

IST CHAPTER INTRODUCTION

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CHAPTER 1

1.1 SUGAR INDUSTRY SECNARIO :-

The origin of sugar industry dates back to 1930, when the first sugar mill was set up in the pre-independence era. Over the last 76 years, the sugar industry has steadily grown and has become the backbone of agricultural and rural economy in the country. Today, sugar is the 2nd largest agro processing industry, next to the textile industry. India is the largest producer in the world, with a production of over 15 million tones. Sugar mills are located mostly in the rural parts of the country. They act as centers of development, provide largest direct employment in the rural areas and contributes substantially to the Central and State exchequers. The prospects of earning foreign exchange from export of sugar are also quite high.

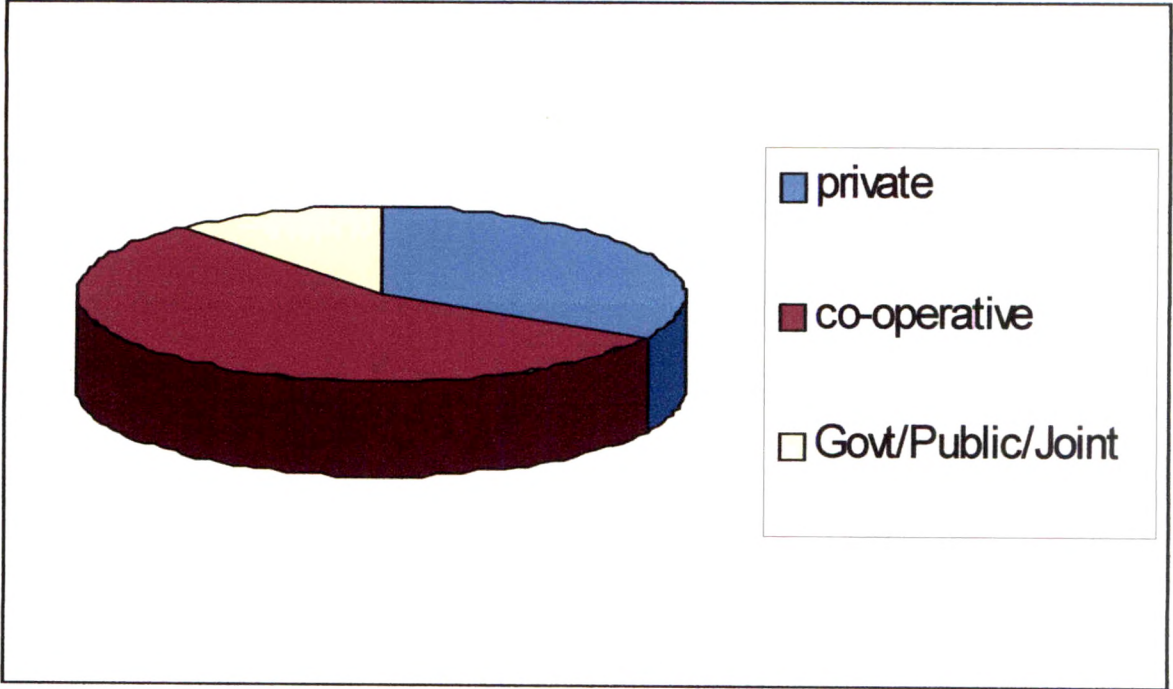
About 600 sugar mills are in operation today, with additional 100 new sugar mills getting established in different parts of the country. The area under sugar cane was cultivation, sugar cane production, sugar cane crushing in sugar mills, average season days, sugar recovery and sugar production have increased steadily over the years. The crop yield per hectare and recovery has been improving, particularly in the last decade.

Indian sugar mills have capacities ranging from 1250 TCD to 10000 TCD . The Indian sugar industry has developed indigenous capabilities for design, manufacture, supply, operation, and instrumentation, R&D and cane development. Ministry of Agriculture, Govt. of India. Sugar Development Fund, Federation of Co-operative and private sector sugar mills at the National and State levels, Equipments and Technology suppliers, Research Institutions, Consultants and Service Providers, Financial Institutions and Central/State Governments are, the major stakeholders of this industry in India.

Sugar production in India is concentrated in six states, viz., Maharashtra, Uttar Pradesh, Gujarat, TamilNadu, Karnataka, and Andhra Pradesh which together account for 85-90% of sugar production in India. The industry directly employs around 0.5 million people while it indirectly provides gainful employment to another about 4.0 million people engaged in sugarcane cultivation.

