

CHAPTER - IV

MEASURES FOR INCREASING SUGARCANE PRODUCTION-II

- (3) Infra-structure facilities.
- (4) Protective Measures.
- (5) Incentive Schemes.

C H A P T E R - I V

MEASURES FOR INCREASING SUGARCANE PRODUCTION-II

(3) INFRA-STRUCTURE FACILITIES :

Growth of a sugar factory depends upon infra-structure facilities like transportation, communication, power development, etc. Rajaram Karkhana has taken the following steps for creating infra-structure facilities.

(i) CONSTRUCTION AND MAINTENANCE OF ROADS :

Sugarcane is perishable commodity. Thus creating and developing transport facilities for the prompt transportation of sugarcane is an essential requirement of cane marketing. For successful marketing of sugarcane, arrangement for its quick disposal must be made at the proper time with the help of means of suitable transport facilities.

In the area of Rajaram Karkhana there was inadequacy of roads and feeder roads linking the village cane area and the condition of the roads added to losses arising on account of sugar recovery. The roads and feeder roads were in pitiable conditions specially in the Karkhana area causing great inconvenience and hardship to the cane growers. The lack of roads and feeder roads had been a chief

obstacle to admission of trucks, tractors and other vehicles into the interior area.

In order to achieve good sugar recovery, fresh canesupply system must be in operation. For this purpose it requires construction of transportable roads, communication system and vehicle arrangement for speedy and timely supply of cane to the Karkhana according to daily requirement.

Rajaram Karkhana created separate civil department headed by chief Engineer consisting of overseer, suboverseers, tracers, clerks and helpers. The Karkhana spent amount continuously out of Government Road Grant and out of its own funds for construction and maintenance of katcha roads and "panand" roads joining to main roads. Also upto 1988-89, 32 Cross Drainage Works were constructed by the Karkhana out of its own funds. Following table shows the expenditure incurred for construction and maintenance of roads in the area of the Karkhana.

Table 4.1 : Statement Showing Details of Construction and Maintenance of Roads.

Year	Roads in K.M.	Out of Govt. Grant	Out of Kar-khana funds Rs.	Total expenditure Rs.
1979-80	7.00	5,84,725	25,850	6,10,575
1980-81	4.50	1,98,000	13,250	2,11,250

Year	Roads in K.M.	Out of Govt. Grant	Out of Karkhana funds	Total expenditure
			Rs.	Rs.
1981-82	16.00	12,20,600	27,750	12,48,350
1982-83	5.25	-	4,16,300	4,16,300
1983-84	8.00	-	8,04,298	8,04,298
1984-85	-	-	1,23,390	1,23,390
1985-86	-	-	1,25,373	1,25,375
1986-87	-	-	3,05,380	3,05,380
1987-88	-	-	2,09,204	2,09,204
1988-89	-	-	1,80,400	1,80,400

*Source - Office Records of Rajaram Karkhana*

The Government Grant for road construction was received upto 1981-82 after which it stopped coming. After 1983-84 the Karkhana spent the amount on maintenance of the roads and not on construction of roads. The Karkhana has constructed nearly 46 K.M. roads through its own resources and Government Road Grant. Remote villages in the area of operation have now been linked by the roads so constructed. This has resulted in minimisation of the road distance from the Karkhana site. This further results in savings in transport cost and better recovery.

(ii) EXTENTION SERVICE :

With the increasing number of co-operative sugar

factories, competition for procuring cane intensified. At this time, the Karkhana authorities realised that per acre yield and recovery was going down. The Karkhana authorities further realised the need for cane development work in the area of operation of the Karkhana. So, to achieve sufficient amount of the cane for working of the Karkhana, the Cane Development Department was created in the year 1987 and attached to the Agricultural Department. The Chief Sugarcane Development Officer is the incharge who looks after (a) extension and (b) research work. The Chief Sugarcane Development Officer is a graduate in agricultural science having wide experience of both extension and research work. The Sugarcane Development Officer prepares the development schemes for a particular year. For implementation of the development programme trained Diploma-holder Agricultural Assistants are posted for every village. The Agricultural Assistants visit all the fields periodically and see that farmers implement all recommendations. The Assistants submit their weekly report to the Section Officer who in turn prepares a consolidated report of his zone and submits the same to the Sugarcane Development Officer. The knowledge of these agricultural assistants is kept updated by arranging regularly lectures of experts from Agriculture University,

