

Extending farmers' reach beyond production:

Development of Market linkages under Farmer FIRST Programme

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Indian agriculture has always been under stress due to inherent challenges such as lack of information, awareness and skills etc. on the latest agricultural technologies. However, under the present scenario, lot of efforts are required to move from production to market led extension, keeping in view the non-availability of remunerative price to the farmers. The Farmer FIRST Programme of Indian Council of Agricultural Research aims at moving beyond production and productivity to recognise the complex, diverse and risk prone realities of the farmers.

Keywords: Farmer FIRST Programme, Maize, Market Linkage, Public Private Partnership

Farmer FIRST Programme (FFP) which has been implemented in different regions of the Country is also implemented in the Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu (J&K) with a project titled “Exploring economic opportunities for farmers of Kandi villages through application of proven scientific technologies” in 12 cluster villages of Samba district, Jammu and Kashmir. Due to the prevailing low price in the market, owing to increased yield, an arrangement for the disposal of maize produce of the farmers was made under the FFP with private manufacturers namely, M/s Shalimar Cattle Feed and M/s Satyam Cattle Feed, and Bari Brahman Jammu in which it was decided to barter maize for animal feed. During the year 2018-19, 120 farm families bartered 140 quintals of maize for animal feed wherein the price accounted for maize was higher than the prevailing market price, though not equivalent to the Minimum Support Price declared by the Government but price accounted for animal feed was less than the manufacturer's retail price. The linkage developed can last forever as both the parties found the

linkage developed under FFP as mutually and socially beneficial.

Situation analysis

The Farmer FIRST Programme (FFP) moves beyond productivity to focus on enhancing farmers' income by incorporating suitable modules. In Jammu and Kashmir, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu has implemented the FFP in twelve villages of block of Samba district. The map of selected cluster is depicted in Fig. 1.

The efforts have been made to bring change in the lives of 778 farm

families of the selected cluster of 12 villages. The distribution of farm families under selected cluster of 12 villages is presented in Table 1.

The inhabitant farmers are resource poor, owing to the fact that 86% belong to marginal category as per the land-holding classification (Fig. 2). The cluster of 12 villages falls under rainfed ecosystem which receives an average annual rainfall of 700-800 mm. More than 70% of rainfall has been received in just 3 months w.e.f. June to August that highlights the basic problem in respect of water availability in the region throughout the year.

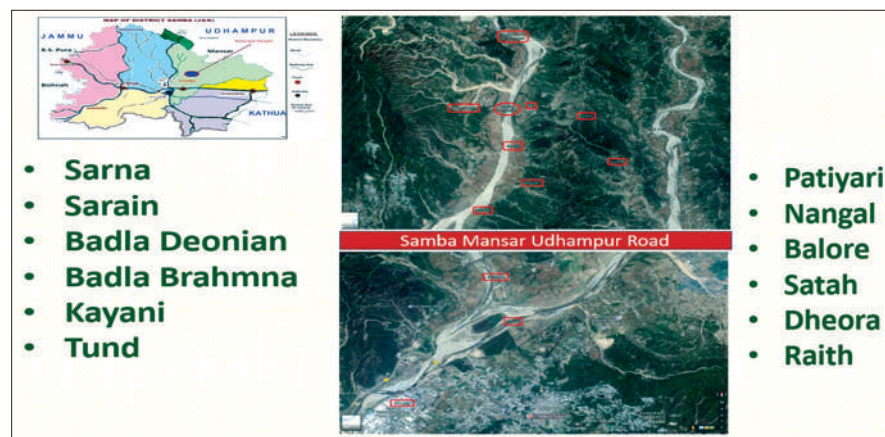
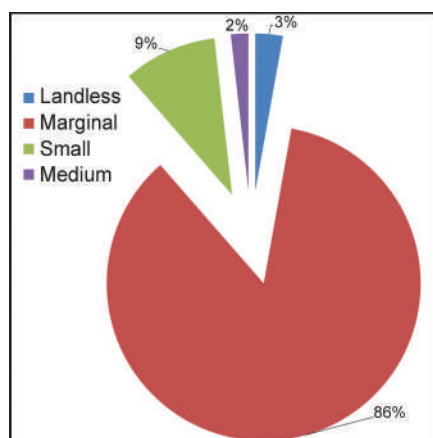


Fig. 1. Satellite map of selected cluster of 12 villages

Table 1. Distribution of farm families

Name of the village	No. of farm families
Sarna	73
Raith 32	
Badla Deonian	62
Badla Brahmana	35
Kayani	64
Nangal	88
Patyari	34
Sarain	114
Toond	56
Satah	57
Dheora	24
Balore	139
Total	778

The majority of farm families own livestock, including cattle, sheep, goats and poultry etc. The livestock census of selected villages conducted during the baseline survey is presented in Fig. 3. Productivity of livestock in terms of milk production and animal breeding is very low, owing to the non-availability of quality fodder and

**Fig. 2.** Classification of farmers based on land holdings

lack of awareness regarding the use of mineral supplements.

