

Time Utilization Pattern of Tribal Women in Animal Husbandry

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ABSTRACT

The study was conducted in two tribal development blocks of two districts of Assam namely Kamrup and Lakhimpur. Data were collected from 348 tribal women by a pre-designed interview schedule. Different socio-personal characteristics showed that most of the tribal women were in older age group, belonged to nuclear and not heading the family, illiterate and rearing smaller herd/flock size. Time spent pattern of the tribal women in various animal husbandry operations in descending order, were preparing feed for animals (29.33 minutes), providing water to the animals (21.24 minutes), cleaning animal shed (20.42 minutes), grazing animals (19.28 minutes), milking (18.06 minutes), cutting and bringing fodder (16.39 minutes). The study also revealed that most of the animal husbandry operations were female dominated as compared to their male partners. Regression analysis proved that family educational status, flock size (sheep/goat) and age of the tribal women were highly correlated with time spent on animal husbandry operation. Similarly, regression analysis indicates herd size and family education had influence of 18 per cent with the time spent behaviour of tribal women.

Key words : Tribal women; Animal Husbandry; Time spent;

Time is a unique and valuable resource. Rural women spend a lot of time not only in managing their homes but also managing their farms and animals, but most of the time their contribution remains unrecognized. *Srivastava (1985)* stated that all farm women irrespective of land status of their family provide 14-18 hours of productive physical labour in different chores, thus depicting the load of drudgery shouldered by them in day-to-day activities. According to the 2001 census of India, about 74% of women were involved in agriculture and allied activities out of a total female working population (*Anonymous, 2005*). The data show that there was a sharp decline of 11% of women in the agriculture sector in comparison to the 1991 census. But, agriculture in India is still a family enterprise where the family participates as a unit and the share of women is half of the human resource in farming. The social, economic and cultural conditions of the area determine women's participation in home and farm activities. It also varies from region to region and within a region, their involvement varies among different farming

systems, castes, classes and socio-economic status (*Swaminathan, 1985*). Therefore, an attempt was made to know the time spent pattern of tribal women in animal husbandry operation.

METHODOLOGY

The study was conducted in two districts of Assam namely Lakhimpur and Kamrup. Two blocks from the list of tribal development blocks of each district were selected viz. Rani and Boko from Kamrup district and Lakhimpur and Boginodi from Lakhimpur district for the present study. Similarly from village list of each selected blocks, two were selected randomly for the study purpose. All the tribal women whose main occupation was farming under the selected villages were taken as respondents making total sample of 348. Few independent variables namely age, family size, annual income and herd size were selected along with the dependent variable i.e. time spent of tribal women in animal husbandry practices. The data were collected through interview using 24 hours recall method.

Statistical methods used for drawing inferences were percentile, frequency, mean, SD, t-test, Pearson’s correlation (r) and regression analysis.

RESULTS AND DISCUSSION

Profile of tribal farm women

Age: Table 1 reveals that majority of the respondents varies from younger to middle age group in Boko, Lakhimpur, respectively whereas in Rani and Boginodi majority of the respondents are belonged to older age group. However, in pooled sample maximum respondents were from older age group.

Respondents position in the family : Respondents position was estimated in terms of either head or others and the results revealed that more than 80 per cent women were not heading the family. However, the Table 1 indicates, women belonged to Boko block were heading more family than other blocks.

Family size : The Table 1 also reveals that different category of family size differs in different area. In Boko and Rani blocks, majority of the respondents were having small family size whereas in Lakhimpur block, majority were of larger family size. However, in Boginodi blocks family size varies from medium to small.

