

Socio - Economic and Developmental Consequences of Training on Farm Mechanisation: A Case Study

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ABSTRACT

A case study was conducted among the members of the Food Security Army, Vennor, who had received training on farm mechanisation from Agricultural Research Station, Kerala Agricultural University, Mannuthy and adopted farm mechanisation as their livelihood option. The Food Security Army, Vennor was started with 18 members, which included 12 females and 6 males. Earlier all the members were agricultural labourers and had undergone the training on 'Garden land mechanisation' for a period of 20 days. The socio economic and developmental consequences of the training programme were assessed among members of Food Security Army, Vennor. The members of Food Security Army were elevated from unorganized to organized status, partially assured their employment and increased their social status as a member of the mechanized labour force. Food Security Army, Vennor could create an organized labour force, increase area under farm mechanisation, reduce cost of labour, provide timely labour service, function as agents of promoting farming in fallow lands and attract youth towards agriculture. Assessment of back home utility after attending the training on farm mechanisation among the members of the Food Security Army revealed that the training created a positive impact among the trainees as well as their families received indirect benefits.

KEY WORDS: Consequences, Training, Farm mechanisation, Organized labour force

INTRODUCTION

The process of farm mechanisation in Kerala is in slow pace because of its inherent nature of landscape, fragmented holdings and unique socio demographic preferences. The farmers are constrained due to acute shortage of farm workers, high wage rates, unseasonal rains, natural calamities and fluctuating price for farm produce. As a result, extent of fallow land expanded and area under paddy cultivation in wet lands reduced and several of them were abandoned or deferred cultivation. Due to the problems of drudgery, health and life insecurity and lack of social respect involved in farming operation, the younger generation could not be motivated or retained in farming. Migration of conventional farm workers had taken place to other job areas where remuneration was better and physical drudgery was less. Lack of technically trained and skilled workers and inappropriate service and maintenance of farm machinery resulted in less use of whatever little machinery introduced. There was no focus on the service sector for the operations of farm machinery. Farmers were

exploited by middlemen wherever machinery was introduced for farm operations from outside the state.

The farmers are abandoning cultivation and younger generation is not showing enthusiasm in farming because of the absence of life security, social accreditation to farming as an occupation and lack of social security. The labour scarcity and high cost of cultivation were the primary reasons of decreasing agricultural production in Kerala. Farm mechanisation was considered as a remedy to conquer the issue. However, absence of trained workers for operating farm machinery and their maintenance, high cost of farm machinery and small holdings were the factors which restricted farm mechanisation in Kerala. To overcome these problems the concept of Food Security Army (FSA) was introduced by the Agricultural Research Station, Kerala Agricultural University, Mannuthy. The objective of the study was to explore the socio-economic and developmental consequences of the training programmes on farm mechanisation through a case study method.

METHODOLOGY

The case study method is commonly used for making an in-depth analysis, a detailed description and considered as descriptive research. The case study is used to be conducted in several modes like interviews, conferences, conversations, dramatic productions, test of abilities, social reactions, etc. It is basically a longitudinal approach which studied the unit over a period of time. The case study is an approach which viewed social unit as a whole. In this case study, the researcher gathered data through methods of observation and interviews among the members of the group. The community case study was the one in which the social unit was not a person rather, a social group. Such case study was through observation and analysis of group of people who were living in a particular geographical territory. The community case study tried to deal with different elements of the community life such as location, prevailing economic activity, climate and natural resources, historical development, social structure, life values, health, education, religious expression, recreation, impact of outside world etc. The case study was a mode of organizing data in terms of some chosen

unit such as the person's life history, the history of group or society, and social process. This had the advantage of intensive study of the social unit. According to Goode and Hatt (1981) the case study method provided sufficient basal facts for developing a suitable hypothesis regarding the social unit being studied. This was possible because of the in-depth analysis of the concerned social unit. A community case study was conducted among the 18 members of a group who had received training on farm mechanisation from Agricultural Research Station, Mannuthy and adopted farm mechanisation as their livelihood option. Data were collected from all the members of the group using a pre-tested and well - structured interview schedule.

