Case Study on Production and Marketing Constraints of Sugarcane Farmers in Southern Tamil Nadu

ABSTRACT

This study asses the production and marketing constraints faced by sugarcane farmers in Southern Tamil Nadu, India. Sugarcane is an important commercial crop in India. India has emerged as one of the largest producers of sugarcane and sugar in the world with highest number of sugar factories. India ranks second position in Sugarcane production and Tamil Nadu ranks fourth. However, despite its economic importance, farmers encounter various challenges that impede their productivity and profitability. The production constraints primarily revolve around water availability, fluctuating weather patterns and pest infestations. Furthermore, pest attacks, such as the sugarcane whitefly and red rot disease, lead to yield losses and increased production costs due to the need for pest control measures. The marketing constraints predominantly pertain to inadequate infrastructure, inconsistent pricing and limited access to markets.

Key words*: Constraints, Production technology, Sugarcane growers*

INTRODUCTION

Sugarcane (*Saccharum officinarum*) is a species of tall, perennial grass that is used for sugar production. Sugarcane is an important commercial crop in India [1]. India has emerged as one of the largest producers of sugarcane and sugar in the world with highest number of sugar factories. India ranks second position in Sugarcane production and Tamil Nadu ranks fourth [2]. The plants are 3-7m tall with stout, jointed, fibrous stalks that are rich in sucrose, which accumulates in the stalk internodes. Sugarcane is propagated by the plantings of cuttings. The planted cane setts should have two or three buds. Sugarcane is a multipurpose crop and has a rich source of food (Sucrose, jiggery and syrups), fiber (cellulose), fodder (green top, bagasse, molasses) fuel and chemicals (Bagasse molasses & alcohol) [3]. During the process of sugar production, the main by-product of cane sugar industry is Bagasse, Molasses and Press mud. In India, Sugarcane is grown as a Kharif crop, with temperature of 21° to 27° C and rainfall of 75-150cm [4]. India ranks second in Sugarcane production with 281,170 tonnes next to Brazil. The largest producer of sugarcane in India is Uttar Pradesh, which produced over 177 million tonnes of sugarcane in 2021 [5]. Top Sugarcane Producing States are Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu and Bihar. Tamil Nadu occupies fourth position with average of 37.5 MT annually [6]. Tamil Nadu maintains the record of 107 tonnes/ha and produces an average of 98 tonnes/ha [7]. Major sugarcane producing districts in Tamil Nadu are Coimbatore, Erode, Tiruppur, Trichy, Theni, Dindugal, Madurai and Tirunelveli. There are 42 sugarcane mills in Tamil Nadu [8, 9].

In other countries sugar is a by-product, but in India sugar is the main product produced by sugar mills. India is producing large quantity of sugar because of our own needs, but now a day's only sugar production is not production is not profitable for sugar mills. Major sugar producing states are Uttar Pradesh (36%), Maharashtra (24%), Karnataka (11%), Tamil Nadu (11%), Gujarat (4%), Andhra Pradesh (5%), Bihar (3%), Uttarakhand (2%), Haryana (2%) and Punjab (2%). Total sugar production is 100000 quintal and recovery rate are 11%. Total cost of operation is 9677 lakh rupees. Total profit is 5677 lakh rupees. Current price of sugarcane is 325 rupees per quintal. The objective of this study to identify major constraints faced by sugarcane producers in production and marketing of sugarcane in selected places in Tenkasi districts of Tamil Nadu.

In Vasudevanallur Block of Tenkasi district, the major crop being cultivated are lemon, sugarcane, paddy. Sugarcane is an irrigated crop, where it is cultivated around 3000 hectares in area. In Vasudevanallur, the planting system followed is Ridges and Furrows. It has been planted on February and harvested on December. Next to lemon, sugarcane is being cultivated in Rayagiri (80 %), Sivagiri (75 %), Arulachi, Ramanathapuram, Ullar Thalavaipuram, Viawanathaperi, Devipattinam, Thenamlai with 50% of total land area production and most cresers are found in Rayagiri for jaggary production. Predominant varieties used for cultivation are Co 86032, Theni sevala, Thiruvanamalai sevala.

Constraints faced in Sugarcane cultivation

Predominant varieties used for cultivation are Co 86032, Theni sevala, Thiruvanamalai sevala which is used for Jaggery production which differs from Rasthali variety. Improper plough may cause soil termites which attack stalk. Lepidopteran stalk borers which cause splitting of stalk on sugarcane which cause reduces yield and market price. Excess wind cause breakage of stalk. Due to excess rain, lepidoteran pest spreads through stalk cause damage of stalk and yield loss.

Web formation in stalk and leaves of sugarcane cause stunt growth which is the reason for declining in market price. If no proper irrigation, soil termites occur which in turn cause stalk death. Sometimes due to unfavourable conditions like drought, disease, pest attack lessens the weight of sugarcane and deceases the profit. Extreme change in rainfall have impact on sucrose yield.

