

FACILITATING GROUP FARMING FOR ENHANCED PRODUCTION AND PRODUCTIVITY OF RICE IN PALAKKAD DISTRICT OF KERALA

Introduction

Palakkad district is described as the granary of Kerala. *Paruthikkavu Nellulpadhaka Padasekhara Samithi* (Paruthikkavu Paddy Growers Forum) in Chittoor-Thathamangalam Municipality of Palakkad district started with the formation of a *Karshaka Charcha Samithi* (Farmers Discussion Forum) in 1980 with 10 paddy farmers.

Scenario at the time of initiating Group Farming

Prior to the organization of farmers’ discussion forum, the farmers were practicing various cultural operations individually. Several problems in paddy farming were identified during the formation of the forum as indicted below.

- ❖ Lack of uniformity in cropping pattern among the members, resulting in the cultivation of different varieties with varying duration.
- ❖ Common water resource was poorly maintained and water management was difficult.
- ❖ Traditional cultivation practices were dependent on farm animals which was costly. Mechanization was not feasible due to smaller holdings, coupled with farm labour unrest.
- ❖ Inappropriate and high amount of application of chemicals and pesticides by individuals led to high incidence of pests and diseases and degradation of soil.
- ❖ Marketing of products by individual farmers was less rewarding.
- ❖ Government support was not reaching the farmers in time.

With the objective of tackling these problems, the Forum started its activities in 1982 with community paddy nursery using *Jaya* variety as the first crop. The Forum’s efforts were successful and soon caught attention of farmers of the area and the membership of the Forum increased to over hundred. Presently the Forum had 101 members (Fig. 1) with a land holding ranging from 30 cents to 10 acres. The group farming started with 25 acre in 1990-91 and reached 169 acre in 2002-03 (Fig. 2).