Sugar mills in India are spread over the entire country, however, 95% of them are located in 9 States viz., Uttar Pradesh, Bihar, Punjab and Haryana in the north, Maharashtra and Gujarat in the west and Karnataka, Andhra Pradesh and Tamilnadu . In the south. More than 70% sugar mills are either or below 2500 TCD capacity and balance have higher capacities. Total sugar industries in India are 506 out of which 67 are

public sector companies, 157 are private sector companies and 282 are co-operative societies. It means about 67% of the Indian sugar mills are in the co-operative and Government/joint sectors and balance 33% in the private sector.



The Indian sugar industry is a key driver of rural development, supporting India's economic growth. The industry is inherently inclusive supporting over 50 million farmers and their families, along with workers and entrepreneurs of almost 500 mills, apart from a host of wholesalers and distributors spread across the country.

The industry is at a cross roads today, where it can leverage opportunities created by global shifts in sugar trade as well as the emergence of sugarcane as a source of renewable energy, through ethanol and cogeneration. While some of these opportunities have been well researched in the past, there was a need to assess the potential for India and to develop a comprehensive and actionable roadmap that could enable the Indian industry to take its rightful place as a food and energy producer for one of the world's leading economies.

India is second largest producer of sugarcane next to Brazil. As per last year data, about 4 million hectares of land is under sugarcane with an average yield of 70 tones per hectare. India is largest producer of sugar including traditional sugar sweetener, Khandasari and Gur equivalent to 26 million tones raw value followed by Brazil in the second place at 18.5 million tones.

1.2 PROFILE OF THE SUGAR INDUSTRY

The advent of modern sugar industry began in 1930 with grant of tariff protection to the Indian sugar industry. The number of sugar mills increased from 30 in the year 1930-31 to 135 in the year 1935 and the production during the same period increased from 1.20 lakhs tones to 9.34 lakhs tones under dynamic leadership of the private sector.

The era of planning for industrial development began in 1950-51 and government laid down targets of sugar production and consumption licensed and installed capacity, sugarcane production during each of the five year plan periods. The targets and achievements various plan periods are given bellow.

1.3 GROWTH OF INSTALLED CAPACITY

YEAR	No of factories in operation	Installed capacity (M.tones)	Sugar production (M.tones)
1950-51	139	16.7	11.0
1955-56	143	17.8	18.9
1960-61	174	24.5	30.2
1965-66	200	32.3	35.4
1973-74	229	43.1	39.5
1978-79	299	59.1	58.4
1985-86	339	72.7	70.3
1990-91	377	98.5	120.5
1995-96	415	127.6	164.3
1999-00	423	161.8	182
2000-01	437	168.2	185.1
2001-02	433	176.8	185.3
2002-03	453	180	201
2003-04	461	185	170
2004-05	506	197	175

The small size new units licensed by the government were supported with a scheme announced on 25th November 1975 known as Sampath committee incentive. It provides percentage of free sale quota to both new sugar factories and expansion in existing units. This is a mushrooming growth of relatively small sized sugar units in the country.

Under the policy of licensing, government initially permitted small sized new units of 1250 TCD capacity and later on increased the minimum economic size of plant to 2500 TCD, similarly the capacity expansion initially allowed up to 3500 TCD, were subsequently raised to ITCD and finally those expansion limits were withdrawn in 1990. As a result the industry had grown horizontally with an all India per unit average capacity of 500 TCD. As against this, there has been consolidation and move towards larger per unit capacity all over the world, which is evident from the following table.

Sugar mills with cane crushing capacity and sugar production per unit in various countries.

Country	No. of Units	Avg. cane crushing per day	Avg. production per day
Thailand	45	10307	140540
Australia	28	9216	183321
Brazil	213	9168	64018
South Africa	13	6877	137769
Mexico	67	4749	71015
Colombia	10	4590	214900
Cuba	150	4229	45538
Hawaii	9	4111	44111
Mauritius	16	3195	42970
India	430	2527	35000

Government enacted the Sugar Development Fund Act & Rules, which provides for levy of per quintal of sugar known as Sugar Development Fund (SDF). The SDF is utilized for granting term loans to sugar mills modernization and grants for research projects in the sugar besides creation of buffer stocks as and when required to ensure price stability. Government de-licensed sugar sector in August 1998. It is now open to entrepreneurs to set up mills without license but at distance of 15 kms away from the existing factory. Sugar units free to expand their capacity and also put up high capacity new units. This should help to consolidate and expand their capacities wherever cane potential exists.

