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UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Report on the Mission

To

The Republic of Sudan

From 29 Nov. To 15 Dec., 1991

Concerning

Formulation of project document on:
Rehabilitation & Restoration for eventual Privatization
of selected public industrial enterprises
(Phase I - Sugar Sub-sector)

Prepared by

Fayez F. Khadr
UNIDO Consultant

Vienna, January 1992

Backstopping Officer: Abu Zuhair

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I. INTRODUCTION

- 1- The mission was undertaken by Mr. Fayez Khadr UNIDO consultant, from 29 Nov. to 15 Dec. 1991 concerning the formulation of project document on:
Rehabilitation and restoration to eventual privatization of selected public industrial enterprises with the framework of the recent country programme of privatization.

- 2- Initial briefing with UNIDO Country Director (UCD) Mr. M. Garzelli, who arranged and facilitated all meetings with government officials.

- 3- After another briefing with the Resident Representative Mr. P. Janvid, The first official meeting was held with Mr. Tag El-Sir Mostafa, The Minister of Industry, The Government institution for the project. Present at the meeting were Mr. M. Garzelli, Dr. Hassan Taha, Director of the Technical Committee for privatization and Dr. Faisal Ossman, Director of Investment Public Enterprises. The Minister has identified the public sugar sub-sector as the first priority that to be considered by the project, and gave his immediate instruction to the General Director of the public sector to facilitate and arrange our meetings and visits to the Sudanese Sugar Production Co. and the four Sugar Estates, namely, Guneid, Sennar, Halfa and Assalaya.

- 4- Subsequently, the mission visited number of industrial enterprises, Ministries and organizations selected by the Government, and held discussion with their management, as well as bi-lateral consulting agencies and investment institution. The organization visited and persons met are listed in Annex (1).

- 5- The first draft of the project document was reviewed in detail on 9 Dec. with the UCD and with the Managing Director of the Sudanese Sugar Production Co. (SSPC). Based on these reviews, the project document was revised, the final version once more reviewed with the Managing Director of SSPC, UCD and finally on 14 Dec. with the General Director of the Industrial Public Sector Mr. Gaafar Hussain, who is representing the Ministry of Industry in this project matter and reporting directly to the Minister of Industry. Finalized project concept was given to the UCD to be handed over to Mr. Hussein as requested during the meeting, to be the base for the release of an official request to UNIDO, either directly to Vienna or through the UCD in Khartoum.
- 6- The consultant would like to express his special appreciation for the assistance by the UCD and by all Government officials and UNDP.

II. WORK CARRIED OUT IN REFERENCE TO JOB DESCRIPTION

- 7- The consultant basic guidance in the preparation and implementation of his mission to Sudan was his job description Annex (2). The following work was accomplished as per the described duties.
- (A)- The Ministries, Organizations, industrial enterprises and institutions visited and the Sudanese officials met, are listed in Annex (1).
- (B)- The documentation reviewed is listed in Annex (3).
- (C)- The enterprises to receive assistance through the project as PHASE-I has been identified and approved personally by the Minister of Industry in our meeting with him, namely, the Sudanese Sugar Production Co. and the four Sugar estates registered

under the holding company. (Guneid, Sennar, Assalya and Halfa), also attention was given to the National Sugar Training Center at Sennar. Other phases of the project will follow, based upon more enterprises that will be identified as to remain state-owned for the foreseeable future, with the framework of the recent country privatization programme.

- (D)- First draft of the project document was prepared and discussed with all concerned parties, i.e UCD, UNDP and Government officials: Based on their feedback and comments, the document was revised and draft was finalized, job descriptions for experts and consultants, workplan and UNIDO budget (Direct Cost) were also prepared.

III. RELEVANT COMMENTS CONCERNING THE PROJECT

- 8- The environment in which the project will operate, and some examples of the problems of industry with which the project will have to deal with, are attached in Annex(4).
- 9- The project document gives a relatively tight overall time-frame-work for implementation (See Annex 1. - workplan of the project document).
- 10- The Institution set-up of SSPC is shown in Annex (5).
- 11- Statistics and trend analysis, tables and graphical representation for all four sugar producing estates are shown in Annex (6).
- 12- Breakeven analysis and Breakeven Chart for Guneid Sugar production estate is shown in Annex (7).

LIST OF PERSONS AND ORGANIZATION VISITEDMINISTRY OF INDUSTRY

Dr. Tag El-Sir Mostafa The Minister of Industry,
The chairman of Investment
Public corporation (IPC)

Mr. Gaafar Hussain Managing Director, Public
Sector Companies.

General spinning and weaving Co. Ltd.

Dr. Abdel Rahman Abdalla Ali Managing Director

Sudanese Sugar Production Co. Ltd.

Dr. Swar El-Dahab Eisa Managing Director

Guneid Sugar Co.

Mr. Ibrahim Habbani	General Manager
Mr. Saleh El-Zobier	Deputy G. Manager
Mr. A. Shampool	Assist. G. Mgr., Production
Mr. A. Khaled	Assist, G. Mgr., Agriculture
Mr. A. Hashim	Assist. G. Mgr., Finance
Mr. M. Sanhoury	Chief Engineer
Mr. E.A. Aly	Senior Engineer
Mr. M. Habbani	Chief Chemist
Mr. A. Ezz El-Deen	Senior Eng. Elect.
Mr. M. El-Kenzy	Assist. Manager agriculture workshop

Sennar Sugar Co.

Mr. El-Akeb Soliman	Deputy, G. Mgr. and
	Assist. G., Mgr., Production
Mr. Yousif El-Tayieb	Assist G. Mgr., Finance
Mr. Ismail Isaac	Assist. Mgr., Workshop

Sennar Industrial Training Center

Mr. Fathi Bishir	General Manager
Mr. Galal Hassan	Chief Engineer
Mr. Ossman El-Shikh	General Manager, Halfa Sugar Co.

Sugar Project Implementation Committee (SPIC)

Mr. Mohammed A. Hassan	Chairman, SPIC
Mr. Mohammed Abu-Shama	Procurement Manager
Mr. Asghar M. Elahi	Project Advisor

Investment Public Corporation (IPC)

Dr. Faisal M. Ossman	Director, IPC
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MINISTRY OF FINANCE AND ECONOMIC PLANNING

Mr. Abd El-Rehim Hamdy	Minister of Finance and Economic Planning
Mr. Al-Fateh M. Eied	Deputy Manager, Public Sector Administration
Mr. Yasin El-Mag	Assist Deputy, Public Sector Administration
Mr. Kamel Abd El-Aziz	Assist Deputy, Public Sector Administration

Technical Committee for Privatization

Dr. Hasan A. Taha	Director of the Technical Committee for privatization.
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UNDP

Mr. P. Janvid	Resident Representative
Mr. M. Garzelli	UNIDO Country Director (UCD)

Independent consulting Agency

Mr. F. Atabany	Chairman
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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

JOB DESCRIPTION

Post title: Expert in project formulation

Duration: Three weeks (0.7 w/m) two weeks in Khartoum, one day debriefing in Vienna and four days in Vienna for finalization of the project document.

Date required: 15 December 1991

Duty station: Khartoum

Purpose of project:

The manufacturing sector in Sudan has a great need for technical assistance support to the industrial enterprises to be privatized and modernized. The objectives of the project are the rehabilitation of the industrial enterprises that will remain state-owned for the foreseeable future in order to increase industrial outputs and employment, improving the trade balance, improving of management performance or in some cases contracting-out the management in the private sector.

