

Participation of Women in Commercialised Agriculture and Its Effect on Time Allocation Pattern

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KEY WORDS Agriculture. Commercialisation. Women. Time.

ABSTRACT Women's participation in commercialised agriculture has become a reality. Since, Women's heavy work load and worktime are seen as crucial factors in determining their own and family nutrition the present study was undertaken to measure the effect of time allocation pattern of farm women. The study covered a random population of 285 households from Bangalore rural district in Karnataka. Two hundred and eighty five women were selected representing from three different farming groups viz. Commercial group with irrigation (CG-I), without irrigation (CG-WI) and subsistence group (SG). Also based on the nature, type and duration of the work that women were engaged in they were classified into three groups viz. employed women (EW), partially employed women (PEW) and unemployed women (UEW) so as to assess the impact of total working hours spent in agriculture related activities and other household tasks particularly child care. Results of the study indicated that time allocation pattern of women for both agriculture and household related activities were found to be similar in all the farming groups. The characteristic feature appeared to be that time was spent by women of all farming groups on personal care less rest and recreation with no difference in the net total time spent in child care activities. However, by the criteria of work status there appeared to be a significant decrease in child care activities in case of employed women belonging to different farming groups.

INTRODUCTION

Women constitute almost half of the agricultural labour force and contribute more towards family income (Sahn, 1990 and Bajaj, 1989). While women's employment has been reported to have improved the household nutrition there is an apprehension that women's employment may have detrimental effects on child feeding and care. Also any system involving women in income generating activities to alleviate poverty of households may have to focus on health and nutrition of women and children (Lukmanji, 1992).

The common assumption in commercial agriculture is that a rise in income accompanying

the adoption of commercial production will automatically lead to improved nutrition (Biswas, 1979). However additional demands of labour generally calls for women's participation which in turn may divert their time from other household activities. It is emphasised that mothers increased time allocation for family activities may reduce both the time spent in child care activities and household food preparation (Senaur, 1988) which may also affect the nutritive value and aesthetic quality of the meal (Smith, 1986).

It is a widely accepted fact that the working status of the mother plays an important role in determining the health and nutritional status of the children. (Lukmanji, 92; Popkin, 1980; Carloni, 1984 and Chaudhury, 1986). However research has not provided clear evidence that children of working mothers have lower nutritional status than those of mothers who do not work outside the home (Sahn, 1990). Therefore it is opined that increasing commercialisation of agriculture consequently influences the time women allocate to child care and other activities that have either direct or an indirect bearing on the health and nutritional status.

Commercialisation of subsistence agriculture and participation of women in such changing farming systems have become a reality. Since the effect of changing farming systems on the allocation of women's time particularly to child care activities is of concern, time allocation pattern of mothers has to be evaluated. Therefore the specific objective of this study was to determine the time allocation of mothers in household related activities particularly on child care and its relationship with farming systems.

STUDY DESIGN

Study Area : The study was conducted in Devanahalli taluk in Bangalore rural district in the state of Karnataka, India. The area was selected

as it has resource potential for cash crop production. The taluk has gone into both traditional and commercial cropping. It has a slightly more number of big farmers (52%) than small farmers (48%). Ragi (*Eleusine coracane*) is the main cereal grown in a large area of 8726 hectares followed by hybrid maize (*Zea mays*) usually grown under rainfed condition. Cow pea (*Vigna catjang*) horse gram (*Dolichos biflorus*) and field bean (*Dolichos lablab*) are the important pulse crops grown in the taluk. The groundnut-oilseed crop is also grown to a large extent. Crops like vegetables, grapes and other non food crops like mulberry were the main cash crops grown in irrigated land.