NET POSITION

Indian Sugar Industry at glance

No of sugar factories established	506
Total capital employed	Rs. 50,000 crores
Total annual turnover	Rs. 25,000 crores
Total payment to cane growers	Rs. 18,000 crores
Contribution to central & state exchequers	Rs. 1700 crores+800 crores
Direct employment : rural educated	Rs. 5.00 Lakhs
Farmers/families involved in sugar cane (7.5% of rural population)	Rs. 45 million

In global economy, the Indian sugar industry has achieved a number of milestones

- Largest Sugar Producer in 7 out of 10 years.
- Second Largest Area under Cane production.
- Amongst the cost effective industries with its field cost (Sugar cane) being the second lowest, despite small land-holding and low productivity.
- Fourth efficient processor of sugar despite low capacity of its sugar plants as compared very large-size plants in other parts of the world.

Maharashtra is the largest producer of sugar in the India and Tamil Nadu. Andhra Pradesh and Karnataka are some of the other major producers of sugar. These States are of crucial importance to national production of sugar.

1.4 Sugar Industry in Karnataka:-

Total sugar industries in Karnataka are 39, out of which 2 are public sector companies, 18 are private sector companies, 19 are co-operative societies and one is joint venture. Most of the sugar industries of Karnataka are situated in Belgaum District that is near about 80% of the total. Hence the fertile land, water and other valuable natural resources of other districts are not used.



1.5 Sugar Industry in Ugar Khurd

About 66 years ago Ugar Khurd was a small hamlet in the erstwhile princely state of Sangli. It was however blessed with two great advantages; on its south flowed the perennial river Krishna and on the north, was situated the railway station of Ugar Khurd on the broad gauge line between Miraj & Bangalore. Conditions were ideal for somebody to harness the two advantages and exploit the fertility of the loamy soil. An abortive attempt was made in late thirties to start a sugar industry. After that, the ruler of Sangli invited the late Dr. S. R Shirgaokar – who had previous experience of setting up of sugar factory in Kolhapur, to embark on the unexplored venture which he did with great dexterity and the slumbering village of Ugar Khurd was transformed into a humming industrial township in a few years. Today, Ugar is equitant to a mint city with a decent sized population and having agriculture concentrated employment surrounding the sugar manufacturing focused township.

Dr. S. R Shirgaokar deputed his competent nephew Shri V. S Shirgaokar to purchase sugar plant from Mohali sugar factory in Sitapur district in Bihar and install it at Ugar Khurd. The Ugar Sugar Works hence found a very competent navigator in one of its visionaries – Late V. S Shirgaokar. The 500 TCD plant was purchased and installed in the year 1939 and the first crushing season was started on 21st April, 1942.

1.6 Introduction to Risk Analysis

Risk is said to be all pervasive and there is no escape. Individuals and organizations are exposed to risks of various degrees in the course of everyday activities. Every opportunity brings challenges with itself and it is impractical for an individual or an organizations to avoid these risks: we need continual innovations to deal with them. Risks emanate from Various environments.

Business itself is a complex web of risks. No one can expect or should think of smooth sailing in any kind of business. Every business invariably brings with it a good number of risks; it is in fact, undertaking a venture. With whatever skills and techniques, the future cannot be unfolded exactly. Therefore every business is exposed to one or other type of risks. But initiating the risk analyses in advance and trying to adopt such techniques to face the risks can minimize the intensity of the risks.

The rapidly changing, increasingly complex global economy has created an expanding array of risks to be managed if the viability and success of an enterprise are to be ensured.

The risks which an sugar producing organization is supposed to face are

1. Availability Risk
2. Risks of farmers shifting to cash crops other than cane.
3. Fuel Risk
4. Technology Risk:
5. Environment Risk:
6. Performance risk of Raw Materials
7. Cost overrun Risk
8. Risk of sugar sale payment
9. Risk of reduced revenue by sugar and molasses sales
10. Regulatory Risks/KERC's perception
11. Operational Risk

For the successful growth and prosperity of the organization all the hurdles coming in the way of development needs to be controlled and managed by proper Risk Analysis.

