

Promotion of farm mechanisation in Malappuram district through women empowerment

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Introduction

Rice cultivation in Kerala is declining at an increasing rate. The total area under rice cultivation declined from 588.34 thousand ha in 1990 to 263.53 thousand hectares in 2007. Labour scarcity being the major reason for the decline and to overcome this, farm mechanisation is considered as an important remedial measure. However there are several constraints for wider adoption of farm mechanization in Kerala especially for crops like paddy for reasons such as pre-dominance of small and marginal farms, fragmentation of land holdings, non-availability of suitable equipments, and lack of facilities for training operators, insufficiency of private & public hire service and inadequacy of repair & service facilities.

Scenario in Malappuram district

Malappuram district lying in the mid-region of the state has witnessed an increase in productivity of paddy due to introduction of improved varieties and use of scientific technologies. However, the total production of paddy is gradually decreasing mainly due to declining area. The cost of production especially for that of labour is also on an increasing trend. The following reasons contribute to the decrease in production and increase in production cost.

- a. *Decrease in area under paddy cultivation:* Conversion of paddy fields to horticultural crops and non-agricultural purposes is wide spread in the district.
- b. *High labour cost:* The younger generation, particularly the literate is reluctant to adopt agriculture as a profession.
- c. *Migration:* Migration to foreign countries, especially to the gulf countries is another reason for the rise in cost of production. Migration has badly affected the labour availability in agriculture sector.
- d. *Rapid growth of real estate sector:* The real estate sector is growing rapidly in Malappuram due to inflow of gulf money. Attracted by better prospects labourers in agricultural sector are shifting to building-construction works.

All the above factors result in the shortage of farm labourers, which increase labour cost and increase in cost of cultivation.

Considerable reduction in labour requirement can be achieved through selective mechanisation with appropriate farm machinery systems to change rice production as economically viable. At present, tillage operations in rice cultivation are mechanised to a greater extent with the help of tractor and power tillers. However other labour intensive operations such as transplanting & harvesting are performed manually. Commercial rice farming machines like mechanical rice transplanter, reaper and thresher are yet to be adopted widely in the farms in Malappuram district mainly due

to their high investment cost and sophisticated technology for operation & maintenance. Large scale adoption of this kind of machines in rice farming is possible only through government support to cooperative groups of farmers to make them economically viable and to enable the farmers to meet local requirements.

In Malappuram there are a large number of *Padasekhara* samithies and *Kole vikasana* samithies which concentrate wholly on paddy crop and take up group farming activities including distribution of inputs and incentives. But their activities are restricted due to lack of skilled labour to operate farm machineries.

Role of KVK Malappuram in paddy mechanisation

Right from the inception in 2004, KVK Malappuram has been playing a pioneering role in technology assessment, refinement and imparting need based training to farmers and rural youth with respect of farm mechanisation. The details of the trainings conducted are as follows

Year	Name of Training	Type of Training	No. of trainings	No. of participants
2006-07	Mechanization in Paddy	On campus	2	50
	Mechanisation in Paddy	Off campus	2	224
	Operation & Maintenance of reapers, threshers & winnowers	Vocational	1	15
2007-08	Helical Blade puddler in paddy cultivation	Off campus	1	20
	Small scale mechanisation	Off campus	2	90
	Mechanisation in paddy	Off campus	2	106
	Mat nursery preparation & working of yanji transplanter	Vocational	1	15
2008-09	Mechanisation in paddy	Off campus	7	266
	Helical blade puddler	Off campus	2	68
	Demonstration of yanji transplanter	Off campus	2	116
	Repair & Maintenance of yanji transplanter	Vocational	1	12

Collaborative effort of KVK and State Planning Board

KVK also took up a project collaborating with State Planning Board to popularise mechanization of rice in Malappuram district. The project included Front Line Demonstrations on mechanical rice transplanting using yanji sakthi rice transplanter and mechanical paddy harvesting using KAMCO reaper. The programme was implemented in 10 ha in Kuttipuram, Maranchery and Thripangode Panchayats and Ponnani municipality.

Aimed at equipping an ever ready work force to do the job in long run, vocational trainings were organised by KVK Malappuram in mat nursery preparation, transplanting and harvesting of paddy. Six trainings and demonstrations of yanji sakthi rice transplanter were conducted in an area of 10 ha in the selected Panchayats involving women trainees. On gaining experience in the field under the supervision of KVK scientists these women trainees decided to organise into a SHG. Thus with the support and supervision of KVK, 11 women formed the group named 'Krishi Sahayi'.

During June to August 2008, this group could transplant 20 ha of fallow paddy land. KVK Malappuram with the help of *krishi sahayi* was able to convince other farmers about the advantages of the farm mechanisation over conventional methods.

The impact on selected quantitative indicators is furnished below.