Sugarcane Research Centres and Government Departments associated with rural development. The cane development has close contact with different Government Research Stations and Semi-Government Agencies, which are working for the benefit of sugarcane cultivators. The Cane Development Department tries to identify and pin-point the problems of the cultivators and give clear direction and try to overcome their difficulties. The seed farm, hot water treatment plant, and soil testing laboratory are under the control and guidance of Chief Sugarcane Development Officer. He also supervises nurseries, testing of new varieties and carrying out of different experiments conducted in seed farms at Bawachi and Kasegaon. In order to understand the cane development activities needed for the area the Cane Development Department has conducted general soil survey and survey for pests and diseases. Chief sugarcane Development Office organises 8 to 10 seminars in every zone every year. Group Discussion, demonstration and face to face visits are arranged by the Chief sugarcane Development Officer. Following table gives the details of the Seminars.

Table 4.2 : Statement Showing Yearwise Seminars Conducted and Farmers attended.

Year	No.of seminars in 6 zones	No.of farmers attending seminar
1987-88	64	4324
1988-89	57	3287

Source : *Office Records of Rajaram Karkhana.*

(iii) SOIL TESTING LABORATORY :

Now-a-days for the scientific cultivation of the land the soil testing programme has got utmost importance. Through this programme the doses of the fertilizers and water are suggested according to the need of a particular crop. Rajaram Karkhana used to do the soil testing work with the help of Mobile Laboratory of the National Chemicals and Fertilizers Ltd., Bombay and Padegaon Research Centre upto 1986. In 1987 the Karkhana has established a well equipped soil testing laboratory in the main building of Engineering College run by the Karkhana. The Chief Cane Development Officer is incharge of the laboratory. Chief Soil Chemist, Soil Chemist and two lab-boys are appointed for testing the soil. The laboratory has capacity to analyse 3500 to 5000 samples for NPK, PH

conductivity and frelime. The work of testing soil was started on 1st October, 1987. Upto 1988-89, 2500 samples were analysed by this laboratory. The advise on the reclamation of problematic soils and fertilizer recommendations based on soil analysis are given by this laboratory. Necessary staff is attached to this laboratory so as to enable it to do the work efficiently and effectively.

(4) PROTECTIVE MEASURES :

To get expected yield of cane for healthy crop growth, Rajaram Karkhana has taken following plant protection measures.

(1) SUPPLY OF FERTILIZERS :

The sugarcane yield and recovery percentage are mainly related with manures and fertilizers applied to the cane crop. It is very difficult for many cultivators to make available the fertilizers as and when they are required. It affects the anticipated sugarcane yield. Hence Rajaram Karkhana has been supplying the fertilizers on credit to the cultivators against their sugarcane bills at the required time. The Karkhana has also been supplying press-mud at a reasonable price to the members. The fertilizers such as urea, Sufala, Sulphate, Potash, Super



Phosphate, mixed fertilizers such as 10:26:26, 15:5:5, 20:20:0, 18:18:10 etc. are supplied to the cane-grower-members on credit. The credit limit fixed for per registered acre of sugarcane for crushing was Rs. 250/- in 1978-79 which was raised to Rs. 500/- in 1979-80 and further Rs. 1000/- in 1980-81. In 1981-82 the Karkhana decided to supply fertilizers to non-members cane cultivators on credit at the rate of a maximum of Rs.1000 per acre and in proportion to their deposits with the Karkhana, provided that such cultivators previously supplied sugarcane to the Karkhana continuously and presently made agreement for supply of sugarcane in next crushing season. As the prices of fertilizers increased Rajaram Karkhana increased the credit limit to Rs. 1300 to members and non-members from the year 1986-87. The Karkhana used to supply fertilizers by purchasing them from outside to the members on credit upto the year 1979-80. From the year 1980-81 the supply of fertilizers has been done through Walwa Taluka Krishi Padavidhar Krishi Udyog Vikas Sahakari Sangh Ltd., Islampur. The Karkhana gives a guarantee letter to the cultivator on the basis of which the Sangh supplies fertilizers to cultivators on credit.

The following table shows the position of supply of fertilizers by the Karkhana on credit basis.

Table 4.3 : Statement Showing the Yearwise Fertilizers Distributed by Rajaram Karkhana.

Year	Amount Rs.lakhs
1979-80	7.43
1980-81	12.31
1981-82	16.54
1982-83	36.23
1983-84	42.55
1984-85	43.57
1985-86	60.27
1986-87	58.21
1987-88	48.55
1988-89	52.40

SOURCE : Office Records of Rajaram Karkhana.