1.7 TITLE :-

“RISK ANALYSIS A CASE STUDY OF JEWARGI UNIT OF THE UGAR SUGAR WORKS LTD (USW)”

1.8 MEANIING OF RISK ANALYSES:-

Risk is the possibility of loss, damage, or any other undesirable event. It is the possibility of an event occurring that will have an impact on the achievement of objectives. It is measured in terms of impact and likelihood

Uncertainty about a situation can often indicate *risk*, which is the possibility of loss, damage, or any other undesirable event. Most people desire low risk, which would translate to a high probability of success, profit, or some form of gain

RISK ANALYSES INCLUDES

- 1 Risk Assessment
- 2 Risk Management
- 3 Risk Communication

1. 9 STATEMENT OF THE PROBLEM:

Most of the sugar industries of Karnataka are situated in Belgaum District that is near about 80% of the total. Hence the fertile land, water and other valuable natural resources of other districts are not used. Expansion of its activity by The Ugar Sugar Works Ltd., is an attempt as a PROMOTING COMPANY to utilize the available rich natural resources of Jewargi of Jewargi Taluka of Gulbarga District of Karnataka.

The following are the points, which have attracted the attention to undertake the specific research work.

1. Huge amount of capital investment in an unfamiliar location for the business.
2. An effort to create employment opportunities.
3. An intension of social responsibility.
4. The strong motive of wealth maximization in the light of new industrial policy of the Government.

In this regard the present research is an attempt to analyses and evaluates the risks, which are supposed to be faced by the unit in order to project the frequency, and severity of future loses

1.10 Scope of the Study: -

The present study "RISK ANALYSES A CASE STUDY OF JEWARGI UNIT OF THE UGAR SUGAR WORKS LTD (USW)" is the first of its kind. The sugar-producing corporations can progress still rapidly by optimum utilization of available resources by proper and effective Risk Analysis. Companies should not neglect the risks by mere glance on the returns.

The present study is confined to Jewargi Unit of the USW Ltd which is a promoting company. Further this study composed Of

1. Regular sugar producing plant with a capacity of 3500 CTD.
2. Power (Electricity) generation plant with a capacity to produce 15 MW per day

1.11 Objectives of the Study: -

When we speak of the objectives we rationalize our thinking process to a set of attainable goals under the give situation. The broad objectives of the study are analyzing the risks faced by the sugar producing organizations, which are faced at the time of expansion. The specific objectives of the study are as follows;

1. To evaluate the various risks of expanding a business.
2. To facilitate the management of risks.
3. To suggest the Ways for stable and continuous earnings by overcoming the risks.
- 4.To estimate the profitability of the Jewargi Unit of The Ugar Sugar Works Ltd
- 5.To quantify the benefits of the project to various categories

1.12 Hypothesis: -

Commensurate with the objectives, the following hypotheses were framed.

1. Due to the new economic policy and deregulation and decontrol programmes of the Government towards Sugar Industries lead to rapid development of sugar Industry subject to number of risks.
2. The borrowed funds are more helpful to the organization towards the achievement of the goal of wealth maximization. Because the cost of debt capital is less in comparison with cost of owned capital.
3. The Ugar Sugar Works Ltd., is more competent and abundant potential to bear the risks in the extension programme of sugar production.

1.13 Research Design:-

Methodology means the science of method or the body of methods used for a study. Methodology is indispensable because of its scientific free thought. Unless a proper method is followed, and project work or study would not be a success. Therefore, to arrive at notable results, Methodology should form a significant part of it.

The aim is to present a clear idea of the procedure followed in this study. Since, the value of any systematic & scientific research lies in its Methodology, which gives a clear idea of the form of procedure adopted in conducting it & stating the purpose becomes the essential part of every study.

1.14.1 Collection of Data :

The researcher has visited two there concerned persons of the concerned department for the collection of data. The necessary data has been collected with the help of Interview method without preparing any schedule and questionnaire on the basis of questions based on objectives and hypothesis particularly depending on case study. Therefore with the help of sense method for particular factors of Ugar sugar Works the information is collected by interview method.

The Ugar Sugar Works Ltd carries on its day-to-day affairs with various departments .The various Departments in the organization are:

1. Administrative Dept.
2. Finance Dept.
3. Cane Purchase Dept.
4. R & D Dept.
5. Store Purchase Dept.
6. IML Marketing Dept.
7. I. T.Dept.
8. Stores Dept.
9. Production Dept.
10. Environmental Dept.

