

REPORT OF THE
COMMITTEE
ON
REVITALIZATION OF SUGAR INDUSTRY



सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF CONSUMER AFFAIRS, FOOD & PUBLIC DISTRIBUTION
(DEPARTMENT OF FOOD & PUBLIC DISTRIBUTION)
NEW DELHI

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Preface

India has a sizeable sugar industry with 4.3 million hectares of area under sugarcane with a potential to produce 20 million tons of white sugar. There are 541 sugar mills installed for white sugar manufacture in the organized sector and a very large number of units to produce gur and khandsari in the unorganized sector of which many are not in operation due to various reasons like inadequate sugarcane, sickness etc.

We are the second largest producer of white sugar in the world. India is also the largest consumer of sugar in the world today. It has a thriving industry for manufacture of downstream chemicals from molasses and in addition has a potential to produce up to 5000 MW of power through the cogeneration route.

The opening of the global economy has now made it imperative for the Indian sugar industry to fine tune its operations, policies, financials and technical skills to remain sustainable and maintain a competitive edge in the international market. As a key agro based industry, it can substantially accelerate India's rural economy.

Lately, the global competence of the Indian sugar industry was eroded due to depressed prices of sugar in the international market and its high cost of production. The problem was accentuated due to high holding costs as the industry had high stocks to maintain as a consequence of high production, outstripping the domestic demand in the recent years. The viability of the industry further eroded with low sugarcane production in the year 2003-04 leading to low capacity utilization. Therefore in April, 2004, the sugar industry found itself entangled in a complex web of problems of high production cost, low sugar prices, mounting cane price arrears and inadequate availability of working capital.

The Government sensing the seriousness of the issue, decided for a review of the existing policies, levels of technology, financial strengths and facilities for research and development and manpower training and identify measures to achieve global competence. Accordingly, a committee was set up for the purpose with members from the Government, Banks, Industry and Academia.

The Committee had detailed discussion with various stake holders in all the key sugar producing States to elicit information and suggestions for its revitalization. After a number of brainstorming sessions with points and counter points, a consensus was evolved on the path to be adopted for the revival of the industry, which forms the basis of this report. This report contains the recommendations of our Committee for interventions in existing policies, levels of technology, skills and R&D facilities.

I wish to thank all the members of the committee who, with their rich knowledge and experience, have immensely contributed to this report. My sincere thanks are also due to all the stake holders who have actively participated in various discussions and provided valuable data and information on the various aspects of the industry.

I would also like to gratefully acknowledge the efficient professional support extended by Sugar Technology Mission, TIFAC, Department of Science & Technology, Government of India, to the Committee.



(S.K. Tuteja)

Chairman

New Delhi

December 02, 2004

Committee on Revitalization of Sugar Industry &
Secretary, Department of Food & Public Distribution

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Executive Summary

EXECUTIVE SUMMARY

- 1 *Sugar industry is the largest agro-based industry located in the rural India. About 45 million sugarcane farmers, their dependents and a large mass of agricultural labourer are involved in sugarcane cultivation, harvesting and ancillary activities, constituting 7.5% of the rural population. Besides, about 0.5 million skilled and semi-skilled workers, mostly from the rural areas are engaged in the sugar industry. The sugar industry in India has been a focal point for socio-economic development in the rural areas by mobilizing rural resources, generating employment & higher income, transport and communication facilities*
(para 1.0.1)
- 2 *There are 553 installed sugar mills in the country with a production capacity of 180 lakh MTs of sugar. These mills are located in 18 states of the country. About 60% of these mills are in the cooperative sector. 35% in the private sector and rest in the public sector.*
(para 1.0.2)
- 3 *On the back of successive good monsoons, sugar production in the country increased rapidly in the last five years, reaching 20.1 million tons in 2002-03 from 15.5 million tons in 1998-99.*
(para 1.0.4)
- 4 *Huge increases in production upto 2002-03 have been followed by low sugar production in 2003-04 (and projected low production in 2004-05) on account of drought and pest infestation in certain major sugar producing States.*
(para 1.0.8)
- 5 *By April 2004, the sugar industry found itself entangled in a complex web of problems of high stocks, low prices, poor profitability, mounting cane price arrears, financial crunch (or outright sickness), limited modernization / expansion / diversification, and weak international competitive edge.*
(para 1.0.9)
- 6 *The average per capita consumption of sugar is estimated at 18.3 kg/year in the year 2002-03. Based on the existing trend, this is estimated to increase to 23-24 kg/year by year 2010.*
(para 2.1.5)
- 7 *India has maintained its position as the 2nd largest sugar producing country in the world, having a share of over 15 per cent of the world's sugar production.*
(para 2.2.3)
- 8 *India is the largest consumer of sugar in the world.*
(para 2.2.5)
- 9 *As per the latest report available on world sugar balance, the increases in production and consumption in 2004-05 are marginal in comparison to 2003-04.*
(para 2.2.7)

- 10 *In the new season the market will be shaped by developments in two sugar giants – Brazil the world's largest sugar producer and exporter and India the world's largest sugar consumer.*
(para 2.2.9)
- 11 *Suitable steps by various stake holders (including State Governments) are necessary to ensure that sufficient sugarcane is developed and grown in the mill area for the economic viability of sugar factories.*
(para 3.1.1).
- 12 *Scientific rationalization of cane area will have a direct impact on the economy of the sugar industry.*
(para 3.1.6).
- 13 *Almost 35% of the 300 million tons of sugarcane produced in India is utilized for the purpose of manufacture of Gur and Khandsari and for chewing purposes.*
(para 3.2.1).
- 14 *Though the recovery percentage has remained stable during the last 5 years, the yield of sugarcane during the same period has reduced from 70 T/ha in the year 1999-00 to 59.1 T/ha in the year 2003-04.*
(para 3.3.3)
- 15 *There is an urgent need for replacement of low sugared cane varieties through extension services in Uttar Pradesh.*
(para 3.5.1.3)
- 16 *Sugarcane Research Institute, Pusa which is the only Research Institute in Bihar should be allocated adequate funds by the Central and State Government for developing suitable varieties of sugarcane which are high yielding and have high sugar content.*
(para 3.5.1.3)
- 17 *Use of alternate feed stocks like sugarbeet and sweet sorghum may be encouraged and projects for seed development, cultivation and processing of such crops may be provided loans from SDF.*
(para 3.6.5)
- 18 *Sugar factories in Uttar Pradesh may enter into a direct contract with the growers like in other States and execute, tri-partite agreements with banks and farmers for procurement of sugarcane and to facilitate use of Kisan Credit Cards and availability of soft loans to farmers.*
(para 3.7.2)
- 19 *State Governments may pay special attention to provide and maintain necessary infrastructure like irrigation, power, roads and drainage etc. for sugarcane cultivation and transportation.*
(para 3.9.3)
- 20 *The present arrangement of payment of SMP along with benefits of price sharing with sugarcane farmers as per Clause 5A of Sugarcane (Control) Order, 1966 is equitable and may continue.*
(para 4.1.3)

21 *The Central Government may dispense with the release mechanism for free sale sugar with effect from 1st October, 2005.*

(para 4.3.4)

22 *The present system of 10% of production as levy sugar may continue.*

(para 4.4.1)

23 *Beyond the initial time limit, a maximum of 3 months may be permitted for lifting of levy sugar, where after, the levy sugar quota would automatically be converted into free sale sugar, without any recurring levy obligation on this portion of levy sugar.*

(para 4.4.2)

24 *Systems and procedures for providing incentives for exports may be modified so that they require minimum paper work and ensure expeditious settlement of claim.*

(para 4.5.2)

25 *Augmentation of sugar supply in the country may be effected when required through facilitation of imports of raw sugar. Indian Sugar Exim Corporation (ISEC), an organ of the sugar industry, may play a prominent role both in import and export of sugar.*

(para 4.5.5)

26 *The minimum radial distance (as the crow flies) between an existing sugar factory and new factory may be 25 km, in place of the present 15 km. Additional requirement of sugarcane for expansion of Capacity beyond 5000 TCD should accrue through increased productivity and not by expansion of the area under sugarcane.*

(para 4.6.6)

27 *Relief measures to farmers in drought/ flood affected States may be made available to such debts of sugarcane farmers as they stand on 31-3-05.*

(para 5.2.3)

28 *To ensure that the sugar factories in drought / flood affected States get adequate working capital to start their crushing operation in 2004-2005, a package of assistance for rescheduling their debts may be provided. Under this package sugar factories which were operational in 2002-03 sugar season may be covered :*

(para 5.3.1)

29 *All loans as on 31-03-2004 may be deferred/ rescheduled to long term loans repayable in 10 to 12 years, besides a moratorium of both interest and principal for 3 years starting from 2004-05. Loans to be covered under this package are the deficit in stock value as on 31-03-03 (Rs.1,500 crores) which was rescheduled into working capital term loan, deficit in stock value as on 30-09-04 (Rs.1,000 crores) and other term loans (Rs. 4,000 crores). The exact terms of the package may be worked out by NABARD and RBI (in consultation with the state governments) on a case to case basis taking into consideration the debt service obligations and the capacity to repay of these sugar factories.*

(para 5.3.1.1)

30 *NABARD may provide pre-seasonal loans as per their existing norms to sugar factories in Maharashtra and Karnataka.*

(para 5.3.1.2)

21 *The Central Government may dispense with the release mechanism for free sale sugar with effect from 1st October, 2005.*

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(para 5.3.1.1)

30 *NABARD may provide pre-seasonal loans as per their existing norms to sugar factories in Maharashtra and Karnataka.*

(para 5.3.1.2)

- 31 Governments of drought / flood affected states may be allowed additional open market borrowings to help sugar factories to meet the fixed costs and 75% entitled wages (of 2004-05 and 2005-06 season and arrears of 2003-04 season) of mills which were operational in 2002-03 sugar season but may have to remain closed in 2004-05 and 2005-06 sugar seasons due to non-availability of sugarcane; The State governments may offer this as loan to sugar factories at a rate of interest of 4% per annum; the central govt. may provide interest subsidy to meet the difference between the coupon rate on the bonds raised through additional market borrowings and 4% as was done last year when state governments were allowed the same facility for clearing cane price arrears.

(para 5.3.1.3)

- 32 *A scheme similar to the one available for integrated textile units should be sanctioned for the sugar sector for reducing their debt service burden.*

(para 5.4.1)

- 33 In the case of units set up keeping the incentives of 1993 and 1997 in view, the excise duty payable on levy sugar namely Rs.38/quintal may be charged on 50% of sugar sold by these units under their free sale quota as against excise duty of Rs.71/quintal payable on free sale sugar.

(para 5.4.2)

- 34 All eligible cases for restructuring in the sugar industry may be taken under CDR scheme. The present minimum principal exposure of Rs.20 crores may be brought down to Rs.10 crores.

(para 5.5.5)

- 35 Working capital to cooperative sugar factories may be made available through National Cooperative Development Corporation (NCDC) at a subsidized rate of interest. For this purpose, NCDC may arrange cheaper funds through External Commercial Borrowings (ECBs) and the Government of India may accord permission as well as provide guarantee in this regard.

(para 5.6.1)

- 36 A body like BIFR may be set up for rehabilitation of cooperative sugar mills and NCDC may be appointed as the Nodal agency for preparing rehabilitation packages for sick cooperative sugar mills.

(para 5.6.2)

- 37 The financial restructuring of cooperative sugar factories under rehabilitation package may generally comprise the following components:

- Conversion of full/part of outstanding State Government loans into equity.
- Infusion of additional equity by the State Government / members of the society
- Reschedulement of outstanding loans of banks & financial institutions and waivers/ concessions in interest on outstanding loans of cooperative sugar mills.

(para 5.6.2.2)

38 *NCDC while acting as a nodal agency may work out a suitable rehabilitation package involving the above steps and also working out required amount of interest subsidy for revival of a sugar factory, in consultation with term lenders, banks and National Federation of Cooperative Sugar Factories.*

(para 5.6.2.3)

39 In order to improve profitability of sugar industry through value addition to byproducts like bagasse and molasses, cooperative sugar mills having potential for setting up of diversification projects may be encouraged. In this context, NCDC may also explore the possibility of arranging external commercial borrowings and Government of India may accord permission as well as guarantee in this regard.

(para 5.6.3)

40 Rate of interest on SDF loans may be so prescribed as to maintain a uniform concessional nature of these loans, that is, the rates of interest should increase or decrease in accordance with the interest rate regimes prevailing in the market. The Committee noted that Government had already taken steps in this direction by prescribing a rate of interest at two percentage points below the bank rate.

(para 5.8.2 & 5.8.3)

41 Rate of interest on existing loans from SDF may be pegged at 2 percentage points below the prevailing bank rate.

(para 5.8.5)

42 First charge *pari passu* or exclusive second charge on assets of the sugar undertaking may be considered as security for loans for cane development in cases where the sugar undertakings are not in a position to furnish bank guarantees/State Government guarantees.

(para 5.9.2)

43 Expansion of capacity of sugar mills upto 10000 TCD may be deemed as 'modernization' for the purpose of loans from SDF.

(para 5.9.3)

44 VRS in the sugar sector may be funded by commercial banks.

(para 5.10)

45 The facility of additional market borrowings to clear the cane price arrears (as on 30.9.2003) of 2002-03 sugar season may be kept open till September 2006 to enable other state governments to take advantage of this facility.

