



## Management Arts

Elixir Mgmt. Arts 43 (2012) 7033-7039

Elixir  
ISSN: 2229-712X

# Sickness causes in cooperative sugar factories in Andhra Pradesh – a case study

K.Srinivas<sup>1</sup> and V.Apparao<sup>2</sup>

<sup>1</sup>KGR Institute of Technology and Management, Rampally, Keesara, Ranga Reddy, Hyderabad - 501 301.

<sup>2</sup>Department of Commerce, Osmania University, Hyderabad-50007.

### ARTICLE INFO

#### Article history:

Received: 27 September 2011;

Received in revised form:

19 February 2012;

Accepted: 27 February 2012;

#### Keywords

Industrial sickness,

NCSF,

Management Ineffectiveness.

### ABSTRACT

Industrial sickness is a universal phenomenon, over the years the problem of the industrial sickness has grown not only in developing countries but also in developed countries. In India, the problem of sickness in industries has become very acute. It adversely affected the health of the industrial sector in particular and the economy of the country in general. This paper covers the causes of sickness in the cooperative sugar factories in Andhra Pradesh with reference to NCSF and to examine the revival / closure strategy of NCSF. The present study is based on secondary data and is substantiated by discussions and interviews with the officials of NCSF. The data is analysed by using appropriate statistical tools like averages, trend analysis and percentages. In order to identify the forewarning indicators of industrial sickness in Cooperative sugar factories, L.C. Gupta model of four financial ratios such as (1) EBDIT \ NS (2) EBDIT \ GTA (3) OCF \ NS (4) OCF \ GTA are also applied.

It concludes that the originating factor was management ineffectiveness. The management could not make the farmers understand the importance of survival of NCSF. The management could not convince the farmers to continue to produce sugarcane for their survival vis-à-vis the NCSF's survival. EBT was negative for all the years but for 1998-99 it was positive due to interest waived. All these indications show that the organization was never sound, ultimately leading to sickness.

© 2012 Elixir All rights reserved.

### Introduction

The incidence of industrial sickness has been growing in India during the last decade. Apart from the traditional industries like cotton textiles, jute and sugar, some other industries like engineering, Chemicals, rubber, cement, electrical and paper have also been affected by sickness. This paper deals with the problems and factors causing industrial sickness. During the last two decades, the incidence of industrial sickness has been growing rapidly and has been one of the persisting problems faced by the industrial sector of the country. The economic survey (1989-90) stated that the "substantial amount of loanable funds of the financial institutions is locked up in sick industrial units. The consequences of industrial sickness are more serious in a country where unemployment is a major problem and resources are scarce. The Sixth Plan commenting on the consequences of sickness mentions has said that "The phenomenon of industrial sickness not only tends to aggravate the problem of unemployment, but also render infrastructure capital investment and generally creates an adverse climate for further industrial growth.

#### Objectives of the study:

The objectives of the present study are to:

1. explore the causes of sickness in the cooperative sugar factories in Andhra Pradesh with reference to NCSF.
2. examine the revival / closure strategy of NCSF.

**Methodology:** The present study is based on secondary data and is substantiated by discussions and interviews with the officials of NCSF (Nagarjuna Cooperative Sugar Factory Ltd). The data is analysed by using appropriate statistical tools like averages, trend analysis and percentages. In order to identify the forewarning indicators of industrial sickness in Cooperative sugar factories, L.C. Gupta model of four financial ratios such as

(1) EBDIT \ NS (2) EBDIT \ GTA (3) OCF \ NS (4) OCF \ GTA are also applied.

**Sources of data :** The data required for the study are collected from both primary and secondary sources. Primary sources consist of personal interviews and discussions with the concerned officials of the organization. The secondary data include annual reports of NCSF, and South Indian Sugar Mills Association (SISMA). Data is also collected from India Sugar Journal, The Indian sugar year book, Directorate of sugar (Government of Andhra Pradesh) and News Papers.

#### Period of the study:

The present study confined to 16 years period, Further, L.C. Gupta model is applied and analyzed for a period of 16 years starting from 1983-84 to 1999-2000 to make the analysis more meaningful.

