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Uma Maheswara Rao D
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

KT Rao
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

Adilaxmi D
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

Roy GS
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

Anantha Vihari M
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

Mukunda Rao CH
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

Corresponding Author:
Uma Maheswara Rao D
Acharya N.G. Ranga Agricultural
University, Regional Agricultural
Research Station, Anakapalli,
Andhra Pradesh, India

A study on technology needs, input needs and policy needs of sugarcane farmers of north coastal zone of AP.

Uma Maheswara Rao D, KT Rao, Adilaxmi D, Roy GS, Anantha Vihari M and Mukunda Rao CH

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Abstract

Sugarcane is one of the most important cash crops of Visakhapatnam district of Andhra Pradesh. From past few years many of the farmers are shifting from sugarcane to other crops due to less yields and low / No profits. To know the real problems faced by the sugarcane growers, the input needs, technology needs and policy needs are to be studied. The study taken up in two districts i.e. Anakapalli and Vizianagaram districts. The out of the study reveals that sugarcane area reduced from 37,000 ha to 9,000 ha (-75.67%) and production reduced from 21 lakh tons to 52,000 tonnes in Anakapalli district (-97.5%) and In Vizianagaram district, sugarcane area decreased from 16000 ha to 3000 ha (-81.25%) and Production is reduced from 10,45,000 tones to 2,20,000 tonnes (-78.94). From the study it was observed regarding technology needs technology on weed management ranked 1st followed by technology on pest management ranked 2nd and technology on ratoon management ranked 3rd. As per the study regarding input needs, inputs required for weed management ranked 1st, followed by varieties resistant to Red rot, Mosaic and YLD are very much required ranked 2nd and Introduction of whole cane harvesters through CHC ranked 3rd. The outcome of the study regarding policy needs reviews that, policy decision by state govt to develop diversified products at factory level ranked 1st followed by renovation of factory supply chain to involve new role players like supermarkets, distillery units, beverage corporations and EPDCL in sugar factory supply chain ranked 2nd and the study reveals that, attaching MGNREGS program with sugarcane cultivation especially planting and harvesting activities ranked 3rd.

Keywords: Sugarcane, Technology needs, Input needs, Policy needs

Introduction

Sugarcane (*Saccharum officinarum*) is a tall perennial grass belonging to the Poaceae family, recognized globally as one of the most significant crops due to its role in sugar production, bioenergy, and other by-products. Sugarcane is one of the world's oldest commercial and viable crops in the tropics and subtropics. Sugarcane is becoming an important cash crop for farmers because the domestic market has great potential for sugar production and sugarcane products. In India, area and production of sugarcane has been fluctuating from year to year depending upon pricing policy and climate conditions. It occupies about 5.06 million hectares. The total production of cane is 341.20 million tonnes (Directorate of Economic & Statistics, DAC&FW). As part of the study the basic data of North coastal zone with regard to sugarcane area, Production and productivity deviations over fast 10 years i.e. from 2011-12 to 2021-22. The data interprets that, the sugarcane area decreased from 37,189 to 19,590ha i.e 47.32% decline in area in Anakapalli district, The sugarcane area reduced from 16,000ha to 6,023ha i.e there is 62.35% decline in area in case of Vizianagaram district and the sugarcane area reduced from 5,712ha to 3,586ha i.e., there is 37.21% decline in area with regard to the area in Srikakulam district.

