rural women achieving empowerment status in WDCs, GDCs and PSs are presented in Table 4. The results showed that empowerment of rural women of WDCs was highest (64 per cent) followed by rural women of GDCs (54 per cent) and PSs (51 per cent).

The percentage of rural women providing adequate inputs in productive decisions was found higher in WDCs (62 per cent), followed by PSs (43 per cent),

and GDCs (41 per cent). With respect to autonomy in production, the empowerment level achieved by women respondents of WDCs, GDCs and PSs are 79, 80 and 75 per cent, respectively. With respect to women providing adequate inputs in nutrition decisions, the WDCs had the highest percentage of women involved in decision making (67 per cent), followed by PSs (75 per cent) and GDCs (72 per cent). In relation to autonomy in nutrition, the decision by women varied from 80 to 90 per cent among selected groups. The women empowered are more in case of ownership and control over livestock assets (72, 53 and 58 per cent in WDCs, GDC's and PSs, respectively) compared to ownership of land and crop assets (36, 28 and 28 per cent in WDC's, GDC's and PS's, respectively).

The involvement of rural women in decision making relating to credit access are at 58, 40 and 23 per cent in case of WDC's, GDC's and PS's, respectively. With respect to control and use of income, 54 per cent of rural women had control in WDC's, followed by PS's (44 per cent) and GDC's (39 per cent). The decisions taken by rural women in access to market are 79, 39 and 40 per cent for WDC's, GDC's and PS's, respectively. Ninety four per cent and 93 per cent of rural women belonging to WDCs and GDCs, respectively participated in training or possessed membership of any group / organisation like SHGs or involved in both.

TABLE 4  
Percentage of women respondents achieving empowerment in cooperatives and private markets

Dimension	Indicator	WDCs	GDCs	PSs
Decisions about agricultural production	Inputs in productive decisions	62	41	43
	Autonomy in production	79	80	75
	Overall	71	61	59
Decisions related to nutrition	Inputs in nutrition decisions	77	72	75
	Autonomy in nutrition	90	80	80
	Overall	84	76	78
Access to and control over resources	Ownership and control over livestock assets	72	53	58
	Ownership of land and crop assets	36	28	28
	Credit access	58	40	23
	Overall	55	40	36
Control over and use of income	Control over farm income	68	43	45
	Control over non-farm income	16	22	20
	Control over expenses	78	51	58
	Overall	54	39	44
Access to and control over opportunities	Access to markets	79	39	40
	Access to non-farm income opportunities	9	9	10
	Access to training, information & group activities	94	93	68
	Overall	61	47	39
Extent of and control over work time	Total workload	53	56	55
	Proportion of revenue generating workload	60	48	45
	Control over own time	75	70	63
	Overall	63	58	54
Overall empowerment		64	54	51

Access to non-farm income opportunities and its income was low across all the selected groups. PS's access to training, information and group participation were about 68 per cent, which was lower than respondents of WDC and GDC *i.e.*, 94 and 93 per cent, respectively. The percentage of rural women whose workload was lesser than or equal to 10.5 hours per day was around 55 per cent across the selected groups. The rural women involved in more than 20 per cent of workload for revenue generating was higher

in WDCs (60 per cent), followed by GDC's (48 per cent) and PS's (45 per cent). Similar findings were found in the study of Kumari and Malhotra (2019). The results related to decision making was contradictory to findings of Dohmworth (2014).

Table 5 presents the weights of indicators and dimensions in deciding WELI across the selected groups. Decisions related to nutrition and decisions about agricultural production were found to be

TABLE 5

Weights of indicators and dimensions contributing to the WELI in cooperatives and private markets