#### Causes of industrial sickness in Nagarjuna Cooperative Sugar Factory (NCSF) :

There are number of causes, both internal and external, often operating in combination have been responsible for industrial sickness. The main causes include deficiencies in planning, management and marketing. The committee appointed by RBI in 1981 under the chairmanship of "Tiwari" attempt to draw more meaningful analysis of multi-dimensional causes of sickness. Usually, the causes of industrial sickness are often classified into internal and external. The internal causes include managerial factors, financial factors, technical factors and infrastructural factors. The external factors relate to government policies pertaining to production, distribution, prices, power, raw material transport communication. Among the factors listed above, the managerial and technical factors are said to be vital

**Internal Factors:****Managerial Factors:**

One of the important internal causes of sickness is inefficient management. "The definition of management reveals that management is the art of getting things done through and with people in formally organized groups. It is the art of creating an environment which people can perform and individuals could co-operate towards attainment of group goals. It is an art of removing blocks to such performance, a way of optimizing efficiency in reaching goals.

From the above definition it is clear that the success of any organization, depends upon the efficiency in managing resources. Ineffective management results in the failure of the organization, in the present study it is observed that the management deficiency was the most important reason for growing sickness. Faulty managerial decisions in the field of production, marketing, finance and personnel departments, can cause serious damage to profitability and viability of business. In this connection, it would be of interest to learn the causes of sickness observed in case of NCSF, which are outlined as follows :

1. One of the major factors for poor management is that the organization is managed by IAS Officers who are inexperienced and generally lack managerial skills required to run a commercial organization.
2. It is also observed that there are no technically qualified staff to use modern technology.
3. A qualified chemist is also required for chemical analysis of raw materials and by-products, the organization failed to recruit a chief chemist for the purpose.
4. In this particular factory, the purchase department will take care of purchases of all raw materials. But in the case of NCSF, it is observed that the purchase department has not taken care in purchasing cane. It had purchased uncleaned cane and resulted in low productivity.
5. It is observed that in the company almost all plant workers/employees are illiterates and they did not receive any technical training to run the plant.

Besides, it is also observed that inefficient use of working capital, improper wage increment and promotion policies, lack of man power planning and bad industrial relations were other factors contributing to inefficient management.

**Financial Factors :** Apart from the inefficient management, the financial factors also contribute to sickness. Financial factors include, shortage of liquid funds to meet short term financial obligation of creditors and also to meet statutory obligations. When an enterprise faces shortage of funds for purchase of raw materials, payment of wages, interest and repayment of loans, then, it can be said that the unit is facing financial crisis. It is observed that a number of units face acute financial problems right from the stage of planning, construction to the stage of implementation and beyond. Most of the units depend upon banks and financial institutions for short-terms funds. Due to this, they are unable to meet the financial obligations. In some cases, lack of support from banks or financial institutions causes sickness of the unit, on the other side the equity base of small scale units is very weak. Failure to introduce proper financial control devices and cost control methods is found to be another prominent factor leading to sickness in units. According to the study carried out relating to Prime Minister Rozgar Yojana (PMRY) units, funds diversion appears to be major causes of sickness. The same is observed in the case of NCSF. It

borrowed at high rates of interest and did not care for making economies in cost. High overhead costs and high salaries were also some of the causes for sickness. Another important issue of financial factor is paucity of funds and faulty financial management. In the case of few companies, the heavy investment is made in unproductive capital assets. It is a general complaint in the industrial circles that the credit squeeze adversely affects the industrial sector. According to Tiwari committee, 24 per cent of large sick units were affected by shortage of working capital / liquidity constraints.

**Technical Factors:** Technology is the one of the most important factors in the production. The world is, today, in the present state, because of technology. Technology helps produce high quality and large quantities. The unit which uses highly sophisticated technology can produce better quality produce in large quantities, thereby it can reduce its production costs. According to the Tiwari Committee 14 percent of the large sick units suffered from technical factors and faulty initial planning. In a number of cases the units do not seek professional and technical guidance from competent authorities in choosing correct machinery. At times, the technology adopted by the entrepreneur is obsolete and inappropriate. Production with the help of such technology is bound to be inferior in quality as compared to the production using modern and appropriate technology, on the other hand the inappropriate technology likely to suffer a cost and price disadvantage vis-à-vis units employing modern technology. In case the of NCSF, it is witnessed that the machinery used was outdated when compared with other factories in the same industry, and the cost of production obviously was more than that of other units.

