

Perspective of Frontline Extension Delivery System for Economical Emancipation of Sugarcane Farming in Tribal Area of South Eastern Gujarat.

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ABSTRACT

Gujarat is one of the important sugar producing states in the country. The study was conducted in Valsad district of Gujarat state to know the relative advantage of two sugarcane varieties viz 'CoN 05071' and 'CoN 05072' recently released for south Gujarat. Valsad district is the south eastern part of Gujarat which is one of the major sugarcane growing districts and falls in heavy rainfall area. 'CoN 05071' is an early maturing high yielding and high sucrose variety with erect cane, sparse flowering and good ratooning ability and moderately resistant to wilt, red rot and smut diseases, while, 'CoN 05072' is a mid late maturing, high yielding variety with tall erect attractive canes moderately resistant to wilt, red rot and smut diseases and has good ratooning ability and no lodging characteristics. These two varieties were assessed through on farm trials at instructional farm of KVK Valsad keeping in view the perspective of tribal farmers. KVK, Valsad selected 55 tribal farmers and imparted trainings on sugarcane production technologies, use of optimum planting materials per unit area, planting methods and intercropping for enrichment of their knowledge, skills and further advisory services through Farmers' Field School (FFS). Seed production programme was also taken up to ensure availability of cane planting material of these high yielding varieties. The front line demonstrations of variety 'CoN 05071' was demonstrated at 25 farmers' field covering eight hectare area and variety 'CoN 05072' at 30 farmers' field covering three hectare area with its counterpart local checks of varieties 'CoC 671' and 'CoN 97009' during 2009-12. The weighted average cane yield of 'CoN 05071' was 108.25 t/ha which was found to be 32.41 per cent higher with Benefit Cost Ratio (BCR) of 1:4.77 as compared to its counterpart local checks cane yield of 81.75t/ha with BCR 1:2.61. In variety 'CoN 05072', the weighted average cane yield obtained was 97.13 t/ha which was found to be 17.31 per cent higher with Benefit Cost Ratio (BCR) of 1:3.79 as compared to its counterpart local checks cane yield of 82.83 t/ha with BCR 1:2.24. Thus by adopting high yielding varieties ('CoN 05071' and 'CoN 05072') the tribal farmers of Valsad district are deriving benefit of higher production and income from sugarcane cultivation. The effective economic gain through the frontline extension delivery system has a broad perspective in economical emancipation for tribal farmers growing sugarcane in south Gujarat.

Key words : Frontline Demonstration, Sugarcane Farming, Economic Emancipation

Sugarcane is an important commercial crop in Gujarat state. In Valsad district, tribal farmers are growing sugarcane as one of the major commercial crop. The average annual rainfall of 2350 mm is mainly received in the months of June-September with spread of 63 rainy days from south western monsoon. As per an estimate, sugarcane is grown in 14700 hectare area with 83500 metric tonnes of production with average productivity of 70 tonnes per hectare under good management practices (District Contingency Plan 2010) The commercial farming of sugarcane at destination, as source region was not sufficiently developed for small tribal farmers to survive for the whole year. The seasonal movement of tribal farmers in search of wages was controlled by rich sugarcane farmers to maximize their profit of their sugarcane farming at low wages. In this process, the tribal farmers got their meagre wages and they did not move above the poverty line (Anjana and Sulaiman, 2003). While realizing political freedom of 1947,

it was the only half of the race won while the rest half was to come from economic emancipation (Jha 2001) Randhawa and Sundaram (1990) emphasized on the cutting edge of development for direct upliftment and emancipation of small farmers while making conceptual retooling to bring in agricultural strategy in line with demographic structural reality of a country. Paswan and Jaideva (2003) urged economic emancipation and educational emancipation as imminent aspects in development process and democratic politics. Yadav (2004) augmented sugarcane as an instrument of agrarian reforms and economic emancipation, is perhaps, second to none being a labour intensive crop that provides livelihood to millions of people through organized industry in rural India. In fact more than half of the national sugarcane production provides the grist for industry of *jaggery* and *gur* and small scale open pan *khandsai* production. Hence, emancipation, in true sense, is the process of freeing oneself from which ever impediment that is holding one back.

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The present study examines the prospective of frontline extension delivery system for economic emancipation of sugarcane farming in tribal area of south Gujarat. The approach followed in delivery of sugarcane technology unravels the ways of socio-economic transformation and empowerment of tribal farmers.

MATERIALS AND METHODS

Based on bench mark survey, Krishi Vigyan Kendra (KVK), Valsad adopted twelve villages namely; Asma, Sukhala, Motapondha, Khuntli, Kheredi, Goyma, Karaya, Pati, Nevari, Arnala, Ambheti for dissemination of sugarcane production technologies at farmers' field. Sugarcane cultivation was found to be occupying major areas next to paddy with a sizable number of tribal farmers practising sugarcane farming in these villages. Keeping in view of farmers perspectives, recommended improved varieties and production technologies of sugarcane by State Agricultural University were assessed for suitability through conducting of on farm trials at KVK instructional farms. A total of 55 farmers practising sugarcane farming were selected for imparting need based practical trainings on sugarcane production technologies. Frontline demonstrations were laid out at farmers' fields for the purpose of showing the proven production potentials improved sugarcane varieties and production technologies. Seed production of selected sugarcane varieties was taken up at instructional farm of KVK to ensure availability of quality planting material to farmers. Demonstration fields were used as Farmers' Field School (FFS) for better conviction and adoption of sugarcane production innovations. Field data were analysed to work out cost-benefit. Production constraints hindering pace of adoption of sugarcane production technologies were ascertained through organizing of interactive sessions with stakeholders of sugarcane.