Profile of the Study Villages : The study was carried out in 17 villages out of the 23 villages belonging to Bijawara mandal. The selected 17 villages were located at a distance of about 1 to 9 kms from main mandal. Cropping system included both subsistence and commercial farming in varying degrees usually in combination with wage labour. The subsistence agriculture was based on traditional cultivating practices using mostly manual labour. Ragi was the most important staple crop covering 1610 hectares of the total area under cultivation. At present the involvement in commercial agriculture appeared to be dependent on the availability of own irrigation. Hence, commercial agriculture of cash crop cultivation was found to be dominant form of land use for those with irrigation facilities in this area. The trend appeared to be towards increased production of fruits (grapes), vegetables and mulberry and also increased involvement in dairy with the introduction of Dairy Development programme.

Selection of Households : A three stage sampling procedure was adopted to select the households for the survey. In the first stage all households which had atleast one preschool child and having land holding of minimum of 0.5 acres were identified. Among these a total of 285 households were selected at random for general survey. In the second stage the selected households were further stratified into two categories based on the commercialisation index which is based on the share of income derived from the main staple crop out of the total farm net income. It was presumed that households receiving lower percentage of total farm net income from ragi

would grow higher percentage of commercial crops. Hence a cut-off level of total net farm income of 30 per cent from ragi was used as a basis of categorising these households into subsistence group (SG) and commercialised group (CG).

It was observed that among CG while a total number of 125 households had the irrigation facilities which included availability of ground water, other households (74 Nos) did not possess such facilities. Hence in the third stage the CG was further stratified into two groups (i.e., irrigated group CG-I) and without irrigated group (CG-WI). Thus in subsistence group (86 Nos) the agriculture was predominantly rainfed. However, soil type and climatic conditions were similar among these farming groups.

Also to assess the impact of total working hours spent in agriculture related activities on other household tasks particularly child care the selected mothers were classified into three groups based on the nature, type and duration of the work that they were engaged in. Mothers who were actively engaged in agricultural labour either in their own farm and/or for wages, working, atleast for a period of 8 to 10 hours in a day were grouped as employed women (EW). Women who were engaged for about 4 hours, a day in any of the agriculture related operations were classified as partially employed women (PEW). The women who were not involved in any of the agricultural activities (own farm or for wages) formed the control group defined here as unemployed women (UEW) for the purpose of comparison.

Development of Tools : Information on the time allocation pattern for women were assessed using an activity guide classifying a wide range of possible activities. The general categories included were the households chore time including child care, farming activities (own and paid labour) time spent on animal husbandry, recreation rest and sleep. The information was collected using a 24 hour recall of the prior days activities twice during the survey period. Activities and the duration of time spent upon waking up until the time mother went to sleep were recorded for different categories.

Data Computation and Statistical Analysis : The collected information on time allocation pattern using an activity guide list was consolidated

and analysed for statistical significance. Analysis of variance (one way ANOVA) was applied to find out the difference in time allocation pattern of women between farming groups and between different work status.

RESULTS AND DISCUSSION

Time allocation for different daily activities by the women from the farming groups is presented in table 1. Daily household chores like food preparation, fetching water, cleaning vessels, washing clothes and collecting fuel consumed a major share of the total time. Time spent on these activities by women amounted to 293, 333 and 337 min. In families belonging to CG-I, CG-WI and SG respectively. While 'fetching the water' consumed 31, 40 and 39 min. for women in CG-I, CG-WI and SG, firewood collection' accounted for 14, 37 and 43 min for women of CG-I, CG-WI and SG respectively. Thus, women belonging to CG-WI and SG significantly spent more time in collecting firewood when compared to CG-I women since these women had to depend only on the availability of this fuel free of cost due to limited income.

The time spent on child care activities did not differ between farming groups. But time spent

on personal care differed significantly between the farming groups showing the gradient of income. Thus women in CG-I were able to spend 42 min. for personal care when compared to SG who were able to afford only 35 min. on themselves.

Significant differences were observed in the duration of time spent for recreational activities. Also, the extent of time spent for rest and sleep by women in CG-I and CG-WI was significantly lower than the time spent by women in SG. This could be related to the involvement of the farmer groups in case cropping activities.