Underutilization of capacity is also a factor which lead to sickness of a unit. Every unit of production for its survival must cross the break even point. It means, the volume of production or sales of firm are just adequate to cover the fixed costs, besides the variables cost which every production unit has to cover. If a firm operates below its break-even point, for a continuous period incurs losses and is bound to go sick. In the case of NCSF, it is observed that the farmers are not growing / supplying the high yielding varieties of cane. This lead to low production of cane and resulted less no. of days in a season. Whenever the crushing period decreased (it is nothing but under utilization of capacity) the unit was not able to meet even its variable costs.

There are no technically qualified staff in the organization. No training programmes have been conducted in the factory for the improvement of skills, due to lack of technically qualified staff the quantity of production has come down. In this particular unit there should be research and development department and cane yielding testing laboratory. But in the case of NCSF there is no research and development department and even laboratory, leading to not having chemical analysis of sugarcane and could not follow new methods of production. The organization did not concentrate to get high yielding varieties of seeds which can grow in short span of time and give better output resulting in the shortage of raw materials. Due to this, factory was not run throughout the financial year. Another important factor observed in the study is that there is no proper technology to use by-products of sugarcane. In consequence of the above problems, the organization was not able to produce and could not survive.

**Infrastructural Factors:** Infrastructural factors are the facilities that are needed for producing and distributing the production among the consumption centers. These facilities can

not be built by the organization alone, as it involves enormous cost. Infrastructure facilities include Roads and Transportation, Electricity, Water, Telecommunications facilities etc.

**Location of the Unit:** Sickness may also arise from locational problems. If the place where the unit has been setup lacks infrastructure facilities, the unit is likely to face difficulties. It has been observed that high technology based units are established in area without skilled labour or supporting infrastructure; without adequate transport and communication system. In the case of sugar industry, every factory should be established far from the urban areas and near to the sugar cane growing areas.

**Roads and Transportation:** Roads and Transportation is most important infrastructure for the growth and development of an industry. In the case of NCSF, it is observed that the roads in the area where the factory is located are well. So there was no difficulty to transporting raw material to and finished product from the factory. Since the raw material (sugarcane) was grown in the nearby villages to the factory, it was not a problem to transport sugarcane to the factory. There was not a problem to transport finished product to the market, because of moderately good roads, for the sake of workers travelling, there is R.T.C. bus facility to the factory place. The impact of Roads and Transportation facilities is insignificant for the sickness of the unit.

**Electricity :** A large number of industrial units face power cuts from time to time. In the case of sugar industries, the power can be generated by themselves with the help of crush waste i.e. by - products. NCSF did not have any power problem. Therefore, the impact of power is said to be insignificant in leading to sickness of the unit.

**Telecommunication Facilities:** Lack of telecommunication facilities are also causes to sickness of unit. It is observed that NCSF the telecommunication facilities are inadequate.

**External Factors :** Sickness may also be caused by the factors beyond the control of an industrial unit. External factors such as non-availability of raw materials, power shortages, transport bottlenecks, financial bottlenecks, environmental factors and Government policies effect in functioning of sugar factory.

**Raw Material :** Some units depends upon scarce raw material. For the sugar industry, most important raw material is sugarcane. The production of sugarcane depends upon availability of water resources. If there is scarcity of water, the cane production will decrease. This results in underutilization of plant capacity and low production. NCSF is also facing shortage of sugarcane due to diversification of farmers to other crops as they required lower quantity of water and provided more return as compared to sugarcane. This is one of the important causes for the sickness in NCSF.

**Transport Bottlenecks :** Though the roads are well-built, the vehicular non-availability was found to be a problem for transportation to NCSF.

**Financial Bottlenecks :** The reforms in financial sector leading to major changes in the structure and policies of the banks, term lending institutions, RBI etc. have created shortage of finance and working capital. At times, recession in the market causes a steep decline in the demand resulting in unsold stocks and losses to individual units. In such instances, working capital need shoots up for which there are no proper availability of funds.