Duties:

In cooperation with the UNDP/UNIDO and the Government authorities, and with the framework of the privatization programme currently being implemented, the consultant will formulate a project document on:

- Restoration to eventual privatization of existing public industrial enterprises;
- Improvement of management performance or contracting-out.

1. Briefing in Vienna: The consultant will be briefed on a) methodology and procedures for the formulation of a UNDP project and b) ongoing and pipeline projects with Sudan.

Applications and communications regarding this Job Description should be sent to:

Project Personnel Recruitment Branch, Department of Industrial Operations
UNIDO, Vienna International Centre, P.O. Box 300, A-1400, Vienna, Austria

2. In Khartoum:

- He will meet and discuss with industrial Sudanese officials as well as with UNDP in order to review the industrial sector and identify main areas concerned by rehabilitation or by divestiture, to obtain an idea on rehabilitation projects funded and implemented by other international organizations (objectives and outputs).
- Prepare the first draft of the project document for rehabilitation with the framework of the privatization programme.
- Discuss the first draft with concerned parties and collect their comments.

3. In Vienna:

- Finalize with IMRB the project document and prepare all annexes (job descriptions, terms of reference, workplan, ect.)

Qualifications: Economist, specialist in industrial rehabilitation with experience in the formulation of project documents.

Language: English

Background information:

The medium-term economic recovery programme, which included a new set of policies and action measures, has outlined the main following objectives:

- revitalization of the Sudanese economy;
- enhancement of the role of the private sector (national and foreign) to play a more active role in all areas of economic activity;
- improvement of economic environment (market organization and pricing policies, monetary and fiscal policies, credit allocation, foreign trade and exchange rates).

The industrial sector in the Sudan, which has been neglected for the last ten years with serious consequences on production and performance (capacity utilization 15-25%, lack of necessary investments and spare parts, etc.), as a part of the national economic salvation programme, lays emphasis on:

1. - Restoration, revitalization, strengthening and development of existing private and public enterprises, namely in the agro-industries sector.
 - More dynamic small-scale industry development with special incentives for private sector involvement.
2. Privatization and improvement of management performance.

Thus, the industrial sector has a great need for technical assistance support to industrial enterprises which have to be turned around and modernized.

LIST OF
MAIN DOCUMENTS AND REPORTS CONSULTED
DURING MISSION

- 1- Appraisal Report. SUDAN. Sugar Rehabilitation project - World Bank 1984.
- 2- Sudan Sugar Rehabilitation project. Ministry of industry (SPIC), Annual work Programme 1991/92.
- 3- Sudan country profile 1991-92.
The Economic Intelligence Unit.
- 4- Public Enterprise And Economic Management Project, PEEMP SUDAN, the World Bank, 1987.
- 5- The SUDAN, towards industrial revitalization, Industrial Development Review Series, PPD. 132 UNIDO 1989.
- 6- The National Economic Salvation Programme (1990-1993).
The Government of Sudan, Ministry of Finance and Economic Planning.
- 7- Sudan, The Manufacturing sector, : setting the stage for restructuring.
The world Bank report No. 6475-su
- 8- Privatization Programme of Sudan, workplan proposal, UNIDO, 1991.
- 9- Report for the review of state-owned enterprises-Ministry of Finance and Economic Development republic of Sudan, Nov. 1990.
- 10- Public Enterprise and Economic Management Project.- Report on Diagnostic study of Cuneid Sugar factory-
BMB Management consultant, March 1990, the Netherlands.
- 11- Agreement for technical services on training under the Sudan sugar rehabilitation project - 1987 - SF/SUD/86/003
- 12- Technical services for training under the Sudan Sugar rehabilitation project - Proposal for phase II - SF/SUD/86/003
- 13- Draft of GOS assessment of the technical report of phase I and draft of phase II - SF/sud/86/003

The environment in which the project will operate

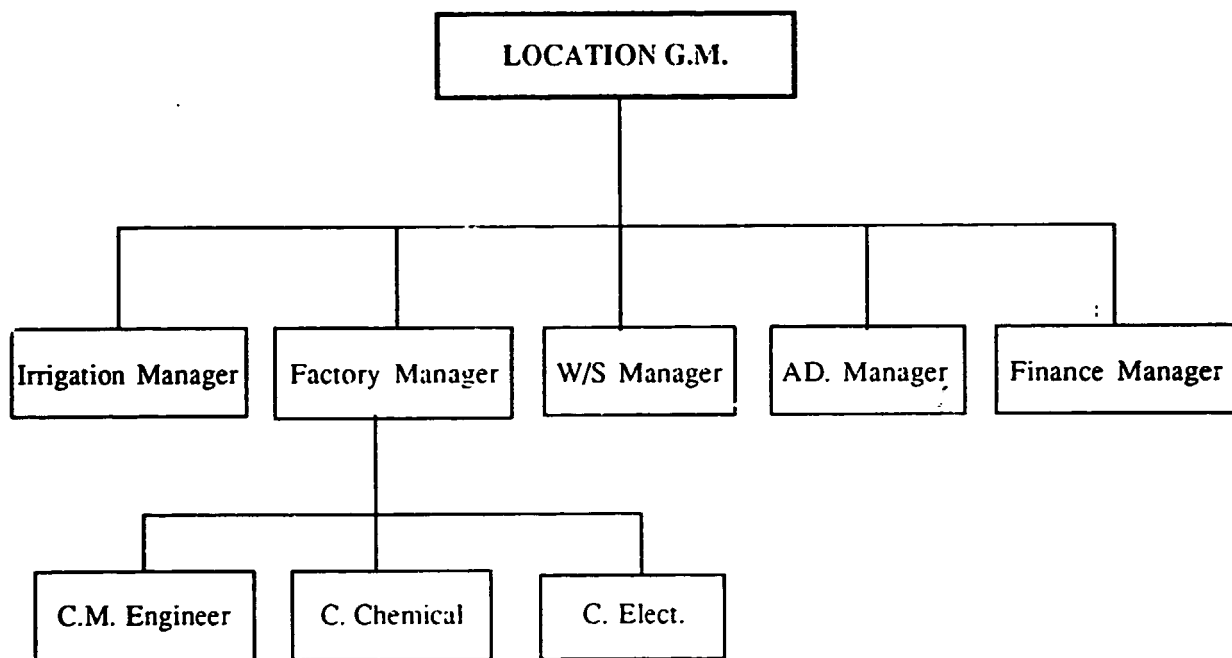
It should be pointed out that, due to the very short time available for visits and discussions with the management of the enterprises visited, the views expressed here should be regarded with caution. A truly clear picture can be only formed through detailed diagnostic analysis of the operations of each enterprise (Factory & Farm). Nevertheless, the comments made here could be useful to establish priorities to which operation should be scrutinized in greater detail.

