



Socio-economic profile of jaggery industries in marathwada Region

Jaishree R Suryawanshi¹, Sachin G Mitkar²

¹ Professor, Department of Commerce, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar, Maharashtra, India

² Research Scholar, Department of Commerce, Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar, Maharashtra, India

Abstract

Agriculture has been the backbone of the Indian economy and it will continue to remain so for a long time. It has to support almost 17 per cent of the world's population from 2.3 per cent of the world's geographical area and 4.2 per cent of the world's water resources. Jaggery (Gur) is a traditional unrefined sugar which is produced from sugarcane all over the world, especially in Asia, Africa Latin America and Caribbean countries. From the Indian Economy's point of view, Agriculture is one of the most significant sectors. Agriculture is the only means of living for almost two-thirds of the workers in India. The agriculture sector of India occupies 43% of India's geographical area and contributes 16.1% of India's GDP. Jaggery industries are considered small-skill cottage industries in rural India. In India especially Maharashtra is one of the leading jaggery producers state. The role of the Agricultural sector is very important in the Socio-Economic development of Maharashtra. In the agro-based industries, Jaggery industries are leading in the graph in the development of the Agricultural sector in Marathwada.

Keywords: Jaggery industries, White Sugar, Jaggery marketing, Agricultural Development, Jaggery Market, Socio-Economic Development, Gur, GDP

Introduction

Agriculture helps to meet the basic needs of humans and their civilization by providing food, clothing, shelter, medicine, and recreation. Hence, agriculture is the most important enterprise in the world. It is a productive unit where the gifts of nature namely land, light, air, temperature rain water, etc, are integrated into the single primary unit in dispensable for human beings. Secondary productive units namely animals including livestock, birds, and insects, feed on these primary units and provide concentrated products such as meat, milk, wool, eggs, honey, silk, and lac.

Agriculture provides food, feed, Fiber, fuel, furniture, raw materials, and materials for and from factories; provides a free fare and fresh environment, abundant food for driving out famine; favours friendship by eliminating fights. Satisfactory agricultural production brings peace, prosperity, harmony, health, and wealth to individuals of a nation by driving away distrust, discord, and anarchy. It helps to elevate the community consisting of different castes and classes, thus it leads to a better social, cultural, political, and economical life.

Sugarcane Cultivation in India

From the Indian Economy's point of view, Agriculture is one of the most significant sectors. Agriculture is the only means of living for almost two-thirds of the workers in India. The agriculture sector of India occupies 43% of India's geographical area and contributes 16.1% of India's GDP. Agriculture still contributes significantly to India's GDP despite the decline of its share in India's GDP. There are several crops grown by farmers. These include different food crops, commercial crops, oil seeds etc. Sugarcane is one of the most prominent commercial crops in India. Sugarcane is the main source of sugar in Asia and Europe. Sugarcane is grown primarily in the tropical and sub-tropical zones of the southern hemisphere. Sugarcane is the

raw material for the production of white sugar, jaggery (gur) and khan sari. It is also used for chewing and extraction of juice for beverage purposes. The sugarcane cultivation and sugar industry in India plays a vital role towards socio-economic development in rural areas by mobilizing rural resources and generating higher income and employment opportunities. About 7 per cent of the rural population, covering about 45 million sugarcane farmers, their dependents and a large number of agricultural labourers are involved in sugarcane cultivation, harvesting and ancillary activities.

Table 1: Sugarcane production and utilization in India (Production is in 000 tonnes)

Year	Production (MT)	Sugarcane utilization (%)	
		Sugar	Jaggery
2017-18	410.6	82.30	17.70
2018-19	432.4	79.10	20.90
2019-20	380.3	83	17
2020-21	385.5	85	15
2021-22	395.3	86	14

Source: (Co-operative sugar IISR Indian Institute of Sugarcane Research June-2023)

Over the span of five years from 2017-18 to 2021-22, the production of sugarcane and its utilization for sugar and jaggery varied. In 2017-18, total sugarcane production was 410.6 MT, with 82.30% utilized for sugar production and 17.70% for jaggery. The following year, 2018-19, saw a slight increase in sugarcane production to 432.4 MT, with 79.10% utilized for sugar and 20.90% for jaggery. In 2019-20, sugarcane production decreased to 380.3 MT, with 83% used for sugar and 17% for jaggery. However, in 2020-21, sugarcane production was 385.5 MT, with 85% utilized for sugar and 15% for jaggery. Finally, in 2021-22, although there was a slight increase in sugarcane production to 395.3

MT, a higher proportion, 86%, was used for sugar production, with only 14% utilized for jaggery.