Table 1. Distribution of respondents according to different independent variables

Parameters	Area	Category			
		<i>Young (17-34)</i>	<i>Middle (35-40)</i>	<i>Old (> 40)</i>	
<i>Age</i>	Boko	44 (46.32)	27 (28.42)	24 (25.26)	
	Rani	26 (28.26)	28 (30.43)	38 (41.30)	
	Lakhimpur	20 (24.69)	36 (44.44)	25 (30.86)	
	Boginodi	5 (6.25)	30 (37.50)	45 (56.25)	
	Pooled	95 (27.29)	121 (34.77)	132 (37.93)	
	<i>Position in the family</i>		<i>Head</i>	<i>Other</i>	
		Boko	28 (29.47)	67 (70.53)	
		Rani	16 (17.39)	76 (82.61)	
		Lakhimpur	5 (1.17)	76 (93.83)	
		Boginodi	15 (18.75)	65 (81.25)	
Pooled		64 (18.39)	284 (81.61)		
<i>Family size</i>			<i>Small (< 5)</i>	<i>Medium (5-7)</i>	<i>Large (>7)</i>
		Boko	60 (63.16)	31 (37.63)	4 (4.21)
		Rani	46 (50.00)	20 (21.74)	26 (28.26)
		Lakhimpur	11 (13.58)	25 (30.86)	45 (55.56)
	Boginodi	35 (43.75)	40 (50.00)	5 (6.25)	
	Pooled	152 (43.68)	116 (33.33)	80 (22.99)	
	<i>Family type</i>		<i>Nuclear</i>	<i>Joint</i>	
		Boko	79 (83.16)	16 (16.84)	
		Rani	59 (64.13)	33 (35.87)	
		Lakhimpur	47 (57.30)	34 (41.50)	
Boginodi		70 (87.50)	10 (12.50)		
Pooled		225 (73.27)	93 (26.72)		
<i>Sub-tribe</i>		<i>Area</i>	<i>Mishing</i>	<i>Bodo</i>	<i>Sonowal</i>
		Boko	0	40 (42.11)	0 (0.00)
		Rani	0	45 (48.91)	0 (0.00)
		Lakhimpur	36 (43.90)	45 (54.90)	0 (0.00)
	Boginodi	0 (0.00)	0 (0.00)	45 (56.30)	
	Pooled	36 (43.90)	130 (37.36)	45 (12.90)	

Table No 1 continued :

<i>Herd size</i>		<i>Low (≤ 33)</i>	<i>Medium (34-48)</i>	<i>High (>48)</i>				
<i>Cattle / buffalo</i>	Boko	52 (54.74)	32 (33.68)	11 (11.58)				
	Rani	35 (38.04)	39 (42.39)	18 (19.57)				
	Lakhimpur	47 (58.02)	24 (29.63)	10 (12.35)				
	Boginodi	40 (50.00)	20 (25.00)	20 (25.00)				
	Pooled	174 (50.00)	115 (33.05)	59 (16.95)				
<i>Sheep / goat</i>			<i>Small (≤ 3)</i>	<i>Medium (4-5)</i>	<i>Large (>5)</i>			
	Boko	52 (54.74)	4 (4.21)	39 (41.05)				
	Rani	62 (67.39)	4 (4.35)	26 (28.26)				
	Lakhimpur	80 (98.77)	1 (1.23)	0 (0.00)				
	Boginodi	60 (75.00)	5 (6.25)	15 (18.75)				
<i>Pig</i>			<i>1 no.</i>	<i>2 nos.</i>	<i>> 2 nos.</i>			
	Boko	67 (70.50)	8 (8.42)	20 (21.05)				
	Rani	50 (54.35)	24 (26.09)	18 (19.57)				
	Lakhimpur	49 (60.49)	15 (18.52)	17 (20.99)				
	Boginodi	30 (37.50)	30 (37.50)	20 (25.00)				
<i>Sub-tribe</i>			<i>Mishing</i>	<i>Bodo</i>	<i>Sonowal</i>	<i>Hajong</i>	<i>Rabha</i>	
	Boko	0	40 (42.11)	0 (0.00)	0 (0.00)	55 (57.89)		
	Rani	0	45 (48.91)	0 (0.00)	0 (0.00)	47 (51.09)		
	Lakhimpur	36 (43.90)	45 (54.90)	0 (0.00)	0 (0.00)	0 (0.00)		
	Boginodi	0 (0.00)	0 (0.00)	45 (56.30)	35 (43.80)	0 (0.00)		
<i>Respondents education</i>			<i>Can read</i>	<i>Upto IV</i>	<i>Upto X</i>	<i>< graduate</i>		
	Boko	35 (36.84)	12 (12.60)	24 (25.30)	20 (21.10)	4 (4.20)		
	Rani	25 (27.17)	8 (8.70)	28 (30.40)	26 (28.30)	5 (5.40)		
	Lakhimpur	34 (41.98)	5 (6.17)	16 (19.75)	11 (13.58)	15 (18.52)		
	Boginodi	45 (56.25)	20 (25.00)	10 (12.50)	5 (6.25)	0 (0.00)		
	Pooled	139 (39.94)	45 (12.93)	78 (22.41)	62 (17.82)	24 (6.89)		