Problem of overproduction

Maize is the principal *kharif* crop of the region and therefore constitutes an essential component of farm economy. However, the baseline survey conducted before the implementation of the project revealed low maize productivity due to the non-adaptation of recommended production technology. Therefore, as one of the major modules under the project of FFP, a scientific package of practices recommended by SKUAST-Jammu for maize crop was demonstrated. Frontline demonstration (FLD) is one of the most important tools for showcasing the technological interventions and their horizontal expansion for large social benefits. FLDs help in reducing the yield gaps which may exist due to the lack of awareness among the farming community on improved technology. Such technological demonstrations may include high yielding/hybrid varieties, production, protection or management practices in the farmer's

field across different agro-climatic regions and farming situations.

During the year 2017-18, scientific package of practices for maize were demonstrated over an area of 150 ha covering 500 farm families. The comparison of demonstrations laid on maize production technologies with existing maize practices is presented in Table 2.

In addition to the demonstrations, training programmes, publication of extension literature and exposure visits of farmers were also organized to provide complete access to the scientific cultivation of maize. Some of the glimpses of maize demonstrations conducted on farmers' fields are presented in Fig. 4.

Success of the demonstrations could be witnessed from the results obtained by farmers in the form of increased production, yield and revenue as compared to the existing practice (Table 3).

However, increased production had resulted in enhanced surplus and glut in local market and therefore, a shortfall in price was realized by the farmers in previous year.

Table 2. Comparison of demonstrations with existing maize production practices

Package of practices	Frontline Demonstration (Recommended technology)	Farmers Practice (Local Check)
Variety	Double Dekalb	Mansar
Sowing Technique	Line sowing	Broadcasting
Seed rate	1 kg/ha	4 kg/ha
Application of fertilizers	60:40:20 NPK	70:00:00 NPK
Seed treatment	Seed treated with chemical recommended	Not followed

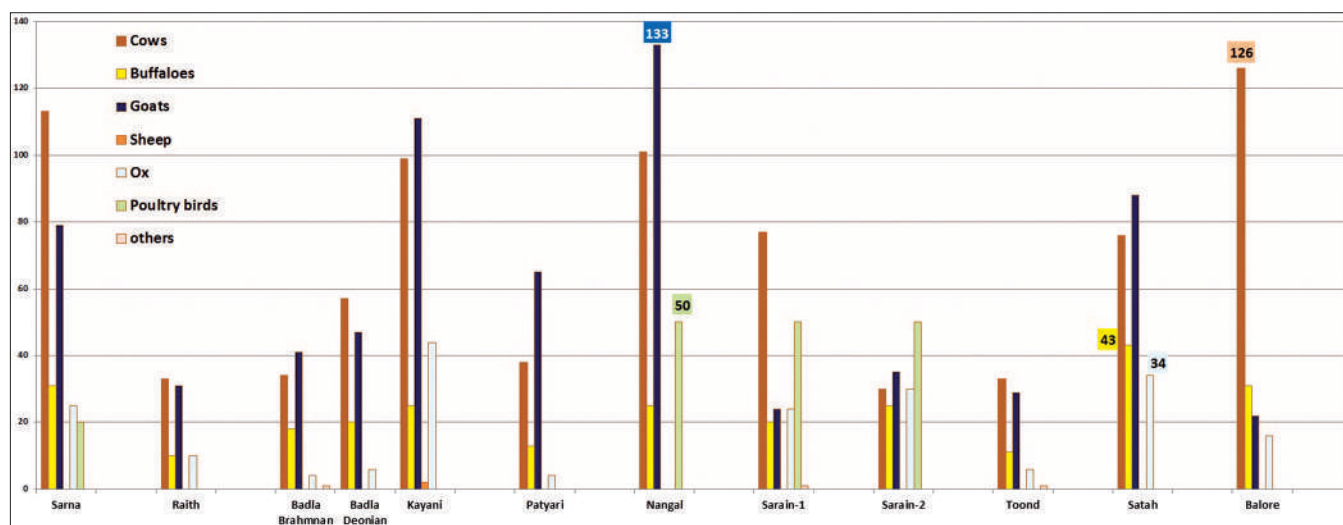
**Fig. 3.** Livestock census of selected cluster of villages



Fig. 4. Glimpses of FLDs and maize harvested

Despite gaining sufficient revenue, a point of consideration was developed for market linkage so that farmers would not feel that increased production is anyway detrimental to remunerative price and higher income.