For increasing the quality and quantity of sugarcane in the area of the Karkhana along with supply of fertilizers the jute seeds for green manuring was also supplied to cane cultivators on 50% subsidy basis from the year 1987-88 onwards. These seeds are also supplied on credit. Following Table shows distribution of jute seeds and subsidy given to the cane cultivators.

Table 4.4 : Statement Showing Distribution of Jute Seeds.

Year	No. of Members	J. Seed in M.T.	Total amount	Subsidy Rs.
1987-88	147	10.434	64,269	28,856.50
1988-89	195	14.787	86,000	36,967.50

SOURCE : Office Records of Rajaram Karkhana.

(ii) SUPPLY OF PRESS-MUD :

Generally the press-mud is used as manure in the field. In order to satisfy the need of compost fertilizers the Karkhana mostly distributes press-mud. It increases yield as well as juice quality of the sugarcane. The Karkhana has supplied press-mud from the year 1980-81 to members at the rate of one trailer of press-mud per acre at the nominal price of Re.1 per ton plus transport cost, to members field. Following Table shows supply of press-mud to the members.

Table 4.5 : Statement Showing Distribution of Press-mud.

Year	Press-mud in M.T.	Rate per tonne (including transport charges) Rs.
1980-81	18214	20
1981-82	18418	21
1982-83	18754	21
1983-84	14715	16
1984-85	14810	19.75
1985-86	14058	20
1986-87	18188	22
1987-88	18942	23
1988-89	18763	27

SOURCE : Office Records of Rajaram Karkhana.

(iii) SUPPLY OF CHEMICALS, INSECTICIDES, PESTICIDES ;

The diseases on sugarcane are fungi, bacteria, virus, leaf spot, red rot, grassy shoot, ratoon stunting etc. To protect sugarcane from disease Rajaram Karkhana supplied such pesticides as Bavestine, Foret 10 G. and agro chemicals such as Gamma B.H.C. For Spraying the pesticides, the Karkhana has purchased spray pumps and made them available to members at free of cost.

For increasing sugarcane production and sugar recovery the Karkhana has been purchasing Pushti liquid fertilizers and distributing them amongst members on credit basis at the rate of 10 ltrs. per acre from the year 1986-87. For sprinkling this liquid fertilizers a subsidy to Rs. 60 per acre is given by the Karkhana. The Agricultural Assistants give guidance regarding use of pesticides, insecticides and liquid fertilizers. Following table shows details regarding distribution of Pushti a liquid fertilizer on credit.

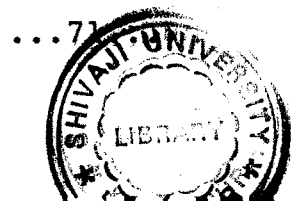
Table 4.6 : Statement Showing Distribution of Pushti.

Year	Pushti in Ltrs.	Subsidy for Spraying(Rs)
1986-87	10,000 Ltrs.	60,000
1987-88	4,134 Ltrs.	24,840
1988-89	8,325 Ltrs.	49,980

SOURCE : Office Records of Rajaram Karkhana.

(iv) WATER LOGGING AND DRAINAGE PROBLEM :

Excess use of water, fertilizers and continuous sugarcane production in the same field leads to problem of water logging. Water logging affects both yield of cane



per acre and percentage of recovery of sugar. Rajaram Karkhana has taken various measures to tackle the problem of drainage and provide ways and means to avoid water logging conditions. As a result, the reclaimed land is brought under cane crop or other crops. The Karkhana supplied 50 tonnes Gypsum on the basis of 50% subsidy in the year 1979-80 and 1980-81. In 1981-82, 123 M.T. Gypsum supplied on 50% subsidy basis. The field staff of the Karkhana give guidance regarding drainage system and alternative crop system. The Karkhana realised the importance of green manuring and for increasing green manuring distributed seeds of jute and Dhencha to members on 50% subsidy basis.

A conference was organised on 9th Dec., 1986 at the Karkhana Hall for giving guidance to farmers on water logging problem. The experts from Deccan sugar Institute Poona, Mahatma Phule Krishi University Rahuri, Social forestry Department, Sangli, Soil conservation department, Sangli and Benar Scheme, Sangli were invited.

(5) INCENTIVE SCHEMES :

For encouraging farmers to increase sugarcane production following incentive schemes have been adopted by the Karkhana.

