

STRATEGIES TO OVERCOME THE SCARCITY OF AGRICULTURAL LABOR: AN EMPIRICAL STUDY OF A RURAL VILLAGE IN THE DRYZONE

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ABSTRACT

Labor is one of the most important inputs in agriculture. Scarcity of labor is a common problem in many farming communities leading to negative impacts on agricultural production. This study was carried out in Amunugama, Mahaweli-H in Anuradhapura district to estimate the scarcity of agricultural labor and strategies adopted by farmers to alleviate the problem. Data were collected from 44 randomly selected farm households during the 2000/2001 *maha* season through personal interviews. The study revealed that the scarcity of labor is a major problem in carrying out farming activities where the majority of farmers use both family and hired labor. Farmers have used different strategies to overcome the labor scarcity and many of the strategies have increased the cost of production. Majority of farmers have realized the importance of traditional *attam* system to overcome the labor problem. Use of labor saving practices, like mechanized land preparation, broadcasting instead of transplanting, chemical weeding instead of manual weeding, cultivation of paddy without repairing bunds in certain seasons. Planned cultivation and adoption of labor exchange are suggested to alleviate the problem of labor scarcity.

KEY WORDS: Labor Scarcity, Dry Zone

INTRODUCTION

Labor is one of the major limiting factors in agriculture production systems in developing countries. It accounts for about 45- 65% of the total cost of production of many crops. Three types of labor exists in agriculture: family labor, hired labor, and exchange (*attam*) (Wickramasinghe, 1977). Timely operation of cultivation practices is very important in farming to achieve maximum production and non-availability of agricultural labor is crucial factor.

At present, the scarcity of agricultural labor is a common problem in many farming communities in Sri Lanka. Several reasons contribute to the scarcity labor- establishment of garment factories in rural areas, migration of young people to Middle-East countries for employment, recruitment for armed forces, seeking off-farm employment due to unprofitability of farming and the negative attitude of the younger generation towards agriculture. The disappearance of traditional labour exchange systems and the system of mutual co-operation among the farmers in rural villages also aggravated the labor scarcity. In addition, the spread of high-yielding rice varieties has increased the demand for hired labor in agriculture (Perera and Gunawardhane, 1980; Khan, 1985). With the introduction of crop

diversification in paddy fields there is an overall increase in demand for agricultural labor in recent years.

The scarcity of labor creates many problems in farming. If labor is not available at correct time it affects crop production and hence farmers' income. In many irrigation schemes, farmers have to cultivate according to the decision taken at the cultivation meeting (*kanna resweema*). If a particular farmer is unable to follow this time schedule, he has to face number of problems in cultivation. Many farmers are not able to complete cultivation practices such as land preparation, planting, weeding and harvesting in time due to scarcity of agricultural labor. Therefore, farmers tend to adopt various strategies to overcome the problem of labor scarcity and to carryout cultivation practices with minimum time delay.

Research on agricultural labor has focused on the efficiency of use, demand, supply, wage rates and migration (Tilakaratne and Tilakaratne, 2000; Bardhan and Rudra, 1980 and Rogaly, 1996). However, farmers' response to labor scarcity and the strategies used to overcome this problem has not been paid much attention. Therefore, the present study was undertaken with the objectives to identify the problems encountered by farmers in finding agricultural laborers during peak demand periods, to study the strategies adopted by farmers to overcome the problem of labor scarcity and to suggest measures to alleviate this problem.

MATERIALS AND METHOD

This study was conducted in Amunugama, Mahaweli-H area in Anuradhapura district. This village was purposively selected for the study, due to employment of large number of agricultural laborers by the government seed production farms and other agricultural institutions. A survey was carried out during 2000/2001 *maha* season with a sample of 44 farm households (15% of total farm households) chosen through random sampling. Data from the selected households were collected using pre-structured questionnaire and personal interviews. Data includes family profile, land holding size, cropping pattern, labor use in the farm and wage rates. In addition, data were further collected from Agricultural Research and Development Assistants, *Grama Seva Niladharis* and Officials of farmer organizations. Data were analyzed quantitatively and qualitatively.