(para 5.11)

46 *Plant size of 5000 TCD may be considered as sustainable.*

(para 6.2.1)

47 *Necessary assistance may be provided from SDF for the following purposes:*

- *Installation of appropriate effluent treatment systems (to achieve zero discharge) including installation of heat exchangers for cooling and condensing, tertiary treatment of effluents and labs for monitoring effluent quality.*
- *Installation of bag filters/high efficiency wet scrubbers/electrostatic precipitator to meet standards of air emission*

(para 6.5.2)

48 *As sugar industry do not discharge any toxic or highly polluting wastes, it may be placed in the ORANGE category.*

(para 6.5.3)

49 *The following policy intervention are necessary for exploitation of by-products*

- *Oxygenation of gasoline may be made compulsory.*
- *The Central Government may strictly implement its long term policy for blending of petrol with ethanol.*
- *Fiscal and other incentives provided (in regard to blending of petrol with ethanol) may be in place for a minimum period of five years, without any rollback.*
- *Purchase price of ethanol may be fixed for a period of three years (with suitable price escalation clauses) in place of the present practice of fixing the price annually.*
- *The Central Government may take steps to prevent frequent changes in PPAs for cogeneration projects.*
- *National Energy Policy may have provisions for (i) mandating the proportion of 'green' power to be purchased in the overall power purchase in a state; and (ii) preferential tariff for cogenerated power. The Central Electricity Act may also be suitably amended to provide teeth to the policy to support 'green' power.*

(para 7.1.1)

50 *In order to ensure that the Research and Development efforts get a proper direction and fillip in the country, the efforts of the existing institutions may be adequately strengthened for increasing productivity in the fields as also in the mills by introduction of new technologies and also by effective extension mechanism. Sugar Development Fund may also assist project linked extension activities of these institutions.*

(para 8.4.1)

51 *SDF may suitably reimburse the cost of organizing national seminars for propagating successful research undertaken by R&D institutions.*

(para 8.4.3)

52 *The industry itself may, in future, take up research in sugarcane as well as in sugar process & engineering through specifically created autonomous organizations, who would be in a position to ensure quick dissemination of the research findings. For industry supported new R&D organizations, capital assistance for building and other equipment may be considered from SDF upto 50%, subject to a limit of Rs. 2.0 crores. Such organizations should also be entitled to receive project linked grants for the duration of these projects.*

(para 8.4.4)

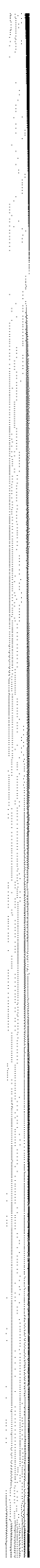
53 *For a closer interaction with the industry, a result oriented approach and functional autonomy, NSI, Kanpur may be converted into a registered society functioning under the Department of Food & Public Distribution, Government of India. While the Society should be progressively in a position to generate enough revenues to meet its revenue expenditure, the Central Government should continue to provide it with project linked grants for meeting capital expenditure.*

(para 8.4.5)

54 *Department of Biotechnology and ICAR may promote the use of biotechnology for improvement in quality and productivity of sugarcane.*

(para 8.4.6)

Background



1.0 BACKGROUND

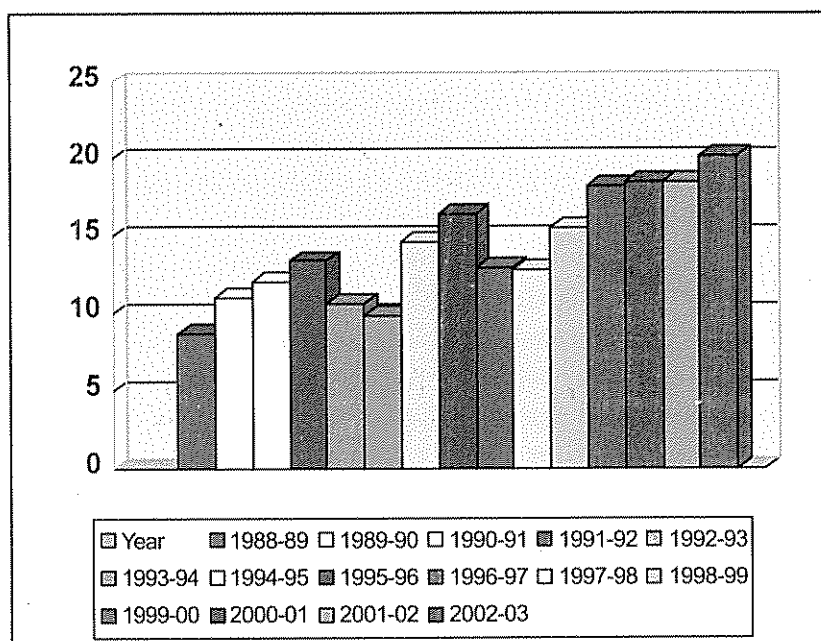
- 1.0.1 Sugar industry is the largest agro-based industry located in the rural India. About 45 million sugarcane farmers, their dependents and a large mass of agricultural labourer are involved in sugarcane cultivation, harvesting and ancillary activities, constituting 7.5% of the rural population. Besides, about 0.5 million skilled and semi-skilled workers, mostly from the rural areas are engaged in the sugar industry. The sugar industry in India has been a focal point for socio-economic development in the rural areas by mobilizing rural resources, generating employment & higher income, transport and communication facilities. Further, many sugar factories have established schools, colleges, medical centers and hospitals for the benefit of the rural population. Some of the sugar factories have also diversified into byproduct based industries and have invested and put up distilleries, organic chemical plants, paper and board factories and cogeneration plants. The industry generates its own replenishable biomass and uses it as fuel without depending on fossil fuel. The sugar industry's contribution to the Indian economy is, therefore, enormous.
- 1.0.2 There are 553 installed sugar mills in the country with a production capacity of 180 lakh MTs of sugar. These mills are located in 18 states of the country. About 60% of these mills are in the cooperative sector, 35% in the private sector and rest in the public sector.
- 1.0.3 The minimum price of raw material, namely sugarcane, is statutorily fixed by the Central Government on the basis of the recommendation made by Commission for Agricultural Costs & Prices (CACP). Sale of sugar produced by the mills is regulated by the Central Government through monthly fixation of quota. 90% of the sugar produced is allowed to be sold by mills as free sale quota (free in regard to price and movement) and 10% is allowed to be sold as levy to State Governments or their nominees at predetermined prices. The sale of sugar produced in 4-5 months of the sugar season is staggered over a period of a year or more.
- 1.0.4 Agriculture in the country being largely rain fed, monsoon plays an important role in the production of sugarcane, the basic raw material for the sugar industry. On the back of successive good monsoons, sugar production in the country increased rapidly in the last five years, reaching 20.1 million tons in 2002-03 from 15.5 million tons in 1998-99. The sugar production in the last 15 years may be seen at Table 1.1.

SUGAR PRODUCTION IN INDIA

Table 1.1

Year	Sugar Production Million Ton
1988-89	8.75
1989-90	10.99
1990-91	12.04
1991-92	13.40
1992-93	10.60
1993-94	9.83
1994-95	14.64
1995-96	16.45
1996-97	12.90
1997-98	12.85
1998-99	15.53
1999-00	18.20
2000-01	18.51
2001-02	18.52
2002-03	20.14

Graph 1.1



Source: Coop. Sugar

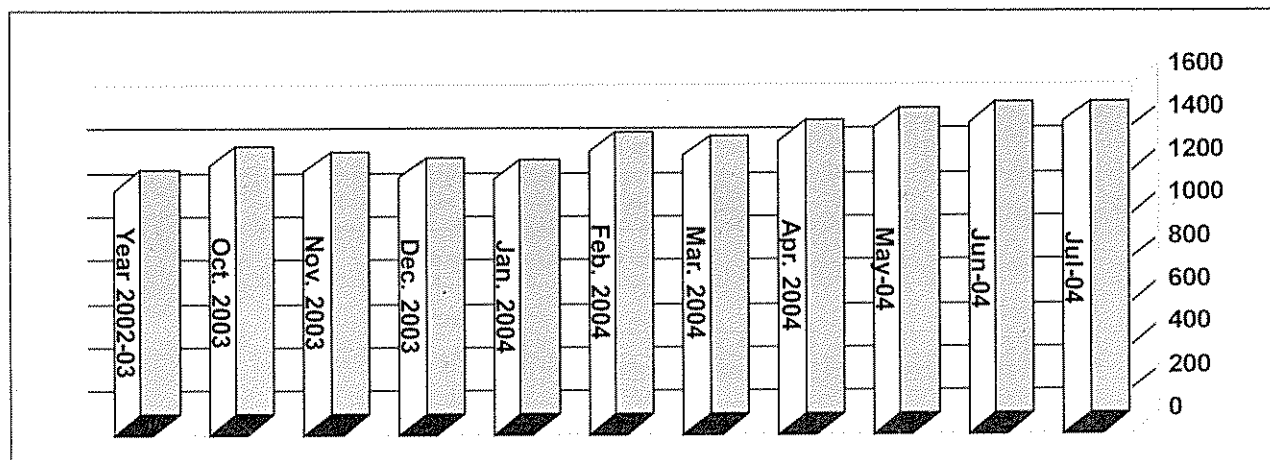
1.0.5 Without any major increase in consumption of sugar, large accumulation of sugar stocks took place during 1998-99 and 2002-03, leading to low price realizations. The ex-factory price of sugar fell from a high of Rs.1630/quintal in 2001 to a low of Rs.1130/quintal in 2003. The ex-factory price of sugar remained even below the cost of production for long periods of time.

ALL INDIA AVERAGE SUGAR PRICE REALIZATION

(Rs. per Qtl.)

Table 1.2

Year 2002- 03	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004	Feb. 2004	Mar. 2004	Apr. 2004	May 2004	June 2004	July 2004
1118.31	1229.18	1203.24	1177.10	1165.55	1292.93	1277.34	1342.28	1399.06	1421.64	1428.48



Source: Coop. Sugar

- 1.0.6 As it is, the competitive edge of Indian sugar in international market is weak. This was further weakened due to depressed price of sugar in the international market, eroding export possibilities and earnings from export. Although efforts by the industry and incentives from Central Government culminated in the export of about 40 lakh tons of sugar in the last three years, yet domestic price continued to remain low.
- 1.0.7 The low cash realizations led to serious financial crunch for the sugar industry. The value of sugar stocks was not even enough to cover the working capital advances taken, seriously affecting cash flows and the ability of sugar mills to service debts and interest on loans for modernization/expansion/by-product utilization. Even routine maintenance was affected in the case of many factories. Interest rate on loans and advances have generally been falling in the country. However, the advantages of falling interest rates did not flow to the sugar industry, as the perspective of financial institutions/banks with regard to the sugar industry remained negative in the adverse sugar market scenario mentioned above.
- 1.0.8 Huge increases in production upto 2002-03 has been followed by low sugar production in 2003-04 (and projected low production in 2004-05) on account of drought and pest infestation in certain major sugar producing States. Although this has resulted in stabilization of sugar prices, the loss in production has compounded the problems of the sugar industry. The loss in production is not only likely to reduce the ability of sugar factories to service their debts, but may even affect running of the sugar factory because of inadequate availability of working capital. Low capacity utilization resulting from low availability of cane is likely to lead to higher costs of production. As many as 100 factories are unlikely to come into production in 2004-05 because of non-availability of cane creating difficulties in meeting fixed costs and wages of mill employees.
- 1.0.9 Thus by April 2004, the sugar industry found itself entangled in a complex web of problems of high stocks, low prices, poor profitability, mounting cane price arrears, financial crunch (or outright sickness), limited modernization /expansion/ diversification, and weak international competitive edge.
- 1.0.10 It was in this context, that the Interim Budget, 2004-05 provided that "The Government will prepare a package for the revitalization of sugar industry, in consultation with all the stakeholders". Accordingly, a Committee, consisting of all stakeholders was set up on March 12, 2004 under the Chairmanship of Shri S.K. Tuteja, Secretary, Ministry of Food, Consumer Affairs & Public Distribution, Government of India for the purpose of identifying the problems faced by the sugar industry and suggest a package for its revitalization to enable make it viable, self sustaining and globally competitive. The notification giving details of composition of the Committee and its terms of reference is at Annexure I.

1.1 Methodology

- 1.1.1 The Committee held detailed discussions with various State Governments and key stake holders like Indian Sugar Mills Association, National Federation of Cooperative Sugar Factories, State Industry Associations and Federations, etc. in different parts

of the country. Their representatives made presentations before the Committee highlighting the problems confronting the industry and their suggestions to overcome these problems. Discussions were also held with Reserve Bank of India, National Cooperative Development Corporation (NCDC), Industrial Development Bank of India (IDBI), NABARD, Indian Renewable Energy Development Agency (IREDA), MSCB, Ministry of Non Conventional Energy Sources (MNES), All India Distillery Association (AIDA) and Vasantdada Sugar Institute (VSI), Pune. Ministry of Textiles was also invited to make a presentation on the steps taken by the Government for the revival of textile industry. The list of stakeholders who participated in the various meetings of the Committee is at Annexure II.

- 1.1.2 The Committee had the benefit of earlier studies on sugar industry for its revitalization including the last study by Mahajan Committee, which submitted its report to the Government in 1998. The committee also accessed relevant records and papers available with the Ministry of Food & Public Distribution. The Committee hopes that the recommendations for rationalization and diversification in the sugar industry made in this report would enable the industry to maintain competitiveness and achieve long term sustainability.

Sugar Scenario – National & International



2.0 SUGAR SCENARIO - NATIONAL & INTERNATIONAL

2.1 National

- 2.1.1 The sugar industry is the second largest agro-based industry, next to textiles in the country. The first sugar mill in the country was set up in 1903 in the United Provinces. There are 553 installed sugar mills, of which 453 were in operation in the year 2002-03 and utilized 194.4 million ton of sugarcane (69% of total cane production) to produce 20.14 million tons of sugar. About 5 lakh workmen are directly employed in the sugar industry besides many in industries, which utilize by-products of sugar industry as raw material.
- 2.1.2 Sugar industry contributes about Rs.1650 crores to the Central Exchequer as excise duty and other taxes annually. In addition, about Rs. 600 crores is realized by the State Governments annually through purchase tax and cess on cane. At the prevailing sugarcane price, the total sugarcane produced in the country value at about Rs. 24000 crores per year.
- 2.1.3 The Government of India licensed new units with an initial capacity of 1250 TCD up to the 1980s and with the revision in minimum economic size to 2500 TCD, the Government issued licenses for setting up of 2500 TCD plants thereafter. The Government de-licensed sugar sector w.e.f. 11.9.1998. The entrepreneurs have been allowed to set up sugar factories or expand the existing sugar factories as per the techno-economic feasibility of the project. However, they are required to maintain a radial distance of 15 kms. from the existing sugar factory.
- 2.1.4 After de-licensing, a number of new sugar plants of varying capacities have been set up and the existing plants have substantially increased their capacity. The increase in number of units and capacities during the period 1980-2003 is shown in Table 2.1.

