



A DOCUMENTATION OF SUCCESSFUL CASE STUDIES ON FARM SCHOOL

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ABSTRACT

Farm School is powerful instrument for participatory research and knowledge management. It is an alternative extension tool and facilitate farmer-to-farmer learning. The three successful case studies have been documented by personal interview method and are as follows: Muniraju S/O Narayanappa, a progressive farmer of Dimballi village of Hosakote taluk conducted FS on importance of paired row technique in ragi+redgram cultivation in 10:2 ratio in an area of 2.50 acre. The effectiveness of the technique is clearly shown by getting a bumper yield under drought condition and by increase in the B: C ratio from 1.14 to 1.74. Many other farmers consulted him and five of his students achieved the success. Second farmer Devaraju S/O Narayanappa, a progressive farmer of Anupahalli village of Hosakote taluk conducted FS on importance of spacial annidation in mango orchard by taking up inter crop and cover crop in 2:1ratio in an area of 2.50 acre. The effectiveness of the intervention was proved by assuring the farmer with additional income as a source during non-bearing season of mango with the B: C ratio of 1.43 from assured crops. He is now successful in the concept of spacial annidation and being a major consultant for the other mango growers and third farmer Jayaramappa S/O Muniyappa, a farmer of Ralakunte village of Hosakote taluk conducted FS on importance of micronutrients and organic agriculture in an area of 2.50 acres by taking up ragi as pure crop in a soil that has become unfit for cultivation. The effectiveness of the treatment was indicated by getting higher yield, improved soil fertility and the B: C ratio has increased from 0.79 to 1.62. He is major consultant for his students and other farmers. This emphasizes the importance, usefulness and farmer oriented approaches of farm school.

KEY WORDS: Farm School, Case study and documentation.**INTRODUCTION**

In 1981 the Mother's service Society evolved a novel strategy for improving the transfer of agricultural technology to farmers. The strategy calls for the establishment of a Farm School in each village on lands leased out from farmers. Classes are conducted for young farmers in the field and the students are paid for their field labour, so they can earn while they learn. The income from cultivation covers the entire cost of operating the school. E.I.D. Parry & Co. established the first farm school near their sugar factory at Nellikuppam, South Arcot District, and Tamil nadu. One-year classes in cane cultivation were introduced. In the very first year, the students obtained a yield of 56 tons per acre, nearly twice the average achieved by farmers in the district. In 2005, the National Farmers Commission of India, on Society's recommendation, proposed establishment of 50,000 farm schools throughout the country to disseminate the latest technology to farmers similarly there are numerous agricultural 'bright spots' covering crops, fruit trees, farm animals and fisheries in the country. These bright spots are the results of the work of innovative and hard working farmwomen and men. Farm schools are established in the fields of such innovative farmers or farmer achievers who are actually enhancing productivity and profitability in their farms through scientific and sustainable agriculture. Establishment of model farm schools to demonstrate and train such progressive farmers on the latest production technology can best achieve rapid dissemination and

adoption of advanced production technologies. The Farm Schools can receive training and technical support on a continuing basis from a network of state level training centers (STC), from the soil testing labs, the farm equipment hiring service and the expert computer system. Farm School is powerful instrument for participatory research and knowledge management. It is an alternative extension tool and facilitate farmer-to-farmer learning. It also reduces the widening gap between scientific know how and farmers practices. This would facilitate development of farming situation / system specific packages. The host achiever farmer is designated as Farmer Scientist / Farmer Professor in the respective crops / enterprises considering his area of expertise. The establishment of such Farm Schools would also add the dimension of engagement with farm families, to extension. ATMA envisaged that Farm Schools will be based on the principles of "farmer to farmer learning" in the field situation of the achiever farmers. Such Farm Schools will operationalize Front Line Demonstrations (FLD) in one or more crops and/or allied sector activities with a focus on Integrated Crop Management including field preparation, seed treatment, IPM, INM, etc. Priority need to be given in the areas of horticulture, crop-livestock, mixed farming, organic farming, agro-forestry and aquaculture for establishing Farm Schools. The principles of farm school are, to disseminate the location specific technologies relevant to different farming situations through farmer-led extension, to establish an experimental learning situation

in the form of successful farmers, to utilize the services of successful farmers as trainers to teach fellow farmers at village level, to make available agriculture training facility at village level benefiting the local farmers, to establish direct linkage between the Farmer-Extension-Research, to establish a cost-effective system of on-farm training to farmers in every village of the country and to double agricultural productivity and farm incomes by dissemination of advanced agricultural technologies for plant nutrition, pest management and water conservation. With this background the present study was conducted to document the successful farm schools.