The time spent in the farming activities was estimated to be 178 and 87 min. in CG-I and CG-WI respectively. Women in CG-WI were also found to spend a significantly higher time in raising animals for milk production. The duration of time spent in added agricultural activities was significantly higher in these groups (CG-I and CG-WI) when compared to SG. However, the involvement in paid labour among women belonging to SG families was significantly higher (160 min) followed by women in CG-WI (63 min) and least in CG-I (13 min).

Since the families belonging to CG-I had larger family size, other members in the family contributed their time in performing certain household tasks. Thus, the extent of time spent in the household activities was found to be significantly reduced in case of women in CG-I.

Time expended in child care activities was found to be low among these women irrespective of farming group they belonged to. This could be related to the fact that among these household child care was considered as a combined responsibility of the family rather than the mother alone.

The less amount of time spent on activities like personal care, childcare and the available inadequate leisure time indicated that child care, personal care and hygiene were not given the importance they deserve.

Time Allocation Pattern of Women vis-a-vis their Work Status : The comparison of mean time allocation for different activities of the women both by farming groups and their work status is presented in table 2, 3 and 4, respectively. As observed earlier, daily household chores and childcare occupied a major share of the total time spent by these women. However,

Table 1 : Mean daily time spent (min) by women for different household and farm activities

Activity (min)	Farming Group		
	CG-I	CG-WI	SG
Food preparation	136 ^a ± 78	141 ^a ± 54	146 ^a ± 60
Fetching water	31 ^a ± 30	40 ^b ± 26	39 ^b ± 26
Cleaning vessels	55 ^a ± 27	58 ^a ± 27	54 ^a ± 20
Washing clothes	57 ^a ± 29	57 ^a ± 20	55 ^a ± 24
Collecting fuel	14 ^a ± 25	37 ^b ± 35	43 ^b ± 46
Total household activities	451 ^a ± 144	493 ^b ± 125	492 ^b ± 156
Child care	117 ^a ± 72	122 ^a ± 69	120 ^a ± 98
Personal care	42 ^b ± 15	39 ^b ± 15	35 ^a ± 12
Recreation	74 ^b ± 65	52 ^a ± 62	41 ^a ± 90
Rest and sleep	639 ^b ± 174	632 ^a ± 148	684 ^b ± 171
Farm activities	178 ^a ± 208	87 ^b ± 120	24 ^a ± 88
(Own)			
Labour	13 ^a ± 70	63 ^b ± 155	160 ^c ± 218
Dairy	82 ^b ± 84	110 ^c ± 98	43 ^a ± 76
Total agriculture	273 ^b ± 219	260 ^{ab} ± 180	227 ^a ± 214

Any two means in rows carrying different Superscripts a,b,c differ significantly (P < 0.05).

the total time spent on household activities and child care was significantly higher in unemployed women (UEW) when compared to employed women (EW) and partially employed women (PEW).

Time allocation for child care activities was significantly lower in case of employed women (EW) followed by PEW irrespective of the farming group. On an average employed and partially employed women spent 71-86 min and 125 min, respectively on child care activities as against

Table 2 : Mean $\pm$ SD daily time spent (min) by women for different activities according to work status (CG-I)

Activity (min)	Employment Status		
	EW	PEW	UEW
Food preparation	108 ^a $\pm$ 77	144 ^b $\pm$ 75	166 ^b $\pm$ 67
Fetching water	30 ^a $\pm$ 27	38 ^a $\pm$ 36	27 ^a $\pm$ 29
Cleaning vessels	50 ^a $\pm$ 30	53 ^a $\pm$ 27	63 ^b $\pm$ 21
Washing clothes	53 ^a $\pm$ 31	67 ^b $\pm$ 25	56 ^a $\pm$ 27
Collecting fuel	22 ^b $\pm$ 30	14 ^b $\pm$ 24	3 ^b $\pm$ 13
Total household activities	380 ^a $\pm$ 144	484 ^b $\pm$ 166	520 ^b $\pm$ 81
Child care	82 ^a $\pm$ 49	126 ^b $\pm$ 75	156 ^c $\pm$ 72
Personal care	36 ^a $\pm$ 12	42 ^b $\pm$ 15	50 ^c $\pm$ 16
Recreation	57 ^a $\pm$ 61	68 ^b $\pm$ 58	99 ^b $\pm$ 65
Rest and sleep	544 ^a $\pm$ 137	657 ^b $\pm$ 170	750 ^c $\pm$ 146
Farm activities (own)	334 ^c $\pm$ 194	108 ^b $\pm$ 193	22 ^a $\pm$ 145
Labour	24 ^a $\pm$ 100	—	7 ^a $\pm$ 32
Dairy	92 ^b $\pm$ 92	124 ^c $\pm$ 80	41 ^a $\pm$ 52
Total agriculture activities	451 ^c $\pm$ 97	233 ^b $\pm$ 191	71 ^a $\pm$ 148