**Number of Sugar Factories in Operation
in India and Average Capacity (TCD)**

Table 2.1

Year	No. of Units	Average capacity (t/d)
1980-81	315	1718
1981-82	320	1721
1982-83	321	1779
1983-84	326	1779
1984-85	339	1834
1985-86	342	1885
1986-87	354	1862
1987-88	357	1888
1988-89	365	1925
1989-90	377	2036
1990-91	385	2088
1991-92	392	2167
1992-93	393	2325
1993-94	394	2388
1994-95	408	2483
1995-96	416	2531
1996-97	412	2656
1997-98	400	2863
1998-99	427	2855
1999-00	423	3049
2000-01	436	3203
2001-02	434	3285
2002-03	453	3343

Number of Sugar Units in Operation

Table 2.2

Decennial period ending	No. of units	% increase in units over the base per year 1980	Average capacity per unit (ton)	% increase in capacity over the base year (1980)
1980	299	---	1650	---
1990	377	26	2030	23
2000	423	41	3000	82
2003	453	52	3340	102

- 2.1.5 The average per capita consumption of sugar is estimated at 18.3 kg/year in the year 2002-03. Based on the existing trend, this is estimated to increase to 23-24 kg/year by year 2010. At an annual population growth rate of 1.6% per annum, the population of India is expected to be 116 Crores by the year 2010 and therefore the corresponding estimated requirement of sugar will be 24.3 million tons. To achieve this, the sugar cane needs to be cultivated on an area of about 5.5 million hectare with an average yield of 65 T/ha. As the increase in area of the sugarcane from the present 4.36 million hectare to 5.5 million hectare, may not be possible due to other competing crops, it becomes necessary to improve the productivity and yield of sugarcane and sugar recovery. The State wise scenario in respect of sugarcane production, cane consumption by sugar industry, sugar produced, season duration, number of units etc. in different key sugar producing States is as per Table 2.3.

**State Wise Sugar Production, Season Duration, No. of Units in Operation in
Major Sugar Producing States of the Country
(Year 2001-02)**

Table 2.3

State	No. of units in operation	Season duration (days)	Sugarcane Production (Million tons)	Sugar Production (Million tons)
Andhra Pradesh	35	119	18.08	1.05
Bihar	10	117	5.21	0.34
Gujarat	15	152	12.46	1.05
Haryana	15	162	9.27	0.62
Karnataka	36	142	33.01	1.55
Maharashtra	135	125	45.14	5.61
Punjab	22	147	9.25	0.59
Tamil Nadu	36	195	32.62	1.83
Uttar Pradesh	101	150	117.98	5.26
Uttaranchal	10	138	7.55	0.44

2.1.6 Phased decontrol of the sugar industry

In pursuance to the decision to decontrol sugar industry, the Central Government reduced compulsory levy obligation of the sugar industry from 40% to 30% with effect from 1-1-2000, 15% with effect from 1-2-2001 and 10% with effect from 1-3-2002. In November 2001, the Central Government announced that the sugar factories will be given quarterly releases for non-levy free sale sugar from January, 2002 in place of the monthly releases. In February 2002, the Central Government decided to dispense with the release mechanism with effect from 1st April, 2003. However, in March 2003, it was decided to continue with the release mechanism up to September, 2005 and to review the position in February, 2005.

2.1.7 Introduction of Futures/Forward trading in sugar

The Central Government has decided to introduce futures/forward trading in sugar, a step that is necessary before effecting complete decontrol of sugar. A notification to this effect has been issued under the Forward Contracts (Regulation) Act, 1952 in

May 2001. In November 2001, the Government has given in principle clearances to three proposed exchanges — two in Mumbai and one in Hyderabad — which are in the process of completing the procedural formalities to set up exchanges and to commence futures trading.

2.1.8 Restructuring of Public Distribution System (PDS) for sugar

Consequent upon reduction of levy percentage, the PDS for sugar has been restructured. Sugar in the PDS is supplied to the Below Poverty Line (BPL) families in all States/Union Territories, except the North Eastern States, hilly States and island territories, where sugar in the PDS is available to all the ration card holders.

2.1.9 Liberalization of sugar trade

The Central Government has lifted restrictions on fortnightly sales by the sugar factories. It has also removed the stockholding and turnover period limits on the dealers of sugar.

2.1.10 Decanalisation of export

The Sugar Export Promotion Act, 1958 under which export of sugar was canalized through agencies nominated by the Central Government has been repealed with effect from 15-1-1997.

2.1.11 Removal of Quantitative ceiling on export of sugar

The Central Government has removed the quantitative ceiling on export of sugar. It has also dispensed the registration requirement for export of sugar with the Agricultural & Processed Food Export Development Authority (APEDA) with effect from 1-4-2001.

2.1.12 Promotion of export of sugar

The Central Government took the following measures to promote export of sugar.

- Exemptions from compulsory levy obligation on the exported quantity of sugar.
- Deferment of adjustment of the exported quantity of sugar in the stocks of the sugar factories for the purpose of domestic free sale releases. (This deferment was initially given for six months, which was later increased to twelve months and in November 2001 to eighteen months).
- Reimbursement of expenditure of internal transport and freight on export shipment of sugar.
- Neutralization of disadvantage in ocean freight charges to the extent of Rs. 350/- per ton of sugar exported.
- Reimbursement of marketing and handling charges @ Rs. 500/- per ton sugar exported.

2.1.12.1 The above have been withdrawn for exports made against Release Orders issued on or after June 21, 2004, keeping in view the lower production of sugar in 2003-04 sugar season.

2.1.13 Revival of sick sugar mills

As on April 01, 2004, there were 45 sick sugar companies in the public/private sectors. The number of cooperative sugar units with negative net worth as on 31-3-2003 was 130, as per information provided by NABARD. Loans from the Sugar Development Fund (SDF) at concessional rates of interest are available now for the revival of potentially viable sick sugar mills. In regard to the cooperative sugar mills which are not within the purview of BIFR, the Government has constituted a Committee under the Chairmanship of Joint Secretary, Food & Public Distribution, to recommend revival packages for potentially viable sick cooperative sugar mills.

2.1.14 Promoting utilization of by-products

The Central Government has amended the Sugar Development Fund Act, 1982 to provide for loans from the SDF at concessional rate of interest to sugar factories for undertaking bagase based cogeneration of power projects and for production of anhydrous alcohol/ethanol from alcohol/molasses.

2.2 International

2.2.1 Sugar is produced in 110 countries. The leading sugarcane producing countries are Brazil, India, Australia, Thailand, China and Cuba. Sugar is extracted from two different raw materials, sugarcane and beet. Both produce identical refined sugar. Sugarcane is grown in semi-tropical regions, and accounts for around two-thirds of world production. Beet is grown in temperate climates, and accounts for the balance one third of world production. The Russian Federation, Ukraine and Europe account for around 80 per cent of total beet sugar production. In addition to weather conditions, diseases, insects, and quality of soil, production of sugarcane and beet are affected by international trade agreements and domestic price support programmes.

Table 2.4

10 Largest Sugar Producers (million ton, raw value)		
1.	India	20.2
2.	EU	17.9
3.	Brazil	16.5
4.	USA	8.1
5.	China	7.6
6.	Thailand	6.2
7.	Mexico	4.8
8.	Australia	4.4
9.	Cuba	4.1
10.	South Africa	2.7

Table 2.5

10 Largest Cane Sugar Producers (million ton, raw value)		
1.	India	20.2
2.	Brazil	16.5
3.	China	6.9
4.	Thailand	6.2
5.	Mexico	4.8
6.	Australia	4.4
7.	Cuba	4.1
8.	USA	3.7
9.	South Africa	2.7
10.	Pakistan	2.6

The Global Sugar Scenario in the Calendar Year 2000 is as under:

Table 2.6

10 Largest Sugar Consumers (million ton, raw value)		
1.	India	16.5
2.	EU	14.1
3.	Brazil	9.7
4.	USA	9.0
5.	China	8.6
6.	Russian Fed.	5.7
7.	Mexico	4.6
8.	Indonesia	3.4
9.	Pakistan	3.3
10.	Japan	2.4

**World Production, Consumption and Stocks of Centrifugal Sugar
(000' tons raw value)**

Table 2.7

Year	World Production	World Consumption	Ending Stocks	Stocks as % of Consumption
1993-94	111631	112637	38035	33.77
1994-95	116126	115167	38589	33.51
1995-96	125871	117953	46221	39.19
1996-97	124104	121063	47018	38.84
1997-98	128929	123300	50748	41.16
1998-99	134641	125561	57289	45.63
1999-00	134026	128309	61638	48.04
2000-01	132012	131426	61853	47.06
2001-02	138541	135924	62385	45.90
2002-03	148845	138729	69677	50.23

Source : F.O. Lichts 2004

**World Sugar Production by Regions
(000' tons raw value)**

Table 2.8

	2002-03	2001-02	2000-01	1999-00	1998-99
Western Europe	21266	18596	21242	22301	21163
Eastern Europe	7344	7077	7081	7172	7713
Africa	9931	9508	10073	9381	9157
N&C America	19511	20932	21411	21955	20727
South America	31825	29764	25042	25155	28242
Asia	53293	47197	42139	42581	42492
Oceania	5675	5467	5024	5481	5147
Total	148845	138541	132012	134026	134641

Source: F.O. Lichts 2004

2.2.2 India is among the largest producers of sugar in the world and ranks as the largest growing global market for the product. India has 20% of the total sugar mills in the world and accounts for about 15% of the global production.

2.2.3 India has maintained its position as the 2nd largest sugar producing country in the world, having a share of over 15 percent of the world's sugar production. The production of sugar in India, from 1996-97 to 2002-03 sugar season (October - September) vis-à-vis the global production of sugar has been as follows:

Production of Sugar in India vis-a-vis the Global Production
(000' tons raw value)

Table 2.9

Sugar Season	Global production	India's Production	India's production as % to Global Sugar Production
1996-97	123.8	14.0	11.3
1997-98	127.0	14.0	11.0
1998-99	133.4	16.9	12.7
1999-00	136.2	19.8	14.5
2000-01	130.0	20.1	15.5
2001-02	135.2	20.0	14.8
2002-03	143.0	21.6	15.1

Source : F.O. Licht

2.2.4 The following table gives the country-wise output of top 10 sugar producers in the world in which India ranked first in year 2000-01.

Country-wise Output of Top 10 Sugar Producers in the World

Table 2.10

(Million tons / Raw value)

S.No.	Country	2000-01	2001-02	2002-03
1.	India	20.1	20.0	21.6
2.	Brazil	18.1	22.4	23.6
3.	EU	18.1	16.0	18.5
4.	USA	7.6	7.0	7.6
5.	China	6.7	9.2	11.4
6.	Thailand	5.3	6.5	7.6
7.	Mexico	5.2	5.1	5.1
8.	Australia	4.4	4.9	5.3
9.	Cuba	3.6	3.7	2.1
10.	South Africa	2.7	2.4	2.7

Source : F.O. Licht

2.2.5 Sugar Consumption

India is also the largest consumer of sugar in the world. India's consumption of sugar, year-wise from 1996 to 2002 as compared to the Global consumption of sugar has been as follows:

Consumption of Sugar in India Vis-a-Vis World Sugar Consumption

Table 2.11

Calendar Year	Global Consumption (million ton)	India's Consumption (million ton)	India's Consumption as % to total consumption
1996-97	120.9	15.0	12.4
1997-98	123.1	16.0	13.0
1998-99	125.0	16.3	13.2
1999-00	127.8	16.7	13.1
2000-01	130.8	17.4	13.3
2001-02	133.0	17.9	13.4

Source : F.O. Licht

2.2.6 Per Capita Consumption

Apart from white sugar India also consumes alternate sweeteners jaggery and *khandsari* which are produced in large quantities, representing about 35% of the total sweeteners production in the country. Taking into account all the three sweeteners i.e. white sugar, jaggery, and *khandsari*, on a per capita basis, India's consumption stands at a reasonably high figure. This would be evident from data of per capita consumption of sugar in various countries Table 2.12.

Per Capita Consumption of Sugar in Various Countries

Table 2.12

(Qty. in kgs)

Region	1996	1997	1999	2000	2001
EU	38.9	38.9	36.9	39.9	37.5
USA	32.8	32.8	33.4	32.9	32.6
Japan	20.5	19.6	19.2	20.1	19.0
India (Total Sweeteners) (Sugar + Gur & Khandsari)	26.6 (14.5 + 12.1)	26.4 (14.5 + 11.9)	24.9 (14.9 + 10.0)	25.6 (15.6 + 10.0)	25.8 (15.8 + 10.0)
Asian Average	13.6	3.3	13.2	13.6	13.8
World Average	20.6	20.6	20.4	20.6	20.7

- 2.2.7 As per the latest report available World Sugar balance based on the basis of first forecast for the season 2004-05 is given below:

WORLD SUGAR BALANCE

Table 2.13

Particulars	Season		Change	
	2004-05	2003-04	Million Tons	%
Production	146.076	143.784	(+) 2.292	1.6
Consumption	147.892	144.859	(+) 3.033	2.09
Surplus / Deficit	(-) 1.816	(-) 1.075	(-) 0.741	68.9
Import demand	42.882	40.758	(+) 2.124	5.2
Export Availability	43.643	41.607	(+) 2.036	4.9
Stock/Consumption ratio	41%	44%		

Source : *ISO Quarterly Market Outlook, November 2004*

- 2.2.8 The production is expected to increase in Brazil, China and Australia whereas, it is expected to fall in India in sugar season 2004-05 as compared to the previous season.
- 2.2.9 In the new season the market will be shaped by developments in two sugar giants - Brazil the world's largest sugar producer and exporter and India the world's largest sugar consumer.



Sugarcane Agriculture

3.0 SUGARCANE AGRICULTURE

Sugarcane is an important commercial crop in the country occupying about 4.36 million hectares with an annual sugarcane production of 281.6 million ton (2002-03). Sugarcane occupies about 3.0% of the total cultivated area and it is one of the most important cash crops, contributing about 7.5% of the gross value of agricultural production in the country. About 50 million farmers depend on sugarcane cultivation for their livelihood and equal number of agricultural labourers earn their living by working in sugarcane farms.

Sugarcane is the primary raw material for all major sweeteners produced in the country. It also supports two important cottage industries; viz. Gur (Jaggery) and khandsari industries, which together produce about 10 million ton of sweeteners (gur and khandsari sugar) consuming about 28-35% of the cane produced in the country.