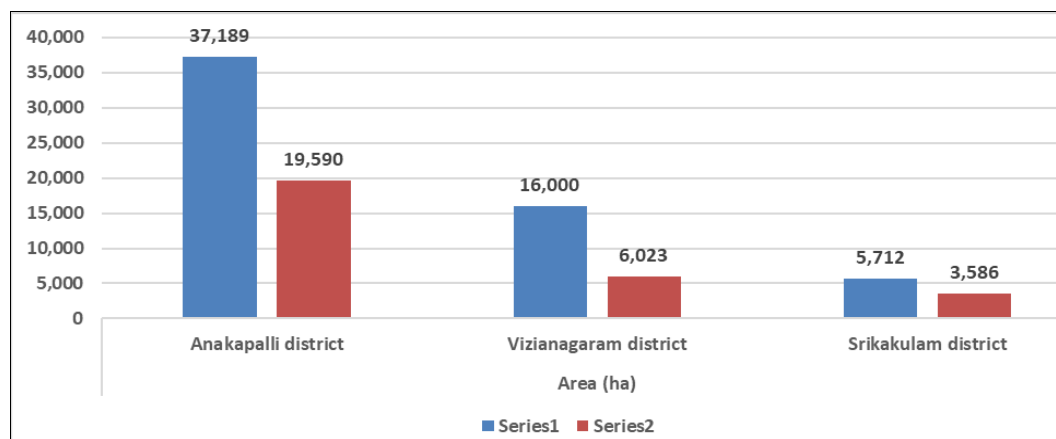


Fig 1: Sugarcane area fluctuations in NC Zone from 2011-12 to 2021-22

As part of the study the basic data of North coastal zone with regard to sugarcane area, after bifurcation of districts the sugarcane area fluctuations in 2 years i.e., from 2022-23 to 2023-24 reveals that the sugarcane area decreased from 16,000ha to 9,000ha i.e., 43.75% decline in area in Anakapalli

district, The sugarcane area reduced from 4,000ha to 3,000ha i.e., there is 25% decline in area in case of Vizianagaram district and The sugarcane area is maintained at 1,000ha in Srikakulam district.

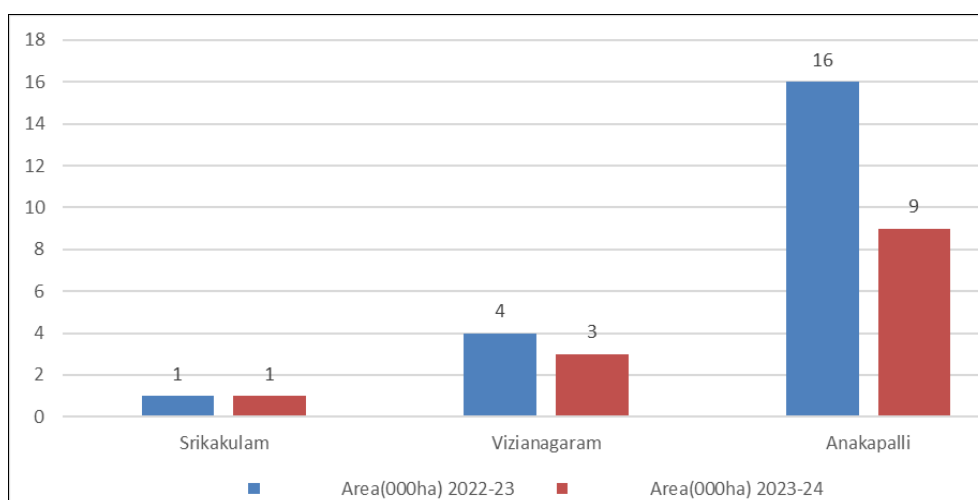


Fig 2: Sugarcane Area (000ha) fluctuations from 2022-23 to 2023-24

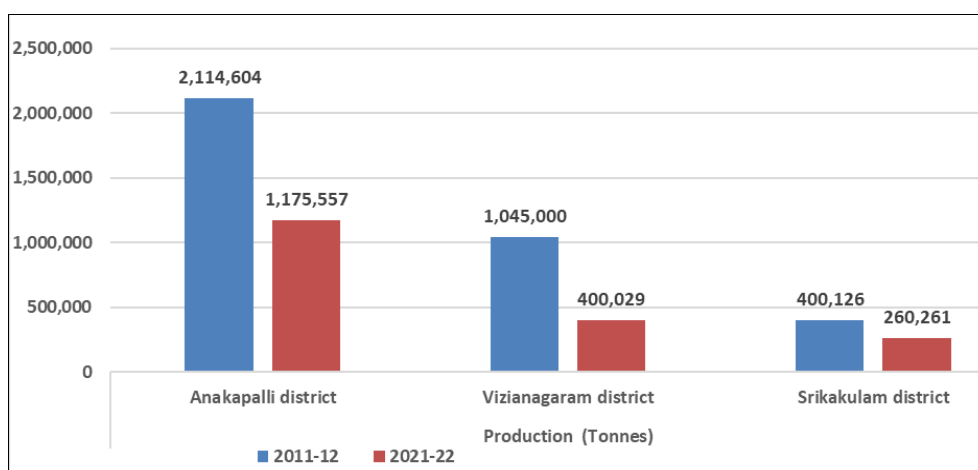


Fig 3: Sugarcane production deviation in North coastal A.P from 2011-12 to 2021-22

The outcome of the study reveals that the sugarcane production decreased from 21,14,604 tons to 11,75,557 tons i.e., 44.04% decrease in production in Anakapalli district, The sugarcane production decreased from 10,45,000 tons to 4,00,029

tons i.e. there is 61.71% decrease in production in case of Vizianagaram district and the sugarcane production decreased from 4,00,126 tons to 2,06,261 tons i.e. there is 48.45% decrease in production in case of Srikakulam district.

