IMPACT: International Journal of Research in Humanities, Arts and Literature (IMPACT: IJRHAL)
ISSN (P): 2347-4564; ISSN (E): 2321-8878
Vol. 6, Issue 01, Jan 2018, 265-268

IMPACT OF AGRO MACHINERY SERVICE CENTRES ON LABOUR COST IN PADDY CULTIVATION

Salini R Chandran

Department of Rural Banking and Finance Management, Kerala Agricultural University, India

Received: 16 Dec 2017 **Accepted:** 08 Jan 2018 **Published:** 27 Jan 2018

ABSTRACT

Labour scarcity and high wage rate charged by agricultural labourers has increased the cultivation cost of paddy. As a solution to this problem, farmers are adopting mechanization in their farm operations. The mechanization needs of farmers are currently met through Agro Machinery Service Centers (AMSCs), where the services are available on contract basis. It will help the farmers reduce the labor usage, especially in the stages of transplanting and harvesting of paddy. This resulted in over all reduction in their total cost of cultivation.

KEYWORDS: *AMSCs, Labor, Mechanization, Transplanting*

INTRODUCTION

Labour is an important element of agricultural operation. Labour cost covers the actual wages paid to the workers and the imputed value of family labour. Labourers are required for rice farming, mainly for bunding, sowing and transplantation, inter - cultural operations and transportation. Wages per man-day differ from area to area. Normally a male labourer is paid a minimum of Rs. 650 and female labourer Rs. 400 for a maximum of seven hours per day. At present, farmers are facing the problem of labour scarcity. Even though labourers are available, they charge high wage rate. As a result the total cultivation cost increases at a higher rate. Farmers are adopting mechanization as a solution to severe labor shortages. Agro Machinery Service Centres (AMSCs) were the major players in the field, where the farmers get all the mechanization services on contract basis. The saving of labourers and labour cost is possible in land preparation, transplanting and harvesting operations.

METHODOLOGY

The study is based on primary data collected by 135 farmers in Thrissur district. The farmers were grouped into users of AMSCs and non-users of AMSCs. The data were collected from the respondents through a structured interview schedule. An independent t-test was applied for analysis purpose.

COST IN PADDY CULTIVATION

The average of the various costs involved in paddy farming and the proportion of each to the total cost of cultivation. These include either AMSC cost or manual transplantation cost, other machine costs, other labour costs, and other costs, consisting of material and miscellaneous expenses. The mechanization cost of paddy cultivation includes the cost of land preparation, transplanting and harvesting. Mechanized transplanting cost is the AMSC cost. Other machine

costs include cost of land preparation and harvesting. Other labour costs comprise of cost of bunding, inter- cultural operations and transportation. The cost is given separately for users and non-users of AMSCs.

Table 1: Types of Costs in Paddy Cultivation

Sl. No	Types of Cost/ Ha(in Rs)	Users of AMSC	Non-Users of AMSC
1.	AMSC cost	8630 (21)	0
2.	Other machine costs	8155 (20)	11085 (23)
	Total machine cost	**16785 (41)**	**11085 (23)**
3.	Manual transplanting cost	0	10970 (22)
4.	Other labour cost	12490 (30)	15130 (31)
	Total labour cost	**12490**	**26100 (54)**
	Total machine and labour cost	**29275 (71)**	**37185(77)**
5.	Other costs	12315 (29)	11175 (23)
	Total cost of cultivation	41590 (100)	48360 (100)

Source: Compiled from primary data

Note: Figures in parenthesis represents percentage share of each to total cost

Table 1 reveals that the share of machine cost to total cost is higher for users (41 per cent) than non- users of AMSCs (23 per cent. It is to be noted here that even though there is difference between users and non – users in the total cost of cultivation, there is not much difference in the proportion of transplantation cost– mechanized or manual to the total cost of cultivation of both categories. In the study area non-users of AMSCs are using migrant labourers from the State of West Bengal for manual transplanting, who are available at cheaper rates and for more man-hours per day than the native labourers. Hence there is not much variation in the transplanting cost of users and non – users. If the migrant labour had not been available, the transplantation cost of non – users would have been much higher, leading to a higher proportion of total cost of cultivation. The materials cost is lower for non – users, compared to users. The frequency of fertilizer and herbicide / fungicide application, type of fertilizers – chemical or organic, and distance to the markets reflecting in transportation costs are some of the factors that will cause variation in the 'other costs'.