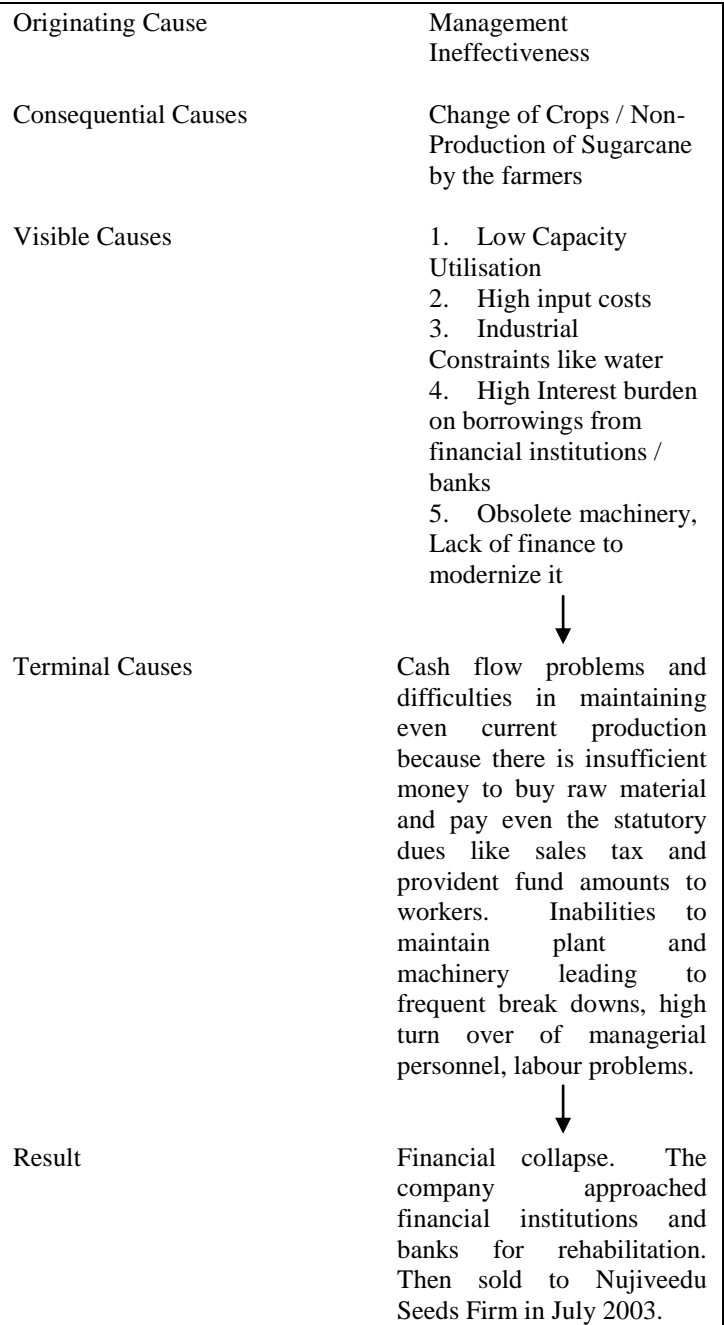
**Government Policies :** Decontrol of sugar led to a competitive pricing of sugar and involvement of Government is minimized. But the sudden changes in the Government policy relating to

imports, exports, industrial licencing, taxation etc., also made viable units sick overnight.

**Environmental Factors:** Environmental factor include all the above mentioned powercuts, shortage of raw materials, change in Government policies etc. Beside this, every sugar factory should satisfy the rules of pollution control board. In order to satisfy the pollution control board rules, the units are incurring huge unproductive costs. This leads to mis-utilization of scarce resources. Another important factor is adverse agro climate condition.

In this study, it is observed that the genuine reasons for sickness of NCSF are deficiency in planning, management, marketing, technological obsolescence and timely modernization.

**Chain of causes for sickness in NCSF**



Achalapathi K.V., gave a different approach to understand sickness. According to him, sickness is like a vicious circle, and an understanding of the originating cause is essential for devising of effective remedial measures, preventive as well as

curative. The whole chain of causation should be traced upwards and downwards so as to reach a proper understanding of the problem.

On the basis of the above study the analysis is made to point out the causative factors for sickness in NCSF. The originating cause being "Management Ineffectiveness". The objective of cooperative sugar factories is "cooperation" among the farmers to run the factory commercially. The farmers have not-cooperated within themselves and have gone for "change of crops" leading to non-production of the sugarcane required. Without the supply of raw material a producing unit cannot survive and shortage of raw material lead to disruption in production and low capacity utilization.

The chain of causes, i.e. originating cause – "Management Ineffectiveness" among the management of NCSF lead to consequential causes. These consequential causes are change of crops and ultimately the farmers not producing the sugarcane leading to non-availability of raw material.

The visible causes externally are followed because of the consequential causes. The non-availability of raw material leads to low capacity utilization, high cost of inputs, followed by other constraints.