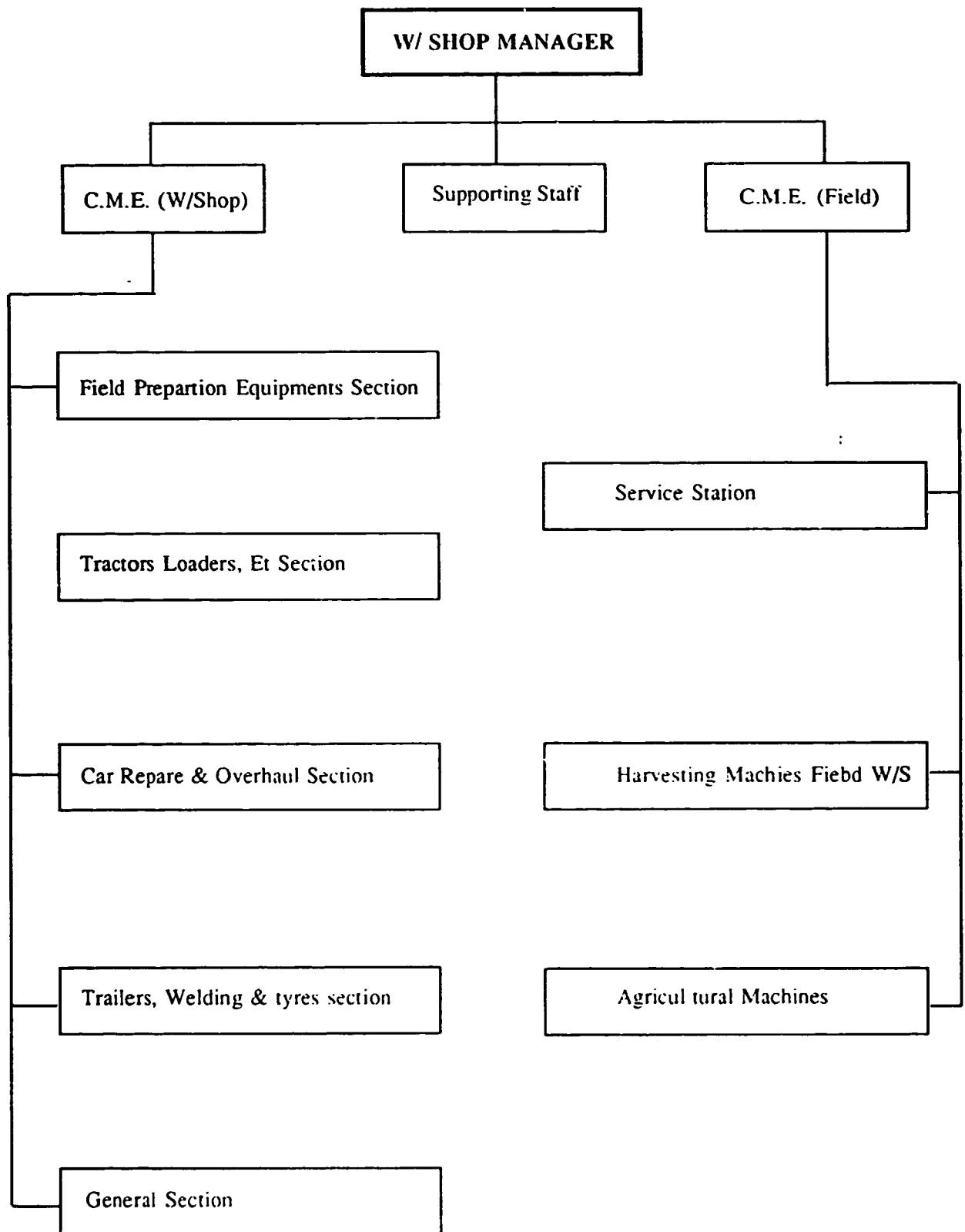
General Impression (Visit to Guneid & Sennar)

- Capital intensive equipment. Capacity utilization relatively low for variety of reasons. In several instances maintenance problems were mentioned either because of lack of spare parts, or because the specific maintenance expertise was not available.
- Profitability was reported to be generally low and losses were incurred due to low capacity utilization and pricing policies, generally speaking the production units are rarely in a position to recoup the full cost of production.
- Output has been affected by shortage in service equipment and tools for cultivation and harvesting of cane as well as shortages in complementary agriculture inputs.
- Shortages of foreign exchange have contributed to shortfalls in fuel, spare parts, technicians and equipment.
- Working condition have led to the loss of staff and skilled worker. Performance is also impaired by inadequate managerial, financial and technical systems.

- There are four main components that need attention:
 - 1- Physical rehabilitation.
 - 2- Measures to insure production inputs.
 - 3- Improvement of management performance, and engineers & technicians effectiveness.
 - 4- Organizational and financial restructuring in each estate, and effective institutional arrangement between the four estates, and their holding company.

- Statistics and analysis for the four sugar producing estates are attached in Annex (6).





BASIC DATA

FACTORY	START	CULTIVATED AREA IN 1000 ACRES	PROD CAPACITY IN 1000 TON		LABOUR		
			Design	Available	Permanent	Seasonal	Total
Guneid	62/63	37.5	60	60	1677	2975	4652
Halfa	65/66	37.0	75	75	2883	3400	6283
Sennar	76/77	31.0	110	80	2184	7850	10034
Assalaya	79/80	28.0	110	50	1790	5700	7490
Total		133.5	355	265	8534	19925	28459

SUDANESE SUGAR PRODUCTION CO.

SUGAR PRODUCTION 1981/82 - 90/91
IN 1000 TONS

YEAR	GUNIED	N. HALFA	SENNAR	ASSALAYA	TOTAL
81/1982	15.7	35.8	21.6	---	73.1
82/1983	20.8	37.7	41.3	31.6	131.4
83/1984	22.7	47.9	57.7	41.4	169.7
84/1985	14.9	61.20	68.9	47.3	192.3
85/1986	25.2	53.7	37.6	42.3	158.8
86/1987	28.9	48.8	47.8	46.7	172.2
87/1988	27.0	42.6	42.2	30.1	143.9
88/1989	22.6	28.7	44.1	26	121.4
89/1990	34.4	36.6	50.7	33.3	155.0
90/1991	40.2	43.8	58.8	37.6	180.4

**3-YEARS PROJECTED CANE AND SUGAR PRODUCTION
FOR THE FOUR SUGAR COMPANIES
(1990/91 - 1992/93)**

FACTORY	YEAR	HARVEST AREA (000) FED.	AVERAGE YIELD T/F	CANE PRODUCTION % CANE	SUGAR RECOVERY % CANE	SUGAR PRODUCTION (000) TONS	AVERAGE OURSHING RATE	SEASON DAYS
Quneid	90/91	18.0	26.0	470	9.0	42.3	2500	188
	91/92	19.5	27.0	530	9.3	49.3	2700	196
	92/93	20.0	30.0	600	9.5	57.0	2900	207
N-Halfa	90/91	18.0	29.5	530	9.0	47.7	2700	196
	91/92	20.0	32.0	640	9.3	59.5	2900	220
	92/93	21.0	33.0	690	9.7	65.0	3100	223
Sennar	90/91	22.5	28.5	640	9.0	57.6	3500	183
	91/92	21.7	32.0	690	9.2	63.5	3700	187
	92/93	24.5	34.5	850	9.3	79.0	3900	218
Assalaya	90/91	16.5	24.0	400	9.8	39.2	3100	129
	91/92	18.0	27.0	490	9.9	48.5	3200	153
	92/93	18.0	30.0	540	9.9	53.5	3300	164
Total	90/91	75.0	27.2	2040	9.2	186.8	2.9	696
	91/92	79.2	29.7	2350	9.4	220.8	3.1	756
	92/93	83.5	32.1	2680	9.5	254.5	3.3	812