Indicators	WDCs	GDCs	PSs
Inputs in productive decisions	0.05	0.03	0.04
Autonomy in production	0.07	0.07	0.06
Decisions about agricultural production	0.12 (18.32)	0.10 (18.88)	0.09 (18.00)
Inputs in nutrition decisions	0.06	0.06	0.07
Autonomy in nutrition	0.08	0.07	0.07
Decisions related to nutrition	0.14 (21.58)	0.13 (23.74)	0.13 (26.03)
Ownership and control over livestock assets	0.04	0.03	0.04
Ownership of land and crop assets	0.02	0.02	0.01
Credit access	0.03	0.02	0.01
Access to and control over resources	0.09 (14.29)	0.07 (12.52)	0.06 (11.94)
Control over farm income	0.04	0.02	0.03
Control over non-farm income	0.01	0.01	0.01
Control over expenses	0.04	0.03	0.03
Control and use of income	0.09 (13.98)	0.06 (11.96)	0.07 (14.48)
Access to markets	0.04	0.02	0.02
Access to non-farm income opportunities	0.01	0.01	0.01
Access to training, information and group activities	0.05	0.05	0.04
Access to and control over opportunities	0.10 (15.68)	0.08 (14.77)	0.06 (11.94)
Total workload	0.03	0.03	0.03
Proportion of revenue generating workload	0.03	0.03	0.03
Control over own time	0.04	0.04	0.04
Extent of and control over work time	0.10 (16.15)	0.10 (18.13)	0.09 (17.61)
WELI	0.64 (100.00)	0.54 (100.00)	0.51 (100.00)

Figures in parentheses indicate percentage to WELI, WELI range is 0.00-1.00

important dimensions which were contributing on higher side of WELI at around 40 per cent of selected groups. Control and use of income dimension were found to be contributing least in case of WDC's and GDC's *i.e.*, 13.98 and 11.96 per cent, respectively. Whereas, access to and control of resources (11.94 per cent) was least in private markets. The WELI was found to be 0.64, 0.54 and 0.51 for WDC's, GDC's and PS's respectively. The percentages of sample rural women of WDC's, GDC's and PS's with WELI score bands are depicted in Fig. 1. With respect to WDC's, 43 per cent of sample respondents were in between 0.61-0.80 WELI score band, followed by 26 per cent (0.81-1.00), 16 per cent (0.21-0.40), 14 per cent (0.41-0.60) and 1 per cent (0-0.20). Fifty five per cent of sample rural women were found in between 0.21-0.60 score band for GDC's and PS's.

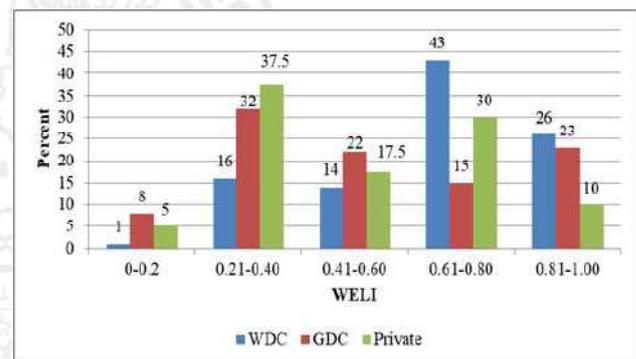


Fig. 1 : Percentage of sample rural women within WELI score bands (n=100 in case of WDCs and GDCs, n=40 in case of PSs)

Table 6 shows the WELI of major groups of respondents in various herd size categories. A greater value of WELI indicated a higher level of empowerment. The WELI for small (1-3 animals), medium (4-5 animals) and large (6 or more animals) dairy farmers were 0.63, 0.65 and 0.68 for the WDC group, 0.51, 0.54 and 0.57 for the GDC group and 0.47, 0.52 and 0.53 for the PS group, respectively. The herd size categories were shown to be positively linked with the WELI score. Thus, the women were more empowered with increase in herd size by getting additional responsibilities in care and maintenance of livestock.

TABLE 6  
WELI across different herd size categories for  
WDC, GDC and PS women respondents

Indicators	WDC	GDC	PS
Small	0.63	0.51	0.47
Medium	0.65	0.54	0.52
Large	0.68	0.57	0.53
Overall	0.64	0.54	0.51