METHODOLOGY

Three case studies are considered in the present study were collected by personal interview of farmers of Hosakote taluk, Sulebele hobli of Karnataka. The villages were selected based on the successful farm schools established by department of agriculture, government of Karnataka. Selected villages were surveyed and farmers were selected from those villages in gram sabha. Membership in farmers’ organizations, Farmer Interest Groups (FIGs) and Commodity Interest groups (CIGs) are also considered. These three case studies are successful and speaks about three different technologies which are location specific and need based and supported the farmer socially, economically, technically. Hosakote is a taluk in Bangalore rural district which is peri-urban in nature but still we find many farmers in the village side who are keen to improve agriculture and have urge to become agripreneurs. Sulebele is a hobli in Hosakote taluk where mango, Ragi, Maize, Redgram vegetable crops like

Cabbage, Capsicum, Tomato, Onion are major crops. Farmers have contact with Raitha Samparka Kendras (RSKs), Horticulture department, veterinary doctors etc., and other such line departments. They too participate in government & extension activities taken up in villages like grama sabhas, campaigns, demonstrations etc. As a part of investigation the participation of both farmer and farm women was also studied.

**SUCCESSFUL CASE STUDIES ON FARM SCHOOL
Case 1. Farm school on Paired row technique in Munirajus farm**

Muniraju aged 36 years; a resident of dimballi village of hoskote taluk belongs to sulebele Hobli of Bangalore rural district. Educated up to PUC and owns 2.50 acres of land. Soil of the land owned by Muniraju is red sandy. Before starting the farm school he was cultivating ragi and after that he is growing red gram along with ragi. He started farm school in the year 2010-11 by adopting paired row technique on 2.5 acres of land. Most of labour requirement met through family members and hired labor only peak period of crop. The reasons for which he adopted the paired row technique were crop sustainability, Economic viability and Training.

The problems that farmer was facing before the starting the farm school are lack for proper seedlings development, abnormal growth of earheads and less yield due to drought. The solution that the farmer found was Farm school through ATMA. One of the advantage of farm school establishment was, ATMA provided the expenses on tillage operation, fertilizers, intercultural operations

TABLE 1: Practices adopted by Muniraju in his farm school

Particulars	Earlier	Present
Cropping pattern	Pure crop	Ragi+Redgram
Seed treatment	Not aware	Treated
Method of sowing	Broadcasting	Seed drill
Weed intensity	more	reduced

The information in the table 1 indicates that, the particular farmer was adopted mono cropping system earlier and after the intervention of the farm school he adopted mixed cropping with paired row technique. Due to the farm school the farmer became aware of seed treatment and now he is successfully adopted seed treatment technique and the method of sowing is also changed as he was earlier

using broadcasting method where uniformity of grain distribution was difficult. Sowing through seed drill ensures uniform distribution of the seeds all along the field. Due to adoption of paired row technique and seed drill method of seed sowing the weed intensity is considerably reduced. The process of weeding is also easy since farmer is using paired row technique.

TABLE 2: Benefit Cost analysis of farm school

Particulars	Before	After
Cost of cultivation (Rs.)	52,450	42,500
Gross return (Rs.)	60,200	74,000
Output (grain + fodder)	14 quintals of grain + 3 tonnes of fodder	10 quintal of grain + 2 tonnes of fodder + 5 quintals of Redgram
Net return (Rs.)	7,750	31,500
B:C ratio	1.14	1.74

The cost benefit analysis of Muniraju farm is indicated in the table 2 and it shows that cost of cultivation before the intervention was very high as it was Rs. 52,450 per 2.5

acres of ragi. The cost of cultivation after the intervention of farm school is Rs. 42,500 per 2.5 acres of mixed cropping which is much lesser than the earlier.

TABLE 3. Participation of family Members in the different activities

Particulars	Access		Control	
	Men	Women	Men	Women
Decision making	Y	Y	Y	N
Resources	Y	N	Y	N
Activities	Y	Y	Y	Y
Incentives & Benefits	Y	Y	Y	N
Education/ trainings	Y	Y	Y	Y

*Y=Yes and N=No

The particulars in the table 3 indicates that the women in the family given access to the decision making process and only men has got the control over the most of the decisions in the family it may regarding the farming or any other decisions in the family. When it comes to the resources of the family only men has got both access and the control. Whereas, in activities related to farming both farmer and farm women were actively involved. When it comes to incentives and benefits both men and women had access but only men had control over the incentives and the benefits. The participation in training and education activities, both men and women had access and control. The inference which could be drawn from the table is that the women in the family had less control whereas men had more control over different activities.