**THE REVISED 3-YEARS PROJECTED CANE AND SUGAR PRODUCTION
FOR THE FOUR SUGAR COMPANIES
(1990/91 - 1992/93)**

FACTORY	YEAR	HARVEST AREA (000) FED.	AVERAGE YIELD T/F	CANE PRODUCTION (000) Tons	SUGAR RECOVERY % CANE	SUGAR PRODUCTION (000) TONS	AVERAGE OURSHING RATE	SEASON DAYS
Quneid	90/91	17.80	23.90	424.50	9.47	40.21	2,400.00	177.00
	91/92	20.01	24.16	483.60	9.70	46.91	2,500.00	193.00
	92/93	20.00	26.11	522.15	10.00	52.22	2,600.00	201.00
New Halfa	90/91	18.80	22.97	431.98	10.14	43.79	2,900.00	147.00
	91/92	21.30	25.00	530.00	10.00	53.00	3,000.00	175.00
	92/93	22.00	27.00	600.00	10.00	60.00	3,300.00	180.00
Sennar	90/91	22.14	28.30	626.50	9.38	58.79	3,742.00	168.00
	91/92	22.00	29.50	649.00	9.40	61.01	3,750.00	173.00
	92/93	22.00	31.00	682.00	9.75	66.50	4,000.00	171.00
Assalaya	90/91	17.16	22.35	382.06	9.87	37.73	2,894.00	132.00
	91/92	18.31	24.50	448.00	10.00	44.80	3,000.00	150.00
	92/93	19.20	26.60	510.00	10.00	51.00	3,200.00	156.00
Total	90/91	75.90	24.38	1,865.04	9.72	180.52	2,984.00	624.00
	91/92	81.62	25.79	2,110.60	9.78	205.72	3,062.50	691.00
	92/93	83.20	27.68	2,314.15	9.94	229.72	3,275.00	708.00

**FACTORY SPARES: AGRICULTURAL MACHINERIES & EQUIPMENTS
SPARES COST ESTIMATION TABLES**

BASIS: \$ 25 Per ton of sugar produced for factory spares

\$ 15 Per ton of sugar produced for agriculture W/S spares

FACTORY	YEAR	TOTAL SUGAR PRODUCTION (000. TONS)	FACTORY SPARE PARTS TOTAL EXPENDITURE \$ (000)	AGRICULTURE SPARES TOTAL EXPENDITURE \$ (000)	TOTAL
Guncid	90/91	42.3	1057.5	634.5	1692.0
	91/92	49.3	1232.5	739.5	1972.0
	92/93	57.0	1425.0	855.0	2280.0
M. Halfa	90/91	47.7	1192.5	715.5	1908.0
	91/92	59.5	1487.5	892.5	2380.0
	92/93	65.0	1625.0	975.0	2600.0
Sennar	90/91	57.6	1440.0	864.0	2304.0
	91/92	63.5	1589.5	952.5	2542.0
	92/93	79.0	1975.0	1185.0	3160.0
Assalaya	90/91	93.2	980.0	588.0	1568.0
	91/92	48.2	1212.5	723.0	1935.5
	92/93	53.5	1337.5	802.5	2140.0
Total	90/91	186.8	4670.0	2802.0	7472.0
	91/92	220.5	5522.0	3307.5	8829.0
	92/93	254.5	6362.5	3817.5	10180.0

SUGAR PER FEDDAN

<i>SEASON</i>	<i>GUNIED</i>	<i>HALFA</i>	<i>SENNAR</i>	<i>ASSALAYA</i>	<i>AVERAGE</i>
88-89	1.60	1.95	2.25	1.74	1.89
89-90	2.04	2.22	2.33	2.09	2.17
90-91	2.26	2.33	2.66	2.19	2.36
91-92	2.32	2.49	2.77	2.45	2.51

AREA HARVESTED (FEDDAN)

<i>SEASON</i>	<i>GUNIED</i>	<i>HALFA</i>	<i>SENNAR</i>	<i>ASSALAYA</i>	<i>TOTAL</i>
88-89	14131.00	14710.00	19650.00	14963.82	63454.82
89-90	16839.00	16551.00	21778.00	16006.23	71174.23
90-91	17757.00	18800.00	22135.00	17166.00	75858.00
91-92	20128.50	21254.00	22000.00	18311.00	81693.50

CANE HARVESTED (T)

<i>SEASON</i>	<i>GUNIED</i>	<i>HALFA</i>	<i>SENNAR</i>	<i>ASSALAYA</i>	<i>TOTAL</i>
88-89	263922.13	387850.60	536004.14	274838.00	1462614.87
89-90	340087.14	389952.50	553398.27	322145.00	1605582.91
90-91	424460.86	431983.20	626503.20	382058.00	1865005.26
91-92	484500.00	530000.00	649000.00	448000.00	2111500.00

SUGAR RECOVERY

<i>SEASON</i>	<i>GUNIED</i>	<i>HALFA</i>	<i>SENNAR</i>	<i>ASSALAYA</i>	<i>AVERAGE</i>
88-89	8.59	7.40	8.23	9.52	8.44
89-90	10.12	9.42	9.15	10.36	9.76
90-91	9.47	10.14	9.38	9.87	9.72
91-92	9.70	10.00	9.40	10.00	9.78

SUGAR PRODUCTION (T)

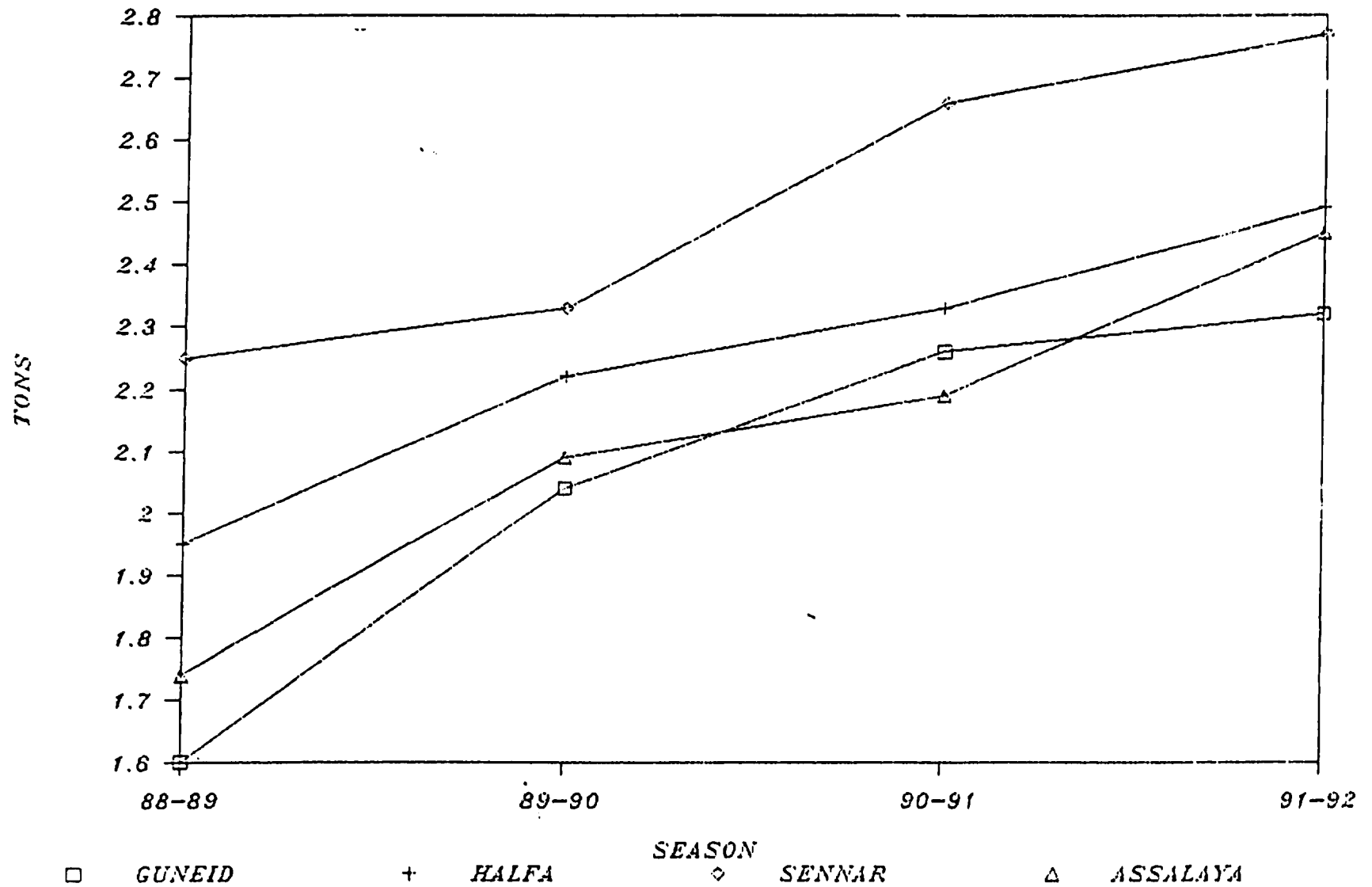
<i>SEASON</i>	<i>GUNIED</i>	<i>HALFA</i>	<i>SENNAR</i>	<i>ASSALAYA</i>	<i>TOTAL</i>
88-89	22673.80	28696.80	44115.00	26106.80	121592.40
89-90	34412.50	36722.90	50560.00	33379.00	155174.40
90-91	40207.00	43792.50	58788.80	37646.20	180434.50
91-92	46700.00	53000.00	61000.00	44800.00	205500.00