Family type : Irrespective of blocks, majority of the respondents were belonged to nuclear family

Herd size: Table 1 indicated that the respondents of Rani block maintains a medium herd size (42.39 %). But in other blocks viz. Boko, Lakhimpur and Boginodi block more than 50 percent of the respondents reared smaller herd size in respect of their cattle / buffalo possession. In respect of flock size (sheep/Goat), though the ranges vary from 0 to 13 numbers, most of the families (72.99 %) reared smaller flock size as evident from the pooled data. Majority of the respondents except in Boginodi block, rear only 1 number of pigs. In case of Boginodi block, equal per cent respondents (37.50%) rear 1 and 2 nos. of pigs

Sub-tribes (communities) : A perusal of the Table 1 indicates that the different blocks dominated by different tribal communities. In Boko and Rani blocks, dominant sub-tribes were Bodo and Rabha whereas Mishing and Boro sub-tribe inhibit Lakhimpur block. But the Sonowal and Hajong sub-tribes were found only in Boginodi blocks.

Respondent's education: Majority of the respondents of Boko and Lakhimpur and Boginodi were illiterate with 36.48 , 41.98 and highest 56.25 per cent, respectively. Whereas, in Rani block as high as 30.4 per cent respondents had reached up to primary school followed by 28.3 per cent of respondents who could reach high school level.

Table 2. Time spent pattern of farm women in different animal husbandry operation

S. N	Activity	Boko			Rani			Lakhimpur			Boginodi			Pooled		
		Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
1	Cultivation of fodder and forage	4.63	9.88	0-30	6.52	12.44	0-30	0	0	0-0	1.87	7.31	0-30	3.42	9.24	0-30
2	Cutting and bring	6.73	10.26	0-30	9.19	19.49	0-60	18.31	18.31	0-60	34.37	22.49	0-60	16.39	20.99	0-60
3	Preparing feed for animals	18.11	15.73	0-60	27.34	27.09	0-120	24.58	24.58	0-60	36.25	19.12	0-60	29.33	23.37	0-120
4	Grazing animals	15.84	21.91	0-90	8.48	14.22	0-90	22.6	22.6	0-60	23.75	18.1	0-60	19.28	21.15	0-90
5	Healthcare of animals/breeding	14.63	8.67	0-30	8.42	9.89	0-30	8.77	8.77	0-30	13.75	15.46	0-60	12.47	11.14	0-60
6	Providing water to the animals	20.23	13.86	3-50	18.86	16.22	0-60	10.16	10.16	0-30	24.06	8.99	14-30	21.24	12.92	0-60
7	Cleaning animals	19.26	15.07	0-60	12.07	10.48	0-60	10.52	10.52	0-30	8.44	9.34	0-30	13.48	12.31	0-60
8	Cleaning animal shed	17.79	9.36	5-40	17.39	10.88	0-40	10.08	10.08	0-30	25.94	14.8	5-60	20.42	11.82	0-60
9	Milking	13.58	15.22	0-60	16.41	12.34	0-60	10.93	10.93	0-30	21.5	12.79	0-45	18.06	13.41	0-60
10	Cleaning the utensils	8.74	4.43	0-20	8.53	4.6	0-20	3.13	3.13	0-10	7.81	3.97	0-15	8.06	4.15	0-20
11	Collection of eggs	4.62	2.76	0-10	4.11	2.97	0-10	2.88	2.88	0-10	6.06	4.65	0-20	4.83	3.42	0-20
12	Selling eggs and milk and other farm products	6.32	7	0-30	3.64	3.82	0-15	2.27	2.27	0-10	5.63	4.58	0-20	4.87	4.94	0-30
13	Bring animal feeds	7.38	9.08	0-30	7.07	13.33	0-60	4.31	4.31	0-15	11.88	12.94	0-30	7.01	11.1	0-60
14	Maintaining poultry/duck products	14.74	13.98	0-60	10.14	11.09	0-50	15.65	15.65	0-71	15.31	7.85	0-30	14.63	12.87	0-71
	Total	162.15	59.43	65-270	166.43	86.19	55-415	230.83	84.90	0-295	232.31	92.40	60-390	191.44	86.10	0-415