Industrial constraints, lack of water supply, high interest costs, obsolete machinery and lack of finance in order to modernize the industrial unit are the other visible causes that contribute to the sickness in NCSF.

The above mentioned are some of the important causes for the sickness of the organization. Primarily, management ineffectiveness coupled with lack of cooperation can be attributed as a major cause for the sickness of the unit. In addition the terminal causes like cash flow problems and maintenance of production levels, shortage of raw material, cash deficit to pay statutory dues etc. are also the visible causes for the same.

Ultimately the organization had collapsed, and was sold off to the Nujiveedu Seeds Firm at a throw away price of 5.347 crores in July 2003.

#### **Application of I.C. Gupta's relative earnings method :**

L.C.Gupta, after testing 56 financial ratios in their ability to stand as forewarning indicators of corporate sickness, has recommended the following combination of four profitability ratios :

1) EBDIT/NS 2) EBDIT/GTA 3) OCF/NS 4) OCF/GTA

**EBDIT / NS :** It denotes earnings before depreciation interest and taxes to Net sales. As the earnings of the company prior to incurring financial expenses such as interest and provision for taxation are taken for calculation, the ratio denotes operating efficiency of the firm. Depreciation, a non cash expenditure is not taken into account to reflect the profitability of the firm to a greater extent.

**EBDIT/GTA :** While EBDIT denotes the current year figure of the earnings before depreciation, interest and taxes, GTA denotes the Gross total assets. The gross total assets means the total assets given in the balance sheet + accumulated depreciation. The accumulated depreciation is added back to the total assets figure as it would facilitate comparison with other firms having different depreciation policy. This ratio would explain operating efficiency of the assets of the company.

**OCF/NS:** It denotes operating cash flow to Net sales. Operating cash flow is obtained by adding back the depreciation to the net profit of the firm. Since the net profits are arrived at, after

deducting the financial expenses like interest and taxes, this ratio denotes the ability of the firm to generate funds from net sales.

**OCF / GTA :** This ratio indicates the ability of the total assets to generate funds to the firm.

The NCSF is located at Gujarala in Guntur District. The factory was registered as a Cooperative Society 1972 under the Andhra Pradesh Cooperative Societies Act – 1964. The Mill was commissioned 1983-84 crushing season with a capacity of 1250 TCD.

This indicates the efficiency of promoters. NCSF's sales has increased and reached a peak of Rs.687.36 lacks from 65.33 within a span of 6 years from the year 1985-86 to 1991-92, the reason being free availability of raw material after that the sales have shown a fall to a low of 3.23 lakhs and then totally halted from the year 1995-96 due to shortage of raw material.

As far as EBDIT is concern, was negative till the first three years from 1983-84 to 1985-86. From the fourth year onwards it went positive and reached a peak of rs.137.78 lakhs in the year 1990-91 and the next year it fell down to Rs.98.88 lakhs.

From 1992-93 onwards the EBDIT has been negative continuously. The first three years negative EBDIT is attributed to the teething problems of an organization and the second negative trend is the symptoms of sickness entering the organization performance. Before it was sold off to another organization in the year 2003 the EBDIT is positive because the lending institution have waved off the interest and the same is shown as income to the organization.

But, when it comes to the ratio of EBDIT to sales, the first year of 1985-86 showed a negative figure of 1.16, however, from the year 1986-87 to the year 1991-92 over a period of five years, the ratio showed a positive figure, apart, it also increased from 0.27 to 0.422. In the last year the ratio was 0.144 or 14.4% EBDIT to sales.

From the year 1992-93 onwards the ratio had shown a negative figure till the last year. Therefore, we can come to an understanding that the performance of the organization is going out of the hands of management.

The ratio of EBDIT to GTA is no way different from the trend of sales, EBDIT, etc. The first three years from the year 1983-84 to the year 1985-86 have shown negative results. Whereas from the year 1986-87 onwards to the year 1991-92, for a period of five years the ratio is positive. However, from the year 1992-93 onwards like other ratios the ratio is showing a negative.

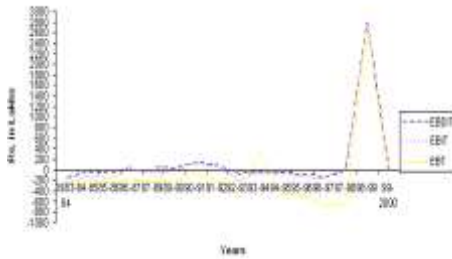
The non-operating expenses particularly the establishment expenses and the interest burden is very high in the organization because of which the ratio of OCF to sales is negative from the beginning.