Pest and Diseases of Sugarcane

In the villages of Rayagiri and Arulachi, small-scale jaggery production faces several challenges, with pests and diseases being among the most significant constraints. These threats attack the sugarcane stalks and leaves, leading to yield losses and the potential spread of infections from one plant to another. Common pests like Internode borer, Top shoot borer, Termites, and Wolly aphids, as well as diseases such as Red rot, Wilt, Smut, and Yellow leaf disease, pose a continuous risk to the crop's health and overall profitability.

In addition to these agronomic challenges, the presence of major weeds such as *Cyperus rotendus, Cynodon dactylon,* and *Amaranthus viridis* exacerbates the situation by

absorbing soil moisture and competing with the sugarcane for essential nutrients, further reducing yields. Moreover, the scarcity of labour during crucial activities like planting and weeding adds to the farmers' woes, hindering timely and efficient crop management.

Lack of scientific knowledge

The lack of knowledge and awareness about the Sustainable Sugarcane Initiative (SSI) has become a significant constraint for farmers in the villages of Rayagiri and Arulachi. This innovative and eco-friendly approach to sugarcane cultivation has the potential to yield an impressive 70 tonnes per acre, which is more than 30% higher than traditional cultivation practices. However, due to the absence of meetings, workshops, and awareness programs, many farmers in the region are unaware of the benefits and techniques associated with SSI. As a result, they continue to rely on conventional methods, missing out on the opportunity to improve yields, optimize resource use, and contribute to sustainable farming practices in the community.

Constrains in marketing the produce

In response to the lack of a sugar factory in their locality, farmers in the villages of Rayagiri and Arulachi have embraced small-scale jaggery production as a means to utilize their sugarcane yield efficiently. With an impressive yield of 40 tonnes of sugarcane per acre, they have found a sustainable way to extract maximum value from their agricultural efforts.

The process of jaggery production begins with crushing one ton of fresh sugarcane to yield approximately 300 liters of sugarcane juice. To refine the juice and remove impurities, they employ a simple processing technique by adding soda, which helps to excrete sugarcane waste materials like muds, molasses, and dry leaves. This traditional approach, passed down through generations, enables them to create a natural and wholesome jaggery product.

However, despite their dedication and hard work, the farmers face a significant challenge with the appearance of the jaggery. The final product tends to have a pale colour, which decreases its market price and demand. Consumers often associate darker shades with higher quality and rich flavors in jaggery, leading to an unfair perception of the locally produced jaggery.

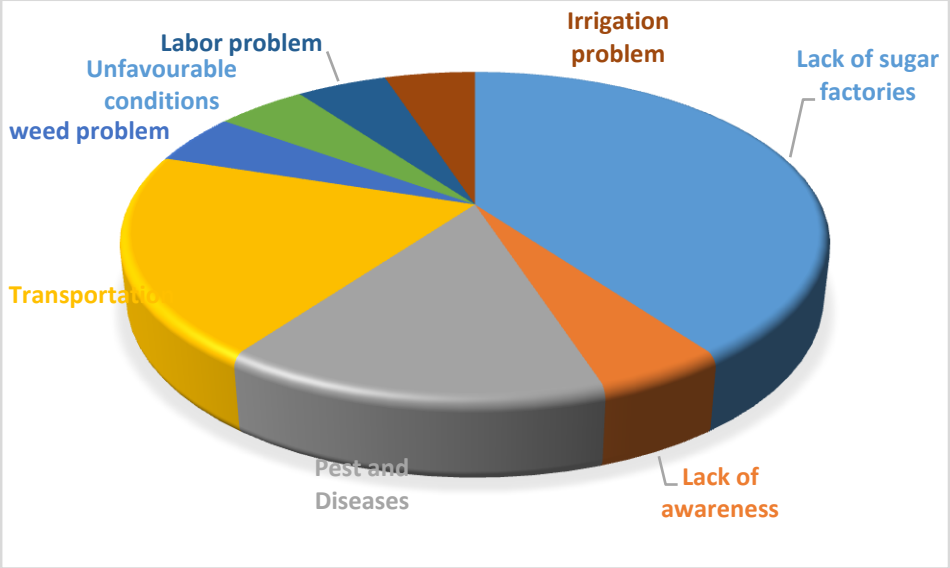

Fig 1. The pie chart showing Constrains in marketing production.

Table 1. SWOT Analysis

STRENGTH • Well grown sugarcane due to soil type and other favourable conditions. • Small scale industry like by-products of sugarcane production is being processing in villages.	**WEAKNESS** • Due to lack of sugar industries, farmers face major problems while transportation where they now transport to Rajasree (Theni). • Transportation cost is high.
OPPORTUNITY • Own their cresers for production of jaggery which facilitates farmers, make better employment to women and their by-products to near-by markets.	**THREATS** • Damage cause by wild pigs. • Pale colour in jaggery may reduce the price. • Scarcity of labour at the time of planting and weeding.

Conclusion

Despite these constraints, sugarcane farming remains crucial for sugar and ethanol production. Addressing these challenges requires sustainable practices, technological advancements, and better market linkages to ensure the viability and sustainability of

sugarcane farming in the long run. Governments, agricultural experts, and stakeholders must collaborate to find innovative solutions and support farmers in overcoming these constraints.

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