Time spent on animal husbandry operation:
 A perusal of the Table 2 reveals that the average time spent by the respondents in cultivation of fodder and forage by the tribal farm women of Boko, Rani and Boginodi were 4.63, 6.52 and 1.87 minutes, respectively. Interestingly farm women of Lakhimpur block did not spent time for this activity indicated the practice was not a job for women in this block. Similarly, in case of cutting and bringing fodder 6.73, 9.19, 18.15 and 34.37 minutes spent by the farm women. In case of preparing feed for animals the pooled data shows that on an average, the respondents spent 29.33 minutes. In this aspect, women from Lakhimpur spent more time than other block's women. Similarly women from Lakhimpur block spent more time in grazing than other block's women. The breeding and health care of the animals received almost similar pattern of time spent by all the respondents in all areas. Providing water to the animal differs slightly among the respondents of different areas. Average time spent on providing water to the animals was 21.24 minutes.

In case of cleaning animals, the respondents of Boginodi block spent minimum time i.e. 8.44 minutes whereas respondents of Boko block spent maximum time (19.26 minutes). The mean time spent for the activity was 13.48 minutes. Time spent on cleaning of animals shed was similar in case of Boko and Rani block which was about 17.5 minutes. However, maximum time spent by women belonged to Boginodi block. But *Kanwar et al (2003)* reported much more time (2.20 hrs) spent by the farm women regarding management of animal shed.

Milking of the animal was found to be another important activity where most of the women participated. Tribal women from Boginodi and Lakhimpur area spent about 21.5 minutes whereas women from other two blocks spent little lesser time

(about 13.5 minutes). In respect of cleaning utensils, collection of eggs and selling of eggs women spent negligible time irrespective of area. It is might be due to less time involvement and irregularities of these activities. Similar was the case in case of chicken / duck rearing. The Table also reveals that respondents of Boginodi area spent maximum time 11.88 minutes in bringing animal feed from different sources, followed by respondents of Boko (7.38 minutes).

Comparison of time spent by female and male respondents in different animal husbandry activities: The time spent in animal rearing is an activity where both the sexes of a family participate in complementary fashion as exist in agricultural operation. The Table 3 depicts the pattern of time spent by tribal women and their counter folk. A perusal on the Table 3 indicates that different aspects viz. cutting fodder and bring fodder, grazing of animals, breeding/health care, cleaning of animals and selling of different

Table 3. Comparison of time spent (minutes) by female and male respondents in different animal husbandry activities

S. No.	Activity	Mean time spent by		
		Female	Male	't' value
1.	Cultivation of fodder and forage	3.42	15.26	2.66**
2.	Cutting and bring fodder	16.39	17.19	1.65
3.	Preparing feed for animals	29.33	1.37	4.79**
4.	Grazing animals	19.28	19.20	1.70
5.	Healthcare of animals/breeding	12.47	13.59	1.29
6.	Providing water to the animals	21.24	12.11	1.95*
7.	Cleaning animals	13.48	12.42	1.65
8.	Cleaning animal shed	20.42	5.73	2.59**
9.	Milking	18.06	10.27	1.73*
10.	Cleaning the utensils	8.06	1.13	2.53**
11.	Collection of eggs	4.83	2.20	1.79*
12.	Selling eggs, milk and other farm products	4.87	5.37	1.75
13.	Bring animal feeds	7.06	18.91	3.61**
14.	Maintaining poultry/duck products	14.63	1.72	5.25**
	Total	191.34	136.47	2.10*

farm products; almost equal share was contributed by both the sexes in terms of their time spent and no significance difference was observed between the pairs. Findings particularly in respect of cleaning animals and selling of animal products were very similar to the findings of *Saikia (1986)*. Contrary to this, *Waghmare (1989)* stated that tribal women mostly perform poultry keeping and maintenance activities.