3.1 Availability of cane

- 3.1.1 At present, sugarcane is being cultivated throughout the country except in certain hilly tracts in Kashmir, Himachal Pradesh etc. The sugarcane growing areas may be broadly classified into two agro-climatic regions viz. sub-tropical and tropical.
- 3.1.2 Major portions of sugarcane cultivation in India lies in the sub-tropical belt. U.P., Uttaranchal, Bihar, Punjab, Haryana are the important cane growing States in this region. Sugarcane is also grown in a few pockets in Madhya Pradesh, West Bengal, Rajasthan and Assam, but the productivity in these States is very low.
- 3.1.3 Sugarcane is grown extensively in the tropical belt including States of Maharashtra, Andhra Pradesh, Tamil Nadu and Gujarat, as sugar cane, which is a tropical crop, has favourable agro climatic conditions for its growth in these States. The yields are substantially higher in the tropical belt as compared to the sub-tropical regions.
- 3.1.4 Details of areas and production of sugarcane in major sugarcane producing States during 1999-00 (peak) and during 2003-04 as per Table 3.1.

**Area & Production of Sugarcane
in Major States During 1999-00 & 2003-04**

Table 3.1

	1999-2000		2003-04	
States	Area under cultivation ('000 ha)	Production (000 Tons)	Area under cultivation ('000 ha)	Production (000 Tons)
Andhra Pradesh	231	18508	203	14616
Bihar	97	4 89	103	4222
Gujarat	201	14066	155	10850
Haryana	137	7640	161	9340
Karnataka	373	37567	237	15800
Maharashtra	590	53143	526	26982
Punjab	108	6770	123	7870
Tamil Nadu	316	34285	185	19714
Uttar Pradesh	2011	115419	2030	112754
Others	11	482	11	401

3.1.5 The availability of sufficient quantity of good quality sugarcane in the mill area is an important pre-requisite for the factory to be economically viable. Further, the cost of transportation and deterioration in quality increases significantly with the distance of the areas from where sugarcane is procured. It is therefore necessary that suitable steps are taken by the various stake holders (including State Governments) to ensure that sufficient sugarcane is developed and grown in the mill area for the purpose.

3.1.6 Therefore scientific rationalization of cane area will have a direct impact on the economy of the sugar industry to enable it to compete globally.

3.2 Utilization of Sugarcane

3.2.1 Almost 35% of the 300 million tons of sugarcane produced in India is utilized for the purpose of manufacture of Gur and Khandsari and for chewing purposes. The manufacture of Gur and Khandsari is predominant in Karnataka, Tamil Nadu and Uttar Pradesh but large quantities of Gur and Khandsari are also produced in Andhra

Pradesh, Haryana and Punjab. The utilization of sugarcane for production of sugar, gur and khandsari in these States during the period 1996-2002 are as per Table 3.2.

**Statewise Utilization (%) of Sugarcane for Production of
sugar, gur & khandsari**

Table 3.2

State	1996-97		1997-98		1998-99		1999-00		2000-01		2001-02	
	Sugar	Gur & Khand-sari	Sugar	Gur & Khand-sari	Sugar	Gur & Khand-sari	Sugar	Gur & Khand-sari	Sugar	Gur & Khand-sari	Sugar	Gur & Khand-sari
AP	50.3	42.1	59.6	32.8	69.5	22.8	63.3	29.0	55.8	36.6	57.9	34.5
Haryana	61.6	25.9	54.7	32.8	66.8	20.7	67.4	20.1	73.2	14.4	67.6	19.9
Karnataka	35.3	55.5	32.2	58.5	37.6	39.7	39.3	27.6	34.8	26.4	43.8	24.9
Punjab	62.7	24.8	50.9	36.6	59.8	27.7	68.3	19.2	65.8	21.7	67.9	19.6
TN	45.3	44.6	48.0	41.9	57.4	32.5	54.5	35.4	55.7	34.2	58.7	31.2
UP	34.8	51.4	31.6	54.6	35.4	50.8	42.3	43.5	43.2	43.0	46.8	39.4

- 3.2.2 It is noted that the diversion to Gur and Khandsari decreased during the years of abundant availability of sugarcane and increased substantially during the years of shortages in sugarcane availability. State-wise utilization of sugarcane for production of sugar, gur, and khandsari in important states during the year 1999-2000 are given in Table 3.3.

**State wise Utilization (%) of Sugarcane for Production of
Sugar, Gur & Khandsari**

Table 3.3

State	Utilization of sugarcane in the year 1999-00	
	For Sugar	For Gur & Khandsari
AP	63.3	29.0
Karnataka	39.3	27.6
Tamil Nadu	54.5	35.4
Uttar Pradesh	42.3	43.5
All India	59.6	28.9

3.3 Sugarcane Development

- 3.3.1 The cost of sugarcane is nearly 70% of the total cost of sugar production. The quality and yield of cane therefore has a significant influence on the cost of sugar production.

- 3.3.2 The area under cane (ha), Yield (T/ha), sugar production (000 tons) and recovery during the last 5 years is as per Table 3.4.

**Cane Area, Yield, Sugar Production and
Sugar Recovery Percent**

Table No. 3.4

Year	Area '000 ha.	Yield ton/ha.	Production of sugarcane ('000 ton)	Recovery %	No. of factories in operation
1999-00	4220	70.90	299324	10.20	423
2000-01	4316	68.60	295956	10.48	436
2001-02	4430	67.40	297208	10.27	434
2002-03	4361	64.60	281575	10.36	453
2003-04	2995	59.1	236176	N.A.	N.A.

- 3.3.3 It can be noted from the above table that though the recovery percentage has remained stable during the last 5 years, the yield of sugarcane during the same period has reduced from 70 T/ha in the year 1999-00 to 59.1 T/ha in the year 2003-04. The low yield of sugarcane is a matter of great concern to the industry. Cane development activity with specific target is necessary to achieve improvements both in yield and quality of sugarcane.

3.4 Major reasons for low productivity

- 3.4.1 Recently there has been a major reduction in area under sugarcane cultivation and its yield mainly due to drought in almost the whole of tropical and sub-tropical regions. The effect of drought, delayed payment of cane price and low sugar prices in the recent past have led to fall in sugarcane production and closure of some sugar mills.
- 3.4.2 The incidence of woolly aphid as a new pest on sugarcane came to light in August 2002 in Belgaum district and moved swiftly to Bhadra canal areas and Cauvery basin in southern Karnataka. The incidence and alarming rate of spread and severity has created panic among the cane growers in Cauvery basin who have already suffered substantial losses due to drought during the previous years.

3.5 Interventions

The following interventions on the various issues are required for the purpose:

3.5.1 Sugarcane Variety

- 3.5.1.1 Various experiments conducted under All India Coordinated Research Project (AICRP) has shown that the newly developed varieties are suitable to be grown under specific climatic conditions. Therefore only the recommended varieties are to be cultivated suitable to the regions.

3.5.1.2 Bihar records the lowest sugar recovery % cane as compared to other major sugar producing States of the country. Against an all India average recovery of 10.36% in 2002-03, Bihar's recovery was only 9%, some factories have even recorded recovery as low as 7.0 - 8.23%. This is against an average recovery of 10.93% which was achieved by the Bihar factories in 1942-43.

3.5.1.3 Special attention is therefore required to be given to varietal composition in regions recording low sugar in cane. It was suggested by the stake holders that the Sugarcane Research Institute, Pusa which is the only Research Institute in Bihar should be allocated adequate funds by the Central and State Government for developing suitable varieties of sugarcane which are high yielding and have high sugar content. It was noted that in some regions like Uttar Pradesh a number of low sugared cane varieties continue to occupy large areas in spite of being rejected by the State Government. Therefore, there is an urgent need for replacement of such rejected varieties through extension services.

3.5.2 Water Conservation

3.5.2.1 Out of the total irrigated area in the country, nearly 58% is irrigated by Tube wells and other wells, 32% by canals, 5% by tanks and remaining 5% by other sources. For conserving water, all the area under well irrigation in sugarcane needs to be brought under drip irrigation. Drip irrigation will facilitate improvements in production and optimize use of fertilizer and other nutrients.

3.5.3 Lack of sufficient knowledge about the pest in the ecosystem and preparation to gear up to situation among the technologies has been a major concern to suggest effective management practices. The pest occurring mostly in tropical Asiatic region, cool and cloudy weather (19 - 35° C) in conjunction with high relative humidity (85%) favoured faster infestation of the pest. Therefore, keeping in view the bio-ecology of the pest some of the agronomic practices to mitigate the spread and ill effect has to be developed. VSI has extended its services to control the diseases by developing and providing the natural enemies, viz. Trichogramma, Chrysopera, Encarsia, Isotima, Dipha etc.

3.6 Alternate Feed Stocks

3.6.1 Sugarcane has been conventionally used as raw material for manufacture of sugar in India. The sugarcane yield has remained stagnant for the past many years and the sugar content also has not shown any significant increase despite efforts by the industry.



A 5-months Tropical sugar beet in Shendi, Sudan

- 3.6.2 The moot point is whether the sugar industry should remain solely dependent on one crop, viz. Sugarcane or explore the use of various other alternate raw materials.
- 3.6.3 Recent studies have shown that it is possible to cultivate sugar beet under tropical conditions and that this can effect economics of the industry in many ways. Sugar beet can be used as a co-crop to sugarcane to extend the duration of the crushing season and also to enhance the sugar yields. It can also be used as a stand alone crop.



First Commercial growing of Tropical Beet, Chittoor, India

- 3.6.4 Another crop that can have a good potential in improving the economics of the sugar industry is Sweet Sorghum. Sweet Sorghum can be processed alongside

sugarcane or sugarbeet to produce ethanol. Therefore a combination of cultivation of sugarcane, sugar beet and sweet sorghum can facilitate the sugar industry to have a right product mix and achieve commercial sustainability on a global basis. A comparison of the features of the three crops clearly indicate that each of the three crops have their own merits and demerits and a combination of these can effectively solve the problems of adequate availability of raw material for the success of a sugar complex.

- 3.6.5 The Committee recommends that the use of alternate feed stocks like sugarbeet and sweet sorghum may be encouraged and projects for seed development, cultivation and processing of such crops may be provided loans from SDF.

3.7 Purchases through Intermediaries

- 3.7.1 The Committee observed that in Uttar Pradesh, the sugarcane is purchased by the factory through cooperative societies, whereas, the factories deal directly with the sugarcane growers in all the other major sugarcane producing States including Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka and Punjab. The Committee noted that the Lok Sabha Standing Committee on Civil Supplies and Public Distribution (1995-96) have recommended a direct link between the factories and the farmers. In U.P. most of the sugar factories have already computerized the following operation:

- Preparation of cane supply calendars
- Issuance of supply tickets to the farmers
- Making cane price payment through the banks
- Maintenance of grower-wise records etc.

- 3.7.2 The above functions were previously being done by the cane societies. Therefore the Committee observed that the factories in UP should enter into a direct contract with the growers like in other States and execute tri-partite agreement with banks and farmers for procurement of sugarcane to facilitate use of Kisan Credit Cards and availability of soft loans to farmers.

3.8 Taxes on Sugarcane

- 3.8.1 The stakeholders expressed concern on the impact of the incidence of various taxes including purchase tax on the profitability of the industry in the various States. The quantum of taxes on sugarcane affects the capacity of the sugar mills to pay cane price. It was suggested that if these taxes could be uniform throughout the country, level playing field could be established. The Committee felt that it was not possible to achieve uniformity as these taxes are in the purview of the respective States. An alternate suggestion, namely that these taxes might be credited against VAT, which is to be brought into operation from April 01, 2005 was discussed. It was brought to the notice of the committee that some States are not agreeable to the crediting of such taxes against VAT and in any case, matters of this kind are to be finalized by the Empowered Committee of State Finance Ministers.

3.9 Infrastructure

- 3.9.1 The Committee after discussions with the representatives of industry and stake holders of major sugar producing States observed that infrastructure required for sugarcane cultivation and transportation is poor in many parts of the country.
- 3.9.2 Sugar industry in many States need better infrastructure like good irrigation facilities, availability of power, properly maintained road for transportation of sugarcane from field to sugar mills etc. The sugarcane cultivation in many parts of the country suffer from flood and water logging. The causes for the frequent flooding in Bihar is due to release of excessive water from Nepal. In states like Maharashtra and Karnataka sugarcane growers require basic facilities for irrigation, power etc. Inadequate infrastructure has adversely affected the yield and quality of sugarcane.
- 3.9.3 The Committee therefore felt that the State governments should pay special attention to provide and maintain necessary infrastructure like irrigation, power, roads and drainage etc. for sugarcane cultivation and transportation.

3.10 Alternate Usages

- 3.10.1 Vacuum pan sugar factories are bound to produce plantation white sugar only. Some presentations made before the Committee suggested that this restriction could be lifted and sugar factories might be left free to produce other sweeteners like gur and khandsari, if they wished.
- 3.10.2 The Committee discussed the idea of allowing sugar mills to manufacture sweeteners other than sugar if required. The Committee noted that the use of sugarcane for manufacturing products other than white sugar should be commercially and legally examined.

De-Regulation

4.0 DE-REGULATION

4.1 Sugar cane pricing

4.1.1 Sugarcane is the main raw material for sugar industry and accounts for 70% of the cost of production of sugar. It is also the major source of income for millions of farmers. The determination of price for sugarcane is, therefore, a matter of critical importance both for the sugar industry and the cane growers. It was noted that for a sustainable production both of sugarcane and sugar, the sugarcane price should be fixed on a realistic basis. The Central Government fixes a Statutory Minimum Price factory wise, in terms of Clause 3 of the Sugarcane (Control) order, 1966 in respect of each sugar season having regard to the following:

- Cost of production of sugarcane
- Return to the growers from alternative crops and the general trend of prices of agricultural commodities
- Availability of sugar to consumers at a fair price
- Price at which sugar produced from sugarcane is sold by sugar producers
- Recovery of sugar from sugarcane

4.1.2 Further, under the Clause 5A of the Sugarcane (Control) Order 1966, the farmer is entitled to an additional payment out of the price realization by the factories.