Any two means in rows carrying different Superscripts a,b,c differ significantly ($P < 0.05$).

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156-188 min. in UEW, which was significantly higher in all the farming groups. As expected women when employed (full or part time) were not able to spend more time on personal care. Therefore, the time spent was significantly less (EW) when compared to other two categories in all farming groups.

It is obvious that when women take up additional outside employment either in their own farm or engaged as hired labour, had less time at their disposal for activities like recreation and for rest and sleep. Unemployed and also partially employed women (CG-I and CG-WI) enjoyed significantly more time than employed women. However, no significant difference in the time

Table 3 : Mean $\pm$ SD daily time spent (min) by women for different activities according to work status (CG-I)

Activity (min)	Employment Status		
	EW	PEW	UEW
Food preparation	12 ^a $\pm$ 58	146 ^b $\pm$ 47	162 ^b $\pm$ 46
fetching water	44 ^a $\pm$ 27	34 ^a $\pm$ 24	45 ^a $\pm$ 27
Cleaning vessels	52 ^a $\pm$ 25	63 ^a $\pm$ 31	60 ^b $\pm$ 19
Washing clothes	53 ^a $\pm$ 25	59 ^a $\pm$ 15	63 ^a $\pm$ 18
Collecting fuel	42 ^b $\pm$ 31c	27 ^a $\pm$ 32	50 ^b $\pm$ 41
Total household activities	428 ^a $\pm$ 129	495 ^b $\pm$ 90	616 ^b $\pm$ 77
Child care	86 ^a $\pm$ 60	125 ^b $\pm$ 63	188 ^c $\pm$ 37
Personal care	31 ^a $\pm$ 8	42 ^b $\pm$ 14	48 ^b $\pm$ 18
Recreation	39 ^a $\pm$ 55	63 ^a $\pm$ 63	56 ^a $\pm$ 58
Rest and sleep	526 ^a $\pm$ 133	684 ^b $\pm$ 117	732 ^b $\pm$ 100
Farm activities (own)	183 ^b $\pm$ 167	38 ^a $\pm$ 38	—
Labour	161 ^b $\pm$ 100	—	—
Dairy	92 ^a $\pm$ 97	160 ^c $\pm$ 84	36 ^a $\pm$ 65
Total agriculture activities	441 ^c $\pm$ 120	198 ^b $\pm$ 61	36 ^a $\pm$ 65

Any two means in rows carrying different Superscripts a,b,c differ significantly ($P < 0.05$).

Table 4 : Mean $\pm$ SD daily time spent (min) by women for different activities according to work status (CG-I)

