

PARLIAMENT  
OF KENYA  
LIBRARY

THE STATE OF THE SUGAR INDUSTRY IN KENYA

KSA

SEPTEMBER, 1994.

## 1. INTRODUCTION

The sugar industry plays an important role in the economic development of this country as:

- (a) the main product, sugar, is an important food item, while refined sugar is an essential ingredient in the food processing, beverage manufacture and other industries;
- (b) thousands of our people benefit directly or indirectly by being engaged in its operations or by being dependants of those employed by the industry;
- (c) the industry has contributed significantly to rural industrialization and has raised the standard of living for the people in areas where sugar factories are located;
- (d) the industry generates revenue for the Government and local authorities through various types of taxes/duties and cesses.

The paper describes the current sugar situation in Kenya and in particular highlights the technical and economical factors that influence the performance of the industry.

## 2. SUGAR PROCESSING

Sugar is a final product obtained after processing either sugar cane or sugar beet through complex operational stages in a factory. The various processing stages and the flow chart using a sulphitation process are attached as figures 1 and 2 respectively.

It is important to note that the rated or design capacities of a sugar factory is defined in terms of raw materials (sugarcane) crushed per day (TCD). However, the actual production of such factories is dependant on factors such as the quality of cane, the length of operations, maintenance of the various units of operations and sugar recovery. More particularly, the capacity of a sugar factory is defined by the following formula:

$$C = \frac{0.55cnLD^2 \sqrt{N}}{f},$$

- where C = tonnes cane crushed by day  
c = preparation equipment factor  
n = mill roller revolutions per minute  
L,D = Length and Diameter of mill rollers  
N = number of rollers in a milling tandem  
f = fibre % cane.

### 3. SUGAR PRODUCTION

The industry has continued to experience declining sugar production during the last five years. Production has fallen below our domestic requirements as shown in the attached table. In the last couple of years, domestic production has met approximately two-thirds of local demand for sugar.

SUGAR INDUSTRY PERFORMANCE 1989 - 1993

A: <u>PRODUCTION</u>		1993	1992	1991	1990	1989
CHEMELIL	Rated Capacity, TS/Y	75,000	75,000	75,000	75,000	75,000
	Actual Production	53,691	43,429	69,546	77,181	73,253
	Variance	21,309	31,571	5,454	-2,181	1,747
MUHORONI	Rated Capacity, TS/Y	55,000	55,000	55,000	55,000	55,000
	Actual Production	19,452	15,445	42,870	43,402	46,069
	Variance	35,548	39,555	12,130	11,598	8,931
MUMIAS	Rated Capacity, TS/Y	215,000	215,000	215,000	215,000	215,000
	Actual Production	216,755	213,031	217,490	216,861	222,097
	Variance	-1,755	1,969	-2,490	-1,861	-7,097
NZOIA	Rated Capacity, TS/Y	75,000	75,000	75,000	50,000	50,000
	Actual Production	22,242	33,201	39,962	36,926	50,715
	Variance	52,758	41,799	20,038	13,074	-715
SONY	Rated Capacity, TS/Y	65,000	65,000	65,000	65,000	65,000
	Actual Production	55,397	58,095	56,389	57,466	48,952
	Variance	9,603	6,905	8,611	7,534	16,048
MIWANI	Rated Capacity, TS/Y	45,000	45,000	45,000	45,000	45,000
	Actual Production	13,674	8,024	7,456	-	-
	Variance	31,326	36,974	37,544	-	-
TOTALS	Rated Capacity, TS/Y	530,000	530,000	530,000	505,000	505,000
	Actual Production	381,211	371,225	433,713	431,836	441,261
	Variance	148,789	158,773	96,287	73,164	63,739
	Shortfall, %	28.1	30.0	18.2	14.5	12.6
B: <u>CONSUMPTION</u>		560,000	552,000	493,945	537,999	489,544
C: <u>PRODUCTION % CONSUMPTION</u>		68.1	67.2	87.8	80.3	90.1



KSA

SEPTEMBER, 1994

The actual sugar production for the first eight (8) months of 1994 was 194,160 tonnes as shown below by each factory.