RESULTS AND DISCUSSION

The Food Security Army, Vennor started working under the Service Co- operative Bank, Vennor of Thrissur district from 2013. The group started with 18 members, which included 12 females and 6 males. Earlier all the members were agricultural labourers and had undergone the training on 'Garden land mechanisation' for a period of 20 days.

*Table 1
Knowledge and skill level of respondentson farm mechanization before and after participating in the training on Farm Mechanisation*

Sl. No.	Before training	After training	Z - value
	Mean rank	Mean rank	
1	00.00	30.50	6.827**

** Significant at 0.01 level (2-tailed)

Before attending the training, the respondents did not possess knowledge and skill on farm mechanization. After attending the training, the respondents secured a mean rank of 30.50 with Z- value of 6.827 at 0.01 level of significance. From this data, it could be interpreted that the trainees had felt that they gained adequate knowledge and skill on farm mechanisation and thereby acquired skills in using farm machinery. The new service group of Food Security Army expressed that they could sense a better status in the society, when compared to the earlier status as agricultural labourer. The group

owned important farm machinery required for the mechanized labour force viz; Tractor, Mini tiller, Digger, Brush cutters, Sprayers, Rotovator and Small farm tools.

All the farm machinery owned by Food Security Army, Vennor was under working condition. The maintenance was carried out in the service centers and the farm machinery was under the coverage of guaranty period. The farm machinery of the group was purchased by the Service Co-operative Bank, Vennor under the fund provided by the government for setting up of

Farmer Service Centre. The Service Co-operative bank was provided with ₹25 lakhs for the purchase of farm machinery by the government. Through that funding the bank provided training to selected members and the farm machinery were provided for use among the members of the group.

Socio economic and developmental consequences of the training on farm mechanisation

The socio economic and developmental consequences of the training programme on farm mechanisation were assessed among the members of Food Security Army, Vennor the results of which are discussed below:

1. Created an organized labour force

*Table 2
Employment Opportunity received by the respondents before and after training on farm mechanization*

Sl. No.	Before training	After training	Z - value
	Mean rank	Mean rank	
1	19.27	30.78	4.570**

** Significant at 0.01 level (2-tailed)

Based on the data given in the table 2, unorganised labourers were left with multiple problems of non-availability of regular employment in farming sector, no skills on operating farm machinery, low wages and switching over to off farm employment before participating in the training programme. A few fellow members migrated to nearby cities or gulf countries. After participating in the training, the members of the Food Security Army, Vennor functioned as the

organized as well as mechanized labour force in Vennor and nearby places of Thrissur district of Kerala State. They mainly undertook mechanisation in garden lands.

a. Increased area under farm mechanisation

The Food Security Army could cover an area of 140 ha under mechanisation during 2019. The year-wise area covered by the group is given in Table 3.

*Table 3
Area covered by the members of FSA, Vennor using farm machinery*

Sl.No.	Year	Area covered (Hectare)
1	2017	15
2	2018	94
3	2019	140

From Table 3, it is clear that the Food Security Army had been increasing the area under farm mechanisation in each year from 2017-2019. The FSA, Vennor had covered an area of 140 hectares of garden land during last year under farm mechanisation. As per the trend, it shows a progressive growth of area covered under farm mechanisation.

b. Reduced cost of labour

As mentioned earlier, the Food Security Army, Vennor had covered an area of 140 ha under

farm mechanisation, thereby reducing the high cost of manual labour to be involved. In some places, machines of other private persons/agencies were being used at higher cost before the Food Security Army, Vennor started functioning. Thus there was a reduction in the cost again due to the comparatively low rate charged by the Food Security Army. The savings earned by the members of Food Security Army, Vennor is presented in Table 4. Reduced cost of labour had created a positive attitude among the people of the area towards Food Security Army, Vennor as well as farm mechanisation.