Manual labor is being displaced by machines when mechanization is adopted. Hence, considering the total of manual labor and machine costs, it is seen that there is a difference of nearly Rs 8000/- between users and non – users, to the advantage of users of AMSCs. To get a better understanding of the machine/ labour costs involved, the activity – wise costs for which manual labour or machines are employed in rice farming, are analyzed in Table 2.

Table 2: Labour/ Machine Cost Involved in Paddy Cultivation

Sl. No	Activity	Average Cost/Ha (in Rs)	
		Users of AMSCs	Non-Users of AMSCs
1.	Bunding	3750	6225
2.	Transplanting	8630	10970
3.	Weeding	2990	3775
4.	Manuring	1250	1675
5.	Plant protection	750	1310
6.	Miscellaneous labourers	3750	2145
7.	Land preparation	4100	4265
8.	Harvesting	4050	6820
	Total	29270	37185

Source: Compiled from primary data

As evident from Table 2 the labour costs of non – users are higher than that of users with respect to all activities, except miscellaneous labour charges. This is due to the difference in the wage rates of labourers in the area to which the farmers belong. The highest difference in costs is found in the case of transplanting, where non – users have to spend Rs 2340/- per Ha more than the users of AMSCs.Among the non-users, farmers are facing severe weed problems. So they have to spend more amount of money for inter- cultural operations. Regarding harvesting, non-users have to pay more amount than users. The shape of landholdings by non-users creates difficulties in driving the harvesting machine and takes more time for completing the harvesting operation. Apart from these the water logged nature of land also leads to high cost for harvesting.

An independent sample t-test was employed to check whether there is any significant difference in the labour cost between users and non-users of AMSCs. The result is presented in Table 3.

Table 3: Independent Sample T-Test of Labour Cost Farmer Category - Wise

Sl. No	Variables	Mean	F	t Statistic	p- Value
1.	Users of AMSCs	30886.7588	49.065**	-5.586**	0.000
2.	Non- users of AMSCs	37736.7209			

The t-statistic is significant at one per cent level. This indicates that, there is a significant difference in the labor cost between users and non-users of AMSCs. As already seen, labour cost is more for non-users of AMSCs due to manual transplanting.

CONCLUSIONS

Farm mechanization by using the services of AMSCs help the farmers overcome several constraints felt by them at ground level. Use of services of AMSCs provides the effect of what mechanization brings about in agriculture. In fact, this can lead to economically quantifiable benefits in terms of reduced cost of cultivation due to increase in efficiency in operations of mechanization, saving in machine buying costs and labour costs, and timeliness in farm management practices. Thus AMSCs help the farmers avoid laborers from many stages of farm operations, especially from transplanting and harvesting of paddy.

REFERENCES

1. *Hossain, A.H.M.S. and Callaghan, J.R. 1996. A case study on the mechanization of wheat cultivation in Bangladesh. J.Agric. Engng. Res.* ***65****(3):175-181.*
2. *Huffman, W. E. 2012. The status of labor-saving mechanization in U.S. fruit and vegetable harvesting. Choices a magazine on food, farm and resource issues. 27(2).*
3. *Purnima Saikia et al., Extent of Adoption of Improved Boro Paddy Cultivation Practices by the Farmers, International Journal of Agricultural Science and Research (IJASR), Volume 7, Issue 4, July-August 2017, pp. 245-250*
4. *Indira Devi, P. 2012. Dynamics of Farm Labour Use — An Empirical Analysis, P. Agricultural Economics Research Review, Vol.* ***25****(2): 317-326*