Activity (min)	Employment Status		
	EW	PEW	UEW
Food preparation	112 ^a $\pm$ 53	164 ^b $\pm$ 46	171 ^b $\pm$ 56
fetching water	30 ^a $\pm$ 21	52 ^a $\pm$ 32	42 ^b $\pm$ 25
Cleaning vessels	45 ^a $\pm$ 18	60 ^a $\pm$ 19	60 ^b $\pm$ 19
Washing clothes	51 ^a $\pm$ 22	70 ^b $\pm$ 34	54 ^a $\pm$ 17
Collecting fuel	47 ^a $\pm$ 24	50 ^a $\pm$ 30	37 ^a $\pm$ 62
Total household activities	388 ^a $\pm$ 134	552 ^b $\pm$ 90	565 ^b $\pm$ 141
Child care	71 ^a $\pm$ 88	126 ^b $\pm$ 79	161 ^c $\pm$ 93
Personal care	32 ^a $\pm$ 8	30 ^b $\pm$ 8	41 ^b $\pm$ 15
Recreation	12 ^a $\pm$ 25	106 ^b $\pm$ 176	41 ^b $\pm$ 56
Rest and sleep	583 ^a $\pm$ 114	588 ^b $\pm$ 145	815 ^c $\pm$ 132
Farm activities (own)	43 ^a $\pm$ 126	40 ^a $\pm$ 79	2 ^a $\pm$ 10
Labour	402 ^b $\pm$ 154	8 ^a $\pm$ 30	—
Dairy	16 ^a $\pm$ 34	166 ^b $\pm$ 85	17 ^a $\pm$ 43
Total agriculture activities	460 ^c $\pm$ 99	214 ^b $\pm$ 77	19 ^a $\pm$ 44

Any two means in rows carrying different Superscripts a,b,c

allocation for rest and sleep was observed among women belonging to SG regardless of their work status. However, the unemployed women of SG were found to spend maximum time for rest and sleep (815 min) when compared to any other category representing any farming groups.

Farming activities such as agriculture related

activities (dairy, sericulture, crop cultivation, etc.) Occupied major time for those who were engaged in outside employment. For women of CG-I both employed and partially employed, activities in their own farm occupied much of their day's time (334 min and 108 min, respectively). The amount of time spent by any category of women by their work status in SG was significantly lower as most of the women were engaged in outside hired labour. Thus, their involvement in activities in their own farm was limited. However, women belonging to SG spent much of their day's time in outside hired labour (402 min) since most of the women in CG-WI particularly PEW were involved in 'dairying' significantly more time (160 min) was being spent in caring of milch animals.

Thus, employed women of all farming groups spent the maximum time in agriculture related activities which in turn decreased the time on household activities, personal care, childcare, recreation and rest and sleep. The unemployed women had more time at their disposal for household chores, rest and sleep and particularly for child care activities.

Thus the findings of the present study are indicative of the fact that there was, an increase in participation of women in the households who had changed over to cash cropping system. It is a fact that participation in labour force especially would have a net increase in work time for both domestic and economic activities. In fact as observed in the CG-I and CG-WI particularly when the women were employed full time, there was a significant net increase in the work time for the daily activities though it did not vary across the farming groups. This could be attributed to the fact that women from SG families were also involved in agricultural labour activities. It is also known that time allocation pattern vary little across income groups as at all levels of income women are involved in energy intensive activities devoted to household and agriculture. Hence, time allocation for different activities both inside and outside home are of major concern for the maintenance of nutrition of women themselves and their children.

There is some evidence that the time for child care, leisure, rest and personal time of women may be affected by the women's participation in

the economically gainful activities. It was evident from the results that both in CG-I and CG-WI increasing income permitted more time for personal use. Time spent on child care was not affected between the farming groups. However, by the criteria of work status there appeared to be a significant decrease in child care activities in case of employed women belonging to different farming groups. On the other hand, mean time for household chores, child care and personal time including leisure and rest of unemployed women was found to be significantly higher.

There is evidence that in agricultural households generally having joint family systems, mothers appear to be the primary care takers of the children only in early infancy. Later, child care is generally managed by other older members in the family. This appears to be similar to the observations of the present study, as in all the farming groups at different levels of income, time allocation for child care remained the same. Though the quality of the child care at the household level could not be measured, the fact that breast feeding was continued for a longer time by all the mothers irrespective of the farming group to which they belong or their work status was proof enough for its quality atleast upto the age of one year.

In summary, the women's employment may benefit household nutrition to a 'Certain extent' through increasing income. However, it may adversely affect the nutrition of the women themselves as agricultural activities particularly cash cropping and animal husbandry places increased demands on the women's time.

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