	<u>Cane (TC)</u>	<u>Sugar (TS)</u>	<u>TC/TS</u>
Chemelil	231,647	18,594	12.46
Muhoroni	66,083	4,740	13.94
Mumias	1,072,062	117,648	9.11
Nzoia	231,294	16,547	13.98
Sony	310,974	31,496	9.87
Miwani	<u>89,849</u>	<u>5,135</u>	<u>15.97</u>
Total	2,001,909	194,160	10.31

---

With only four months left to the end of the year, sugar production is estimated at about 340,000 tonnes during 1994 representing some 10.8% drop from the production of 1993. Only 64.2% of the existing capacity of the factories will be utilized in 1994.

The following factors have contributed towards low production:

- (a) inadequate cane supplies.
- (b) limited investments in sugar cane production.
- (c) droughts of 1991 and 1993.

#### 4. CONSUMPTION AND IMPORTS

The domestic demand for sugar has steadily risen over the years reflecting improved supplies of sugar and higher incomes. Consumption of sugar increased from 489,544 tonnes in 1989 to 560,000 tonnes during 1993.

To meet our domestic requirements, the country has increasingly depended on sugar imports. Importation of sugar has been liberalized from 1991/92 and it has been difficult to establish the actual imports into the country. The situation has improved since May, 1994 when Government authorized the KSA to impose a development levy on sugar imports. The Authority now monitors the quantities of all sugar imports into the country.

The following levels of imports were imported for the years 1989 to 1994:

<u>Year</u>	<u>Quantity of Imports (tonnes)</u>
1994 to August	61,761
1993	65,217
1992	124,463
1991	21,288
1990	64,050
1989	80,000

## 5. UPDATE ON ON-GOING AND POTENTIAL PROJECT

### 5.1 Mumias Rationalization Project

This is the most tangible on-going project which will involve introduction of diffusion technology to improve extraction and increase capacity from 7200 TCD to 8000 TCD. Tenders for the supply of equipment and erection have already been awarded. The project is estimated to cost some Kshs. 4.5 billion.

## 5.2 Nzoia Phase II Expansion

The quest for modalities to complete the Phase II expansion project for Nzoia Sugar Company Ltd following abandonment by Arkel International Inc continue to be the main concern of Nzoia Sugar Company. Arbitration process between the company and Arkel has already commenced.