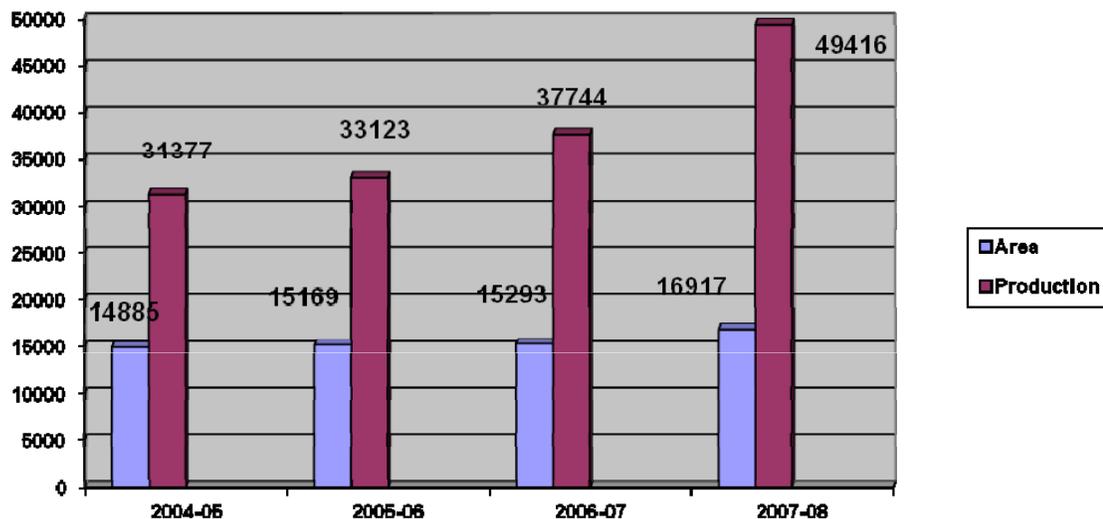
Sl. No	Parameters	Demonstration	Local check
1	Yield (t/ha)	4.5	2.0
2	Input requirement		
	Seeds (kg/ha)	50	75
	PPC (Rs./ha)	2250	3000
3	Savings in labour	45 nos. for transplanting 17 nos. for reaping	- -
4	Cost of cultivation	Rs. 23230/ha	Rs. 29900/ha

These demonstrations motivated many farmers, who had abandoned paddy cultivation due to labour scarcity, to take it up in the next season, provided they get the work force with the machinery. The group is being called by Panchayats and Padasekhara Samithies to do mechanised paddy cultivation.

Impact of Krishi Sahayi

Krishi sahayi after its formation was able to bring 20 ha of area under paddy cultivation in 2007-08 and their contribution increased to 50 ha in 2008-09. During 2009-10, kharif season, the group has already done mechanised transplanting, weeding etc. in around 12 ha of land. It can be clearly seen that krishi sahayi with the support of KVK Malappuram is moving in the right direction towards the revival of paddy cultivation in the district as seen from the graph below.

Trend in area (ha) and production (MT) of paddy in Malappuram district



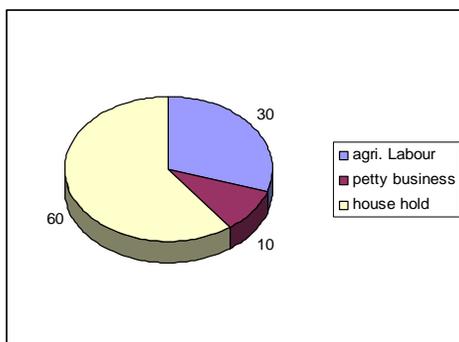
It can be seen from the graph that there is an increasing trend in the area and production of paddy in Malappuram district over the past 5 years. This increase is attributed to interventions like farm mechanisation, high yielding varieties, better INM & IPM practises etc.

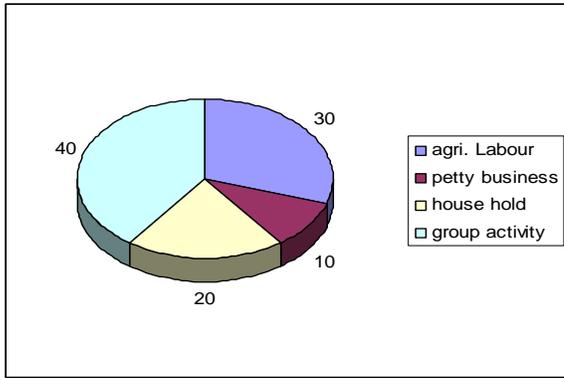
Socio economic impact on group members

Of the 11 members of the group, 3 worked as agricultural labourers and others were house wives with small income from tailoring, poultry, petty business etc. At present they are getting additional income during paddy season and in the off-season they also perform other income generating activities.

Activity analysis

The members utilised most of the time (60%) for household activities and agricultural labours (30%) and other petty business (10%). After group formation majority of time is utilised for group activity.