(i) CREDIT FACILITIES :

Lack of adequate credit facilities to the farmers is an important factor inhibiting sugarcane development. Agricultural credit to sugarcane growers is given by the village co-operative credit societies, district co-operative Banks and Nationalised Banks. The loans given by credit societies and banks are recovered through deduction from the cane price. Rajaram Karkhana gives letter of guarantee to member and non-member cane cultivators for purchase of fertilizers and insecticides on credit. For obtaining loan for purchase of tractors the Karkhana stands guarantee to the banks. For preparing land for sugarcane cultivation in time and getting fertilizers in time for increasing yield per acre and develop quality of sugarcane, production assistance was given by Rajaram Karkhana to the extent of Rs. 51.34 lacks in the year 1981-82 to member and non-member cultivators.

Central and state Governments are providing funds, loans and subsidies for implementing cane Development and supplementary schemes aimed at increasing cane yield and area. The Karkhana has utilised the above funds, loans and subsidies for implementing the schemes.

In order to provide credit facilities to the members for other than agriculture purpose and to various institutions run by the Karkhana, Rajarambapu Patil Sahakari Bank Ltd., Peth, was established in the year 1981. At present 5 branches of the Bank are working in the area of the Karkhana, which provide credit and banking facilities to the members.

(ii) PROVIDING RUBBER-TYRED CARTS :

The cane growers within a radius of 5 to 10 kms. carry their cane to the gate of the Karkhana by bullock carts. Bullock carts are slow moving means of carriage and take longer time in transporting the cane to the Karkhana resulting in driage and evaporation of sugar contents. The roads get spoiled by the bullock carts with iron tyres. There is cruelty to animals as well as huge loss of cane sucrose on account of driage due to delay in transport. So Rajaram Karkhana has taken steps to popularise the rubber tyre carts. A scheme was started in 1979-80 for providing Rubber Tyred carts. Up to 1988-89 the Karkhana purchased 700 Rubber Tyred Carts. Out of these 700 carts 225 were given to members, backward class members and small landholders. Subsidy was given under this scheme and it amounted to Rs. 2,75,000 upto 1988-89. This subsidy was given



from share development fund. The remaining 475 carts were given on hire to needy farmers at Rs. 4 per day per cart. From 1987-88 onwards the hire charges were increased from Rs. 4 to Rs. 5 per cart per day. The Karkhana also gives guarantee for loan taken from a Bank for purchase of Rubber Tyred carts and bullock, to the member and non-member cultivators and backward class members.

(iii) BACKWARD CLASS AND SMALL LANDHOLDERS  
SUBSIDY SCHEME :

The Government of Maharashtra has decided to give subsidy to small landholder in backward class, sheduled cast and tribes and Navbudha for sugarcane cultivation from the year 1981-82. Under this scheme a Weaker cane grower in scheduled cast and tribes, who are not getting finance from co-operative societies, are entitled to production subsidy from the Govt. of Rs. 2250 (Rs.1250 for fertilizers + Rs.800 for seeds + Rs. 200 in cash) in first year, Rs. 1450 for next two years' ratoons (1250 for fertilizer + Rs. 200 Cash) and Rs. 750 for next two years for sugarcane cultivation.

The Karkhana has implemented a very progressive Sugarcane development scheme for weaker cane growers, by assisting them with timely supply of inputs, finance and

technical guidance with an objective of rehabilitating them and making sufficient good quality cane available to the Karkhana. Following table shows year wise subsidy given by the Karkhana to Backward class and small landholders.

Table 4.7 : Statement Showing Subsidy given to Backward Class and Small landholders.

Year	No. of Members	Subsidy(Rs.)
1981-82	201	2,58,188
1982-83	170	2,13,000
1983-84	358	2,87,958
1984-85	237	1,40,997
1985-86	190	86,906
1986-87	173	60,380
1987-88	182	2,13,600
1988-89	167	1,96,050

SOURCE : Office Records of Rajaram Karkhana.

(iv) PILOT PROJECTS FOR SUGARCANE :

Pilot project scheme was sponsored by the Government of Maharashtra. This Scheme was implemented with intention of increasing sugarcane yield per acre, recovery percentage and to contribute more in the earnings of the sugarcane

cultivators. Under this scheme the financial and technical know-how was provided by the Karkhana. The Karkhana had allotted the area under this scheme on selective basis. On an average one cultivator was not allotted more than one acre of land under this scheme. It resulted into increase of average yield per acre as compared to general average. The Agricultural Assistants guide the cultivators regularly in respect of finance facilities, water supply and fertilizers. The financial assistance was also made available to the backward class and marginal farmers. The loan was made available to them at 4% interest under this scheme. In the year 1979-80 the total acreage under this scheme was 130 acres, covering 75 villages and loans sanctioned by the Karkhana amounted to Rs.2,07,180. The management of the Karkhana had tried its level best to implement this scheme, but due to lack of proper response from members, the Karkhana decided to abandon this scheme from 1980-81.