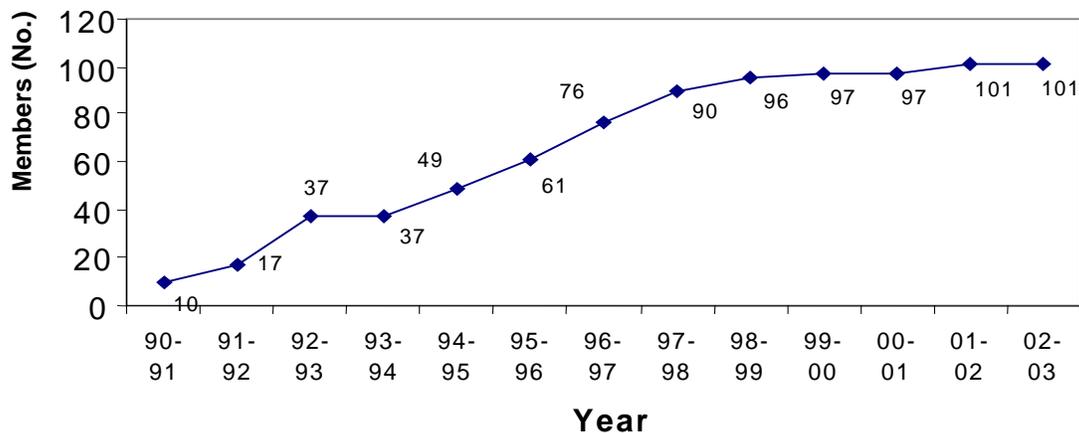


Fig.1. Membership growth of the Forum over the years

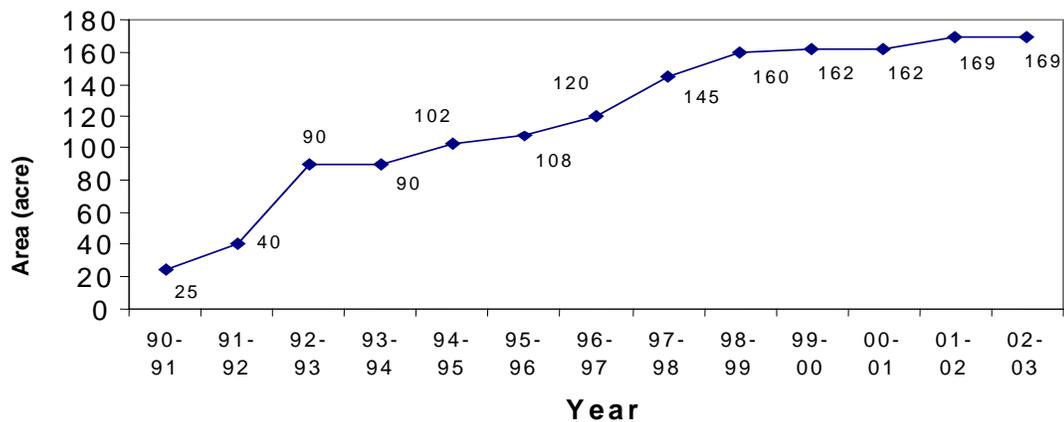


Fig. 2. Area under Group Farming over the years

Growth in group farming

The increase in group size and the operational area was due to the hard work of the members and the technical leadership provided by the KVK at various stages as seen in the timeline of progress. The KVK started its support to the group in 1990, and had contributed immensely by introducing and popularizing appropriate agricultural machinery, IPM technologies and crop diversification. The chronology of the important events that were instrumental in the success of Group Farming had been depicted in the timeline given below.

Timeline of progress achieved by the Forum

- 1980 - Farmers Discussion Forum started with 10 farmers
- 1982 - Activities started with community nursery raising for the 10 farmers
- Soil testing initiated
- 1983 - Success story broadcasted in AIR and the model was adopted by Department of Agriculture for the entire state
- 1984 - Collaboration with input agencies to take up demonstrations and village adoption
- 1985 - Crop competition started to encourage competitiveness in farming
- 1989 - The forum was registered as per the Group Farming Scheme of Dept.of Agriculture
- 1990 - Group farming started with intensive technical support and seeds of new varieties from KVK, Palakkad. The KVK trained farmers to use tractor and tillers. The forum acquired the required machinery
- 1992 - Farmers group insurance was started
- 1993 - The forum bags the first *Nel Kathir* award of Govt. of Kerala for best Group Farming Forum
- 1994 - Agreement with National Seed Corporation to take up seed production. The KVK ensured the technical guidance.
- 1994 - Crop diversification with integrated cropping system involving rice, vegetables and floriculture under the technical guidance of the KVK
- 1999 - Cono weeder and use of seed drum for paddy sowing were introduced by the KVK
- 2000 - The Samithi was selected as one of the seven farmers' organization in the country for the Integrating Front Line Extension System in the country
- 2000 - IPM strategies like use of Tricho card and Pheromone traps were introduced by the KVK. It also guided the forum to purchase a paddy harvesting machine
- 2002 - The KVK introduced paddy transplanter and *Pseudomonas* in cultivation. Separate women cell also started in the forum.

Achievements of Group Farming

Reduction in cost of cultivation production

The forum started its activities with a community nursery for all its members. The approach not only saved lot of investment, but also ensured several direct and indirect benefits. Prominent among them were uniform crop stage, variety, cultural practices and overall reduction in total cost of production.



Group members on a routine field visit

With the implementation of the community nursery by the group, the members realized that this approach reduced economic loss remarkably and they got motivated to practice group approach in other cultural operations too. Comparison between traditional nursery (in normal situations of individual farming) and community nursery indicated significant savings in community nursery rising approach (Table 1). The area required for raising a community nursery (10 cents) was 60 percent less than the land required for raising nursery (25 cents) by individual farmers. In addition, the cost of seeds, manure and the labour required to pull the seedlings were lesser in the community nursery which saved Rs 1310 at the nursery stage itself.

Table 1. Comparison of traditional and community nursery raising in Palakkad

Particulars	Traditional nursery		Community nursery		Net saving (Rs)
	Quantity	Value (Rs)	Quantity	Value (Rs)	
Seeds (Kg)	125	1250	80	800	450
Farm yard manure (ton)	1.0	600	0.4	240	360
No. of labour required for pulling of seedlings	<20	<1000	<8	<400	<600

Their community nursery concept was widely appreciated and All India Radio carried a special programme for the benefit of other farmer organizations in the state as a model for reducing the cost of cultivation through group approach in farming. This was later on adopted by the Department of Agriculture as a model to be extended throughout the state.

Water management

The Forum took up conservation of water bodies in the fields. New channels were laid to take water to the fields, which enabled the farmers to convert single crop paddy fields to double cropping system.



Scientific farming

Intensive agriculture was practiced on scientific basis by testing the soil at regular intervals and updating the soil map prepared by the Forum. The fertilizer recommendations were adopted based on soil test values. Application of farmyard manure and organic manures was insisted early enough to protect the soil characteristics and reduce the effects of synthetic

fertilizers. Daincha was cultivated during the fallow season to reduce dependency on purchased organic manure. Most significant improvement was seen in soil pH, which was regaining its neutral status.