4.1.3 It was suggested to the Committee that the price of the sugarcane may be allowed to be determined by market forces. The Committee noted that there is, however, a major difference between sugarcane and other raw materials. Sugarcane is a perishable crop which must be crushed at the earliest after harvesting. For this, and other considerations, the sugarcane grower is obliged to supply cane to a particular mill. Therefore the sugar mill becomes a monopsonic buyer. An enlightened mill owner may be expected to fix a remunerative price for sugarcane taking into account the relative prices of competing crops, as otherwise, the cane growers would divert the land to growing of other crops, thus adversely affecting the availability of sugarcane to the mill. However, in absence of any competing crops, the sugar mill may be tempted to fix an unduly low price, thus adversely affecting the earnings of the sugarcane growers. It therefore becomes an obligation on the Government to ensure a remunerative price to the cane growers. The Committee is therefore of the view that the present arrangement of payment of SMP along with benefits of price sharing with sugarcane farmers as per Clause 5A of Sugarcane (Control) Order, 1966 is equitable and may continue.

4.2 Quality based Sugarcane payment

4.2.1 The sugarcane price in India is paid on the basis of weight of cane while in most other sugar producing countries, the same is paid after taking into account the sucrose content of the cane supplied to the mills. The latter system has an advantage as it provides incentives to the growers to plant high sucrose varieties and adopt

cultural practices which increases the sucrose content of the cane at the time of its supply to the mills including harvesting of cane at maturity and minimizing the time involved from harvesting of cane and its supply to the mills. This issue has been discussed on various occasions in the past. The Committee feels that there would be serious practical problems in introducing the system in the country at present, as a large number of farmers are involved and there may be difficulties in instilling sufficient confidence among them on the transparency of assessment. Reliable and quick methods for assessment of sugar cane are being developed both in India and abroad and these are being evaluated by various research institutions. The mechanism to ensure authenticity of the tests have also to be evolved for its success. However, as the Central Government has already set up an Expert Group on New Sugarcane Pricing Policy to go into this question, the Committee felt that the report of the Group may be awaited.

4.3 Release Mechanism

- 4.3.1 Under the partial control of sugar industry followed by the Central Government, 90% of the sugar produced by sugar mills may be disposed off by them, without any restriction on price and movement. The balance 10% is to be supplied by them at prices fixed by the Central Government. However, both free sale sugar and levy sugar are subject to monthly quotas decided by the Central Government. The sugar produced in 4 to 5 months in a sugar seasons is controlled and regulated to be sold throughout the year. This release mechanism has been in place since 1942, when the Sugar and Sugar Products Control Order was first promulgated and has since been followed except for a break during 1978-79, when monthly release was given up. The reason for monthly release of sugar has been to ensure that sugar is available throughout the year at reasonable prices to consumers, while at the same time maintaining the price at a steady level helps the industry.
- 4.3.2 The Central Government decided in February 2002 to dispense with the release mechanism by 31.03.2003, after operationalization of futures/forward trading in sugar during the financial year 2002-03. Government accorded clearance, in principle, to set up exchanges in futures/forward markets in sugar. Fearing drastic fall in sugar prices following decontrol, a number of factories approached the Courts in 2002 for release orders for sale of free sale sugar. Courts held that the Central Government had no authority to enforce restrictions on the sale of free sale sugar and allowed in many instances sale of sugar leading to fall in sugar prices. Apex organizations of sugar industry simultaneously urged the Government to continue with the release mechanism. Under these circumstances, the Central Government decided in March, 2003 to continue with the regulatory release mechanism upto September, 2005 and to review the position in February, 2005.
- 4.3.3 The Committee discussed the issue of continuing with the release mechanism. It was brought to the notice of the Committee that futures/forward markets would not work well if the release mechanism is continued. The ex-factory prices of sugar in the open market have, by and large, been stable in the last few months. With the present availability and production prospects of sugar, steep fall in prices was unlikely to take place. At the same time, augmentation in stocks, as and when

required, would take place through import of raw sugar, thereby reducing cause of concern in terms of availability at reasonable prices from the point of view of the consumers. Allowing market forces of demand and supply to operate to bring prices to reasonable levels would serve interests of all the stakeholders, viz, the consumers, industry and the farmers. The industry's financial health would improve contributing to higher investments in improving efficiencies of production thereby bringing down the cost to the consumers. The sugarcane farmers could expect to get cane price payments in time, once the industry is in good financial health, operating in a free market. This may lead to further gains in competitiveness of the domestic sugar industry in the global sugar market. The Committee also noted that release mechanism is today an anachronism, without a parallel in the world. The Committee also felt that as the sugar industry, which has been in existence for more than a century, has achieved sufficient maturity to put in place self regulatory mechanisms in this regard, Central Government may withdraw from this sphere of control.

4.3.4 The Committee therefore recommends that the Central Government may dispense with the release mechanism for free sale sugar with effect from 1st October, 2005.

4.4 Levy Sugar

4.4.1 10% of the sugar produced by the factory is procured by the Government as levy sugar at a pre-determined price for supply to consumers through the Public Distribution System. This proportion of levy sugar was 60% in 1967-68 and has been gradually brought down to 10% from 2001-02. The distribution of sugar through public distribution system is presently for the most vulnerable sections of the society, namely, the 'Below Poverty Line' families in all the States, except for North Eastern States, Hill States and Island Territories, where all ration card holders are eligible to buy sugar from the Public Distribution System (this has been done on account of special needs of these areas, difficult terrain, poor infrastructure and lack of market integration). Sugar is one of the essential commodities and the Government is committed to making essential commodities available to the most vulnerable sections of the society at reasonable prices. Besides, providing levy sugar to meet the requirements of these sections is part of the social obligation of the industry towards the poorest of the poor. The Committee therefore felt that the present system of 10% of production as levy sugar should continue. As the Committee is recommending dispensing with the regulated release mechanism of free sale of sugar, the lower realization from levy sugar would be made up by better realization from sale of free sale sugar.

4.4.2 It was also brought to the notice of the Committee that there were frequent delays in lifting of levy sugar by Governments or their nominees, beyond the initial time limit. This blocks the funds of the mills, who have to pay interest on the stocks. The Committee recommends that beyond the initial time limit, a maximum of 3 months may be permitted for lifting of levy sugar, whereafter, the levy sugar quota would automatically be converted into free sale sugar, without any recurring levy obligation on this portion of levy sugar.

4.5 Import and Export of Sugar

- 4.5.1 Sugarcane cultivation in India is largely in rain fed areas. Monsoon plays a crucial role in the production of sugarcane and consequently sugar. In times of good monsoon, sugarcane production remains high leading to high sugar production and accumulation of stocks as was witnessed in the years 1998-99 to 2002-03. Likewise, failure of monsoon in major sugar producing States may cause decline in sugarcane production and sugar production, as was seen in 2003-04 and is estimated for 2004-05 sugar season. Stability in sugar production, though desirable, is not likely, given Indian conditions.
- 4.5.2 The Committee discussed ways and means of managing this situation, keeping the interest of all stakeholders in view. In the years of excess production, while the consumer gains, the industry loses heavily because of low realization and huge carrying costs, leading to mounting cane price arrears. The situation can be remedied, by providing WTO compatible incentives for boosting exports, as was done during the years 2002-04. The incentives offered by the Central Government have been mentioned in para 2.1. The Committee while recommending this approach, also recommended that such systems and procedures for providing the incentives should be put in place which would require minimum paper work and ensure expeditious settlement of claim.
- 4.5.3 In a situation of low production of sugar, the domestic demand can be met through augmentation of supply by import of sugar. However, import of white sugar is likely to be detrimental to the interest of the sugar industry and should be avoided as far as possible. The present customs duty regime imposes a tariff of 60% ad-valorem, besides countervailing duty of Rs. 850/- per ton to protect the domestic industry. This may be maintained. The other option is to allow import of raw sugar to be processed into white sugar by the domestic industry. This has the advantage of increasing the capacity utilization, extending the season, enabling the factories to cover some of the overheads and create value addition, etc.
- 4.5.4 The Committee was informed that import of raw sugar has been facilitated in the current season by extending the period of export obligations (for sugar imported against Duty Exemption Entitlement Certificate Scheme) from 18 to 24 months and de-linking of the nexus between the imported DEEC raw sugar from the white sugar to be exported.
- 4.5.5 The Committee recommends that augmentation of sugar supply in the country may be effected whenever required through facilitation of imports of raw sugar. The Committee also suggests that Indian Sugar Exim Corporation (ISEC), an organ of the sugar industry, should play a prominent role in both imports and exports.
- ## **4.6 Distance Between Sugar Mills**
- 4.6.1 The minimum radial distance between two sugar factories was for the first time fixed at 30 km during the Sixth Five Year Plan vide Press Note dated 4-7-1984. This was increased to 40 km. during the 7th Five Year Plan vide Press Note No.1 (1989

series) dated 2-1-1987. The distance was reduced to 25 km on fulfilment of certain conditions vide Press Note No.12 (1989) dated 11-5-1989. Vide Press Note No.16 (1991) dated 8-11-1991, the distance between proposed and existing factories was brought down to 25 km with a stipulation of reduction to 15 km in special cases where cane availability so justified. This was further reduced to 15 km by Press Note No. 1 (1997) dated 10-1-1997. Press Note No.6 of 1997 dated 20-5-1997 reiterated the distance of 15 km subject to milestones being achieved. While sugar industry was delicensed with effect from 14/9/98, vide press Note No.12 of 1998 dated 31-8-1998, the distance criterion of 15 km has been retained.

- 4.6.2 The impact of distance between two sugar mills on the capacity utilization and viability was discussed in detail. It was mentioned that one of the reasons for sickness in the industry is non-availability of sufficient sugarcane. While this may be due to drought or a temporary shift to other more remunerative crops in the short term, but chronic cane shortages may arise on account of close proximity of sugar factories.
- 4.6.3 The above distance was considered inadequate especially in the case of the southern States where land under sugarcane cultivation accounts for hardly 5-7% of the irrigated area. With the de-licensing of crushing capacity enhancement and the current system of registration of IEMs, the installed capacity is tending to grow rapidly with complete disregard to the sufficiency of sugarcane for the existing capacity. The basis for the present distance criterion seemed to be sufficient availability of sugarcane for a 2500 TCD plant, whereas, it was represented to the Committee that sufficient availability of sugarcane for a 5000 TCD plant should be the basis, if we wish to keep up with global trends towards large plant sizes and if we aim at value addition through exploitation of by-products of sugar mills.
- 4.6.4 The Committee analysed cane availability for different radial distances keeping in view the relevant parameters. For this analysis, the Committee assumed that 60% of the total area would be cultivable. 70% of this cultivable area would be under cane. Yield was taken at an average of 65 T/ha and drawal of cane was assumed to be 60%. The analysis of per day cane availability for a season duration of 160 days is presented at Table No.4.1.

Impact of Distance between sugar factories

Table 4.1

Distance (km)	15.00	20.00	25.00	30.00	35.00	40.00
Radius (km)	7.50	10.00	12.50	15.00	17.50	20.00
Cultivable Area [% of total area]	60.00	60.00	60.00	60.00	60.00	60.00
Area Under Cane [% of total cultivable area]	70.00	70.00	70.00	70.00	70.00	70.00
Yield (T/ha)	65.00	65.00	65.00	65.00	65.00	65.00
Drawal Rate (%)	60.00	60.00	60.00	60.00	60.00	60.00
Cane Availability per sugar season of 160 days in MT	289575.00	514800.00	804375.00	1158300.00	1576575.00	2059200.00
Cane Availability per day in MT	1809.84	3217.50	5027.34	7239.37	9853.59	12870.00

- 4.6.5 It will be noted from the above table that to make available sufficient cane for a sugar factory of 5000 TCD crushing capacity, a minimum radial distance of 25 km between two sugar factories will have to be maintained.
- 4.6.6 In view of the above, and 5000 TCD being, in the opinion of the Committee sustainable, the Committee recommends that the minimum radial distance (as the crow flies) between an existing sugar factory and new factory may be 25 km, in place of the present 15 km. Additional requirement of sugarcane for expansion of Capacity beyond 5000 TCD should accrue through increased productivity and not by expansion of the area under sugarcane.

Financial Re-Structuring & Meeting Credit Needs

5.0 FINANCIAL RESTRUCTURING AND MEETING CREDIT NEEDS

As earlier mentioned, the sugar industry in India has been in great financial stress since year 2001. It is therefore essential to understand the factors that have contributed to it.

5.1 Effect of Drought/ Floods on Sugar Production

5.1.1 Maharashtra is the largest producer of sugar in the country 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. Droughts in 2002-2003 and 2003-2004 and Woolly Aphid infestation have seriously affected sugarcane production in these States. It is estimated that the availability of sugarcane would reduce from 165 lakh tones in 2002-2003 to 121 lakh tones in 2003-2004 in Tamil Nadu, from 120 lakh tones in 2002-2003 to 86 lakh tones in 2003-2004 in Andhra Pradesh, from 172 lakh tones in 2002-2003 to 100 lakh tones in 2003-2004 in Karnataka and from 535 lakh tones in 2002-2003 to 290 lakh tones in 2003-2004 in Maharashtra. On the other hand, because of regular floods sugarcane production in Bihar has been consistently falling since the last four years. The sugar production in the country, as a result, fell from 201 lakh M.T. in 2002-2003 to 140 lakh M.T. in 2003-2004.

5.1.2 The problem of low availability of cane for sugar production in 2003-04 sugar season has come on top of the problems sugar industry has been facing for sometime. The production of sugar in the country increased continuously from 2000-2001 reaching an all time high of 201 lakh tones in 2002-2003. As a result of this high production, the ex-factory realization of sugar fell steeply, falling as low as Rs.1000/- per quintal. Because of low cash flows, the sugar factories registered deficit in their stock value and were unable to service debts. Although this deficit in stock value was converted into medium term loans in Maharashtra, lack of availability of cane in 2003-2004 and the resultant under-utilization of capacity (in 2003-2004, the average capacity utilization of factories in these States has been about 50% only) and low production of sugar have further eroded the ability of sugar factories in drought affected States to service their debts. It is estimated that the total defaults on term loans was about Rs.1200 crores as on 31-3-04 and the deficit in stock value would be about Rs. 2500 crores as on 30-09-04.

5.1.3 Besides, harvesting and transportation of sugarcane is carried out by the sugar factory on behalf of farmers in the State of Maharashtra and parts of Karnataka. In the light of the problems stated above, these factories will also face difficulty in financing this pre-season activity.