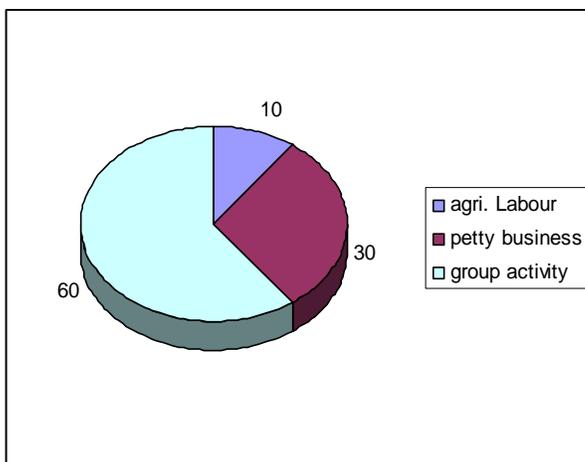
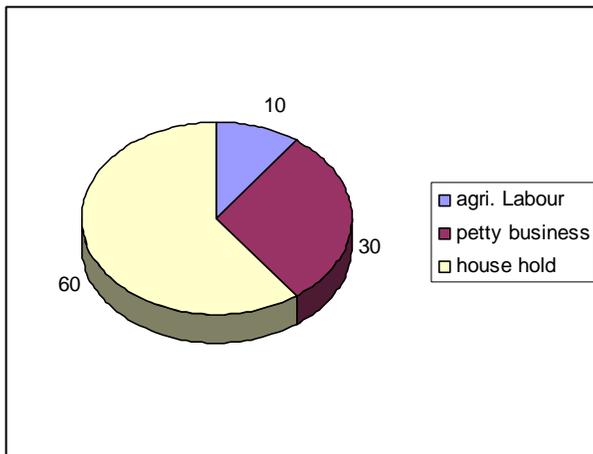


Before

After

Income analysis

The change in income earning pattern indicated that after popularization of farm mechanization, income from group activity has increased to 60% as compared to 60% on house hold activities before.

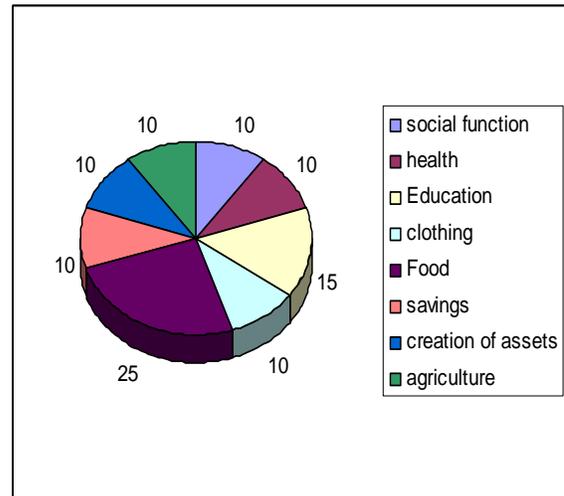
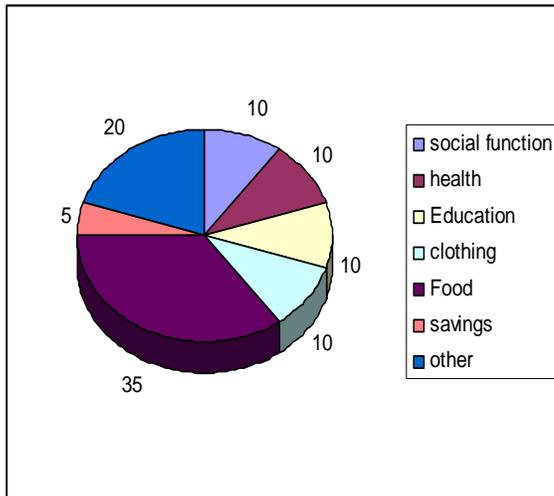


Before

After

Livelihood analysis

Before forming the group the annual income of the members was low (Rs 5000-12000 per annum). Consequently the expenditure on various needs such as food, social functions, clothing, health & education was low. After group formation the utilisation of money increased as indicated.



Before

After

Summary

Reaching the rural women is greatly facilitated through group approach. It also gives tremendous boost in improving the extension efficiency of KVK.

KVK Malappuram emphasized the concept of social & economic empowerment of rural women through group approach. Krishi Sahayi was able to increase their income and thereby their standard of living after forming the group. The group approach not only improved the economic well being of group members, but also helped the KVK to revitalise its activities.

Though paddy cultivation is facing several constraints particularly labour availability and smaller holdings, which are not easily amenable for farm mechanisation, krishi sahayi has shown the way to tackle most of these problems. Not only the cost of production in paddy has been reduced, but also the farmers have been able to effectively implement the scientific crop production technologies, thus reviving paddy cultivation in the district. Sustained and continuous efforts of the group under the support and

supervision of KVK has ensured that the farmers interest and confidence remain in the forefront of farming.

Krishi sahayi is on its march ahead as agents of change and as an innovative model to all that can be replicated across the state.



‘Krishi Sahayi’ the women group empowered by KVK Malappuram taking up mechanised rice transplanting and reaping with active people’s participation



Glimpses of direct seeding in rice with drum





Field days on direct seeded rice technology using drumseeder