CANE YIELD (T/F)

<i>SEASON</i>	<i>GUNIED</i>	<i>HALFA</i>	<i>SENNAR</i>	<i>ASSALAYA</i>
88-89	18.68	26.37	27.28	18.37
89-90	20.36	23.56	25.41	20.13
90-91	23.90	22.97	28.30	22.26
91-92	24.16	25.00	29.50	24.50

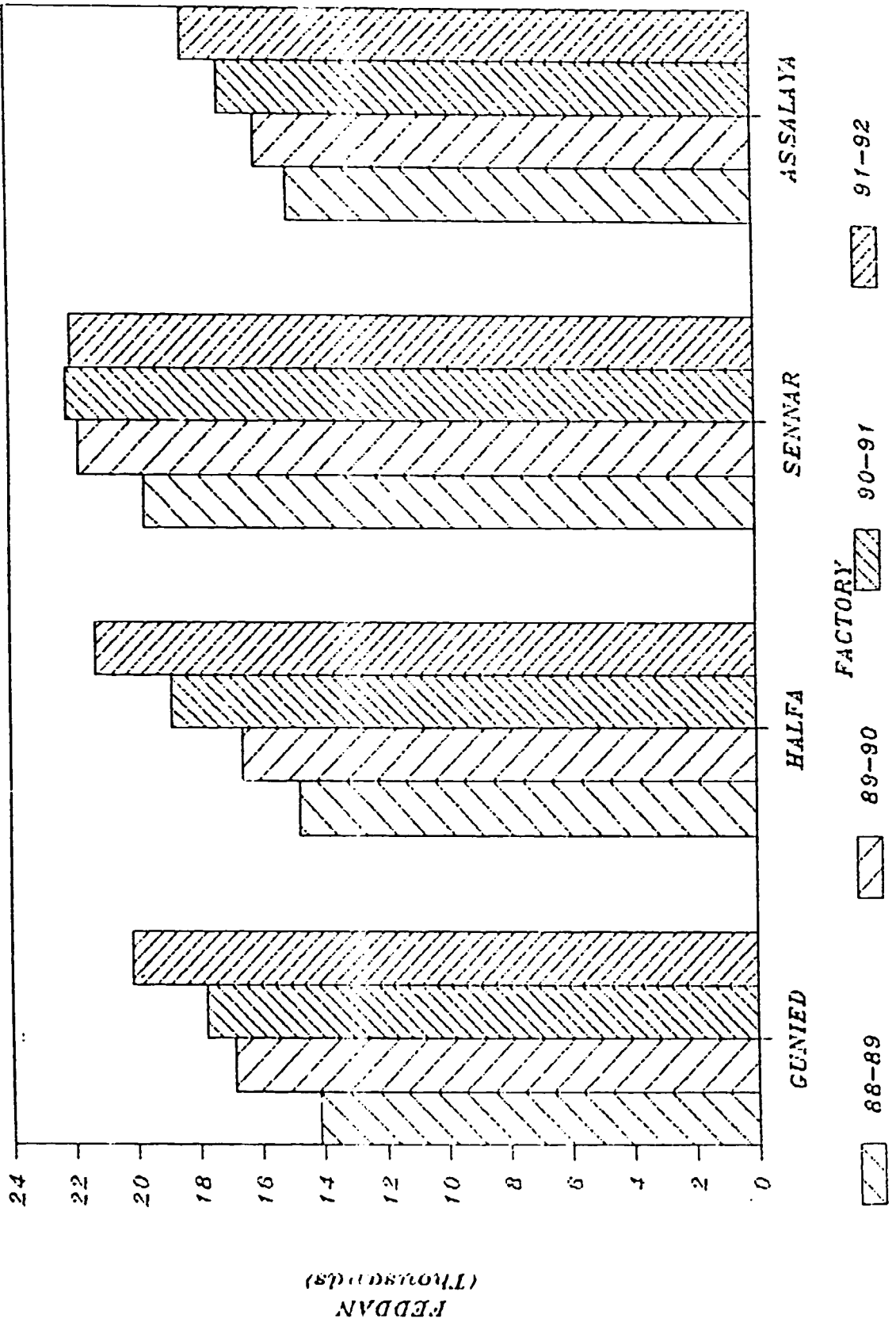
SUDANESE SUGAR PRODUCTION COMPANY