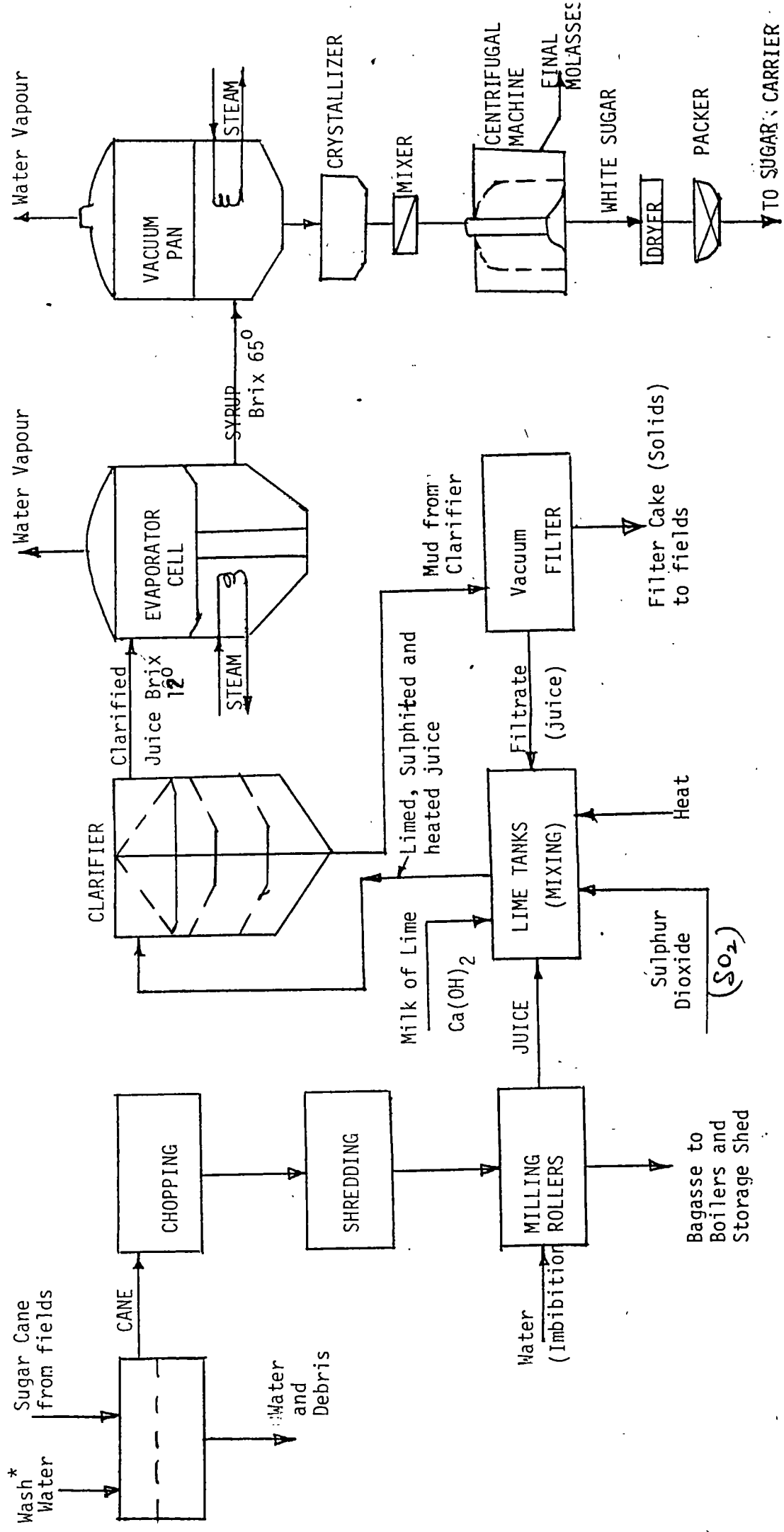
## 5.3 Revival of Ramisi

The Government has established a Task Force to examine the viability of reviving the Ramisi Sugar factory which was placed under receivership in June, 1988.