Outcomes of intervention

Due to the intervention of farm school on Muniraju's farm, the farmer could get many benefits among them Soil and moisture conservation, control of pests and diseases,

reduced chemical fertilizers usage, benefit cost ratio (B: C) increased from 1.15 to 1.62, Supplementary crop, Improved grain quality and he successful mitigated the drought.

Case study 2: Farm school on spacial annidation

A.N.Devarau aged 42 years; a resident of Anupahalli village of hoskote taluk belongs to sulebele Hobli of Bangalore rural district. Educated up to PUC and owns 8.0 acres of land. Soil of the land owned by Devaraju is red sandy. Before starting the farm school he was not taking up any crops in the interspaces b/w mango plants in his mango orchard and now he is taking up intercrops in the spaces of mango orchard. He started farm school in the year 2010-11 by adopting spacial annidation technique on 2.5 acres of land. Most of labour requirement met through family members and hired labor only peak period of crop. The reasons for which he adopted the special annidation were crop assurance, additional income and utilization of space and technology worth.

TABLE 1: Practices adopted by Devaraju in his farm school

Particulars	Earlier	Present
Cropping pattern	No crops in b/w mango plants	Redgram + Cowpea
Varietal selection	-----	Considered.
Crop selection	-----	Considered
Weed intensity	more	reduced
Soil erosion control	Chances of occurrence	No fear

The information in the table 1 indicates that, the particular farmer was having no intercropping system in mango orchard earlier and after the intervention of the farm school he took redgram and cowpea as intercrops in between the space of mango plants. Due to the farm school

the farmer became aware of special annidation, intercropping in between mango plants, varietal selection, and crop selection has been considered. Weed intensity is reduced and the fertility of soil enhanced and erosion rate decreased

TABLE 2: Benefit Cost analysis of farm school

Particulars	After
Cost of cultivation (Rs.)	26,500/-
Gross return (Rs.)	38,000/-
Output (Redgram+Cowpea)	5qtl+2.0qtl
Net return	11,500/-
B:C ratio	1.43

The cost benefit analysis of Devaraju farm is indicated in the table 2 and it shows that the additional income he is gaining in the off season, from the crops taken up in the space between the mango plants is Rs.11, 500 net income from Rs.26,500 cost of cultivation and Rs.38,000 gross income and the B:C ratio is 1.43.

Outcomes of intervention

Due to the intervention of farm school on Devarajus farm, the farmer could get many benefits among them major are; Utilization of natural resource, additional income during non-bearing season, reduced intercultural operation, additional income with B:C ratio of 1.43, Pollination rate & fruit quality improvement, Soil fertility improvement, Altered microclimate.

TABLE 3. Participation of family Members in the different activities

Particulars	Access		Control	
	Men	Women	Men	Women
Decision making	Y	Y	Y	N
Resources	Y	Y	Y	Y
Activities	Y	Y	Y	Y
Incentives & Benefits	Y	Y	Y	Y
Education/ trainings	Y	Y	Y	Y
Women don't have control on Decision making, aspects				
*Y=Yes and N=No				

The particulars in the table 3 indicates that the women in the family given access to the decision making process and no control whereas men has got the control and access over the most of the decisions in the family it may regarding the farming or any other decisions in the family. When it comes to the resources of the family both men and women has got both access and the control. Whereas, in activities related to farming both farmer and farm women were actively involved. When it comes to incentives and benefits both men and women had access and control over the incentives and the benefits. The participation in training and education activities, both men and women had access and control. The inference which could be drawn from the table is that the women in the family has no control on decision making aspects whereas men has control and access over all activities.

Case study 3: Farm school on importance of micro nutrients and organic agriculture:

Jayaramappa aged 38 years; a resident of Ralakunte village of hoskote taluk belongs to sulebele Hobli of Bangalore rural district. Educated up to SSLC and owns 5.0 acres of land. Soil of the land owned by Jayaramappa is red sandy. Before starting the farm school he was not aware about the importance of minimum utilization of chemicals in the field, its effect on natural resources, and also organic way of cultivating crops. Due to his over adoption of chemical fertilizers in his field to get higher yield and returns, his soil has become sick with ph of 4.6 and whatever he grows, the returns was meager. He started farm school in the year 2009-10 by adopting organic way of cultivating crops and application of micro nutrients, vermicopost, and organic manure as per the recommendation of national soil testing laboratory report on 2.5 acres of land. Most of labour requirement met through family members and hired labor only peak period of crop. The reason for which he adopted is the soil condition.