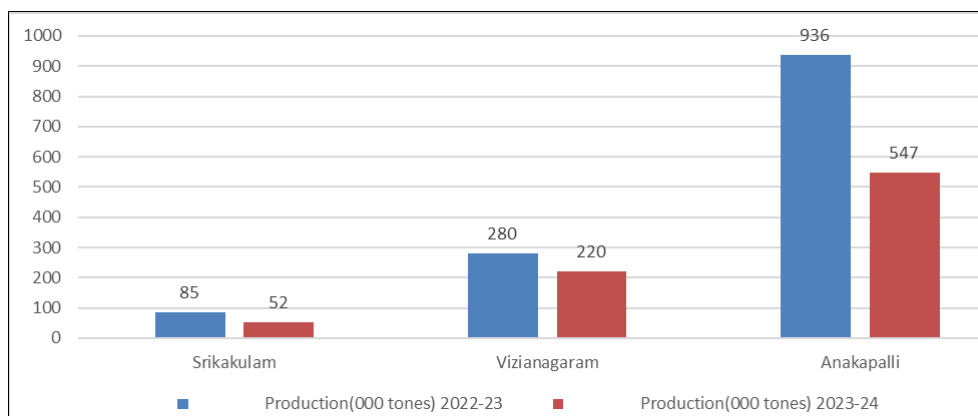


Fig 4: Sugarcane Production (000 tones) fluctuations from 2022-23 to 2023-24

As per the basic data of the district, the sugarcane production decreased from 9,36,000 tons to 5,47,000 tons i.e., 41.55% decrease in production in Anakapalli district, The sugarcane production decreased from 2,80,000 tons to 2,20,000 tons i.e.

there is 21.42% decrease in production in case of Vizianagaram district and the sugarcane production decreased from 85,000 tons to 52,000 tons i.e. there is 38.82% decrease in production in case of Srikakulam district.

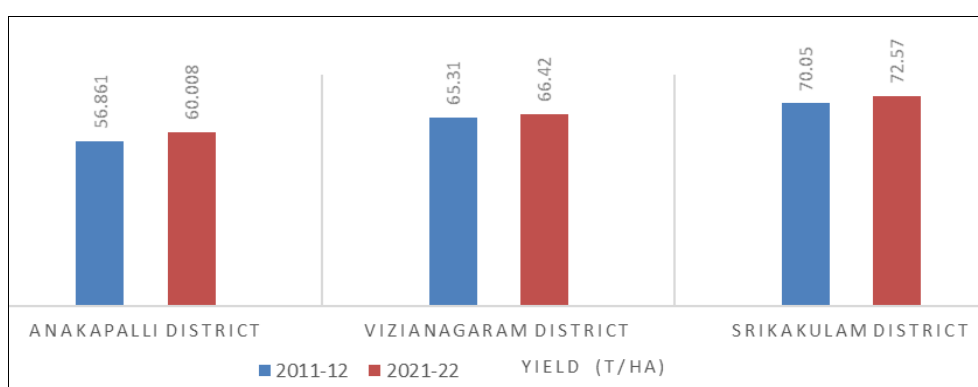


Fig 5: Sugarcane yield deviation in north coastal A.P from 2011-12 to 2021-22

The basic data reveals that the sugarcane productivity/ yield increased from 56.86 t/ha to 60.00 t/ha i.e., 5.52% in Anakapalli district, The sugarcane yield increased from 65.31t/ha to 66.42

t/ha i.e., 1.11% increase in case of Vizianagaram district and the sugarcane productivity increased from 70.05 t/ha to 72.57 t/ha i.e., there is 3.59% increase in Srikakulam district.