## 5.4 Muhoroni Sugar Factory

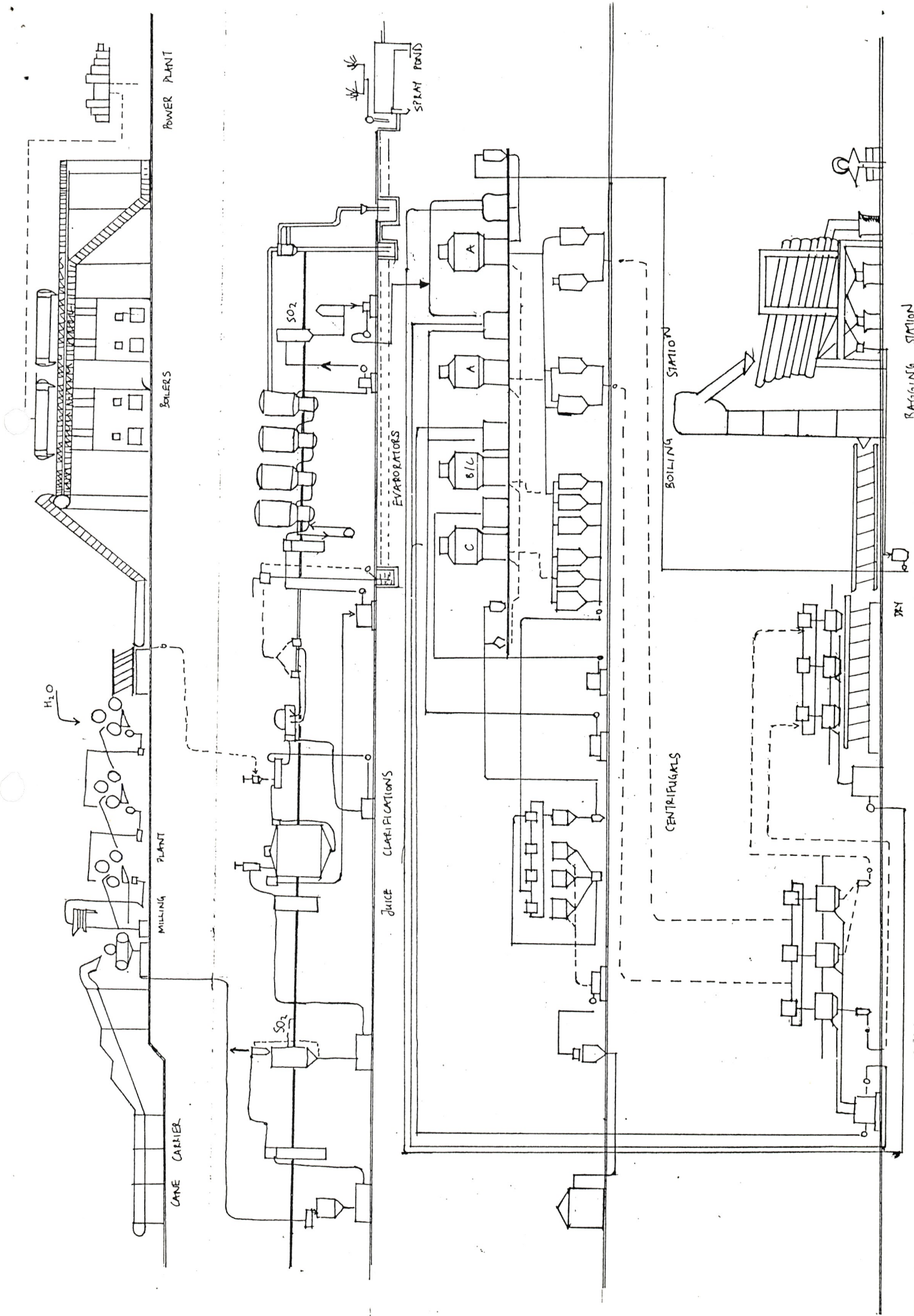
This factory temporarily closed down in mid-June 1994 and is expected to resume operations by October, 1994. A detailed feasibility is contemplated to examine the current problems of Muhoroni with the objective of rehabilitating the factory.

# PROCESSING SUGARCANE TO MAKE CONSUMABLE SUGAR



\* Only some Factories have cane washing system.

Figure 2. WORKING SCHEME OF A CANE SUGAR FACTORY PRODUCING WHITE SUGAR BY SULPHITATION PROCESS.



TERMS OF REFERENCE FOR CONSULTANCY FIRM AND TECHNICAL ASSISTANCE

CONSULTANTS

**SUGAR SUBSECTOR DEVELOPMENT COMPONENT**

**INTRODUCTION**

The project (ASMP II) has seven components :

1. Institution management component, covering the former Ministries of Agriculture, Livestock Development (now the combined Ministry of Agriculture, Livestock Development and Marketing (MALDM));
2. Cotton subsector development;
3. Sugar subsector development;
4. Oilseeds subsector development;
5. Preparation of the National Environment Action Plan (Ministry of Environment and Natural Resources);
6. Cooperatives development (Ministry of Cooperative Development);
7. Department of Resource Surveys and Remote Sensing (DRSRS) component (Ministry of Planning and National Development).

In the sugar subsector, the major activity will be the sugar sector restructuring study (SSRS) whose broad objectives are to :

- (a) initiate institutional and policy reforms aimed at stimulating the development of the subsector;
- (b) provide options to maximize economic and technical efficiency of the subsector;
- (c) provide options for meeting the distributional objectives of the Government where consumers and canegrowers are concerned, in a transparent and effective manner.