From the year 1985-86 onwards till the date of closure and sale, the ratio is never positive, which indicates inefficiency of financial management in the organization.

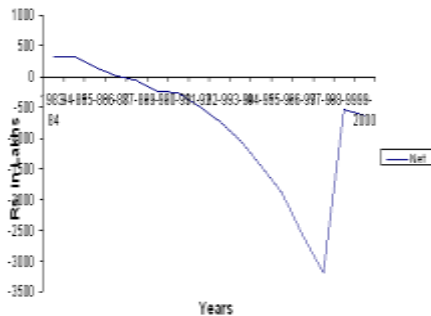
The next ratio for the analysis in the L.C. Gupta model analysis is OCF to GTA has also shown the same trend. From the years 1983-84 to 1999-2000 the ratio never had shown a positive ratio, excepting in the year 1986-87.

The ratio which indicates the ability of the assets in relation to generation of funds to the firm is showing a negative, thus, it can be concluded that the organization has never performed well commercially and went into the clutches of sickness.

### Earning analysis of NCSF



### Net worth analysis of NCSF



### NCSF

#### Earnings analysis :

EBDIT of NCSF was negative initially but turned positive in 1986-87 and continued till 1991-92 but from 1992-93 onwards the company's EBDIT was never positive except for the year 1998-99 which was not revenue profit but interest waived by financial institutions which was shown as profit. EBDIT was positive only for 1990-91 and 1991-92 and for rest of the years negative except for 1998-99 which was due to interest waived. EBT was negative for all the years but for 1998-99 it was positive due to interest waived. All these indications show that the organization was never sound, ultimately leading to sickness.

#### Net worth Analysis :

It is observed that the net worth eroded totally by the 5<sup>th</sup> year and became negative by year end. The net worth also became negative by around two hundred per cent by the year 1999-2000, i.e. within an eleven years after it went 'zero'. The same tendency also observed on graph. From the above ratios, it can be observed that the organization has never been in position to make profits and was never commercially viable. Lack of professional management is the cause that can be attributed for the sickness in the unit. It is also seen that the management is not seriously viewed this problem.

#### Sica 1985 analysis

According to SICA 1985, the definition to conclude a unit as sick is that the firm is not able to generate profits, eroded its net worth and is registered for not less than seven years. Accordingly the NCSF is suffering with cash losses eroded net worth and also registered for more than seven year. This unit can be concluded to be sick with reference to the definition of SICA 1985.

In the year 1992, the SICA amendment act introduced in Feb.1994 made changes in the definition by removing the clauses of cash losses and reduced the period from seven years to five years. Apart the default of accompany with regard interest for four consecutive periods or two half-yearly installment of principal. The NCSF as such, had defaulted

interest, principal both for the said period apart from the erosion of net worth. Therefore, can be concluded to be sick as for the present definition too.

#### Conclusions:

The factors that caused sickness and contributed to closure / sale of the firm are classified into originating causes, consequential causes, visible causes and terminal causes.

1. A proper and useful diagnosis provides a clear picture of the organization for its revival. When NCSF's position is analyzed, the originating factor was management ineffectiveness. The management could not make the farmers understand the importance of survival of NCSF. The management could not convince the farmers to continue to produce sugarcane for their survival vis-à-vis the NCSF's survival. The management could not initiate, motivate and convince farmers to become entrepreneurs by involving themselves in NCSF actively.

2. Due to inefficiency in management and understanding among the farmers, they shifted from cultivating sugarcane in their fields to some other crops. Non-production of sugarcane by the farmers holding lands in the surrounding area is also a factor which can be attributed to the management's failure in motivating, initiating and involving the farmers in NCSF's affairs. Had there been the involvement of farmers, the problems would not have continued.

3. Non-cultivation of sugarcane have led to the problems of shortage of raw material leading to low capacity utilization and high input costs. These visible causes had an adverse impact on the functioning of the NCSF.

4. The study also observed that, the size and location of the industry had serious impact on sickness. The size of the NCSF is very uneconomical or below the economical level when compared to the private and public sector sugar factories in Andhra Pradesh. Availability of raw material was a serious problem, the raw material was available till the year 1993-94 and later the farmers in the peripheral area have slowly shifted towards cultivating other crops like chillies, cotton, groundnut, etc. which led to severe shortage of raw material, underutilization of installed capacity increase in the cost of production.