RESULTS AND DISCUSSION

Constraints in sugarcane production

The bench mark survey revealed the following sugarcane production constraints as under;

Prevalence of old varieties: Farmers using varieties CoN 671 and CoN 97009 were old, low yielding and susceptible to wilt.

High cane seed rate: Farmer using 6-7 tonnes cane seed per hectare was higher which amounting to high cost of planting material.

Impure planting material: Farmers were obtaining planting material from own field without paying much care in selection of cane seed.

Low yield of sugarcane: Low cane yields about 70 tonnes per hectare under good management practices at farmers' field.

Non availability of quality seed: Non availability of quality seed material and no access to seed producing agencies.

Lack of knowledge: Traditional ways of sugarcane farming more pronounce among the sugarcane growers.

Lack of resources: Tribal farmers did not have capacity to afford cost of sugarcane production inputs.

Extension Intervention in dissemination of sugarcane technologies

Training: Sugarcane farmers were imparted training on selection of sugarcane variety, planting material, optimum seed rate, treatment of cane seed, planting techniques, control of pyrrilla.

Frontline demonstration: Demonstrations were laid out at farmers' fields to demonstrate production potential of improved varieties CoN 05071 and CoN 05072 and improved production technologies such as use of optimum planting material @ 4.5 t/ha. with end to end planting.

Multiplication of cane seed: Production of cane seed of high yielding varieties CoN 05071 and CoN 05072 was taken up at instructional farm of KVK, Valsad.

Supply of planting material: KVK ensured timely supply of seed material to sugarcane growers.

Farmers' Field School: Demonstration fields were used as a potential extension tool for better conviction and adoption of sugarcane innovations.

Result of Demonstration

An analysis of the yield data (Table 1) revealed that weighted average cane yield of 'CoN 05071' was 108.25 t/ha. which was found to be 32.41 per cent higher with Benefit Cost Ratio (BCR) of 1:4.77 as compared to its counterpart local check variety 'CoN 671' (81.75 t/ha with BCR 1:2.61). In variety 'CoN 05072', the weighted average cane yield obtained was 97.13 t/ha which was found to be 17.31 per cent higher with Benefit Cost Ratio (BCR) of 1:3.79 as compared to its counterpart local check (variety 'CoN 97009') cane yield of 82.83 t/ha with BCR 1:2.24. The farmers fetched net return from improved varieties 'CoN 05071' (Rs.192320/ha.) and 'CoN 05072' (Rs.179514/ha.) which were found to be giving higher net return as compared to their counterpart local Check varieties 'CoN 671' (Rs. 88688/ha.) and 'CoN 97009' (Rs.94517/ha.), respectively. The higher return derived in terms of net profit was also due to use of optimum planting material @ 4.5 t/ha. with end to end method of planting. The reduction in quantity of planting material also cut down the cost of cane seed by about 20per cent as compared with the farmers' practices of using 6-7 tonnes of planting material/ha.

CONCLUSION

The tribal farmers of Valsad district derived the benefits of higher production and income from sugarcane farming. The effective economic gain though the frontline extension delivery system has a broad perspective in economical emancipation for tribal farmers growing sugarcane in south Gujarat.

Table 1 Results of Frontline demonstration of sugarcane varieties on framers field under irrigated farming situation

| Varieties (Demo.v/s Local Check) | No. of farmers | Area (ha.) | Yield (t/ha.) | | Increase in yield (%) | Economics of Demonstration | | Economics of Local check | |
|--|-------------------|---------------|----------------|----------------|-----------------------------|-------------------------------|---------|-----------------------------|---------|
| | | | Demo. | Local check | | Net Return (Rs.) | BCR | Net Return (Rs.) | BCR |
| 'CoN 05071' v/s 'CoN 671' | 25 | 8 | 108.23 | 81.75 | 32.4 | 192320 | 01:04.8 | 88688 | 01:02.6 |
| 'CoN 05072' v/s 'CoN 97009' | 30 | 3 | 97.13 | 82.83 | 17.31 | 179514 | 01:03.8 | 94517 | 01:02.2 |

Demo. - Demonstration; BCR- Benefit Cost Ratio:



Fig 1 Training on production technology



Fig 4 Frontline demonstration



Fig 2 Farmer visit to Demo unit of KVK



Fig 5 Dignostic visit



Fig 3 Seed production at KVK



Fig 6 Farmers field school at Demonstration field



Fig 7 Exhibition

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