(V) MATURITY-WISE HARVESTING :

This programme was planned with utmost care so as to make fully matured sugarcane available for crushing. There should be minimum time lag between harvesting and crushing of cane. This has resulted in increasing sugarcane recovery during the period of this study. The higher

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recovery percentage enabled the Karkhana to pay higher price for the sugarcane produced than the price fixed by the Government. It can very well be explained with the help of the following table.

Table 4.8 : Statement showing Yearwise Recovery Percentage and Sugarcane Price.

Year	Average Recovery Percentage	Sugarcane price paid Rs.
1979-80	11.56	254
1980-81	11.75	324
1981-82	11.69	275
1982-83	11.71	257
1983-84	11.88	268
1984-85	11.90	350
1985-86	11.90	400
1986-87	11.64	400
1987-88	11.60	437
1988-89	12.27	476

Source : Office Records of Rajaram Karkhana.

(vi) CROP COMPETITION :

In order to increase sugarcane yield per acre and encourage development of quality crop Rajaram Karkhana has arranged sugar-cane crop competition with effect from the year 1982-83. Separate prizes for adsali, eksali (suru) and ratoon were declared in each and every zone. The minimum production per acre and amount of prize declared were given in the following table.

Table 4.9 : Statement Showing Minimum Production Per-acre and Amount of Prizes.

Type of cane	Minimum production per acre in tonnes	P R I Z E		
		No. 1 Rs.	No. 2 Rs.	No. 3 Rs.
Adsali	70	700	500	250
Eksali (suru)	60	700	500	250
Ratoon	50	700	500	250

Source : Office records of Rajaram Karkhan.

The prizes distributed by the Karkhana in 6 zones were Rs.18,500, Rs.14,650 and Rs.4,350 in the year 1982-83, 1983-84 and 1984-85 respectively. The Karkhana abandoned this scheme from the year 1985 onwards.

(vii) DEMONSTRATION :

In order to implement modern methods of cultivation of sugarcane the Karkhana arranges demonstrations in the area of operation of the Karkhana. Verietal trial , manureal trials, fertilizer trials and irrigation trials, were taken on these demonstration plots. In the year 1979-80, Central Government's Cane Development Scheme subsidy of Rs.32,006 was given to participant cultivators on 217 demonstration plots. After creation of the separate Sugarcane Development Department in the year 1987, atleast one demonstration plot has been being taken at each and every village.

(viii) COTTON CROP TESTING PLOT :

In order to increase sugarcane yield per acre alternative crop cultivation is essential. Rajaram Karkhana decided to take cotton crop for developing fertility of the land in the year 1984-85. For implementing this scheme the Karkhana gives subsidy up to Rs.450 for seeds and insecticides out of share Development fund of the Karkhana. For popularising this scheme a conference was organised with the help of Agriculture College, Kolhapur. But due to lack of proper response from members, this scheme remained only on paper.

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(ix) VARIETAL PLANNING :

In order to bring co-ordination between cutting and crushing for increasing recovery percentage the Cane Development Department has been <sup>/trying</sup>to implement varietal planning programme in each and every village. The Cane Development Department tries to allot required area under early, midlate and late varieties having different maturity periods at the beginning of planting season. But the cultivators are planting as per their convenience and suitable varieties are generally not available at the time of planting. The varietal planning could not be implemented properly due to lack of co-operation of cultivators

(x) ZONEWISE MEETINGS :

In order to solve the problems of members and to discuss the various plans and policies of the Karkhana, zonewise meetings of members with directors and departmental heads are arranged in the first week of every month from August, 1985. Various suggestions of members are taken into consideration and necessary action is taken wherever feasible.

(xi) FINANCIAL ASSISTANCE FOR TRACTORS :

Tractors are useful for preparation of land for planting sugarcane as well as for transport of sugarcane.

The Karkhana encourages members to purchase tractors by giving guarantee to the Bank. The Karkhana also provides financial assistance of 12.5% to 15% of total investment in tractor. The amount of loan is recovered from owners by using the tractors for transport of sugarcane in crushing season. The pattern of investment was 12.5% by member, 12.5% by the Karkhana and 75% by the bank. In the year 1979-80 the financial assistance of Rs.1,51,920 was given for purchase of 11 tractors. From 1980-81 onwards this scheme was abandoned.

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