5. Apart from the above, a Chief Chemist, with a knowledge of chemical analysis and yield study, was not appointed in NCSF, which reveals the laxity and loopholes in terms of professional management of NCSF.

6. An Agricultural Officer is to be appointed in the sugar factory to supervise, guide and advice the farmers regarding the usage of cane produce for manufacturing sugar. But, the authorities in NCSF have overseen this part totally. This lapse has resulted in both poor quantity and quality of sugar in NCSF leading to poor performance of NCSF.

7. The NCSF was registered in 1972 and the machinery was acquired in 1978. Later on the factory was not in a position to adapt to the modern technology. So, the usage of old obsolete and outdated machinery contributing to an increased cost of production, low quantity and low quality of the product.

#### References:

##### Books :

1. Ruddar Datt and Sundharam K.P.M. "Sickness in Indian Industry" Sulthanchand & Sons, New Delhi, 2000.
2. Bidana S.N. and Mitra, P.K., "Industrial Sickness, Identification and Rehabilitation" Vision Books Pvt. Ltd., New Delhi, 1982.

3. Joshi, V.K. "Management of Industrial Sickness" Kaber Associates and Publishers, Jaipur, 1987.
4. Kaveri, V.S. "Financial Ratios as Predictors of Borrowers' Health" Sultan Chand and Son's, New Delhi, 1980.
5. Reddy, K.C. "Sickness in Small Scale Industries" Ashish Publishing House, New Delhi, 1983.
6. Simha, S.L.N. "Sickness in Industrial Units, Some Observations". Institute of Financial Management and Research, Madras, 1977.
7. Reddy, T.S. and Reddy L.V. "Sickness in Small Industry". Himalaya Publishing House, Bombay, 1988.
8. Pandey I.M. "Financial Ratios as Predictors of Failure". Vikas Publishing House Pvt. Ltd., New Delhi, 1999.
9. Francis Cherunilam "Industrial Sickness" Himalaya Publishing House Bombay, 2000.
10. Misra S.K. and Puri V.K. "Industrial Sickness in India", Himalaya Publishing House Bombay, 2000.
11. T. Jyothi Rani "Sickness in Small Scale Industrial Sector". Sandeep Publishing House Warangal, 1985.
12. Vedachalam N.T. "Incidence of Industrial Sickness in Small Scale Industries". Himalaya Publishing House Bombay, 1991.
13. The Sick Industrial Companies (Special Provision) Act, 1985, Law Publishers (India) Private Limited, 2000.

**Articles :**

1. Prasad, R.V.I.N., "Rehabilitation of Sick Units and Workers". *Financial Express*, June 28, 1990.
2. Prabhu, J.M. "Sickness of Industries". *The Economic Times*, Vol. XXIII, No. 59, 3<sup>rd</sup> May, 1978.
3. Rao S.B. "Industrial Sickness and Rehabilitation" *Financial Express*. Vol. XVIII, No. 83, 7<sup>th</sup> & 8<sup>th</sup> May, 1978.
4. Sri Laxmi M. "Industrial Sickness I & II. Topical Review". *Sendoc Bulletin*, Vol. 8, No. 8 & 9, August & September, 1980.

**Reports :**

1. Reports on the Performance of Sugar Factories in Andhra Pradesh from 1990 to 2000. Directorate of Sugars, Govt. of Andhra Pradesh, Hyderabad.

2. Annual Reports of Nagarjuna Co-operative Sugar Faculty Ltd., from 1990 to 2000.

3. Baga Redy, M. Committee Report on Sugar Price and Cane Development, Constituted by Govt. of Andhra Pradesh, 1990.

**Thesis / Dissertation :**

1. Baru, Sanjay "Evolution of Sugar Policy in India 1932-1982 – The Political Economy of State Intervention" Doctoral Thesis, Jawaharlal Nehru University, Delhi, 1986.

2. Jaganatha Rao, P. "A Study of Sugar Co-operative in Andhra Pradesh", Doctoral Thesis, Dept. of Commerce, Osmania University, Hyderabad, 1980.

- 3) Appa Rao V. "Cost Structure and Behaviour in Sugar Industry – A Study of some select units in Andhra Pradesh", Doctoral Thesis, Department of Commerce, Osmania University, Hyderabad 1999.