The acceptable taste and nutritive value of jaggery have attracted many since ancient times. Jaggery forms an important item of the Indian diet for its high nutritive value and as a sweetening agent. Jaggery and sugarcane are also used as alternative sweeteners it is natural sweeteners. In Ayurveda, jaggery is considered to be the best of all sugarcane preparations. India has one such eco-friendly sweetener, jaggery and contributes more than 70 per cent to the production of the world. It is being exported to many countries like Bangladesh, Great Britain, Canada, Chilli, Egypt, Fizzy, Iran, Iraq, Kuwait, Malaysia, Nepal and USA. The jaggery industry has been considered as one of the small-scale and cottage industries in India. As much as 45-50 percent of sugarcane crop has been processed annually into jaggery.

Jaggery Production Industries

The jaggery industry has been considered one of the small-scale and cottage industries in India. From time immemorial, the sugarcane crop has been known as a cash crop for Indian cultivators and so also the preparation of jaggery. As much as 45 to 50 percent of sugarcane crop have been processed annually into jaggery or khandsari. The production of jaggery ranges between five million tons and seven million tons. It is estimated that two-thirds of the sweetening requirement in rural areas is met by Jaggery. The jaggery industry in the country has thus, continued to be an industry of great importance and relevance. The economy of the country is closely associated with this industry.

The Sugar Committee of the Imperial Council of Agricultural Research recommended a study on existing conditions of jaggery to improve the jaggery preparation process in the year 1937. There it was indeed, a matter of great surprise that despite the significance of the industry in the economy no attention, worth mentioning, has been paid to this industry until recently. It has been realized that by organizing the jaggery industry on a systematic and scientific basis a good deal of national wealth could be saved from being lost and improve the conditions of Indian farmers.

Review of Literature

Babar and Lohar (1994): The study examined the pattern of Jaggery arrivals and prices in the Sangli-controlled market. Utilizing the least squares method, researchers estimated the linear trend in both arrivals and prices. The findings revealed a consistent upward trajectory in arrivals and prices spanning 12 years.

Jaswantsingh and S.R. Mishra (1997): The study is analysing the process of manufacturing jaggery. The study suggests that the government should assist in the price fixation, use of horizontal crushers, insurance policy for the sugar, and jaggery industry, form a development council, command area, standing research advisory committee, etc.

Misra (1992): A study conducted derived correlation from data on 8 quality characters in 12 promising mid-late and late varieties and two controls grown during 1986-89. It was concluded that higher sucrose and purity with lower organic non-reducing sugars, reducing sugars, and ash are needed for good-quality jaggery.

Rohal *et al.* (1989): In that study, the average cost of processing sugarcane to make khandsari was Rs. 8.54 per kg. Economic analysis of capital structure in Khandsari units showed better capital turnover (Rs 1.83 per Rs invested). Which indicated further scope for capital investment in the industry.

Jaggery Industries Maharashtra

The Indian state of Maharashtra is the largest producer and consumer of Jaggery. In Maharashtra, most vegetables curries and dals contain Jaggery. Jaggery is specially used during 'Makar Sankrant' for making sweets called Til-Gul. In rural Maharashtra, water and a piece of Jaggery is given when someone arrives home from working under a hot Sun, Kakvi, a by-product from the production of Jaggery is also used in rural Maharashtra as a sweetener. It contains many minerals not found in ordinary sugar and is considered beneficial to health by the traditional Ayurvedic medical system.

Maharashtra is one of the leading producers of Jaggery apart from sugar. Large numbers of Jaggery production units are located in the state. In Maharashtra, about 11 to 12% sugarcane was being used for Jaggery preparation during the year 2010-2015 Jaggery from Maharashtra is also well known for its quality, which has a wide demand in the international market. Marketing is one of the important activities in the production process of Jaggery.

Table 2: Region-wise Jaggery industries in Maharashtra (Year up to 2017-22)

Sr. No	Name of Region	No of Jaggery Industries
1	Kokan	245
2	Marathwada	415
3	Western-Maharashtra	910
4	Vidarbha	330
5	Khandesh	360
6	Nasik	340
Total		2600

Source: (Agricultural Department of Maharashtra and ACPDA Agriculture Crop Processing Development Authority)

According to the above data, the Kokan region had an average of 245 jaggery industries during the mentioned period. Marathwada region had a slightly higher average of 415 jaggery industries. Western Maharashtra had the highest number of jaggery industries with an average of 910, indicating a significant concentration of this industry in that region. Vidarbha region had an average of 330 jaggery industries, while Khandesh and Nasik regions had averages of 360 and 340 respectively.