However, a significance difference between tribal women and their counterpart in terms of their time spent was observed in many farm operation namely cultivation of fodder, preparation of animal food, providing water, cleaning animal shed, milking, cleaning the utensils, collection of eggs and bring animal feeds. Of these activities except cultivation of fodder and forage and bring animal feeds, women spent more time in all other activities. It is obvious that for cultivation of fodder, male have to devote more time on tilling the soil indicating male dominating activity as stated by *Varma (1992)*.

The Table 3 concluded that female spent more time then their male counterpart and their contribution differs significantly. *Mishra et al (2008)* revealed in their study that female's participation was more in cleaning of shed, feeding, milking and health care than male. In contrast to all these finding, *Annual Report 2004-2005*, of National Research Centre for women in Agriculture, Bhubaneswar revealed that In livestock owning households that account for 77% of sample households, participation of men in livestock related activities were found to be more than that of women. This finding contradicts the normally accepted hypothesis that participation of women in livestock related activities was more. Importantly, it was the elderly male member of the household or old man that takes care of the livestock, particularly cattle. Hence it is the family structure and the type of household that decides the gender participation in livestock.

Relationship between different independent characteristics and time spent of women in various animal husbandry activities: Pearson's product moment correlation (r) multiple regressions and t-test were carried out to establish whether any relationship exists between dependent and independent variable and

Table 4. Pearson moment correlation between time spent and socio-personal characteristics

S. No.	Parameters	Mean time spent (r value)
1	Age	0.164**
2	Family size	0.065
3	Family type	0.009
4	Sub-tribe	-0.067
5	Respondents education	-0.246
6	Family education	0.166**
6	Cattle & buffalo	0.102
7	Sheep / Goat	0.162**
8	Pig	0.232**

Table 5. Regression analysis (Variables in the equation)

Variable	B	SE B	Beta
Respondents education	-15.579	3.068	-0.250
Family educational status	19.816	4.877	0.205
Flock size (Sheep/Goat)	-7.955	1.790	-0.223
Herd size (Pig)	13.987	3.089	0.226
Constant	156.087	12.418	
<i>Variables not in the equation</i>			
Variable	B	SE B	Beta
Age	0.029	0.029	0.783
Family size	0.010	0.011	0.884
Family type	-0.005	-0.005	0.860
Sub-tribe	-0.019	-0.019	0.849
Multiple R : 0.429,	R ² : 0.184,		
	F : 19.352,		

depicted in the Table 4 and 5. Age was found to be significantly correlated with time spent in animal husbandry practices (0.16). *Borghain (1993)* reported similar finding. According to his finding, with the increase of age, time devotion in animal husbandry practices increase. The observation was also similar to that of findings reported by *Goyal and Sharma (1992)* and *Kanwar et al (2003)*.

A highly significant relationship was observed between respondent's education and their time spent in

animal husbandry activities, meaning that with the increase of educational level the tribal women less and less time in animal related activities which is an obvious explanation in this regard.

In respect of herd / flock size, only sheep/goat and pig possession were found highly correlated with time spent. The possible explanation may be due to the tribal population use to rear pigs as a traditional activity and the entire responsibility lies on women head for their look after. Therefore as the number of pigs increases, women role and their performance increase. Similar finding was also reported by *Malik (1997)* and *Bora (1999)* in role performance. Similar is the case of small ruminants. The respondents were found to have no relation with time spent were family size, family type, sub-tribe, family educational status.

Regression analysis: Of the nine variables that put for regression analysis, only four variables viz. respondents education, family education, herd size (goat) and herd size (pig) were found to be in equation. Respondent's education was found to be negatively significant with time spent. The finding was in contrary to the finding of *Borghain (1993)*. But the herd size (pig) and family education status found to be highly significant as 'F' value for 'R' was very high (19.35) indicating both the factors had influence 18 per cent with the time spent for animal husbandry operation.

CONCLUSION

Women plays pivotal role in agriculture as a whole and animal husbandry in particular. Women's contributions in few animal husbandry activities were more prominent than their male counterpart. Therefore, it can be said that success of livestock enterprise depends on both male and women farmers and any approach for upliftment of livestock demands to focus both the sexes.

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