Table 4
Savings earned by farmers from Food Security Army, Vennor

Sl.No.	Name of machinery	Cost involved in using farm machinery (₹)		Savings earned (₹)/ha
		Before	After	
1	Brush cutter	5250	3675	1575
2	Tractor	2725	2000	725

From Table 4, it is clear that the farmers could save an appreciable amount of income after the introduction of Food Security Army, Vennor for the various agricultural operations using farm machinery. Brush cutter and tractor were the farm machinery commonly used by the members of Food Security Army, Vennor in farmers' fields. The members of Food Security Army, Vennor could earn a reasonable income after using the farm machinery. At the same time, the farmers' could save an amount of ₹1575/ ha for using brush cutter and ₹725/ha for using tractor.

c. Timely availability of labour

Before establishing the Food Security Army, farmers depended on panchayath and middlemen for tractors and other farm machinery. It was difficult to get required farm machinery on time during peak seasons. This forced them to approach private parties. The private groups charged higher rate for their farm operations using the farm machinery. The Food Security Army members provided their services to farmers at a reasonable rate, and in time, since they had a battalion of food security army members, who were organized. Thus the Food Security Army, Vennor group acted as an

organized labour force with timely support to the farmers of Vennor panchayat and nearby areas.

2. Increased area under farming by the Food Security Army, Vennor

During off season, the members of Food Security Army, Vennor may not get work regularly. To overcome the unemployment problem among members of Food Security Army, the Food Security Army, Vennor carried out farming in leased land under the supervision of the Service Co-operative Bank. The crops cultivated and the area cultivated during 2019 is presented in Table 5.

The Food Security Army, Vennor had cultivated a total of 3.4 ha during 2019. The group cultivated vegetables in leased area of 2.4 hectares and planted banana suckers in 0.40 ha. They carried out upland rice cultivation in an area of 0.40 ha, and tapioca in 0.2 ha. In addition to this, the Food Security Army carried out cultivation of vegetables in poly houses too. Thus the FSA group, besides acting as a mechanized labour force, involved in farming activities and played a major role in increasing the area under cultivation of major crops such as vegetables, banana and tapioca.

Table 5
Area under different crops cultivated by the FSA, Vennor during 2019

Sl.No.	Crops	Area (Ha.)
1	Vegetables	2.4
2	Banana	0.4
3	Tapioca	0.2
4	Upland rice	0.4
Total		3.4

3. Agents of promoting farming in fallow lands

In addition to acting as a labour force and undertaking farming activities, the Food Security Army, Vennor had involved in activities of promoting farming in fallow lands, which were pivotal in ensuring food security. Similar findings were reported by Barman *et al.* (2019). The FSA mainly involved two types of creative activities viz; managing a marketing outlet for agricultural produce and took up farming around school premises to attract students towards farming with the mantra of catch them young.

a. Running marketing outlet for agricultural produce

The Food Security Army, Vennor had been running an agricultural produce outlet named Saravana stores for marketing their farm produce at fair price. Since the group practiced organic agriculture and they could sell their products easily through the outlet. They could get a fair price for their products by excluding the middle men. They also collected farmers' produces and marketed through the shop thereby the farmers received fair price for their produce. Around 10-15 farmers provided their farm produce through the outlet in every season.

b. Attracting youth towards agriculture

The members of the Food Security Army, Vennor promoted farming activities among school students of five schools by cultivating in school premises, with the aim of attracting the children and youth towards agriculture. They established

vegetable gardens at the school premises, free of cost, and the management of the gardens was vested with the school children. Thus the Food Security Army, Vennor was actively involved in attracting youth towards agriculture. All the above mentioned activities were made possible because of the training programme, as opined by the members of Food Security Army, Vennor. Harilaland Eswaran (2018) also suggested to equip rural youth in farm mechanisation to overcome labour scarcity as well as reduce the drudgery involved.