TABLE 1: Practices adopted by Jayaramappa in his farm school

Particulars	Earlier	Present
Soil test	Not bothered	Considered
Application of micro nutrients	not aware	Recommended (Gypsum, Borax, ZnSo4)
Varietal selection	MR-6	GPU-28
Manures	Neglected	Green leaf manure, FYM, Vermicompost
Sowing method	Broadcasting	Line sowing
Usage of chemical fertilizers	High	Nil
Soil erosion control	Problem	reduced

The information in the table 1 indicates that, the particular farmer was having no idea about soil testing, varietal selection which is suitable for soil and also importance of micro nutrient application and after the intervention of the farm school he acquired the skills of preparing vermicompost and gained knowledge about organic agriculture and importance of micro nutrients through

trainings he attended and he could able to teach his fellow students the acquired skills. Due to farm school his method of cultivating crops changed, succeeded in varietal selection, application of chemical fertilizers became nil which helped him his reduction in cost of cultivation of crops.

TABLE 2: Benefit Cost analysis of farm school

Particulars	Before	After
Cost of cultivation (Rs.)	48,575/-	47,400/-
Gross return (Rs.)	38,400/-	76,800/-
Output (grain + fodder)	8qtl+2t	16qtl+8t
Net return (Rs.)	-10,175/-	29,400/-
B:C ratio	0.79	1.62

The cost benefit analysis of Jayaramappa farm is indicated in the table 2 and it shows that the cost of cultivation in

earlier crop ragi was Rs.48,575 for 2.5 acre and his gross returns was Rs. 38,400 with the yield of 8qtl grains and 2t

fodder. The net return was in negative figures. That is he was under loss with B:C ratio of 0.79 and after intervention of Farm school, his cost of cultivation was Rs.47,400 with gross returns of Rs.76800 and the net

income was Rs.29,400 which was better profitable that to in the rainfed crop ragi. And there is a drastic change in the B: C ratio from 0.79 to 1.62.

TABLE 3. Participation of family Members in the different activities

Particulars	Access		Control	
	Men	Women	Men	Women
Decision making	Y	Y	Y	N
Resources	Y	Y	Y	Y
Activities	Y	Y	Y	Y
Incentives & Benefits	Y	Y	Y	Y
Education/ trainings	Y	Y	Y	Y

Women don't have control on Decision making, aspects.

The particulars in the table 3 indicates that the women in the family given access to the decision making process and no control whereas men has got the control and access over the most of the decisions in the family it may regarding the farming or any other decisions in the family. When it comes to the resources of the family both men and women has got both access and the control. Whereas, in activities related to farming both farmer and farm women were actively involved. When it comes to incentives and benefits both men and women had access and control over the incentives and the benefits. The participation in training and education activities, both men and women had access and control. The inference which could be drawn from the table is that the women in the family has no control on decision making aspects whereas men has control and access over all activities. Due to all these success the main reason is farmers interest, need, urge to succeed in their occupation and punctual participation in the activities of Farm school like demonstrations, group discussions, trainings, Farmer-scientist-extension interface, exposure visits, field trips, conducting field days to make their achievement known to other farmers and inspire them to take up the interventions.

Outcomes of intervention

Due to the intervention of farm school on Jayaramappa farm, the farmer could get many benefits among them major are; Soil condition improved, yield improved, farmer could able to stand firmly in his agriculture occupation, he became an entrepreneur in vermicompost preparation. Minimum of 35-38 tillers per seed and fodder and grain quality improved.

Lessons learnt by farmers in the Farm school

- Participation-integration and coordination makes learning effective.
- Technology specialization.
- Trainings importance.
- Realized worth of technologies.
- Adoption of more productive technologies.
- Utilization of available resources in an optimal way.
- Managerial skill development.
- Better marketing and processing of products.

With all these the farmers are of the opinion that the Farmer school helps the farmers to become a resource person, opinion leader in the village, awareness about the interventions, develops confidence by capacity building,

develops better coordination in the village and line departments, empower the farmer, motivates foe individual initiation, enhanced knowledge and skills, changed the attitude of farmers towards new recommended interventions, increased producer share in consumer rupee, it's a door of wide opportunities to the farmer, entrepreneurship development among farmers, it is a path which reduces risks and uncertainties which are faced by farmers in the traditional way of cultivating crops by its effective knowledge scientific knowledge of crop cultivation.

CONCLUSION

Farm School is based on the principle of “farmer-to-farmer learning”. It helps in developing a cost effective extension system through Progressive farmers. It disseminates the location specific technologies by establishing an experimental learning situation in the farms of successful farmers and effectively utilizes their service as trainers to teach fellow farmers at village level. Thus, the agricultural productivity and farm incomes substantially increased due to disseminating advanced agricultural technologies. This helps the farming community to realize high returns with minimum production cost. The case studies referred in this paper clearly indicates that the farm school has substantially increased the farm profit. Hence farm school can be made as a tool to showcase new technologies as well as to make farming more profitable.

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