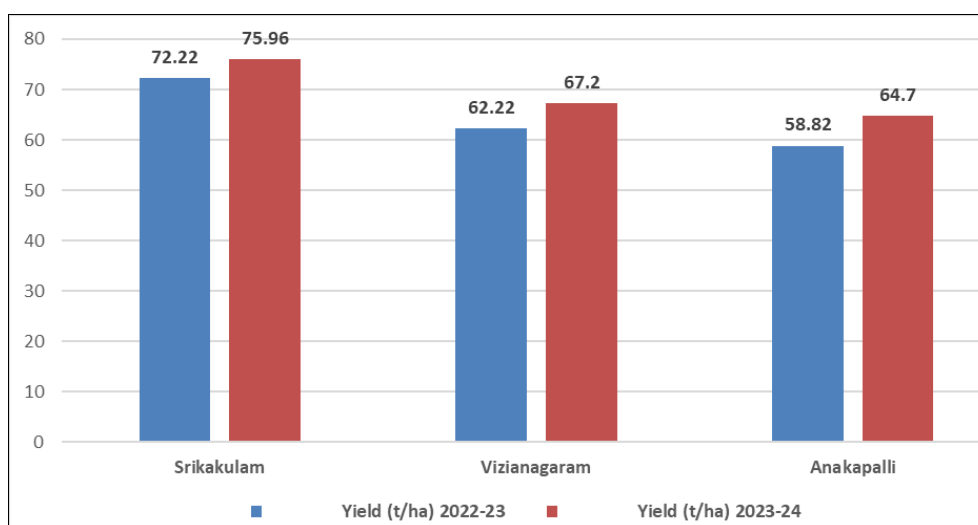


Fig 6: Sugarcane Yield(t/ha) fluctuations from 2022-23 to 2023-24

The basic data reveals that the sugarcane productivity/ yield increased from 58.82 t/ha to 64.70 t/ha i.e., 9.99% in Anakapalli district, The sugarcane yield increased from 62.22t/ha to 67.20

t/ha i.e., 8.00% increase in case of Vizianagaram district and the sugarcane productivity increased from 72.22 t/ha to 75.96 t/ha i.e., there is 5.17% increase in Srikakulam district.

Table 1: Technology needs of Sugarcane growers: (n=100)*

S. No	Technology needs	Required (%)	Not Required (%)	Ranking
1	Recommended new varieties	65.08	34.92	IV
2	Sett treatment	63.91	36.09	V
3	Planting method	60.13	39.87	VII
4	Trash mulching	57.37	42.63	IX
5	Recommended doses of fertilizers	60.31	39.69	VII
6	Bio fertilizers.	50.81	49.19	XI
7	Weed management technology.	73.01	26.99	I
8	TT propping technology.	63.25	36.75	VI
9	Irrigation management.	56.27	43.73	VIII
10	Irrigation and fertigation through Drip system.	43.54	56.46	XII
11	Biological control methods of pest and disease management.	51.61	48.39	X
12	Pest management technology.	68.27	31.73	II
13	Disease management technology.	57.14	42.86	VIII
14	Ratoon management practices	65.62	34.38	III

The study taken up to know the sugarcane farmers technology needs, input needs and policy needs for betterment of the crop. From table 1 this implies that, the sugarcane farmers technology needs identified in the order of priority are technology on weed management required by 73% farmers ranked 1st, followed by

technology on pest management of sugarcane required by around 68% of farmers ranked 2nd and technology on ratoon management required by around 66% of the farmers ranked 3rd. These are the top three technologies required by the farmers in the order of priority to realize better productivity in sugarcane.

Table 2: Input needs of Sugarcane growers (n=100)

S. No	Technology needs	Required (%)	Not Required (%)	Ranking
1	Replacement of sugarcane varieties susceptible to Red rot, YLD, Mosaic etc with new resistant varieties.	74.60	25.4	II
2	Sugarcane seed material 16,000 three budded setts from 6-8months crop.	53.84	46.16	VII
3	Paired row method of planting with mechanization.	63.94	36.06	IV
4	YLD resistant sugarcane Single node seedlings under portray method.	58.46	41.54	V
5	Soil test based fertilizer recommendation through sugar factories.	61.90	38.10	IV
6	Green manure crop with sunhemp, dhanca and glyricidia crops.	62.28	37.72	IV
7	Biofertilizers application with solid form 2kg/ac or liquid form 500ml/ac.	60.31	39.69	V
8	Bio fertilizers or fertigation through drip irrigation.	61.29	38.71	V
9	Intercropping under wider row planting with greengram, Blackgram, bhendi, coriander, Ginger, turmeric crops etc.	56.72	43.28	VIII
10	Introduction of alternative crops like sweet jowar through hybrid seeds for off seasonal crushing to produce ethanol or bio fuels.	55.73	44.27	VI
11	Introduction of whole cane harvester or billet cane harvester through custom hiring to reduce COC.	68.35	31.65	III
12	Mechanization of sugarcane intercultivation under wider row spacing.	62.16	37.84	VII
13	Sugarcane setts soaked in lime solution for one hour before planting under rainfed planting to increase germination and establishment.	53.84	46.16	IX
14	Trash mulching in sugarcane to reduce moisture loss and spread of ESB.	54.84	45.16	VIII
15	Weed management in sugarcane at 30DAS metribuzin 600g in 200lt of water.	85.71	14.29	I