From the Table 4, Table 5 and Table 6, it is evident that members of WDCs had a higher level of empowerment, as shown by the values of the empowerment index. The rural women of WDC's were found to be highly empowered due to the influence of involvement in the cooperatives. The WDC's were successful in bringing more women under single platform, which not only led to increase in their social participation but also in developing drives, initiatives and leadership qualities. As a result, it could be stated that WDC's played a significant influence in improving women's socio-economic status and thus make them empowered. This result is in line with the findings of the study by Kumari and Malhotra (2019), Kochar and Kaur (2015) and Makarabbi *et al.* (2017). Kumari and Malhotra (2019) based on their study results stated that cooperatives have the ability to improve the socio economic conditions of their female members and increase in empowerment level with increase in herd size. Study by Kochar and Kaur (2015), concluded that the women found improvement in their decision making ability, financial conditions and communication skills after becoming members of WDC and taking up dairy activity. Makarabbi *et al.*, 2017, assessed the empowerment of the women members through Women Dairy Self Help Groups (WDSHG) and found that WDSHG members had reached a higher level of empowerment than non-members.

Dairy farming was a major supplemental income activity for the sample respondent households across selected groups. The dairy farmers possessed more of crossbred cows than indigenous cows.

Private sellers' access to training, information and group participation was lower compared to that of women involved in dairy cooperatives. The Women's Empowerment in Livestock Index, which indicates the empowerment achieved due to membership in WDC's, was found to be more than that in GDC's indicating a positive impact of WDCs in influencing the empowerment of rural women. Hence, there is a need to bring more rural women under one platform to increase their social participation and uplift them. Decisions related to nutrition and decisions about agricultural operations were found to be the most important dimensions in contributing towards women empowerment across the selected groups. The rural women were found to be more empowered in control of livestock assets while the empowerment was lower in control of crop assets due to workload of domestic and livestock maintenance. The herd size categories were positively linked with the WELI score. Thus, the women were more empowered with increase in herd size by getting additional responsibilities in care and maintenance of livestock. For further empowerment of rural women, the existing policies of encouraging rural women for self-employment need to be strengthened and implemented in letter and spirit.

#### REFERENCES

- DOHMWIRTH, C., 2014, The impact of dairy cooperatives on the economic empowerment of rural women in Karnataka. Masters' Thesis, joint academic degree from Ghent University, Belgium, Agrocampus Ovest, France, Humboldt University of Berlin, Germany., Slovak University of Agriculture in Nitra, Slovakia and University of Pisa, Italy in collaboration with Wageningen University, The Netherlands.
- GALIE, A., TEUFEL, N., KORIR, L., BALTENWECK, I., GIRARD, A. W., SALAS, P. D. AND YOUNT, K. M., 2019, The women's empowerment in livestock index. *Soc. Indic. Res.*, **142** : 799 - 825
- JYOTHI, B. V. AND KRUPALINI, H. S., 2019, An analysis of STEP and its impact on women milk producers

in Karnataka. *International Journal of Applied Research*, **5** (7): 161 - 163.

KOCHAR, G. AND KAUR, S., 2015, Impact of women dairy co-operative societies on empowerment of women members. *International Journal of Home Science Extension and Communication Management*, **2** (2): 84 - 89.

KUMARI, B. AND MALHOTRA, R., 2019, Socio-economic empowerment of women through women dairy cooperatives : A study of Begusari district of Bihar. *Indian Journal of Economics and Development*, **15** (1): 91 - 97.

MAKARABBI, G., 2017, Economic analysis of women dairy self help groups in Belagavi district of Karnataka. *Master's Thesis*, National Dairy Research Unit (NDRI), Karnal, Haryana, India.

NIKETHA, L., SANKHALA, G., PRASAD, K. AND KUMAR, S., 2017, Empowerment of women through dairy co-operatives in Karnataka, India. *International Journal of Current Microbiology and Applied Science*, **6** (7): 1292 - 1304.

SHIVAGANGAVVA, P. D., MAHADEVAIAH, G. S. AND NAGARAJ, G. N., 2019, Economics of milk production *vis-a-vis* marketing channels - A study in the northern transect of Bengaluru district, Karnataka. *Mysore J. Agric. Sci.*, **52** (3) : 486 - 492.

VEERESH, K. AND CHINNAPPAREDDY, B. V., 2018, Economic efficiency of dairy farms in Bengaluru Rural area : A stochastic frontier production approach. *Mysore J. Agric. Sci.*, **52** (4) : 663 - 668.

(Received : August 2021 Accepted : January 2022)