The Forum had kept records of soil maps prepared since 1990 along with the recommendation of fertilizer to be applied. Soil pH had moved towards neutral status over the years as evident from

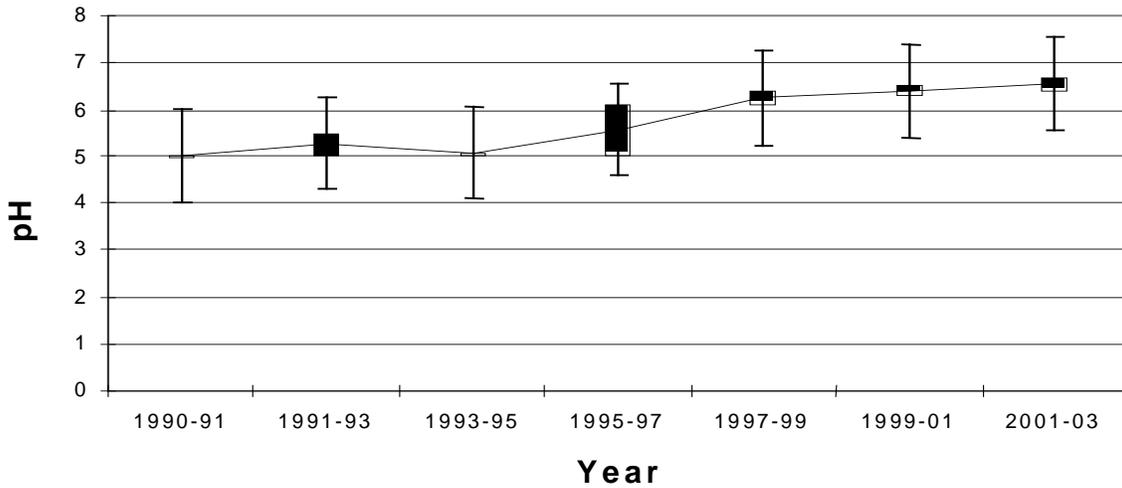


Fig 3.

Fig.3. Changes in soil pH over the years

Supply of seeds and buy-back

Seed exchange with the National Seed Corporation (NSC) had given tremendous boost to farmers’ confidence. NSC gives them 800 kg of paddy seed for an area of 10 ha and the seed produced was procured by the NSC @ Rs. 10/- per kg. It had been a sort of value addition, considering the fact that paddy as grain fetches Rs 6 to 8 per kg. Quantity of paddy sold as seed had increased (Fig 4.) giving substantial benefit to the farmers.