SUGAR / FEDDAN



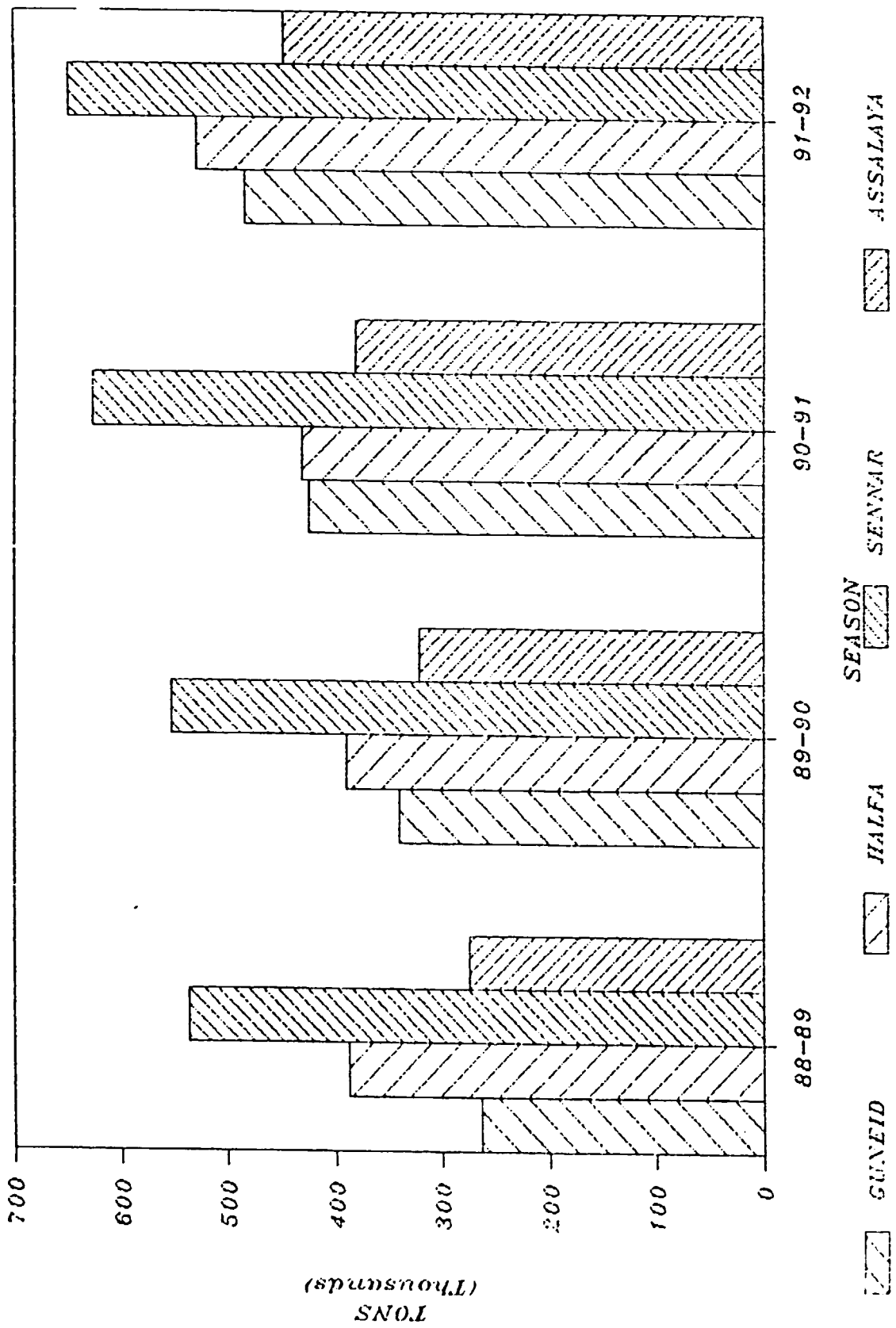
SUDANESE SUGAR PRODUCTION COMPANY

AREA HARVESTED (FEDDAN)



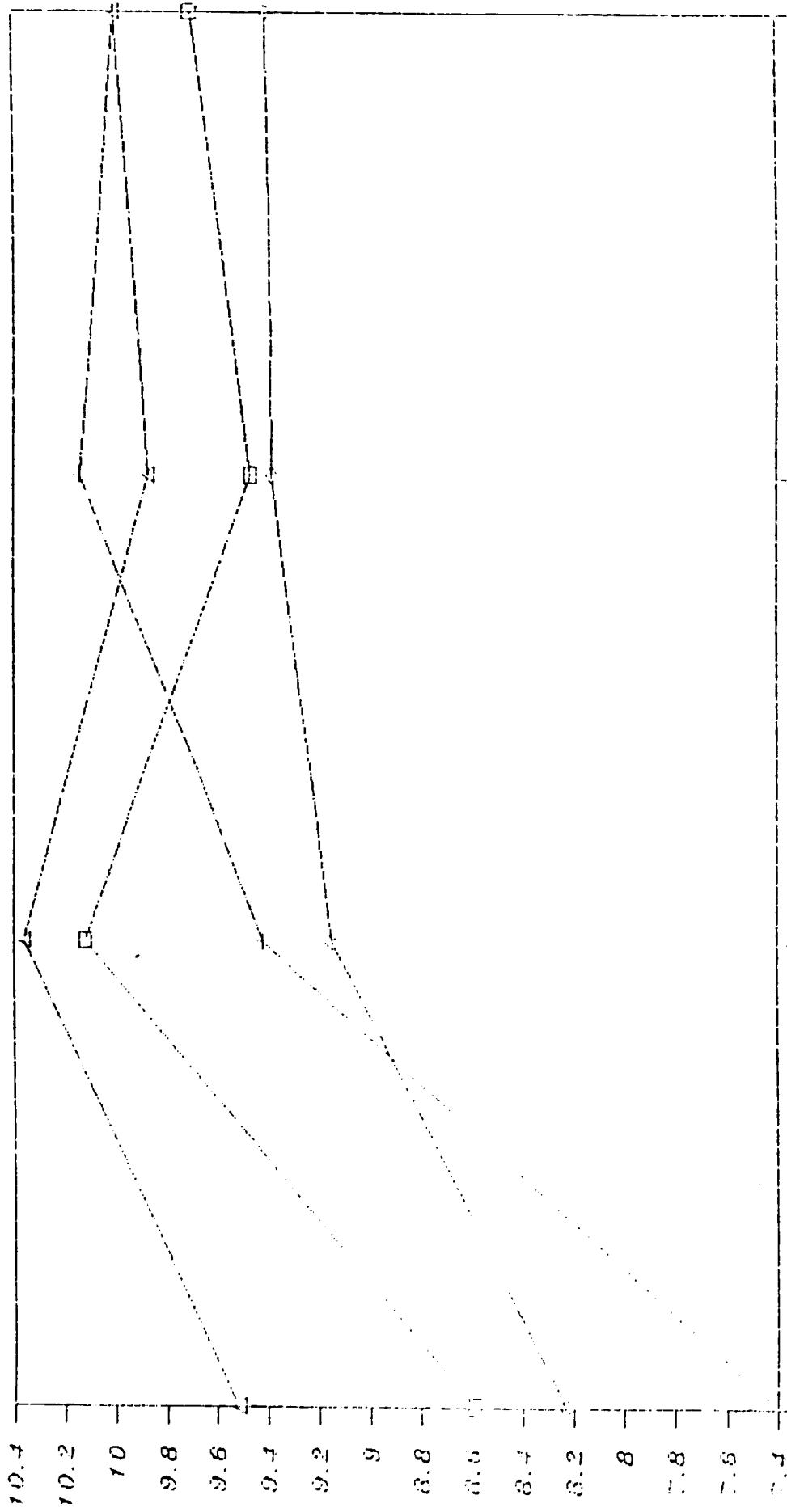
SUDANESE SUGAR PRODUCTION COMPANY

CANE HARVESTED (T)



SUDANESE SUGAR PRODUCTION COMPANY

SUGAR RECOVERY (%)