From table 2, the study reveals the input needs of the sugarcane growers identified in the order of priority are need for use of weed management chemicals to avoid manual weeding by around 86% of the farmers, followed by need for new varieties

to avoid diseases like redrot, YLD and mosaic required by around 75% of the farmers and 68% of the farmers require machinery for sugarcane harvesting through custom hiring centers.

Table 3: Policy needs of Sugarcane growers (n=100)

S.no	Policy decision/ Policy needs	Required (%)	Not Required (%)	Ranking
1	State govt to pay state advisory price bridge the gap between COC and FRP.	57.14	42.86	VII
2	Attaching MGNREGS program with sugarcane cultivation especially planting and harvesting activities with the support of factories and sugarcane Commissionerate.	66.67	33.33	III
3	Underutilization of crushing capacity of sugar factories have to bridge with crushing of alternative crops like sweet jowar to produce ethanol or gasohol.	59.68	40.32	VI
4	Timely release of cane payments to facilitate sugarcane growers to meet working capital expenses of sugarcane crop.	52.37	47.63	VIII
5	Policy decisions to be taken by dept of agricultural marketing to facilitate marketing of jaggery based value added products like jaggery blocks, Powders, liquid jaggery etc.	66.67	33.33	IV
6	Input distribution to sugarcane farmers through cane procurement centers or through FPO formed with shareholders.	58.06	41.94	VII
7	Establishment custom hiring centers at cane procurement centers to promote mechanization among sugarcane growers.	62.90	37.10	V
8	Average COC of plant crop, ratoon crop and rainfed crop to be taken into consideration to estimate the lower and upper limits of SAP.	50.00	50.00	IX
9	Policy decisions to be taken by state govt, sugarcane Commissionerate to promote sugar based diversified products preparation like ethonal, Gasohal, biofertilizers and Bio pesticides.	72.58	27.42	I
10	Renovate the sugar factory supply chain management system to allow other role players like super markets, distillery units and beverage industries, EPDCL and other stake holders.	69.35	30.65	II

From table 3, the study implies that, policy decisions to be taken by central and state governments identified in the order of priority are 72.58% of the farmers needs to facilitation in production of diversified products at sugar factories ranked Ist in the order of priority followed by 69.35% of sugarcane growers required policy decisions regarding renovation of supply chain management of sugar factories and involve super markets, beverage industries, EPDCL and other stake holders ranked 2nd followed by Link up NREGS program with sugarcane cultivation practices to save labor cost and make labor available to sugarcane cultivation is a policy decision required by around 67% of the farmers.

Conclusion

The outcome of the study concludes that, the technology needs technology on weed management ranked Ist followed by technology on pest management ranked IInd and technology on ratoon management ranked 3rd. As per the study regarding input needs, inputs required for weed management ranked Ist, followed by varieties resistant to Red rot, Mosaic and YLD are very much required ranked IInd and Introduction of whole cane harvesters through CHC ranked 3rd. The outcome of the study regarding policy needs reviews that, policy decision by state govt to develop diversified products at factory level ranked Ist followed by renovation of factory supply chain to involve new role players like supermarkets, distillery units, beverage corporations and EPDCL in sugar factory supply chain ranked 2nd and the study reveals that, attaching NREGS program with sugarcane cultivation especially planting and harvesting activities ranked 3rd. The study findings may be taken as needs of the sugarcane farmers and policy decisions may be taken by the state government and stake holders to address the problems of sugarcane growers and improve conditions of the sugarcane growers to make sugarcane cultivation more profitable and economical.

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