The study will focus on the following main areas :

- (a) Determining an appropriate institutional and regulatory structure for efficient development of the subsector based on the principles of price and market liberalization and full participation of the private sector and the commensurate removal of Government, including parastatal, involvement;
- (b) Formulating measures to divest public majority ownership of sugar companies and promote privatization. These will include
  - (i) determination of the current worth of companies through an asset revaluation exercise;
  - (ii) working out options for financial restructuring of the companies based on a projection of the financial prospects of the sector;
  - (iii) determination of efficiency norms for the industry;
  - (iv) determination of private ownership options, including the level of shareholding by canegrowers;
- (c) Determining systems for providing sugarcane growers with appropriate technological support in regard to research, extension, etc;
- (d) Redefining the role of the Kenya National Trading Corporation (KNTC) in the light of the privatization of the trade in sugar;
- (e) Restructuring and strengthening Kenya Sugar Authority as the primary technical and policy and advisory body dealing with the sugar subsector with appropriate association of, and control by, the private sector.
- (f) Determining options for the efficient utilization of by-products from the sugar mills in an environmental sustainable manner.

## **CONSULTANCY FIRM**

The selected consultancy firm will provide two study teams as detailed below. The team leader of each team will report to the ASMP II Project Coordinator. Study Team I will also work under the direction of the Executive Secretariat and Technical Unit of of the Government's parastatal reform programme.

### Terms of Reference:

- (a) Provide two teams as detailed under Study Team I and Study Team II below.
- (b) Appoint one of the long-term consultants to be the Team leader who will report to the ASMP II Project Coordinator and liaise with the Executive Secretariat and Technical Unit of the Government's parastatal reform programme.
- (c) Ensure high quality work from the consultants.
- (d) Ensure that reporting schedules are adhered to.

### Study Team I (approximately 35 manmonths)

Study Team I will comprise Team leader, Civil Engineer, Agricultural engineer, Sugar engineer, Accountant and Lawyer, and will be required to undertake asset revaluation, financial restructuring and divestiture of sugar companies as described below :

#### Asset revaluation :

A revaluation of the assets of the sugar companies is required to establish their true net worth. The study will prepare :

- (a) an initial revaluation of all assets of each of the sugar companies including nucleus estates, using consistent methods common to all the companies;
- (b) establish a method updating the revaluating to reflect the current values of the assets in the consolidated accounts and financial statements that GOK may prepare for its use.

The revaluation should include a determination of the assets' useful value based on technical appraisal of the current condition of the asset, the mix of foreign and local percentages in the asset's capital cost; and the method of depreciation to be adopted on economic grounds, irrespective of the legislative provisions for tax purposes.

In formulating a methodology for frequently updating the revaluation and for reporting the updated revaluation on an enterprise as well as on the industry to KSA, it is not envisaged that a comprehensive physical revaluation is required on an annual basis. A mechanism short of physical verification is required for updating industry status. The study should establish : a method for ascertaining prices for the foreign components to be imported; indices to be used for updating the local costs (material, labour) ; and the formula for combining the two into a derived revaluation.

#### Financial restructuring

The study shall also formulate an appropriate framework for financial restructuring of the enterprises to supplement asset revaluation. In this context the following actions will be required :

- a review of restructuring programmes, if any, carried out since the inception for each factory;
- a review of any restructuring scheme proposed by a company and under GOK consideration;
- the preparation of a financial restructuring plan in the light of the financial prospects, for each company individually, taking into consideration :
  - (a) an optimal debt : equity ratio;
  - (b) the treatment of the surplus arising out of revaluation, on a basis common to all companies;

- (c) the justification for grants, concessions and write-offs if found to be necessary (considering, for example, the differential status of companies in the Nyanza Sugar Belt and the Western Region);
- (d) the transaction in the restructuring that would involve foreign creditors.

Divestiture :

The study would also prepare a privatization action plan and detailed procedures for implementation. This will require :

- (a) consolidation of the technical, financial and asset revaluation inputs into a status report for each company, and for the industry as a whole;
- (b) review the legal provisions for privatization, and the issues and claims that will need settlement, and recommend appropriate action;
- (c) set a range of monetary values (for the enterprises) for negotiations with potential investors (clearly specifying the basis for the assumptions);
- (d) identify on a company-specific basis, the domestic and foreign investor interest, and on that basis recommend appropriate privatizing strategy for each company, recommending a minimum shareholding that should be retained by GOK, for future divestiture to cane growers, industry employees, and the public.