88-89

89-90

90-91

91-92

□ GUNIED

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HALFA

SEASON

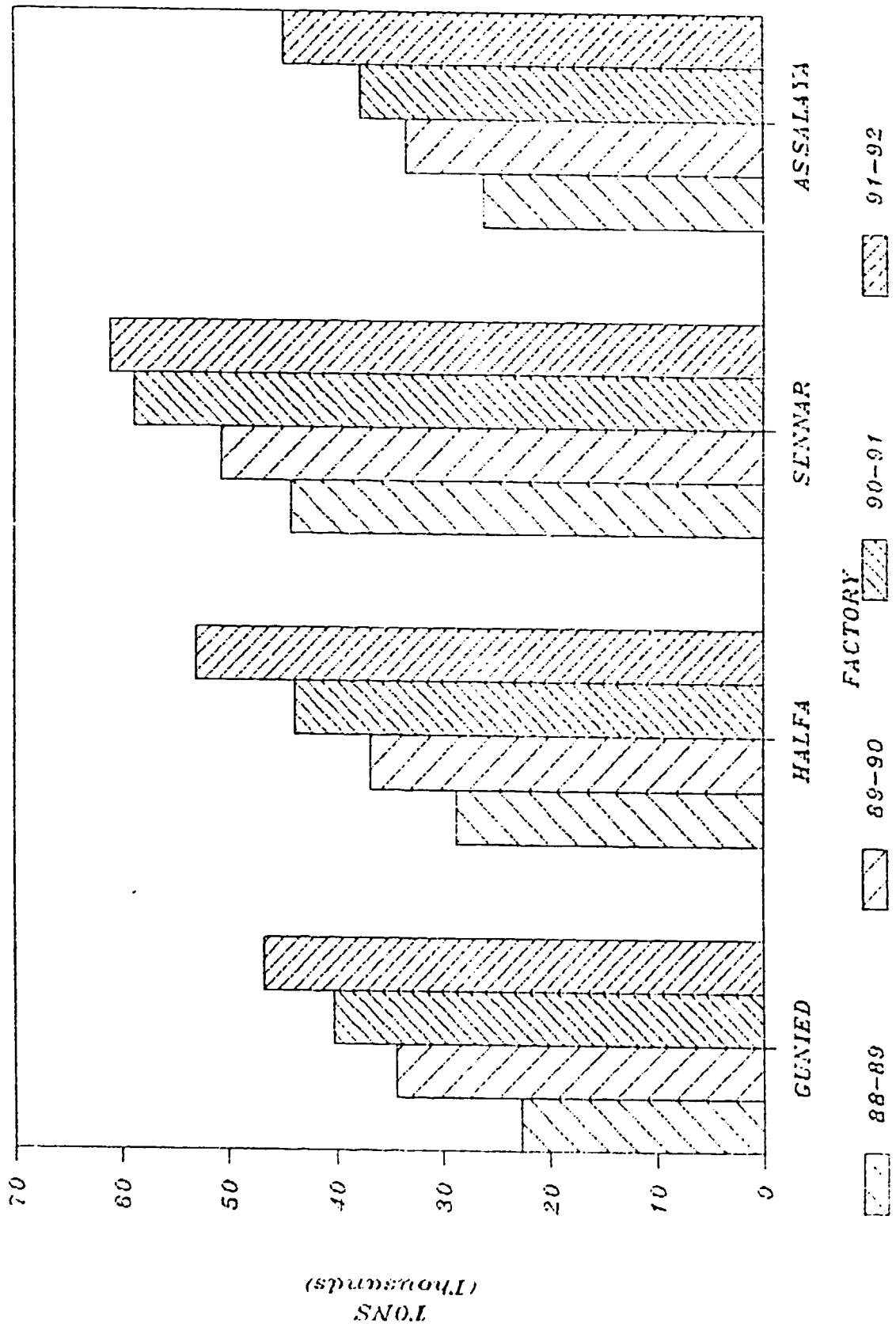
SENAR

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ASSALIM

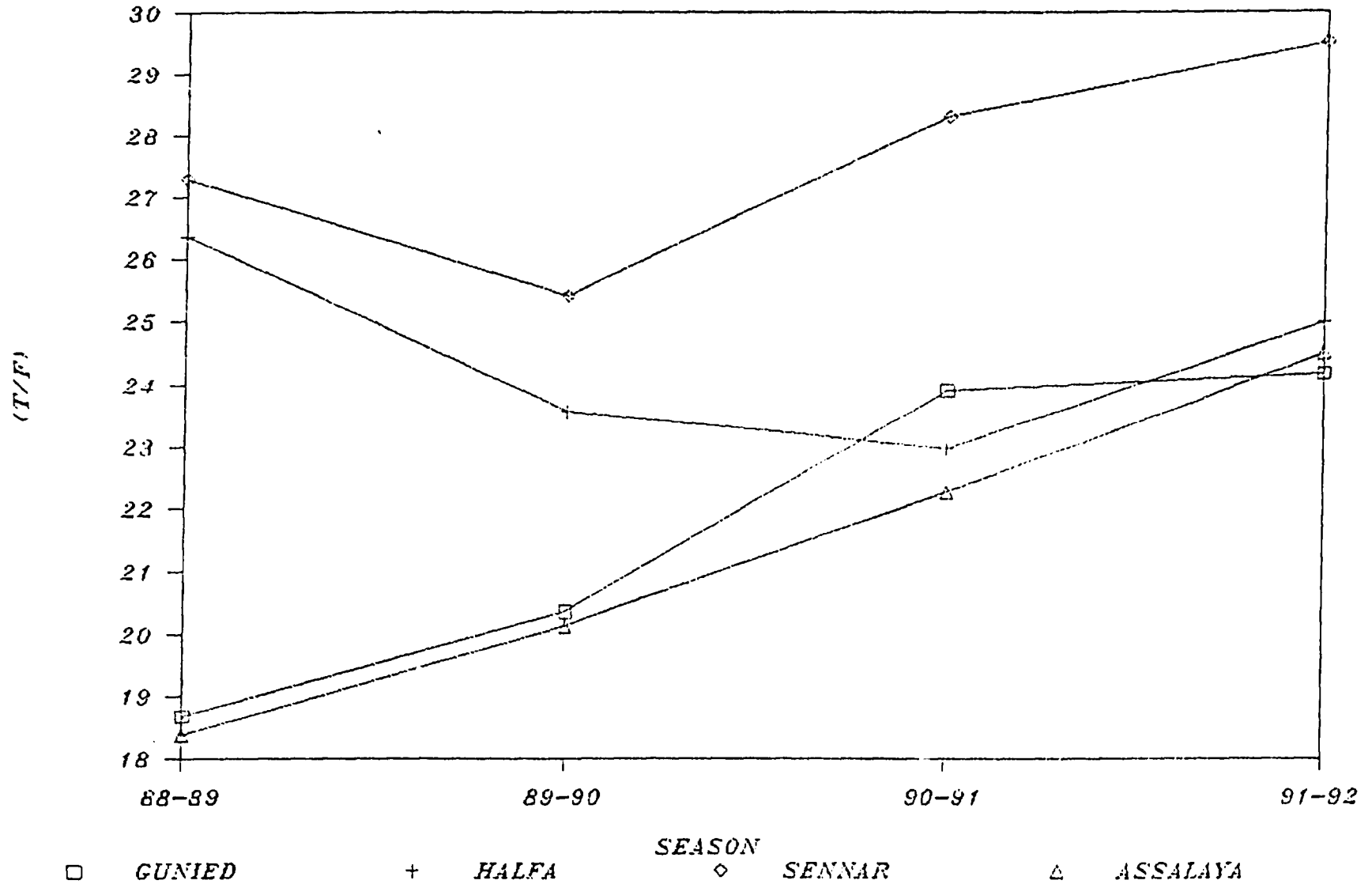
SUDANESE SUGAR PRODUCTION COMPANY

SUGAR PRODUCTION (T)



SUDANESE SUGAR PRODUCTION COMPANY

CANE YIELD (T/F)