Looking beyond production

Farmer FIRST Programme is a unique scheme implemented by Indian Council of Agricultural Research which aims at moving beyond production and productivity. Keeping the basic instinct of FFP and problem in hand into consideration, the efforts were made to develop innovative strategies for having permanent market linkage which can take care of remunerative price to the farmers of the selected cluster of villages.

Considering the market dynamics of maize, it was planned to develop vertical linkages to maximise net social benefit

A number of agro-industries have

been operating in the adjoining district of the selected villages which include manufacturing units of cattle feed. Maize being one of the main ingredients of cattle feed, the cattle feed manufacturers were approached to develop market linkage which could be mutually beneficial for both farmers and private manufacturers. At the end of *kharif* season of the year 2018-19, an arrangement has been made with M/s Shalimar Cattle Feed and M/s Satyam Cattle Feed, Bari Brahman Jammu under which it was decided to barter maize for animal feed.

Developing market linkages for maize

After several deliberations in a Public Private Partnership (PPP) mode, a Memorandum of Understanding (MoU) was signed under FFP in which it was agreed upon by the manufacturers to barter maize from farmers with feed. It was decided that the price of maize will be fixed at higher rate compared to price prevailing at the local market, if

it is lower than the Minimum Support Price (MSP). On the other hand, the feed will be provided to farmers at wholesale (industry) rate. Moreover, the manufacturers will lift maize for feed at farmer's doorstep, which would further result in economic benefit of farmers.

After going into the vertical linkage with manufacturing units, several programmes were conducted to have direct contact of farmers with manufacturing units and to make them aware of the modalities of barter system agreed upon under PPP mode. The glimpses of such programmes organised in the selected cluster of villages have been presented in Fig. 6.

The market linkage developed for maize under FFP has resulted in considerable economic benefit to the farmers as presented in Table 4.

Outcome and Impact of developing market linkage for maize

Farmer FIRST Programme is aimed at bringing out permanent changes in the lives of farmers through the implementation and adoption of interventions that would go beyond production. The output and impact of market linkage being developed for maize can be summarised as follows:

Incentives for farmers to grow more

In order to attain sustainable increase in agricultural production, farmers should receive incentives for making efforts to grow more. This

Table 3. Comparison of economics of demonstrations with existing maize production practices

Package of practices	2017-18		2018-19	
	Frontline Demonstration (Recommended technology)	Farmers Practice (Local Check)	Frontline Demonstration (Recommended technology)	Farmers Practice (Local Check)
Yield (q/ha)	44.71	30.83	40.56	28.26
Total Cost (₹)	28845.00	24210.00	28997.00	24047.00
Gross revenue (₹)	67062.00	46247.00	60828.00	42388.00
Net revenue (₹)	38217.00	22037.00	31831.00	18341.00
B.C ratio(Net return/Total cost)	1.32	0.91	1.10	0.76



Fig. 6. Programmes conducted under market linkage

could be achieved by linking farmers with a suitable source to gain remunerative price for their produce. Market linkage developed under FFP provides direct relief to the farmers as it ensure remunerative price to the farmers for maize. The linkage developed is lasting forever as both the parties found it mutually beneficial.

Improvement in productivity of livestock

The provisions of linkage under PPP mode provided bartering of maize with quality animal feed. The feed procured under the linkage helps in resolving low productivity of livestock, owing to fodder scarcity and rainfed ecosystem in the selected cluster of villages.

Table 4. Economic benefit of market linkage for farmers in 2018-19

No. of families covered	Total Maize bartered for feed	Price realized for maize (₹)	Price of feed for farmers (₹)	Total economic benefit for farmers (₹)	Direct monetary benefit (₹)
120	140 q	1,600/quintal instead of 1,450	680/bag Instead of 730	35,400	Per family: 295 Per quintal: 253

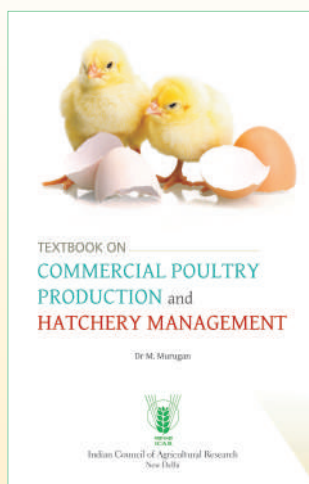
Social benefits

Market linkage developed under FFP ensured achievement of maximum overall social benefit. The farmers got maximum profit for the maize produce. There was an indirect benefit to the farmers by way of increase in milk yield, health and productivity of animals due to quality cattle feed provided to the animals. The manufacturing units also received assured supply of inputs at

reasonable rates so as to support quality production of feed and increased industrial and economic activity.

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TECHNICAL SPECIFICATIONS

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