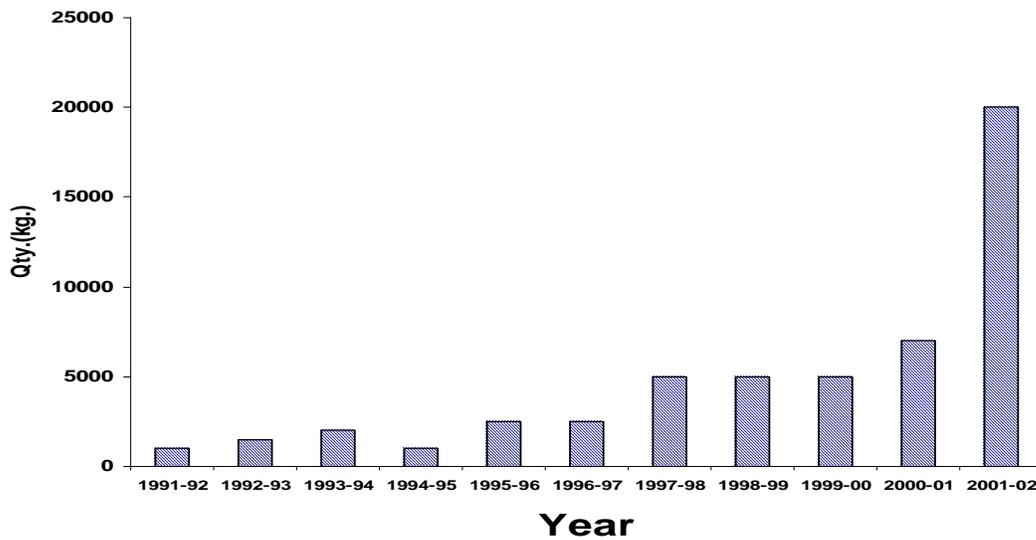


Fig. 4. Quantity of paddy seed sold by the members of the Forum

Increased yield and profit as a result of adoption of new technologies

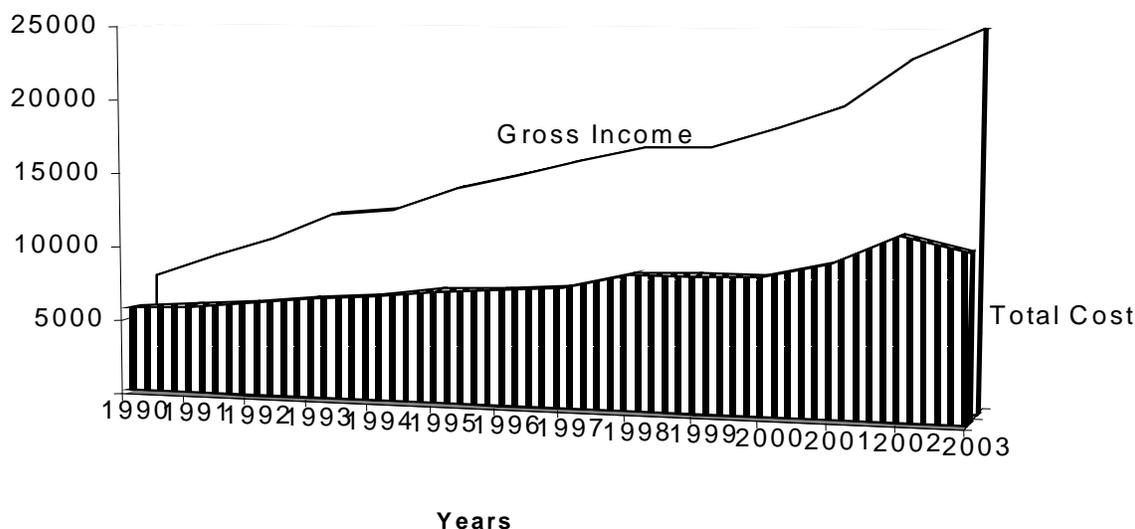
Farmers have switched over from local cultivars such as *Thavalakkannan*, *Chenkazhama*, *Anakkaomban* which yielded around 850 kg/ha, to the high yielding varieties like Kairali, Kanchana in the first crop season and Mahsuri in the second crop season getting an average grain yield up to 2300 kg/ha (Table 2). The forum maintained a good rapport with the Kerala Agricultural University through the Krishi Vigyan Kendra and Regional Agricultural Research Station, located in Pattambi, Palakkad for technical back stopping and other support. Group farming is now being practiced over 700 ha of paddy fields in the nearby Panchayats. While the average cost of production was maintained around Rs 6000 to 7000 per hectare, the gross income could increase up to Rs 25000 per hectare (Fig. 5), thereby increasing the net income.

Table 2. Changes in paddy productivity during the group farming period

Year	Yield (Kg/ha)
1990-91	850-950
1991-92	900-1000
1992-93	1100-1200
1993-94	1200-1250
1994-95	800-850*
1995-96	1200-1300
1996-97	1250-1350
1997-98	1500-1550
1998-99	1000-1050
1999-00	1650-1700
2000-01	1700-1750
2001-02	1700-2000
2002-03	2000-2300

* Drought year

Fig. 5. Profitability in paddy farming over the years (Rs/ha)



2.6 Mechanization

The Forum ventured into mechanization, without affecting job opportunities of the agricultural labourers, with tillers, power sprayers, pumps, oil engines etc.



Demonstrations on planting and harvesting through improved machinery

Information and input exchange

Inputs like pesticides were provided brought at subsidized rates the members. The Forum acted as an apex body of farmers and met their needs like collection of forms for loans of its members and liaising with government bodies. The forum conducts regular crop competitions and observes Farmers day marked with symposiums and exhibitions. The members were taken out for field visit to other areas once in a year. As could be seen from Table 3, such information exchange programmes conducted by the Forum have benefited nearly 4000 farmers during the last three years.

Table 3. Information exchange programmes conducted by the Forum

Year	Community workshop	Training programmes	Field visits	Study tours	Seminars	Total no. of Participants
2000-01	5	10	2	6	2	1360
2001-02	1	4	1	2	2	960
2002-03	5	10	2	2	4	1616
Total	11	24	5	10	8	3936

Marketing and thrift support

For realizing a better price, the produces were sold through cooperative societies in bulk. The average price realized by this bulk marketing was more than (at least Rs 2 per kg) the support price fixed by the Government, which is given in Fig. 6.