Qualifications of team members :

1. Team Leader : (approximately 8 manmonths)

- (a) Should be a management specialist with a background in economics and at least 10 years' experience with a firm or firms with proven track-record in privatization exercises involving enterprises with similar characteristics to sugar factories.
- (b) Should have demonstrated skills in dealing with public sector organizations and in leading multi-disciplinary teams.

Duties :

- (a) Overall responsibility for the study team's output.
- (b) Assignment of primary and secondary responsibilities for each task keeping in view the inter-connected nature of the responsibilities of the team members.
- (c) Liaison with ASMP II Project Coordinator.

2. **Civil Engineer** (approximately 6 manmonths)

Should have relevant experience of at least ten years. He will be responsible for the engineering evaluation of buildings, all other civil constructions including roads, factory and other foundations (where required), and irrigation structures. He will provide inputs for the determination of the current value, replacement costs, rate of depreciation, etc.

3. **Agricultural engineer** (approximately 5 manmonths)

The agricultural engineer should have at least ten years of experience in large sugar companies. Responsibility will include, but will not be limited to the engineering evaluation of all agricultural machinery. He will provide inputs for the determination of the current value, replacement costs, rate of depreciation, etc.

4. **Sugar engineer** (approximately 5 manmonths)

The sugar engineer should have at least ten years of experience in large sugar factories. Responsibility will include, but will not be limited to the engineering evaluation of all sugar factories. He will provide inputs for the determination of the current value, replacement costs, rate of depreciation, etc.

5. **Accountant** (approximately 6 manmonths)

Should have at least seven years' experience at senior levels of accounts/audit firms of recognized standing. Experience in similar assignments will be highly regarded. Responsibilities will include, but will not be limited to the following :

- (a) checking of financial information provided by companies in response to questionnaire, and correlation with the financial analysis;
- (b) determining appropriate valuation basis and methodology, and the overall valuation of assets on that basis;
- (c) assuming primary responsibility for the tasks involving financial restructuring.

6. Lawyer (approximately 5 manmonths)

Should have expertise in company law administration and experience in the legalities of floatation of new ventures. Duties will include :

- (a) review the legal provisions for privatization, and the issues and claims that will need settlement, and recommend appropriate action;
- (b) set guidelines for the execution phase to follow in respect of :  
prospectus in the case of public offering; public notice in the case of direct offering; government clearances necessary; manner of dealing with existing contractual obligations, particularly in respect of labour and cane growers;
- (c) detail the amendments to existing legislation or enactment of new legislation as required, particularly in respect of the restructuring of the KSA and the KNTC.

Study team II (approximately 20 manmonths)

The scope of work for Study Team II will be to formulate a set of measures aimed at:

- (a) removing controls on prices and marketing of sugar;
- (b) restructuring the roles of KNTC and KSA in the industry;
- (c) formulating the basis for providing technological support to cane growers;
- (d) designing a mechanism for the Government to periodically review the status of the industry.

The team will comprise Team leader, Sugar Technologist, Financial Specialist, Sugar Marketing Specialist, and a Sugarcane Agronomist.

1. Team leader (approximately 4 manmonths)

The Team leader will be an economist with at least five (5) years' experience in a top managerial position in a sugar company or sugar consultancy firm. He should have proven track record of having coordinated similar studies and of tactful interaction with Government organizations. His tasks will be to :

- (a) be responsible for the overall coordination of the study; liaison with the Project Coordinator and the Leader of the Task Force, and Team leader of Study Team I; assignment of primary and secondary responsibilities for each task and coordination of output; acting as firm's representative on contractual matters; and assumption of overall responsibility for the timely finalization of the inception, interim and final reports.

- (b) assume primary responsibility for economic analysis, wherever involved, and for the institutional reorganization of the KNTC and KSA; economic analysis of sugar and cane production, price levels, and imports, working out economic levels of production and imports to be targeted for over the next 10 years; reorganization of KNTC; restructuring of KSA, with a view to strengthening its technical wings, redefining its role as a link between the private sector and the Government and serving as the primary advisory body of the Government in respect of the sector.