- 4) B. Pameela "A Study of Selected Sick Industrial Units in Twin Cities financed by Andhra Pradesh State Financial Corporation" M.Phil dissertation, Department of Commerce, 1997.

- 5) Achalapathi K.V. "Sickness in Paper Industry in India. The Role of BIFR as Policy Instrument". Doctoral thesis, Department of Commerce, Osmania University, Hyderabad, 1991.

- 6) Kasireddy M. "Rehabilitation of Sick Small Scale Industrial Units Study of Units Financed by Andhra Pradesh State Financial Corporation" M.Phil Dissertation, Department of Commerce, 1993.

- 7) Gopala Krishnama "Project Appraisal as a Cause and Remedy for Charyulu G. Industrial Sickness" Dissertation submitted to Institute of Chartered Accounts of India for the Award of DMA.

**Table 1 L.C.Gupta Model – Analysis of NCSF**  
(Rs. in Lakhs)

Years	1983-84	84-85	85-86	86-87	87-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-2000
Sales	Nil	Nil	65.33	192.47	362.08	22.55	326.58	687.36	438.49	3.23	320.04	Nil	0.31	4.10	Nil	Nil
EDBIT	-165.93	-38.44	-76.03	51.62	62.96	11.46	137.78	98.88	-74.00	-42.489	-57.67	-77.43	-142.55	-18.82	2806.97	-16.31
GTA	897.87	909.64	957.82	961.61	1183.46	1178.84	1627.63	1541.81	1126.17	1296.79	1067.60	1037.85	1035.34	1063.01	1061.55	1061.57
OCF	-209.15	-112.09	-141.77	-99.94	-116.92	-174.81	-36.71	-166.81	-330.73	-313.80	-426.82	-435.59	-655.07	-621.11	2652.79	-103.19
EBDIT to sales	∞	∞	-1.16	0.27	0.174	0.051	0.422	0.144	-0.169	-13.152	-0.180	∞	-459.84	-4.590	∞	∞
EBDIT to GTA	-0.18	-0.04	-0.08	0.05	0.053	0.01	0.085	0.064	-0.066	-0.033	-0.054	-0.075	-0.138	-0.018	2.644	-0.015
OCF to Sales	∞	∞	-2.17	-0.52	-0.32	-0.77	-0.11	-0.24	-0.75	-97.15	-1.33	∞	-2113.13	-151.49	∞	∞
OCF to GTA	-0.23	-0.12	-0.15	0.10	-0.64	-0.15	-0.02	-0.11	-0.29	-0.24	-0.39	-0.42	-0.63	-0.58	2.50	-0.09

Source : Accounts Department, NCSF

**Table 2 Earnings of the NCSF**  
(Rs. in Lakhs)

Years	1983-84	84-85	85-86	86-87	87-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-2000
EBDIT	-165.93	-38.44	-76.03	51.62	62.96	11.46	137.78	98.88	-74.00	-42.48	-57.67	-77.43	-142.55	-18.82	2806.97	-16.31
EBIT	-261.30	-131.06	-169.62	-33.93	-54.49	-37.63	101.98	55.43	-107.97	-68.84	-78.25	-139.82	-158.45	21.89	2796.18	-85.23
EBT	-304.52	-204.71	-235.36	-185.49	-234.37	-223.90	-72.51	-210.26	-364.70	340.16	-447.40	-497.98	-670.97	-634.18	2642.00	-94.21

Source: Accounts Departments, NCSF

**Table 3 Net worth of the NCSF**  
(Rs. in Lakhs)

Years	1983-84	84-85	85-86	86-87	87-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-2000
Net Worth	327.83	237.59	163.57	21.77	-56.72	-238.27	253.95	404.78	734.90	1044.21	1465.81	1897.76	2568.40	3189.34	536.55	621.45

Source : Accounts Department, NCSF

**Table 4 Net worth and cash loss of NCSF**  
(Rs. in Lakhs)

Years	1983-84	84-85	85-86	86-87	87-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-2000
Net Worth	327.83	237.59	163.57	21.77	-56.72	-238.27	253.95	404.78	734.90	1044.21	1465.81	1897.76	2568.40	3189.34	-536.55	-621.45
Cash Loss	-209.15	-112.09	-141.77	-99.94	-116.92	-174.81	-36.71	-166.81	-330.73	-313.80	-426.82	-435.59	-655.07	-621.11	2652.79	103.19

Source : Accounts Department, NCSF.