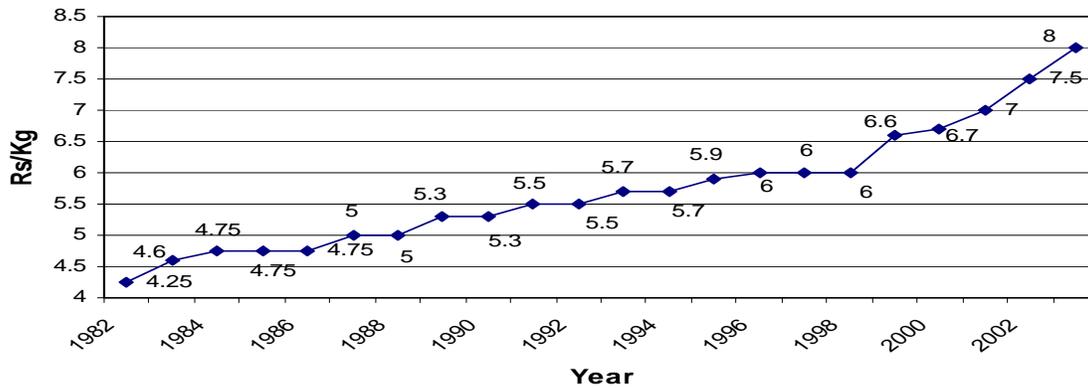


Fig. 6. Support price for paddy over the years

Enhanced credit repayment ability

Due to the reduced cost of production and increased net profits, paddy farmers could repay the crop loan, which was indicated by decreased number of defaulters of bank loans from 75 per cent in 1995-96 to 17.1 percent during 2001-02 (Table 4). Recognizing the need to inculcate the habit of saving money, all members now participate in National Savings Scheme, which helped them in regular repayment of loans if income from farming is delayed.

Table 4. Changes in credit repayment pattern among group members

Year	No of members availed loan	No of defaulters	Percentage of defaulters
1990-91	10	0	0
1991-92	15	0	0
1992-93	25	0	0
1993-94	30	0	0
1994-95	30	0	0
1995-96	40	30	75.0
1996-97	60	10	16.6
1997-98	70	14	20.0
Year	No of members availed loan	No of defaulters	Percentage of defaulters
1998-99	80	15	18.7
1999-00	85	32	37.6
2000-01	80	14	17.5
2001-02	88	15	17.1

Overall Benefit

The benefits that occurred due to Group Farming of Paddy have been summarized in Table-5.

Table 5. Summary of advantages of group farming

Item	Benefits
Advance planning	Timely sowing, green manure raising and incorporation, land preparation, transplanting, fertilizer application, weeding, harvesting and proper selection of varieties for the whole forum were ensured.
Adoption of new technologies	Mechanization through tractor, tiller, transplanter, harvester and thresher was more feasible in a group.
Uniform variety cultivation	Uniform growth stages throughout the crop period helped better management of pests and diseases, fertilizer application, and other cultural operations.
Managing labour scarcity and unrest	This problem is completely avoided through group farming where in machineries were used for various operations making it less expensive for individuals
Ensures timely operations	Effective utilization of farm machineries was possible only through group farming in Kerala situations and this helped in carrying out various operations without any time lag
Reduced seed requirement	Only 80 kg/ha in community nursery as compared to 125 kg/ha in traditional individual nursery
Organic manuring through <i>in situ</i> green manuring	Cultivating daincha during the fallow season had reduced the dependency on purchased organic manures. The forum arranged the broadcasting of green manure seeds, which was not possible at individual level because of reluctance.
Soil test based nutrient management	Balance and need based application of chemical fertilizers along with requisite supplement with organic manuring, the pH of the soil had moved towards neutral.
Effective irrigation and water management	Wastage of water was minimized. The saved water was used to take two crops. Altercations arising out of water related matters have been stopped.
Cost of production	Timely operations, collective efforts, reduced dependency on purchased inputs and mechanization has resulted in reduced cost of production.
Benefits from IPM strategies	Use of <i>Tricho</i> egg cards, <i>Pseudomonas</i> culture, Pheromone traps, light traps etc. were more effective with simultaneous application in large area. Reduction in chemical pesticides helped in keeping a balance of the natural enemy population
Frequent meeting and exchange of information	Increased knowledge on scientific aspects including water and nutrient management, natural resources conservation and their utilization
Profitability of farming	Improved standard of living, reduced community tension and harmonious living

Summary

Agriculture in Kerala is facing several constraints, particularly with labour availability and smaller holdings distributed in valley areas, which were not easily amenable for mechanization. Group farming had shown the way to tackle most of these problems. Not only the cost of production had been reduced, but also the farmers have effectively implemented the scientific crop production technologies, thus reviving paddy farming in Kerala. Sustained and continued existence of the group farming for more than a decade itself speaks volumes about the relevance of the approach. The technical backstopping by the KVK had ensured that the farmers' interest and confidence remain in the forefront of farming.

[BACK](#)