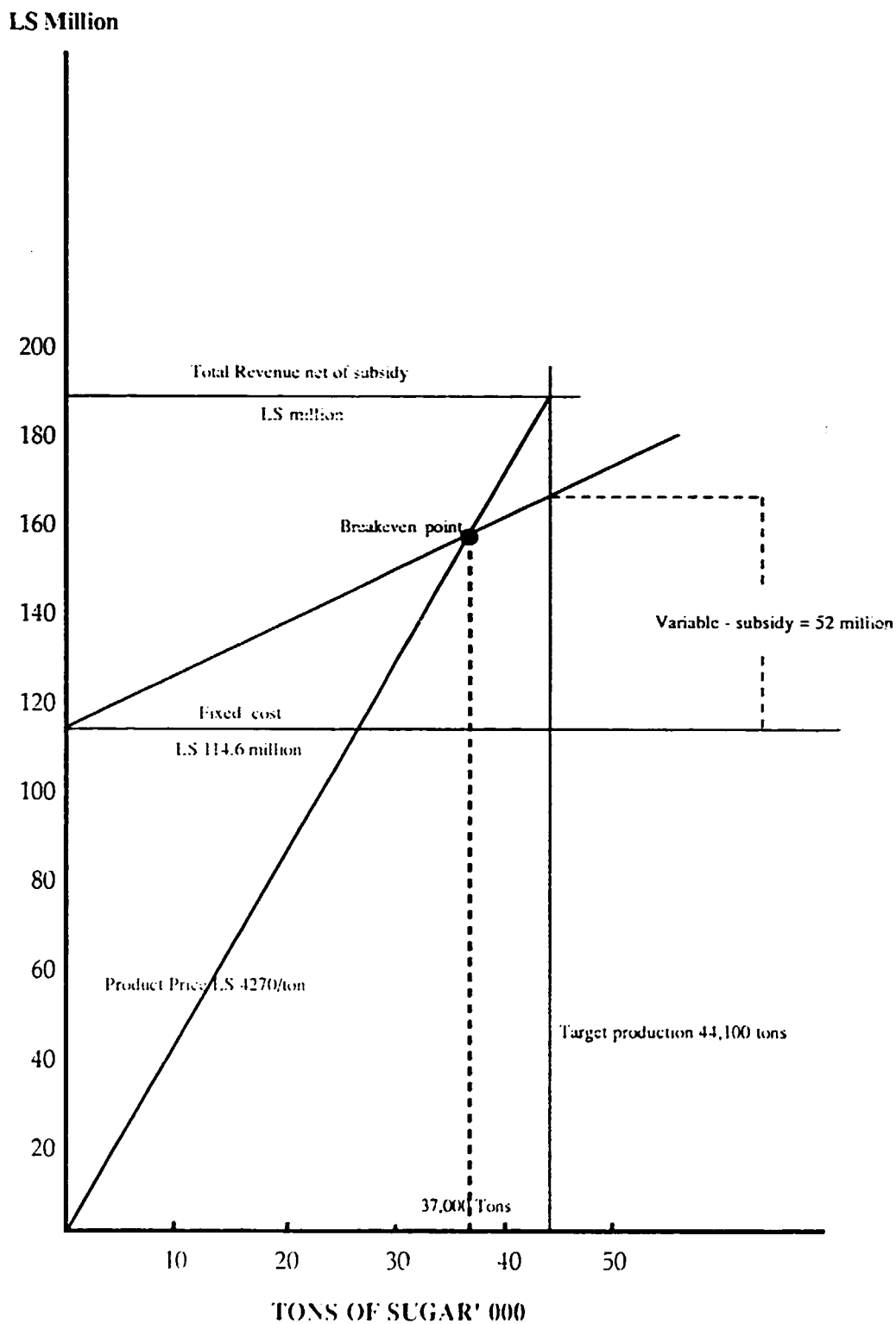
BREAKEVEN ANALYSIS (Guneid)**ASSUMPTIONS:**

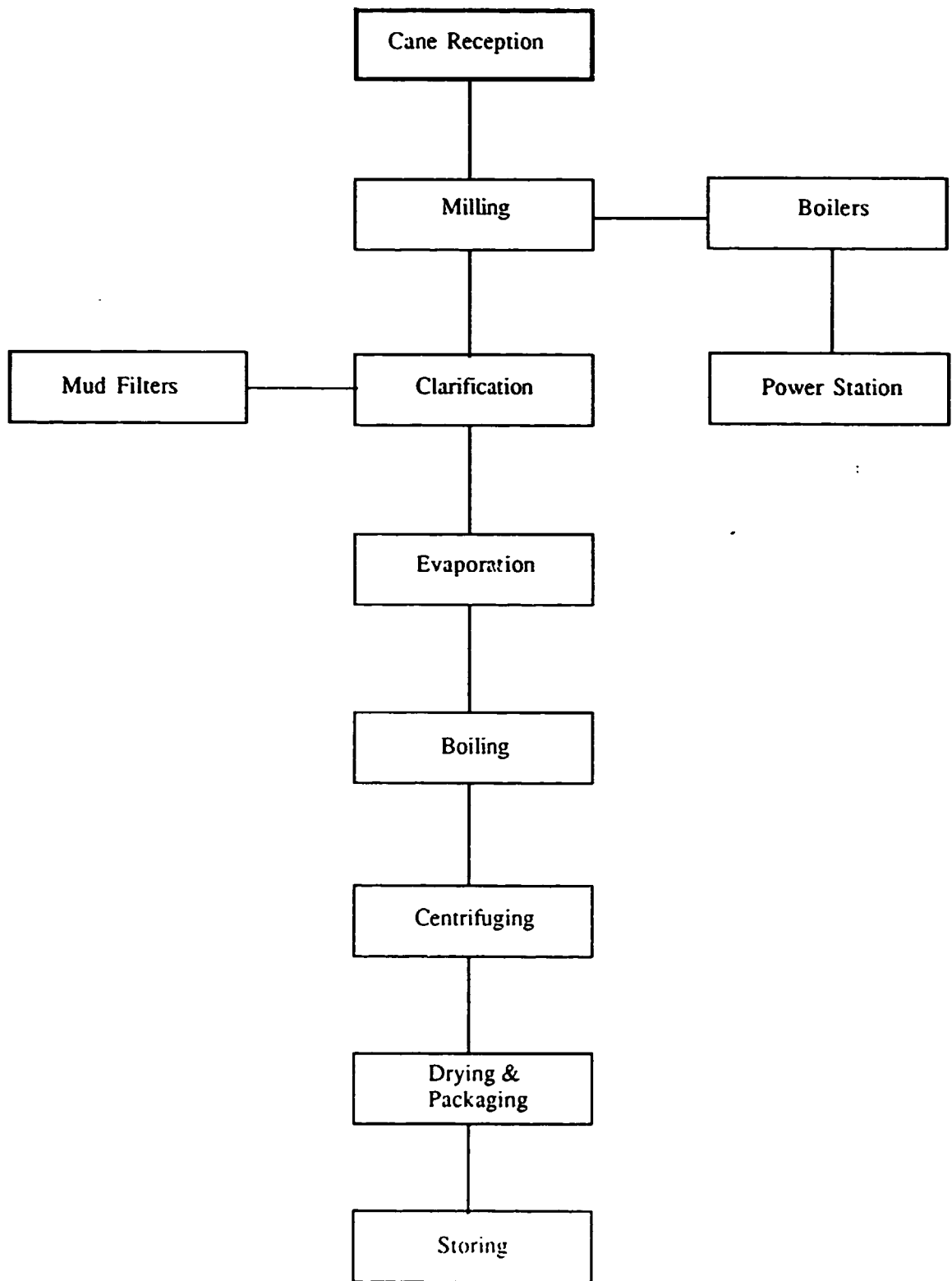
- The design capacity is 60,000 Tons/Year.
- The factory was founded in 1962.
- The real factory capacity in its present situation in a recent study is about 49,000 Tons.
- This calculations assumes 90% capacity utilization i.e 44,100 Tons.
- Assumed profit target is to obtain a 10% return on total equity (i.e shareholders funds). Estimated shareholders funds after revaluation is LS 212.9 Million (World Bank). Thus, target assumed as LS 21 Million.

CALCULATIONS:

	LS'000
Fixed cost	114,600
Variable cost (44,100 Tons @ LS 1579/Ton)	69,634
Profit target	21,000
	<hr/>
Total Revenue	205,234
Less "subsidy" (44,100 Tons @ LS 383.85/Ton)	(16,928)
Total Revenue net of subsidy	188,306
<u>Price</u>	<u>Per ton</u>
Without subsidy	4,654
With Subsidy	4,270

Breakeven Chart (With Subsidy)





Cane Sugar Manufacturing Process Flow