When we sum up the average number of jaggery industries across all the regions, we find that there were a total of 2600 jaggery industries in Maharashtra during this period. This data suggests that Western Maharashtra, Marathwada, and Khandesh were the regions with a relatively higher concentration of jaggery industries, while Kokan, Vidarbha, and Nasik had fewer in comparison.

Importance of Study

To know about demand and supply for the jaggery product. It also Build relationship with farmers. The marketing of the product 'jaggery' is a complicated one involving a long marketing channel, a number of middlemen and time-consuming process. However, many of the jaggery

producers are unaware of cost of production of jaggery and hence cannot compare its relative profitability with that of cane supply to sugar mills and the importance of jaggery industry in the agriculture-based economy of Maharashtra; the study was undertaken with the following specific objectives-to estimate the cost and returns structure in jaggery production

Objective of the Study

1. To study the socio-economic profile of the jaggery production industry.

Table 3: Total number of jaggery production units in Marathwada Region.

Sr. No.	Name of the Talukas	No. of Jaggery P. Unit
1	Chhatrapati Sambhajnagar	43
2	Jalna	37
3	Dharashiv	115
4	Latur	70
5	Beed	38
6	Nanded	40
7	Parbhani	35
8	Hingoli	37
Total		415

Source: (Primary Data Collection 2017-22)

The table provides data on the total number of jaggery production units across various districts in the Marathwada region. Among the districts, Dharashiv district had the highest number of jaggery production units, with 115 units. Followed by Latur District with 70 jaggery production units. 43 Jaggery Production units were working in Chhatrapati Sambhajnagar District. Beed District has 38 production units. Other districts such as Jalna, Nanded, Parbhani, and Hingoli also contributed with 37, 40, 35, and 37 jaggery production units respectively out of 415 jaggery production units in the Marathwada region

Research Methodology Data collection

a. Primary data

The researcher collects the primary data with the help of questionnaires from jaggery producers from the Marathwada Region.

b. Secondary data

For secondary data were collected by the sources. Such as; books, generals, reports, newspapers, thesis and dissertations. About secondary data collection, the e-media will also help. Like; internet websites etc. are facilitated to finding the secondary data.

Sampling method

For the selection of the Sample researcher used a mixed sampling design (viz. Non-random purposive sampling and stratified random sampling Method).

Sample Selection

Under purposive sampling, 10% (41) of Jaggery Producers and Sugarcane cultivators are selected from Marathwada region out of 415.

Scope of the study

There is a vast scope for the development of the jaggery industry thereby improving employment opportunities in

rural areas. The present study focuses on a clear idea of the investment costs and return of Jaggery processing units. It also helps in understanding the existing marketing practices and defects if any and also identifies the problems in the production and marketing of jaggery in the study area.

Data analysis tools

To analyse the data it has been compiled and tabulated systematically. As per the need of the study graphs, charts, and tables have been used. The SPSS method should be used for the Analysis of Data.

Table 4: Availability of land

Land	No. of respondents	Out of 100 %
2-5 acre	21	51
5-10 acre	15	37
10 acres & above	5	12
Total	41	100

(Source: Field survey 2017-22)

As pointed out earlier, for the study 41 Sugarcane Cultivator farmers are chosen by the Researcher, those who process the harvested sugarcane into Jaggery (Gur) and sell it in the Jaggery market. These Sugarcane Cultivators in this study for purpose convenience referred to as Jaggery (Gur) Sugarcane Cultivators. The Sugarcane Cultivators are classified into Marginal farmers (2-5 acres), Small farmers (5-10 acres) and medium farmers (more than 10 acres) based on the size of their land. The size-wise distribution of farmers revealed the predominance of marginal and small farmers in the sample. The majority of the Jaggery Producers and sugarcane farmers (88%) are marginal and small farmers. The predominance of marginal and small farmers in the sample is due to the predominance of these groups in the Marathwada Region.

Table 5: The age group of the respondents

Age Group	No. Of respondents	Out of 100 %
Up to 40	24	58
41-50	09	22
51 and above	08	20
Total	41	100

(Source: field survey 2017-22)

The age composition of the family members of the selected Jaggery producer is presented in the table. It can be noted from the table that about 58% of the respondents are in the age group of up to 40 years and 22 percent of the respondents are in the age group 41-50 years. From the data, it is evident that there is a concentration of respondents in the age group of up to 40 years for the three categories of farmers for jaggery-producing farmers. This concentration of respondents in this productive age group helps the business in several ways, viz., it supplies labour to attend cultivation operations and enhances the earning capacity of the Jaggery unit.