RESULTS AND DISCUSSION

Socio economic characteristics

The farming system in Amunugama consisted of paddy, home gardens and other field crops in paddy fields. Paddy is grown under irrigation during *maha* season (the longer rainy season) and other field crops such as chili; onion and soybeans are grown during *yala* season (the shorter rainy season) in

paddy fields. Home garden cultivation included tree crops like, jack, banana, cashew, lime, oranges, mango and coconuts.

More than half (55%) of farmers in the study sample are over 40 years of age (Table 1). Nearly 74% of farm families consisted of 3-5 family members. About 26% of farmers in the study area had completed secondary education. Since this village was established under Mahaweli development project the majority of farmers had 0.8 -1.2 ha of lowland. However survey data indicated that 4% of farmers are landless and 2% have more than the land extent granted by the project (1 ha low land and 0.25 ha up land).

Table 1. Some socio-economic characteristics of sampled households in Amunugama

Age (years)	>30	31-40	41-50	51-60	
%	19.5	25.5	27.5	27.5	
Family Size	2	3-5	6-8	8<	
%	3	73.5	16.5	7	
Education (completed)	No education	Grade 1-5	Grade 6-10	O/L A/L	
%	4	37	33.5	18.5 7	
Farming Experience (years)	<10	11-20	21-30	31-40	40<
%	23.5	24.5	32.5	11	8.5
Land ownership (ha)	No	<0.4	0.4- 0.8	0.8- 1.2	1.2- 1.6
%	4	10	13	71	2

Source: - Farmer Survey, *maha* Season - 2000/2001

About 84% of farmers faced labor scarcity in farming during the *maha*. About 11% farmers reported that they use family labor and hence labor is not the main problem for them. Majority of farmers who face the problem of labor scarcity indicated that labor problem is severe in the *yala* season than in *maha* season. This is because many farmers cultivate other field crops during *yala* season which required more labor than for paddy cultivation.

Types of labor and wage rates

Four types of labor utilization were observed (Table 2). About 11% farm families with many family members relied on family labor. Similarly 14% farmers in the village used hired labor only for cultivation. It was observed that these farm families are either small or is too old to work in the filed. Therefore these farmers have to completely depend on hired labor. When hired labor is used, they are employed either on daily basis or on contract basis. The wage rate for agricultural labor varies according to the gender and whether or not provision of meals at work place and the type of work.

Majority of farmers (56.8%) use both family and hired labor (Table 2). These farmers used hired labor only for crop establishment, harvesting and threshing. Other farm operations are carried out using family labor. Nearly

18% of families use both family and exchange labor to meet the labor requirement in farming.

Table 2. Types of labor utilization methods observed in Amunugama

Type	Number of Respondents	Percentage
1. Use only family labour	5	11.4
2. Use only hired labour	4	13.6
3. Use both family & hired labor	23	56.8
4. Use family labour & exchange labour	12	18.2

Source: -Farmer survey data, *maha* season 2000/2001

The labor exchange method practiced is known as *attam* system where farmers share their labor mutually to complete farming activities. In *attam* system relatives and neighbors get together and help each other in performing their farm operations. A considerable number of farmers (41%) emphasized the importance of restoration of traditional labor exchange methods such as *attam* and *kayya* to tackle the problem of labor scarcity in farming. In the system of *attam*, farmer has to work in the other farmers' fields in return for the work done by them. In *kayya* system, farmer has not necessary to work in the other farmers' fields. During the *maha* season 2000/2001 the distributory canal along the village paddy track was cleaned through a *shramadana* activity. *Shramadana* refers to a traditional institution of voluntary collective labor and was one of the common features of traditional Sri Lanka villages (Uphoff, 1992).