This study is based on the discussions with the officers of Administrative Dept. and Finance Dept. and their assistants to collect the information required.

The relevant information and data have been collected from both published and unpublished documents. For this purpose the following libraries were consulted:

1. Shivaji University, Kolhapur,
2. Karnataka University, Dharwad,
3. Vasant Dada Patil Institute of Management and Studies Research.
4. B.L.D's A. S.P Patil College of Management.

1 Primary Data

Primary data is a first hand data collected by the researcher. It can be collected through a number of different methods, and sometimes more than one can apply to a single research problem

- ☐ Personal Discussion
- ☐ Observation Primary Data

The information or data has been collected under primary data manually based upon personal discussion with the financial manager and various accounting personal as well as Cost Department Manager and also by observation of day to day happening and daily routine work.

2 Secondary Data

Secondary data is the data which is already collected by some one else and which is used for the present study.

This data is collected with following ways

- ☐ The Annual Reports of the promoting company
- ☐ Internal reports
- ☐ Documents
- ☐ Estimated P&L A/C proposed unit
- ☐ Agreements.

1.14.2 Interview: -

For the information on Jevergi Unit the interview techniques was also adopted. The top level Executives, Accountants and the Assistant officers were interviewed with the help of open-ended and unstructured questions.

1.14.3 Observations: -

With view to understanding the risks faced by the sugar industries observation of activities concerned with the concerned unit are made on documentary wise transaction basis.

1.14.4 Data Processing and Statistical Tools: -

The data collected from both published and unpublished sources from the above sources were analyzed by using statistical tools viz.,

1. Risk Adjusted Discount Rate (RADR)
2. Break Even Point
3. Sensitivity Analysis.

1.14.5 LIMITATIONS OF THE STUDY

The study has the following limitations:

1. The Study is confined only to the Jewargi unit of The Ugar Sugar Works Ltd.; generalizations of findings would

Be limited mostly to the unit under study.

2. Due to limitations of the time and finance, the study could not cover all the expansion activities of Ugar Sugar Works Ltd.,

3. The findings are based on the the ability of response received from interviewed officials and other data collected and Calculations made.

4. Risk Analyses is wide topic involving numerous techniques: Each & every aspect of it cannot be dealt in detail.

. Though the study relates only to the Jewargi Unit, the study in its intensity of probe had led to certain findings, which, it is expected to be useful in designing appropriate policies for Risk Analysis in case of Sugar Industry.

5. Difficulty of data collection as the location of the unit under study is at Jewargi of Gulbarga and the Head Office at Ugar Sugar Works manages the activities; some times it was difficult to collect the data form the officer in charge at Jewargi.

1.15 Review of Literature:-

A related literature is reviewed as preliminary to the present study by---Richard Schmalensee in his article New Risks, New Products, and New Regulations Insurance for the 21st Century published in the Icfai Journal of Risk and Insurance , which highlighted the key issues and problems faced by the insurance industry at the start of 21st century and the recommendations for improvement.

G.V.Rao's Paper on Detariffing An Opportunity to Practice Risk Management pointed out The detariffing initiative has given a unique opportunity to insurers to use their underwriting mechanisms to price risks and manage their loss ratios.

- C T Sam Luther Paper on Liquidity, Risk and Profitability Analysis A Case Study of Madras Cements Ltd. Concluded about consideration of working capital for risk analysis.

In view of the above studies the present Research is undertaken to know whether the Expansion of Sugar Industry is capable of Risk Analysis.

1.16 CHAPTER SCHEME: -

CHAPTER 1.

Introduction

Background of Risk Analysis,

Scope and objectives of the study,

Hypothesis,

Research design,

Methodology,

Data collection

CHAPTER 2

The theoretical concepts of Risk Analysis

Characteristics,

Types of risks,

Identification of risk

Measurement of risks and

Risk treatment.

CHAPTER 3.

The Profile of the Promoting Company The Ugar Sugar Works Ltd.,

CHAPTER 4.

The theoretical application of the concept of risk analysis to the Jewargi sugar plant of The Ugar Sugar Works Ltd.,

The location of the plant,

Commencement of Operation,

Finance,

Analysis of risk ,

Risk measurement,

Methods of handling risks.

CHAPTER 5.

The Summary, Conclusion and Suggestions to

II nd CHAPTER THE THEORITICAL CONCAEPTS OF RISK ANALYSIS

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