Table 6: Education of the respondent

Education	No. of respondents	Out of 100 %
Illiterate	5	12
Primary (up to 10 th)	22	54
HSC	10	24
Graduation	4	10
Total	41	100

(Source: field survey 2017-22)

The education level of the respondents is important since it leads to more knowledge about cultivation practices, for adoption new technologies in the jaggery process and to lead life in a better way. In view of these reasons an attempt is made to analyse the literacy levels of the respondents. The distribution of data relating to levels of literacy of respondents of the jaggery units reveals that 54% of the respondents had done schooling up to primary education, 12 per cent were illiterate and 24 per cent had completed education up to HSC. Graduates are relatively low i.e. only 10 per cent. In the case of jaggery-producing farmers comparatively majority of respondents have completed education up to school only.

Table 7: Income of the respondent

Income in lacks	No. of respondents	Out of 100 %
Up to 5 lakhs	9	18
5.1 to 7 lakhs	21	50
7.1 to 9 lakhs	7	24
9 lakhs and above	4	8
Total	41	100

(Source: field survey 2017-22)

The income of the respondents is a more important factor in socio-economic profile of jaggery industries in the Marathwada Region, that's why we showed in the below Table No. 1.7 In this table we see the income levels of the jaggery producers which shows what the economic condition of the unit is and how many profit earn from the jaggery production unit.

The above table no.1.7 Shows the distribution of Jaggery production unit owners based on their Annual income from their Jaggery units. The researcher selected an Income group of jaggery units from Rs. 5-10 lakhs and above per year. The majority of the unit owner's annual income from jaggery is up to Rs.5.1 to 7 lakhs. Out selected 41 jaggery Producers, 9 jaggery producers annual income is up to Rs. 5 lakhs. The highest income of 4 jaggery production unit owners is up to 9 lakhs and above.

Indian farmers producing jaggery from many years, they understand the Pros and cons of the jaggery industries. Income from above mention jaggery industry is sufficient and up to the mark.

Findings

1. The jaggery industry is one of the important industries in Marathwada Region.
2. Jaggery industries played an important role in the development of a rural economy.
3. The traditional techniques are used by most of the jaggery producers whereas advanced techniques have been used by very few producers.
4. Advance techniques have helped to reduce the problems of labour as well as to reduce the cost of production.
5. Sugarcane Cultivators and Jaggery Producers should go for soil testing as it gives information about the use of fertilizer & proportionate use of water for the better quality of sugarcane production.
6. The necessary arrangements should be made by the government for required advances for the jaggery producer.

Suggestions

1. Grading of the jaggery should be done by authorised persons and there should be some standard norms for checking the quality of the jaggery which helps to produce quality of jaggery.
2. Jaggery producers should adopt the concept of organic jaggery. The importance of organic jaggery is increasing day by day.
3. Develop a jaggery research center in the study area to help the jaggery producer by innovating a special variety for quality jaggery which will also give more productivity and improved process for jaggery production.
4. The government should develop a good marketplace in the study area; because there is no single good marketplace in Marathwada for jaggery.
5. Jaggery producers should use advanced techniques for the production of jaggery because advanced techniques help to reduce the problems of labour as well as to reduce the cost of production and earn more profit.

References

1. IISR Indian Institute of Sugarcane Research Jane. Co-operative sugar, 2016.
2. Director, IISR (Indian Institute of Sugarcane Research).
3. Agricultural Department of Maharashtra and ACPDA Agriculture Crop Processing Development Authority.
4. Maharashtra Agro Industries Development Corporation Limited (MAIDC).
5. Madan, *et al.* Improvement in GUR (Jaggery) Making Plant for Rural Areas. Journal of Rural Tech, Sugar Industry in Latur: Efficiency still Holds the Key, Agriculture Economics Research Review. Jan-Jun 2004.
6. Thiagarajan R, *et al.* Demand Driven Research and Extension Model for Sugarcane Development. Proceedings of the 68th Annual Convention of The Sugar Technologists' Association of India held on August 22-24, 2007 in Goa. Indian Sugar Industry-Update by LKP Research, August 24, 2004. Sugar Industry-Recent Trends and Outlook by ICRA Rating Feature August 2006. Amar Ujala, Daily Hindi News Paper, Padarauna, Kushinagar.
7. Comprehensive District Agricultural Plan for Osmanabad District 2012-13 to 2016-17.
8. Annual Report of Krishi Vigyan Kendra, Tuljapur Dist Osmanabad, 2015.
9. Alibaba. An economics of jaggery industry in Andhra Pradesh. PhD thesis, unpublished, submitted to Acharya N.G. Ranga Agricultural University, 2005.