5.1.4 The problem of low availability of sugarcane and low capacity utilization is expected to continue in the 2004-05 sugar season also. The sugar production is expected to be lower than in the 2003-04 season. Maharashtra is likely to be the most seriously affected with as many as 100 factories not going into production because of non-

availability of cane. This will have serious consequences for lakhs of people directly dependent on the sugar factories, for the huge investment exceeding Rs.10000 crores in these factories and the cooperative banks.

5.2 Assistance to sugarcane farmers in Drought/ Flood Affected States

5.2.1 Central Government announced the following measures to provide assistance to farmers.

- i) One time settlement scheme for small marginal farmers;
- ii) Special scheme for relief to the farmers affected by natural calamities for atleast two consecutive years in the last five years;
- iii) Scheme for providing relief to farmers in arrears.

5.2.2 These measures are applicable to debts as they stand on 31-3-04. In view of the poor production prospects of sugar in 2004-05 season and the possibility of droughts in 2004-05 season. Sugarcane farmers will continue to suffer income and production losses.

5.2.3 The Committee recommends that the above relief measures may be made available to such debts of sugarcane farmers as they stand on 31-3-05.

5.3 Assistance to sugar factories in Drought/ Flood Affected States

5.3.1 To ensure that the sugar factories in drought/flood affected States get adequate working capital to start their crushing operation in 2004-2005, a package of assistance for rescheduling their debts is recommended. Under this package sugar factories which were operational in 2002-03 sugar season may be covered:

5.3.1.1 All loans as on 31-03-2004 may be deferred/rescheduled to long term loans repayable in 10 to 12 years, besides a moratorium of both interest and principal for 3 years starting from 2004-05. Loans to be covered under this package are the deficit in stock value as on 31-03-03 (Rs. 1,500 crores) which was rescheduled into working capital term loan, deficit in stock value as on 30-9-04 (Rs. 1,000 crores) and other term loans (Rs. 4,000 crores). The exact terms of the package may be worked out by NABARD and RBI (in consultation with the state governments) on a case to case basis taking into consideration the debt service obligations and the capacity to repay of these sugar factories.

5.3.1.2 NABARD may provide pre-seasonal loans as per their existing norms to sugar factories in Maharashtra and Karnataka.

5.3.1.3 Governments of drought/flood affected states may be allowed additional open market borrowings to help sugar factories to meet the fixed costs and 75% entitled wages (of 2004-05 and 2005-06 season and arrears of 2003-04 season) of mills which were operational in 2002-03 sugar season but may have to remain closed in 2004-05 and 2005-06 sugar seasons due to non-availability of sugarcane. The State governments may offer this as loan to sugar factories at a rate of interest of 4% per annum; the central govt. may provide interest subsidy to meet the difference between

the coupon rate on the bonds raised through additional market borrowings and 4% as was done last year when state governments were allowed the same facility for clearing cane price arrears.

5.4 Reducing Debt Service Burden

5.4.1 One problem the sugar sector is facing is the high cost of term loans already taken by them. In regard to loan assistance given to the sugar industry from the Sugar Development Fund (SDF), a decision has already been taken to reduce the rate of interest to two percentage points below the bank rate on future loans. While this is almost at par with the interest subsidy of five percentage points being given under the Technology Upgradation Fund Scheme for Textile and Jute industries, the sugar industry does not, unlike the Textile sector, have so far any arrangement for swapping of loans carrying high rate of interest with loans of a lower rate of interest. For the Textile sector, banks/FIs have been permitted to access external commercial borrowing so as to have access to low cost funds to meet the cost of this facility. In order to provide the same facilities for the sugar industry a scheme similar to the one available for integrated textile units is recommended for the sugar sector.

5.4.2 The problem of high cost of term loans is even more acute in the case of units which were set up keeping the incentive schemes of 1993 and 1997 in view. Their viability became a question mark due to the subsequent partial decontrol since 1998. To enable them to be competitive in the changed scenario, it is recommended that for the balance of their incentive period, the excise duty payable on levy sugar namely Rs.38/quintal may be charged on 50% of sugar sold by these units under their free sale quota as against excise duty of Rs.71/quintal payable on free sale sugar.

5.5 CDR Mechanism

5.5.1 Corporate Debt Restructuring (CDR) scheme has effectively been in place since March 2002. The framework was established in India by the initiative of Reserve Bank of India vide its circular dated August 23, 2001. The scheme was initially for standard and sub-standard debt assets of the banks and financial institutions. In February 2003, the scope of the scheme was expanded to include doubtful, suit-filed and BIFR cases. The scheme covers cases involving minimum principal exposure of Rs.20 crores.

5.5.2 The Committee discussed the details of the CDR mechanism which briefly include the following:

- The process of CDR gets initiated only when a lender (or borrower with the support of a lender with at least 20% share in assistance) makes a reference to CDR Cell.
- In order to facilitate quick decision making by the authorized representatives of the lenders, CDR restructuring process is accomplished in a two stage process; first it is discussed at the Empowered Group (EG) as a flash report, when in principle decision of the super majority is sought for restructuring or otherwise.

- The final package is then prepared by the referring lender in conjunction with the lead working capital bank and the CDR Cell.
- 5.5.3 Restructuring model varies depending on the requirement of the specific case. Generally accepted restructuring models consist of the following measures;
- Extension of repayment period to ease liquidity problems
 - Funding of past interest dues (over dues) and if necessary future interest for specified period into funded interest term loan (FITL)
 - Conversion of interest or loan into equity
 - Waiver of liquidated damages/penal interest
 - Reduction of interest of levies linked to current market rates/PLRs
 - Waiver of Principal amount is generally not considered
 - Restructuring models are also designed to suit different lenders like - One Time Settlement; Early Exit etc.
- 5.5.4 After preparation of the restructuring scheme and sanction of the case, at the Empowered Committee, a Monitoring Committee is appointed to supervise implementation of the package within a stipulated time frame.
- 5.5.5 The Committee therefore observed that all eligible cases for restructuring in the sugar industry may be taken under CDR scheme. The Committee recommends that the present minimum principal exposure of Rs.20 crores may be brought down to Rs.10 crores, to make more cases eligible under the CDR scheme.

5.6 Sugar Cooperatives

5.6.1 Working capital

The cooperative sugar mills raise working capital finance from District Central Cooperative Banks (DCCBs). Interest levied by the DCCBs is of the order of 12 to 14%, which is quite high keeping in view prevailing lending rates. Since the interest component is sizeable in the cost of production, it is necessary that cheaper working capital is made available to the cooperative sugar mills so as to contain the cost of production. In order to contain interest expenditure, it is suggested that core component of the working capital may be made available through National Cooperative Development Corporation (NCDC) at a subsidized rate of interest. The overall working capital requirement of the cooperative sugar sector is of the order of Rs.10,000 crores. The core working capital requirement @30% of total working capital requirement works out to Rs.3000 crores. As such, NCDC may arrange cheaper funds through External Commercial Borrowings (ECBs) and the Government of India may accord permission as well as provide guarantee in this regard.

5.6.2 Rehabilitation of Cooperative Sugar Mills

As mentioned earlier, 60% of sugar factories in the country are in the cooperative sector. As on 31-03-2003, 130 of them had negative net worth. To recommend revival

packages for potentially viable sick cooperative units, the Central Government had constituted a Committee under the Chairmanship of Joint Secretary, Department of Food & Public Distribution. The Committee observed that this Committee is neither backed by legislation nor does it have the 'teeth' to undertake this task. As the number of such sugar factories is large, their revival is crucial for the health of the industry. The Committee recommends that a body like BIFR be set up for rehabilitation of co-operative sugar mills and NCDC may be appointed as the Nodal agency for preparing rehabilitation packages for sick co-operative sugar mills.

5.6.2.2 The financial restructuring of co-operative sugar factories under rehabilitation package may generally comprise the following components:

- Conversion of full/part of outstanding State Government loans into equity.
- Infusion of additional equity by the State Government/members of the society
- Re-schedulement of outstanding loans of banks & financial institutions and waivers/concessions in interest on outstanding loans of co-operative sugar mills.

5.6.2.3 NCDC while acting as a nodal agency may work out a suitable rehabilitation package involving above steps and also working out required amount of interest subsidy for revival of a sugar factory, in consultation with term lenders, banks and National Federation of Co-operative Sugar Factories

5.6.3 Projects based on by-product utilization

In order to improve profitability of sugar industry through value addition to byproducts like bagasse and molasses, co-operative sugar mills having potential for setting up of diversification projects may be encouraged. In this context, NCDC may also explore the possibility of arranging external commercial borrowings and Government of India may accord permission as well as guarantee in this regard.

5.7 Sugar Development Fund

5.7.1 The Sugar Development Fund was formed in 1982, under an Act of Parliament to provide, inter alia, for the financing of activities for development of sugar industry.

5.7.2 The Fund is financed from the proceeds of cess levied and collected under the Sugar Cess Act, 1982, reduced by the cost of collection as determined by Government, together with any moneys received by the Government for the purpose of the Sugar Development Fund Act, 1982.

5.7.3 Initially, the fund was applied, among other purposes, for making loans for facilitating the rehabilitation and modernization of any sugar factory and for facilitating the undertaking of any scheme for development of sugarcane in the area in which any sugar factory is situated.

5.7.4 However, the Sugar Development Fund Act, 1982 was amended in 2002 to enable the Fund being applied for making loans to sugar factories for Bagasse-based

co-generation power projects, and production of anhydrous alcohol or ethanol from alcohol with a view to improving their viability.

- 5.7.5 The credits to the Fund and the disbursements made from it, upto 31.3.2004 was as under :

Cess collections transferred to the Fund : Rs.3006.00 crores

Purpose	No. of cases	Amount sanctioned	Amount disbursed
		(Rs. in crores)	
Modernization / Rehabilitation	244	1415.97	1252.39
Cane Development	669	786.636	475.38
Bagasse based co-generation	1	10.60	10.60
Production of Ethanol	--	--	--

5.8 Rationalization of Interest Rates for SDF Loans

- 5.8.1 The Committee observed that the rate of interest on SDF loans which was 6% simple per annum was increased to 9% in 1991 in the face of the then prevailing rates of interest in the market. The rates of interest had later, in late nineties shown a declining trend. The rates of interest on SDF loans however, remained at 9% per annum, a situation that affected the viability of projects undertaken by the sugar factories.
- 5.8.2 The Committee recommends that the rate of interest on SDF loans should be so prescribed as to maintain a uniform concessional nature of these loans, that is, the rates of interest should increase or decrease in accordance with the interest rate regimes prevailing in the market.
- 5.8.3 The Committee noted that Government had already taken steps in this direction by prescribing a rate of interest at two percentage points below the bank rate.
- 5.8.4 The Committee also observed that a major portion of SDF loans were availed by sugar undertakings at a relatively high interest rate of 9% per annum. In terms of viability in debt servicing and also for providing the thrust for sustained all round growth there was a need to rationalize the interest rates on existing loans, still to be serviced fully, with a view to ensuring parity with the loans to be serviced at the rates of interest now prescribed by Government.
- 5.8.5 The Committee therefore recommends that the rate of interest on existing loans from SDF may also be pegged at 2 percentage points below the prevailing bank rate.

5.9 Security for SDF Loans

- 5.9.1 At present, loans from the Fund, for sugarcane development, are allowed against a security of a Bank Guarantee or of a guarantee by the State Government in which the factory is situated. In view of the difficulty faced generally by all sugar undertakings for obtaining Bank Guarantees on account of the high cost involved and also in view of the State Governments generally being reluctant to provide guarantees there is a need to consider other forms of security like that of charge on assets. This would facilitate loans being availed by sugar undertakings to implement sugarcane development schemes in time.
- 5.9.2 The Committee therefore, recommends that a first charge *pari passu* or an exclusive second charge on assets of the sugar undertaking may be considered as security for loans for cane development in cases where the sugar undertakings are not in a position to furnish bank guarantees/State Government guarantees.
- 5.9.3 Considering the global trends, the Committee recommends that expansion of capacity of sugar mills upto 10000 TCD maybe deemed as 'modernization' for the purpose of loans from SDF.

5.10 Voluntary Retirement Scheme (VRS)

The various stakeholders during the deliberations requested funding from SDF for making payments towards Voluntary Retirement Schemes (VRS). As this is not in accordance with the purposes for which SDF may be applied, the Committee recommends that VRS in the sugar sector be funded by commercial banks.

5.11 Cane Price Arrears

The cane price arrears for 2003-04 sugar season have come down from Rs. 2568 crores (25%) as on 30-4-2004 to Rs. 580 crores (5%) as on 30-9-2004. The Central Government have allowed under certain conditions State Governments to raise additional market borrowings to help sugar factories pay cane price arrears (as on 30-9-2003) of 2002-03 sugar season. The Committee learns that only a few state governments have availed of this facility. The Committee recommends that this facility may be kept open till September 2006 to enable other State Governments to take advantage of this facility.

Technology Upgradation

6.0 TECHNOLOGY UPGRADATION

6.0.1 Modernization and technology upgradation have to be seen as a continuous exercise for cost cutting and taking advantage of economies of scale. The future of sugar industry is also closely linked to this.

6.0.2 All attempts to minimize costs have to be technology driven. The technology upgradation of the sugar industry is therefore, every important to ensure its global competence and therefore, has to be a continuous process. The key drivers in technology use are the following:

- Improvements in Capital Output Ratio
- Improvements in Plant Efficiencies
- Energy Conservation
- Optimising cost of consumables
- Impact of sugar quality on price realization

6.1 Major Areas of Technology Upgradation

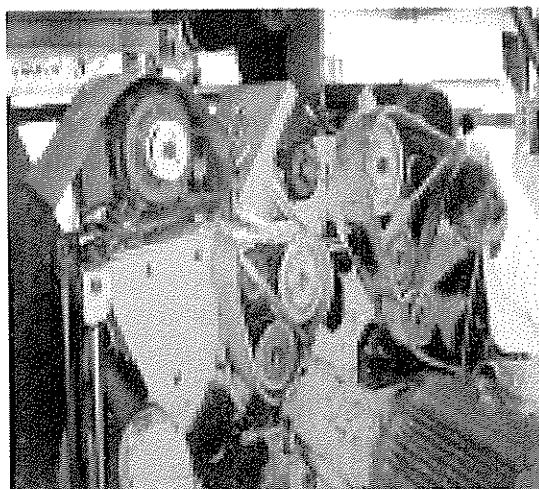
6.1.1 Recently, there has been rapid advances in the equipment, systems and process designs which the industry should evaluate and adopt to be cost effective. These include the following:

- Low Pressure Extraction System
- Use of Two Roller Mill
- Cane Separation System
- Short Retention Clarifier
- Membranes for juice purification
- Film Type Sulphur Burners
- Continuous Pans
- Advanced Condensing and Cooling System
- High Gravity Centrifugals
- Equipment and Process automation etc.