Table 3. Wage rates paid for hired labourers

Gender	Daily Wage Rate (Rs)	No. of Observations	Percentage	Remarks
Male	250	14	9.1	Without meals
Male	200	10	22.7	With meals
Female	175	23	52.2	Without meals
Female	150	7	16.0	With meals

Source: -Farmer survey, *maha* Season 2000/2001

Farmers prefer hiring of female laborers to male laborers (Table 3) because of easy management, less wage rate and the ability of female laborers to complete the same amount of work as male laborers with high quality. Nearly 9% of male and 52% of female laborers were employed without meal basis (Table 3). The respondent farmers reported that they have to face several problems and difficulties with hired labor. These include in addition to poor performance of hired labor, difficulties in labor supervision, providing meals and transport facilities for the hired labor. Therefore 60% of the farmers who utilized hired labor employed them on contract basis to accomplish certain operations such as cleaning of bunds in paddy field, harvesting and threshing of paddy. In this method the farmer and the laborer come in to an agreement about the task to be completed and the payment for the work. Generally when

an operation is done on contract basis only male laborers are considered. However, the contractor employs both male and female laborers in carrying out the work. Farm operations carried out on contract basis and relevant payments made by farmers are given in Table 4.

Table 4. Payments for labour hired on contract basis in Amunugama Mahavali-H during maha 2000/2001

<i>Basis of Payment</i>	<i>Amount Paid (Rs)</i>	<i>No. Observations</i>	<i>Percentages</i>	<i>Remarks</i>
Harvesting & transporting of 1 ha. of paddy field	5500- 6000	16	36.3	
Threshing (laborer/d)	300 -350	9	20.5	With
Cleaning of bunds (1 ha)	2000-2500	6	13.6	meals

Source: - Farmer Survey, maha Season - 2000/2001

Labour scarcity and farmers' strategies

The scarcity of agricultural labor is found to be one of the main constraints in timely operation of farming activities in Amunugama. Since all farmers begin cultivation with the issue of irrigation water a heavy demand for agricultural labor arises at the same time. This has resulted in delaying crop establishment, retarded crop growth, increased pest and disease incidence, insufficient irrigation water at the later part of the season and poor yield. The reasons for labor scarcity in Amunugama village are given in Table 5. Negative attitude of the younger generation towards agriculture is the main reason for the scarcity of labor in the area. This was reported by 59% of farmers. 48% of farmers reported that simultaneous performing of farm operations with the issue of irrigation water as the reason for labor scarcity in Amunugama. Employment opportunities in government seed production farm and other agricultural institutions at Mahailuppallama has also accounts for the labor scarcity as nearly 32% of farmers reported it. In these institutions laborers are given target work which they can finish by 2.00p.m. and thereafter they are free to leave and work their own fields. As such, many people in the area prefer to work in these institutions rather than in the villagers' fields.

In addition, garment factories in near by towns attracted young people in the area. About 27% of farmers reported garment factories as the course for labor scarcity. Moreover 23% of farmers reported that migration of women and male workers to middle-east had reduced the supply of farm workers. About 23% reported that many laborers expected alcoholic drinks. Educated young children of many farm families in the area have joined security forces.

Table 5. Reasons for labor scarcity as perceived by farmers

<i>Problem</i>	<i>Number of Observations</i>
1. Attitudes of younger generation	26 (59.0%)
2. Seasonality of operations	21 (47.7%)
3. Existence of Government seed farm	14 (31.8%)
4. Establishment of garment factories	12 (27.3%)
5. Migration to middle-east countries	10 (22.7%)
6. Provision of liquor (alcoholic)	10 (22.7%)
7. Joining security forces	06 (13.6%)
8. Small family size	04 (9.1%)

Source: - Farmer Survey Data, Maha Season - 2000/2001

On the other hand, people who serve in the forces do not want their parents to continue farming. This has contributed to reduce the supply of agricultural labors and increase the demand for hired labor. Among the respondent farmers 9% of them perceived small family size as one of the reasons for the less availability of agricultural labor. Despite the scarcity of agricultural laborers, all farmers try to complete their farming operations according to the schedule prepared at the cultivation meeting. Failure to do so will cause to face water scarcity at the latter part of the season and also problems in harvesting and threshing because of seasonal rains (Table 6).