2. **Financial specialist** (approximately 4 manmonths)

This consultant should have at least five years' experience in a sugar company in a managerial position or in sugar consultancy, either with a firm or independently. Tasks will include :

- (a) analysing the balance sheets of all sugar companies for the last five years up to June 1992, and compilation of the balance sheet and profit and loss account for the year ending 30th June 1993, in advance of audit;
- (b) reviewing the impact of Government policies on pricing and marketing, (with inputs from the Marketing Specialist), as reflected in the financial status of the enterprises;
- (c) establishing a format for compilation of the cost of production (separately for the cane production and milling), with special reference to cost centres and allocation of overheads;
- (d) preparing projected balance sheets and profit and loss accounts for each company for the next five years (to June 1998);
- (e) designing a format for the determination of costs of efficient production for the industry on a national scale, and revenues, for the use of the Government.

3. **Sugar Technologist** (approximately 4 manmonths)

The sugar technologist should have at least five years' experience in a sugar company in positions equivalent to a factory technologist supervising shift technologists. Tasks will be :

- (a) assessing the technical performance, in milling and boiling houses and analysing factors affecting optimum performance;
- (b) assessing the remedial measures under implementation or under consideration, and propose a package of corrective steps needed;

- (c) evolving norms for the efficient operation of the milling and boiling stations, and for overall factory time and process efficiency, material usage and steam consumption (this will take account the differences in the fibre and sucrose content of cane in various estates);
- (d) providing data for the computation of the costs of efficient factory operation, breaking them down into appropriate cost centres;
- (e) examining and commenting on the proposals for modernization or expansion of the sugar factories particularly linking these proposals to the maximization of steam efficiency, for bagasse savings, and to environmental concerns regarding liquid and solid waste and gaseous emissions, and recommending abatement measures;
- (f) examining the potential and prospects for by-product utilization, i.e. bagasse and molasses.

4. Sugar Agronomist (approximately 4 manmonths)

The sugar agronomist should have specialization in sugar cane agronomy with at least five years' experience in sugar cane field management in a senior management position, and in dealing with small farmer outgrowers. Tasks will include :

- (a) reviewing the historical production and yields of the cane sector;
- (b) assessing the yield gaps between outgrowers and estates, and among estates themselves and suggesting further research possibilities;
- (c) reviewing the organization of sugarcane and sugar research, identifying constraints and drawing up the terms of reference for further studies;
- (d) reviewing the current practice of price determination and identifying its impact on efficiency of growers under different circumstances and suggesting measures for payment based on cane quality, for compensating growers as a group for performance above norm (or penalties for below norm), and provision of inputs;
- (e) providing guidelines for the valuation of land the standing crop;
- (f) reviewing existing institutions, and providing inputs to the team leader on the organization of outgrowers, and their credit requirements.

5. Sugar Marketing Specialist (approximately 4 manmonths)

This consultant should have at least five years' experience in a sugar firm in top managerial position or in consultancy with a sugar consultant firm or independently. He will have a proven record of knowledge and experience in domestic and international marketing of sugar, including the working of the London and New York sugar terminal pricing mechanics, and shipping and freight. His tasks will be to :

- (a) review the current pricing pattern for sugar at the producer, distributor and consumer levels and analysing the distortions;
- (b) analysing consumption patterns and trends, and suggesting a level of consumption that should be targeted, to serve as a guide for production and imports;
- (c) analysing the situation likely to prevail in a liberalized market, i.e. consumer and producer price movements and demand and supply situations;
- (d) specifying guidelines for setting efficiency prices for the sugar producers (considering import parity price and the cost of efficient production), and analysing the levels of consumer prices in different areas that would be justifiable on reasonable distribution margins, and examining the potential for using imports as a regulator to correct market distortions;
- (e) reassessing the role of KNTC (including its organizational structure and staff reduction implications) in a liberalized environment by reviewing its current structure and activities under monopolistic conditions and defining a role that would take into account the maintenance of a national reserve stock, supply to remote areas, possible participation in trade on a competitive basis, and the possible lease/sale of warehouses to the private sector;
- (f) formulating a time table for implementing the reform measures needed.