4. Benefits to the members of FSA, Vennor

Through the training and the resultant activities, the Food Security Army, Vennor could achieve positive consequences. It is worthwhile and important to analyse the consequences of the training in terms of employment and income earned by the members of Food Security Army, Vennor, which is critical in sustaining such a mechanism. The average employment days and the income earned by the members of FSA, Vennor is presented in Table 6. The female members of Food Security Army, Vennor could get employment of 17 days per month by females and 11 days by males. The members were working under the service co- operative bank for daily wages at the rate of ₹ 450 per day for women and ₹ 650 per day for men. The members of Food Security Army, Vennor worked and earned an amount of ₹20 lakh/annum and the co-operative bank, under which the FSA functions used to spend 10 per cent of its profit for promoting agricultural and allied activities.

Table 6
Average employment days and income earned by the members of FSA, Vennor

Sl. No.	Gender	Average employment days/ month	Daily wages (₹)	Average income of the FSA members/ month (₹)
1	Male	11	650	7400
2	Female	17	450	

The members of Food Security Army earned an average amount of ₹ 7400/month. Though it had increased their livelihood security, the trainees felt that this amount was not sufficient for their livelihood. That was the reason that the trainees (FSA members) were engaged in group farming activities as well as worked in the farm run by the Service Co-operative Bank. Besides, they went outside in search of employment on daily wage basis, when they did not have activities with in the purview of Food Security Army. Usman *et al.* (2021) observed similar findings of benefits derived by farmers after attending skill oriented training. They also highlighted that majority of the trainees adopted new techniques on their farm, which resulted in better production and increased income. On the contrary, Pradeep and Sudhir (2019) reported that farm mehanisation increased unemployment, inclusive growth of labour was not possible, over dependence on MGNREGS, fall in human employment, low wage income, adverse effect on living conditions of labour and migration to urban areas. Therefore it may be interpreted that consequences of farm mechanisation may vary according to the socio- economic and demographic conditions of the target population.

It was found that there was still an immense scope for increasing the activities of the group, with the available manpower. Further expansion of area under farming based on the increasing employment opportunities and income over three years was expected. The members of Food Security Army were elevated from unorganized to organized status, partially assured their employment and increased their social status as a member of the mechanized labour force. The major problem for the FSA group was the lack of regular employment throughout the year and the lack of opportunity in using coconut climbers due to the availability of surplus coconut climbers in their area. The major activities of the Food Security Army were:

- Distribution of free seedlings to the participants of the seminars organized by them
- Mother and kitchen garden programme was implemented for promoting the kitchen gardens in the households of nearby areas and

the group members planted 3000 mango trees at various locations free of cost

- The Food Security Army leased in a farm and cultivated diverse crops for securing an income for all the members throughout the year
- Promoted farming in schools to create interest in farming among school children
- Possessed outlet for marketing the farm products
- Services to farmers at reasonable cost to prevent the exploitation of farmers by middlemen

Indirect benefits realized by the members of their families were: they could consume better nutritious food, enhance educational opportunities for their children and siblings, improve access to potable water, improve home amenities, develop recreational facilities, improve access to mass media, meet medical expenses of family members, purchase own vehicles for transportation and travel, spend more on celebrations during festival seasons, etc.

CONCLUSION

The Food Security Army, Venoor started working under the service co- operative bank at Venoor of Thrissur district from 2013. Different types of farm machinery were purchased and a few were hired at reasonable rate. The trainees had received skill oriented training from the Agricultural Research Station, Mannuthy. The co-operative bank met the training expenses and provided support for group farming in leased land. Besides, an outlet named Saravana stores was established for selling out their products at fair price. The major constraint was lack of regular employment and lack of additional benefits as savings. Further, Food Security Army wanted to establish a tissue culture laboratory as well as an unit for collection and processing of coconut. With regard to back home utility after attending the training on farm mechanisation, members of the Food Security Army revealed that the training created a positive impact among the trainees as well as their family members enjoyed benefits indirectly.

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