6.1.2 It is noted that the collective use of some of the above technologies can optimize plant capacities, improve in plant efficiencies, and reduce the cost of consumables and manpower.

6.2 Economies of Scale

- 6.2.1 A careful evaluation of the various costs reveal that most costs are variable except manpower costs and overheads. Therefore if the optimum number of persons are employed in a sugar plant between cane unloading to sugar packing through rationalization of equipment size and adoption of mechanical handling and process



Cane Separation System



Low Pressure Extraction System

control systems, the influence of manpower on cost of manufacture per ton of sugar of a 2500 TCD plant over a 7500 TCD plant may not be significantly different. In fact, under Indian conditions the size of the plant has an adverse impact on the time taken from cut to crush and on the costs of transport. Quite often large sizes are achieved through incremental additions of plant and equipment resulting in multiplicity of equipment and poor layout and housekeeping. Large size of plants in the Indian context, can also affect the capacity utilization over the season duration

due to lack of adequate infrastructure, and difficulties in collection of adequate cane from large number of small growers to meet the daily raw material requirement. Therefore, it is noted that the plant capacities need to be optimized keeping the following in view.

- i) Small land holdings in India
- ii) Global Trends

After evaluating the above, and various other factors the Committee observed that a plant size of 5000 TCD may be considered as sustainable.

6.3 Energy Conservation

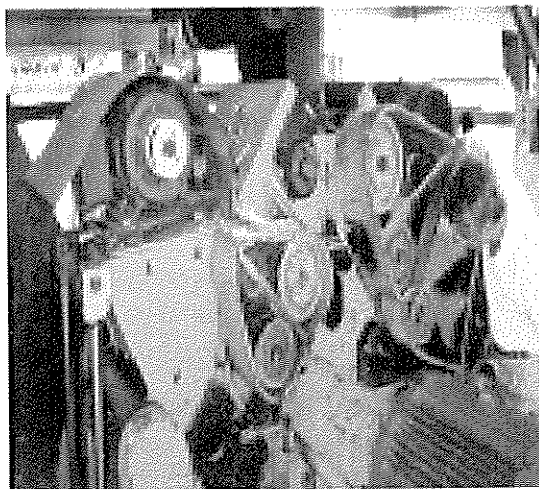
- 6.3.1 Consumption of energy is an important area of concern for all industries including sugar industry. The level of energy consumption has reduced considerably in the sugar industry in the past 50 years. The earlier sugar plants were all steam driven and required substantial quantities of extra fuel in the form of coal, wood and furnace oil for meeting the energy needs.



Planetary Gear Box

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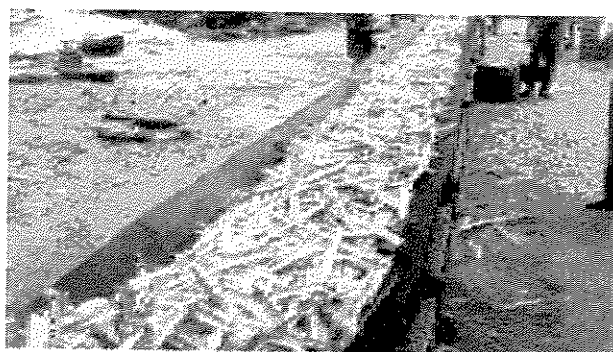


Planetary Gear Box

- 6.3.2 It is noted that now a large number of sugar plants in India are electrically driven, have optimized on process steam consumption and are therefore, self sufficient in fuel (bagasse), but with the rising price realization from sale of bagasse in the last few years, it has become necessary for the industry to save bagasse as possible to earn additional income. The present average levels of power and process steam consumptions in a modern plant are the following :

Power : 35 kW/Ton Cane
Process Steam : 480 Kg/Ton Cane

- 6.3.3 The following targets for energy consumption can be achieved through use of modern technologies like use of falling and climbing film evaporators, Planetary Gear Boxes, Plant and Process automation, use of efficient motors and pumps and the various other technologies as listed above.



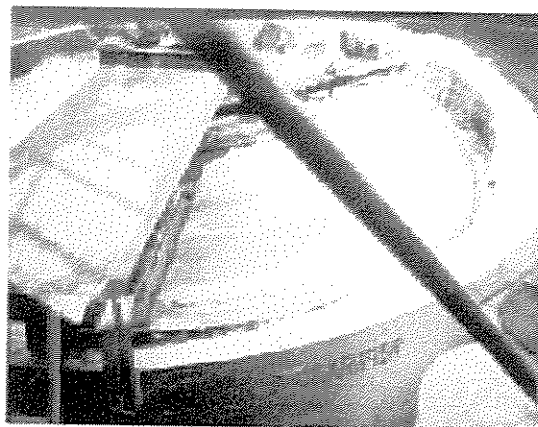
Cane Separation System

Power Consumption : 27-28 kW/Ton Cane
Steam Consumption : 400-420 Kg/Ton Cane

- 6.3.4 It is observed that adequately conceived energy conservation schemes can enable realize the above and therefore such schemes may be actively promoted.

6.4 Sugar Quality

- 6.4.1 Practically all the sugar mills in India manufacture white plantation sugar for direct consumption through use of double sulphitation process, but with the advent of quality conscious consumers in the business of manufacture of aerated drinks and confectionary, it has become necessary for the sugar mills to match the varying demand.



Phospho Floatation Technique

Improvements in sugar quality is also required to facilitate the Indian sugar industry to align with the global trends in quality. Three sugar mills in India have adopted the process of Defeco Raw Melt Phospho Floatation Process (DRP) for sugar refining and these mills are able to produce sugar to match EC-I and EC-II standards.

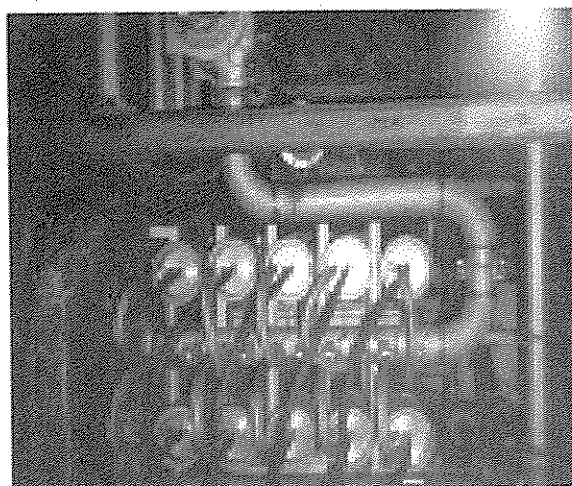
- 6.4.2 It is observed that the industry must evaluate and adopt various alternate processes in sugar manufacture to enable produce sugar of international standards in a cost

effective manner to achieve incremental gains through better price realization.

- 6.4.3 The Committee observed that sugar quality improvement technology and schemes should be actively promoted.

6.5 Environment Management

- 6.5.1 As per the guidelines of the Ministry of Environment and Forests, Government of India, the norms for effluent discharge from sugar mills have been revised from the present 0.4 MT per ton of cane crushed to 0.1 MT/ per ton cane crushed for the year 2003-04. Further, sugar mills have to achieve zero discharge from the year 2004-05. It is therefore necessary for the sugar mills to aim for water conservation, use of efficient effluent treatment technologies and recycling of treated effluents. It is mandatory that with effect from April 01, 2004, every factory should install ESP / bag filters / high efficient scrubbers to comply to the standards of emissions of 150 mg/nm³ of solid particulate matter from bagasse fired boilers.



Ultra Filtration Membrane

- 6.5.2 Many sugar factories are not able to achieve the above norms. The Committee therefore recommends that necessary assistance should be provided from SDF for the following purposes:

- Installation of appropriate effluent treatment systems (to achieve zero discharge) including installation of heat exchangers for cooling and condensing, tertiary treatment of effluents and labs for monitoring effluent quality.
- Installation of bag filters / high efficiency wet scrubbers/electrostatic precipitators to meet standards of air emission.

- 6.5.3 It was represented to the Committee that the sugar industry has been placed under the RED category along with various other highly polluting industries. This has been done as the sugar industry has been linked with the distilleries. Since sugar industry do not discharge any toxic or highly polluting wastes, it is recommended that it be placed in the ORANGE category for the purposes of environmental clearances by the competent authority.

Diversification

Diversification

7.0 DIVERSIFICATION

- 7.0.1 Sugar factories world over have successfully pursued the route of value addition to by-products for improving their financial health. Indian sugar industry would do well to adopt the same route in the interest of achieving long term sustainability. The Committee also feels that the more the extent of diversification of product base, the less will the reliance be, of the industry on domestic prices of sugar.
- 7.0.2 Bagasse and molasses are the two most important by-products of the sugar industry. Whereas bagasse is primarily used to meet the captive requirement of fuel, a substantial quantity of it can be saved to produce products like paper, particle boards etc. In addition, the bagasse can also be used for cogeneration of power by the sugar industry. It is estimated that the sugar industry has a potential to co-generate up to 5000 MW of power.
- 7.0.3 The Government has plans to increase the share of environment friendly cogeneration of power by sugar mills and has indicated that preferential tariff for co-generated power would be given. To accelerate investments in cogeneration of power, the Sugar Development Fund Act has also been amended to provide for concessional loans in this regard. Many sugar factories have gone ahead and made large investments in such projects.
- 7.0.4 It was brought to the notice of the Committee that the units which have set up cogeneration of power are facing a number of difficulties. Power Purchase Agreements (PPAs) are sought to be changed frequently by the State Electricity Boards. The quantum of purchase of cogenerated power and the rate of purchase are hardly encouraging.
- 7.0.5 Similarly, molasses, an important by-product of the sugar industry, is used extensively for the manufacture of ethyl alcohol and alcohol based down stream chemicals in addition to manufacture of potable alcohol. Dehydrated alcohol (ethanol) is a good oxygenate and when used as a blend with motor spirit, substantially reduce the vehicular emissions. Its blending therefore can help reduce pollution in large cities. Ethanol has a high anti knock quality and its addition up to 10% raises the octane rating of regular petrol by 3 units and blending up to 25% raises the octane no. by 8 units thus, eliminating the need for using environmentally harmful lead additives for raising the octane number of petrol.
- 7.0.5 The crude oil prices have increased \$28 per barrel in 2002 to the present level of \$46 per barrel, an increase of over 50%. The promotion of alternative energy sources have assumed considerable importance in the context of rising prices of petroleum products.

- 7.0.6 Government announced Ethanol blended petrol scheme in 2002 to encourage alternative fuel, ethanol in the larger interest of cane farmers and also its beneficial impact on environmental protection. The scheme was launched in nine States and four Union Territories. As per the scheme, it was to cover the rest of the country by end 2004. The percentage of mixing is to be increased to 10% and to 20% in subsequent phases.
- 7.0.7 Initially when the scheme was announced, the Finance Minister in the Union Budget 2002 proposed a concessional duty of 75 Paise per liter of ethanol blended petrol. The alcohol based industry strongly protested the move which was subsequently pruned down to 30 Paise per litre effective from 31-12-2002. The Government issued two notifications effectuating this relief. These two notifications have lapsed in the absence of its further extension in the Union Budget 2004-05. This will have an impact on the price of Ethanol by Rs.6/- per litre.
- 7.0.8 The sugarcane and sugar production declined steeply in 2003-04 on account of severe drought in certain parts of the country. Consequently, the production of molasses has also declined leading to increase in cost of production of Ethanol by about Rs. 6/- per litre. In the circumstances, the Ethanol blended programme has received a serious set back.
- 7.0.9 The Committee noted that, in absence of firm commitment to buy green power by State Electricity Boards and Ethanol by the various petroleum companies, the sugar mills, which have put up such units are in a quandary.
- 7.0.10 The Committee feels that the Government's policy to encourage utilization of by-products is a step in the right direction to enable sugar factories to be in good financial health. The outstanding success of Brazil's ethanol programme is a case in point. Brazil is encouraging automobiles with flexi-fuel engines, which are capable of taking any ratio of ethanol to gasoline. Brazil produces ethanol from sugarcane juice. The proportion of sugarcane juice to be used for production of ethanol and for sugar is decided by market conditions. The Committee recommends that the Brazilian model may be emulated.

7.1 Policy Interventions

- 7.1.1 The Committee recommends the following policy interventions to ensure success of initiatives to exploit by products:
- Oxygenation of gasoline may be made compulsory.
 - The Central Government may strictly implement its long term policy for blending of petrol with ethanol.
 - Fiscal and other incentives provided may be in place for a minimum period of five years, without any rollback.

- Purchase price of ethanol may be fixed for a period of three years (with suitable price escalation clauses) in place of the present practice of fixing the price annually.
- The Central Government may take steps to prevent frequent changes in PPAs for cogeneration projects.
- National Energy Policy may have provisions for (i) mandating the proportion of 'green' power to be purchased in the overall power purchase in a state; and (ii) preferential tariff for cogenerated power. The Central Electricity Act may also be suitably amended to provide teeth to the policy to support 'green' power.

Training, Research & Development

8.0 TRAINING, RESEARCH & DEVELOPMENT

8.0.1 Research for incremental improvements in areas of sugarcane productivity, quality of sugarcane, plant efficiencies, energy conservation and various other process steps is essential to keep pace with the global trends to successfully face competition. A number of institutions in the country are dedicated towards the above, which, amongst others, include the following :

- Sugarcane Breeding Institute, Coimbatore
- Indian Institute of Sugarcane Research, Lucknow
- National Sugar Institute, Kanpur
- Vasantdada Sugar Institute, Pune
- Sugar Technology Mission, New Delhi

8.1 Sugarcane Varieties & Harvesting

8.1.1 The research and development in sugarcane should primarily be for the purpose of evolving new high sugared, disease resistant varieties of sugarcane, improve existing cultural practices, reduce consumption of resources like water, develop quality seed and varieties resistant to water logging, drought etc.