Table 6. Strategies adopted by farmers in Amunugama village of Mahaweli system H

<i>Strategy</i>	<i>Number Reported</i>	<i>Percentage</i>
1. Bringing labourers from outside places	14	31.8%
2. Assigning work to labour contractors	12	27.2%
3. Employment of the same laborer group every season	12	27.2%
4. Adoption of system for exchanging labour	10	22.7%
5. Adoption of labour-saving cultivation practices	10	22.7%
6. Payment of high rates	09	20.4%
7. Provision of good meals and liquor	09	20.4%
8. Getting help from relatives and friends	07	15.9%
9. Seeking assistance of young people	05	11.3%

Source: - Farmer survey data, maha season - 2000/2001

Note. Due to multiple responses total does not add up to 44 or 100%.

About 32% of farmers reported that they hire labour from outside villages. It is a common practice among the farmers who use hired labour to bring labourers from outside villages. Sometimes labourers are brought from villages like *Nallamudewa* and *Thimbiriwewa* located more than 15 km from the study village. Farmers who have transport facilities bring labourers daily from outside villages. Farmers who have no transport facilities provide temporary accommodation for the labourers brought from distance places.

Another strategy used by farmers in the village is assigning certain farm operations to contractors. Twenty seven percent of farmers reported this strategy. There are contractors in the village itself who organize a group of

labourers (8-14) to work as a team. The labour contractor makes an agreement with the farmer on the payment based on the nature and the extent of the work.

Another strategy was to use same laborers continuously for several seasons. This enabled to develop good relationships with them and laborers also tend to work with more care and efficiently. This strategy is practiced by 27% of the farmers in the village. Another strategy use by farmers is organizing collective and exchange labor activities. In this approach a few farm families (2-4) get together and schedule their work in order to accomplish their farm operations by mutually exchanging available family labour. This almost similar to traditional *attam* system and about 23% of sample farmers have adopted this strategy to overcome the labour scarcity.

Further it was revealed that 23% farmers in the village use labor saving cultivation practices including tractors in land preparation, broadcasting instead of transplanting, chemical weeding instead of manual weeding, and cultivate paddy without repairing bunds in certain seasons. These methods save time and labor and also farmers can keep up to the cultivation calendar.

The results also revealed payment of higher wages and provision of better meals and liquor to attract laborers have been adopted by 41% of farmers. When farmers face labor problem in critical operations like planting, harvesting and threshing 16% of farmers in the village requested their relatives living out side to help them. Further 11% farmers reported that they get the assistance of friends of their children if they cannot find sufficient laborers.

Though the strategies discussed are adopted by farmers to alleviate the problem of labor scarcity, they have some advantages and disadvantages. Bringing laborers from outside places, paying high wage rates, using labor contractors and providing better meals and alcohol increase the farmers' cost. In addition, there are some other disadvantages coupled with these strategies. These include crop losses, poor quality of work performed and time wastage of the farmer. However strategies such as adoption of mutual labor exchange systems, collective work, and labor saving cultural practices seem to have many advantageous to farmers as strategies to tackle the problem of labor scarcity in farming.

CONCLUSIONS AND RECOMMENDATIONS

Majority of farmers in the village use both family labor and hired labor. Only a few farmers entirely depended on family labor. As such, hired labor plays an important role in village agriculture. The scarcity of agricultural labor found to be a major problem faced by many farmers. Farmers adopt several strategies to overcome the problem of labor scarcity. These include bringing laborers from outside places, getting assistance from labor contractors, offering high wages, using labor saving cultivation practices,

treating laborers with better meals and liquor, seeking the assistance from relatives and friends and adoption of mutual labor exchange system (attam). However many of these strategies are coupled with some disadvantages such as increase of cost of production, crop losses and poor quality of the work performed.

As many farmers in the village are aware of the importance of mutual labor exchange system, it has to be promoted. This could be done through farmer organizations. Farm planning is another aspect that should be considered in developing strategies for solving of labor scarcity. Through farm planning farmers can utilize available labor efficiently and minimize labor requirement by selecting suitable crops according to the availability of labor. In addition, farmers should be encouraged to adopt suitable labor saving cultivation practices like using suitable farm machinery, broadcasting of paddy, chemical weed control as much as possible in which farmers could face the problem of labor scarcity and they also can reduce the cost of production.

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