8.1.2 Sugarcane Breeding Institute, Coimbatore has released more than 2000 sugarcane varieties for different climatic zones of the country. Despite this impressive list, the number of high sucrose varieties developed during the last 30 years is rather small (primarily COJ64 in sub tropical and COC671 in tropical regions), which are now susceptible to red rot. Therefore development of high sugared varieties which are resistant to red rot should be the priority item for research.

8.1.3 Development of new sugarcane varieties requires a long time of about 15-16 years because sugarcane is a relatively long duration crop and its genetic make up and breeding behaviors are complicated. Therefore many countries have resorted to the use of genetic engineering for the development of improved sugarcane varieties which enables release of the variety for commercial cultivation in a span of 7-8 years. Determination of genetic purity of the recommended variety is important in assuring the quality of the seed at different stages of multiplication. The DNA finger printing technique, which is the most accurate technique for the purpose, needs to be developed.

8.1.4 The quality of sugarcane has a strong influence on the methods and efficiency of its processing in a sugar mill. Therefore, there is a need for research on evolving sugarcane varieties, which are amenable to convenient processing such that it is possible to manufacture low coloured sugar with minimum use of process chemicals. The nature of cane juice also influence the scaling of various heat exchangers which in turn lead to high plant down time and energy requirements. The quantity and nature of fibres in sugarcane play a significant role on plant efficiencies, maintenance and requirements of additional fuel or saving of bagasse.

- 8.1.5 The cultivation and harvesting of sugarcane is highly energy and labour intensive. Suitable techniques, systems and implements have therefore to be developed to minimize the above. The committee noted that IISR, Lucknow has developed a number of useful and commercially adaptable devices such as sett cutting machine, tractor driven cutter and planter, stubble shaver etc. However, a suitable machine for harvesting of cane to suit Indian field conditions is yet to be successfully developed. The Committee observed that the development of a mechanical harvester suitable for harvesting sugarcane in small landholdings is a need of the day.
- 8.1.6 Research is also needed in developing techniques for conservation of water which includes adoption of moisture conservation practices like trash mulching, cultivation of sugarcane varieties with deep root systems, successful application of water under skip furrow methods and the evaluation of various micro irrigation systems and sprinklers etc. Development of a successful drip irrigation system for sugarcane can reduce the water required for irrigation by about 35-40%.
- 8.1.7 The Committee observed that in most major sugar producing countries, the research for sugarcane is funded by the growers or jointly by the grower and the sugar mill. The growers and sugar mill also control the management of such institutes. A similar arrangement exists at the two industry funded training research institutes viz. Coppersucar in Brazil and BSES in Australia.

8.2 Processing

- 8.2.1 The processing of sugarcane into sugar involves a number of process steps. The cost of conversion from sugarcane to sugar is nearly 1/3rd of the total cost of manufacture of sugar. The major costs include manpower, energy and consumable costs. In addition, the sugar loss in processing and the maintenance of plant and equipment have a direct impact on the economics of sugar production. Necessary research is therefore required in all the above areas of process operation. Both National Sugar Institute, Kanpur and Vasantdada Sugar Institute, Pune have undertaken a number of research projects for the above purpose along with various other institutions like Central Electronic Engineering and Research Institute- Pilani, National Physical Laboratory- Delhi, Tata Energy Research Institute-Delhi. The Sugar Technology Mission of Department of Science & Technology, Government of India has taken up commercialization of a number of new technologies which were either at the conceptual or pilot scale stage. The following are the potential areas identified for research in improving the various existing processing techniques and for the purpose of saving of energy, consumables and manpower costs.
- Use of membranes for purification of cane juice
 - Development of suitable centrifugals for the purpose of liquid solid separation
 - Application of R.O. techniques for the purpose of reducing process steam requirements
 - Identification of cost effective alternate processes for improving sugar quality to meet world standards etc.

8.3 Human Resource Development

- 8.3.1 The employees are the most valuable assets of an organization and therefore the impact of their training can be manifold on the performance of the industry. In a technology driven world with rapid changes in technology status, the training of the personnel therefore plays a very significant role. At present, apart from National Sugar Institute, Kanpur and Vasantdada Sugar Institute, Pune, a number of Engineering Colleges, Polytechniques and ITI's, also impart technical knowledge and training to the sugar industry personnel.
- 8.3.2 The sugar industry which has been mostly set up during 1930s and rapidly expanded between 1960s - 1980s is expected to face a serious shortage of manpower when the present set of personnel retire during the next 4-5 years. The rapid advancement in technology have also necessitated re-training of the existing personnel. Therefore the existing training facilities have to be upgraded and strengthened and new facilities to be created to meet the above requirement. The course content and syllabus should be suitably revised from time to time in line with the changing needs of the industry.

8.4 Financial Assistance

- 8.4.1 In order to ensure that the Research and Development efforts get a proper direction and fillip in the country, this Committee recommends that the efforts of the existing institutions be adequately strengthened for increasing productivity in the fields as also in the mills by introduction of new technologies and also by effective extension mechanism. Sugar Development Fund may also assist project linked extension activities of these institutions.
- 8.4.2 The Committee observed that quite often, the projects identified for research and development have very little relevance in improving the performance of the industry. Therefore the Committee recommends that R&D projects may be chosen on the basis of their usefulness in improving the efficiency of the industry and reducing the cost of sugar manufacture.
- 8.4.3 It is also noted that often the research conducted by the research institutes do not percolate into the user industry. It is therefore important that necessary seminars should be held for dissemination of the advantages of such successful researches. The committee recommends that SDF should suitably reimburse the cost of organizing national seminars for propagating successful research undertaken by R&D institutions.
- 8.4.4 The Committee also feels that in line with major sugar producing countries, the industry itself should, in future, take up research in sugarcane as well as in sugar process & engineering through specifically created autonomous organizations, who would be in a position to ensure quick dissemination of the research findings. The Committee therefore, recommends that for industry supported new R&D organizations, capital assistance for building and other equipment may be considered

from SDF upto 50%, subject to a limit of Rs. 2.0 crores. Such organizations should also be entitled to receive project linked grants for the duration of the projects.

- 8.4.5 The Committee recommends that for a closer interaction with the industry, a result oriented approach and functional autonomy, NSI, Kanpur may be converted into a registered society functioning under the Department of Food & Public Distribution, Government of India. While the Society should be progressively in a position to generate enough revenues to meet its revenue expenditure, the Central Government should continue to provide it with project linked grants for meeting capital expenditure.
- 8.4.6 The Committee further recommends that the Department of Biotechnology and ICAR may promote the use of biotechnology for improvement in quality and productivity of sugarcane.

Annexures

Annexure I

No. 1(1)/2004-SP

Government of India

Ministry of Consumer Affairs, Food & Public Distribution

Department of Food and Public Distribution

Krishi Bhavan, New Delhi

Dated the 12th March, 2004

OFFICE MEMORANDUM

Subject:- Constitution of Committee for revitalization of sugar industry

.....

The Sugar Industry is one of the most important agro-based industries in India located largely in rural areas, involving 45 million sugarcane farmers, their dependents and large mass of agricultural labourers. Half a million skilled and semi-skilled workers are also engaged in sugar industries, which has been a focal point for socio-economic development.

In the interim Budget 2004-05, the Finance Minister made the following announcement:-

"Sugar, another major agro processing industry of the country, generating substantial employment currently faces a complex web of problems. The Government will prepare a package for the revitalization of sugar industry, in consultation with all the stakeholders. In the meantime, as a measure of temporary relief, restructuring of loans taken by sugar factories will be examined by the lending agencies, including Banks, in consultation with RBI and NABARD."

While the temporary relief measures are being worked out by the Banks in consultation with RBI and NABARD, a long term solution to the problem needs to be put in place. With this in view, the Government have decided to set up a Committee under the Chairmanship of Shri SK Tuteja, Secretary, Department of Food and Public Distribution, Ministry of Food, Consumer Affairs and Public Distribution, Government of India, with the following composition:-

- | | | |
|----|---|----------|
| 1. | Shri S.K. Tuteja,
Secretary
Department of Food and Public Distribution
Government of India | Chairman |
| 2. | Shri S.S. Kohli,
Chairman & Managing Director
Punjab National Bank
New Delhi | Member |
| 3. | Shri P. Uma Shankar
Jt. Secretary
Department of Food and Public Distribution
Government of India | Member |

- | | | |
|-----|--|-----------------------------|
| 4. | Commission for Agricultural Costs and Prices
Government of India | Member
(to be nominated) |
| 5. | Shri V.P. Rane,
Director General,
Vasantdada Sugar Institute,
Haveli, District Pune | Member |
| 6. | Reserve Bank of India | Member
(to be nominated) |
| 7. | Shri D. Rai
Managing Director,
NCDC, New Delhi | Member |
| 8. | Shri Vivek M. Pittie
President
Indian Sugar Mills Association
New Delhi | Member |
| 9. | Dr. M.R. Desai
President
National Federation of Coop. Sugar Factories
New Delhi | Member |
| 10. | Shri Vivek Sarogi
Managing Director
The Balrampur Chini Mills Ltd.,
Kolkata | Member |
| 11. | Shri S.V. Balasubramaniam
Chairman & Managing Director
Bannari Amman Sugars Ltd.,
Coimbatore | Member |
| 12. | Smt. Vidya M. Murkumbi
Chairman
Shree Renuka Sugars Ltd.,
Belgaum, Karnataka | Member |
| 13. | Shri R.P. Singhal
Former Chief Director (sugar)
Directorate of Sugar
BE-14, SFS Flats,
Jankpuri, New Delhi | Member |
| 14. | Shri Prasad B. Tanpure
Chairman,
Maharashtra Rajya Sahakari Sakhar
Karkhana Sangh Ltd., Mumbai | Member |

15. Shri Jayantilal B.Patel
Chairman,
Sahakari Khand Udyog Mandal Ltd.,
P.O. Gandevi, Via Bilimora,
Distt Navsari, Gujarat
Member
16. Shri J.J. Bhagat,
Mission Director,
Sugar Technology Mission
Department of Science and Technology
Government of India
New Delhi
Member-Secretary

The Committee may at any stage co-opt any other person(s), it considers necessary.

The Committee will, in consultation with all the stakeholders, review the present status of the sugar industry in the country, identify the problems faced by it and suggest a package for revitalization of the industry to make it vibrant, self-sustaining and globally competitive.

The Committee will submit its report in 6 months.

Sd/-

(J.S. Tiwana)
Director to the Government of India
Ph: 23382965

1. The Chairman and Members of the Committee
2. Commissioner/Secretary of the departments of Civil Supplies/Sugar of State Governments concerned.

Copy also to:

1. P.S. to Minister of Consumer Affairs, Food & Public Distribution
2. P.S. to MOSCAFPD (PD)
3. P.S. to MOSCAFPD (CA)
4. PPS to Secretary (F & PD)
5. PPS to Secretary (CA)

Sd/-

(J.S. Tiwana)
Director to the Government of India
Ph: 23389625

Copy also to Indian Sugar Mills Association and National Federation of Coöperative Sugar Factories Ltd.

Sd/-

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REVITALIZATION OF SUGAR INDUSTRY IN INDIA**

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Tel:022-22042676, 22042901, 22870441
Fax No: 022-22042578 Member
14. Shri Jayantilal B.Patel,
Chairman,
Sahakari Khand Udyog Mandal Ltd.,
P.O.Gandevi, Bilimora,
Dist: Navsari, Gujarat
Tel: 02634-262344, 262346, 262347,
Fax No: 02634-262384 Member
15. Shri K. Prasad
General Manager,
Reserve Bank of India,
Financial Institution Division, 2nd Floor,
World Trade Centre – I, Cuffe Parade, Colaba, Mumbai – 400 004
Tel No. 022 2289131, 22182526, 098260641069 (m)
Fax: 020 – 22183579 Member
16. Shri J.J.Bhagat,
Mission Director,
Sugar Technology Mission,
TIFAC, Vishwakarma Bhavan,
Shaheed Jeet Singh Marg,
New Delhi – 110 016
Tel No. 011 26964656, 55651016 Member-Secretary

**COMMITTEE ON REVITALIZATION OF SUGAR INDUSTRY IN INDIA
SCHEDULE OF MEETINGS WITH STAKE HOLDERS**

2nd Meeting, 12th May 2004, New Delhi	
1.	All India Distillers Association of India
2.	Indian Renewable Energy /development Agency Ltd., (IREDA)
3.	Ministry of Non-conventional Energy Sources (MNES), Government of India
3rd Meeting, 11th June 2004, Pune	
4.	RBI
5.	NABARD
6.	IDBI
7.	Officials of Government of Maharashtra
8.	Officials of Government of Gujarat
9.	Maharashtra Rajya SSK Sangh Ltd.,
10.	Maharashtra State Coop.Bank Ltd., Maharashtra
11.	Gujarat State Federation of Coop. Sugar Factories Ltd.
12.	VSI, Pune
13.	NCDC, New Delhi
14.	Maharashtra Rajya Sakhar Kamgar Mahasangh
4th Meeting, 3rd July 2004, Bangalore	
15.	Officials of Government of Andhra Pradesh
16.	Officials of Government of Tamil Nadu
17.	Officials of Government of Karnataka
18.	South Indian Sugar Mills Association (T.N., Karnataka, A.P.)
19.	State Sugar Federations (T.N., Karnataka, Andhra Pradesh)
20.	Tamil Nadu Coop. Sugar Federation Ltd.,
21.	Representatives from EID Parry
22.	Representatives from Renuka Sugars
23.	Representatives from IDBI and Apex bank
5th Meeting, 31st July 2004, New Delhi	
24.	Bihar Sugar Mills Association
25.	Officials of Government of Punjab
26.	Punjab Coop. Sugar Factories Federation
27.	Representatives of Private Sugar Mills in Punjab
28.	Officials of Government of Haryana
29.	Haryana State Federation of Coop. Sugar Mills
30.	Representatives from Private Sugar Mills in Haryana
31.	Representatives for Ministry of Textiles, Government of India
6th Meeting, 11th September 2004, New Delhi	
32.	Officials of Government of U.P.
33.	U.P. Coop. Sugar Factories Federation Ltd.,
34.	UP State Sugar Corporation
35.	UP Sugar Mills Association
36.	Representatives from IDBI
37.	Representatives from Sugar Mills in Uttaranchal

