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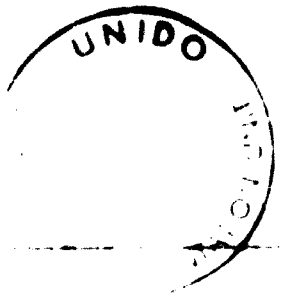
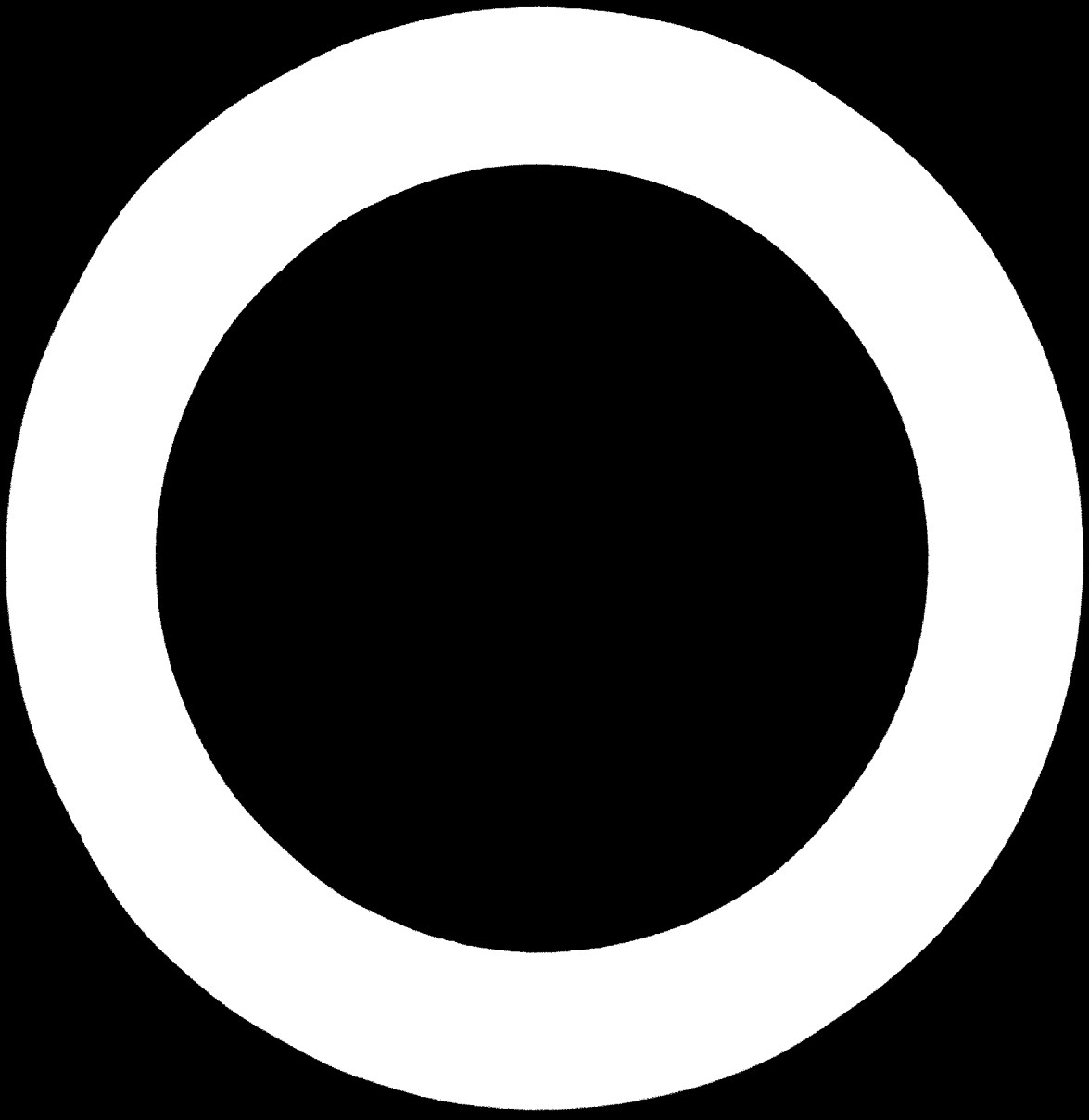
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org





ANNEXURE

DIAGRAMS

VOLUME I

FOREWORD

The work on the Industrial Survey of Somalia commenced with the arrival of Mr. Abdel Malek Ben-Amor, UNIDO Staff Member, on 10 January 1973, along with the UNIDO Field Expert, Mr. P.K. Chattopadhyaharan, Industrial Economist, working in the Ministry of Industry. Mr. D.K. Malhotra, Industrial Economist, joined the Survey Team on 20 January 1973 and Mr. M.V. Divatia, Industrial Economist, on 4 February 1973. Mr. Ben-Amor left on 7 February 1973. Mr. P.V. [illegible], Industrial Engineer and Mr. I. Plas, Agro-Industry Expert, joined the Survey Team on 10 and 13 February 1973, respectively. The Somali counterpart staff was assigned, as and when [illegible] field. Messrs. Hassan Farah ALI 'Geeraf', Sharif Awes Mire, Ismail Mohamed Aden, Economists, Mr. Ibrahim Sheikh Isse, Industrial Engineer, and Mr. Ahmed Yusuf Said, Mechanical Engineer, formed the counterpart national staff. Mr. Hassan Farah Ali 'Geeraf' [illegible] attend a UNIDO Seminar on 16 March 1973. Mr. Ibrahim Sheikh Isse ceased to be a counterpart consequent to his transfer to the newly created Ministry of Fisheries on 17 April 1973 and Mr. Ahmed Yusuf Said left the Ministry on his appointment as Manager of the Milk Processing Factory on 13 May 1973. Mr. Malhotra left Mogadiscio on 16 May and Mr. Badami on 31 May. Mr. Plas and Mr. Divatia left on 1 June. The report was finalised on 10 July 1973.

The scope of the project work is to:

a) study all existing industries, resources, infrastructure facilities;

b) identify industrial opportunities in the country;

c) prepare pre-investment project data for identified projects;

d) establish the priority order among the recommended projects;

e) advise on both the long-term and short-term strategy and programme for industrial development of the country with particular reference to the National Development Programme for 1974-78.

The Survey Team along with their counterpart staff visited the industrial establishments in Mogadiscio, Jowhar, Merca, Barao, Hargeisa, Bossaso and Kismayo Regions and held discussions with the various Ministries and Departments of Government, the Managements of Industrial Units and the people engaged in the field of industry. The experts also studied the various material made available to them.

A preliminary report incorporating the studies, findings, and recommendations of the Survey Team up to the end of March 1973 was submitted on 8 April 1973 mainly to facilitate preparation of the industrial plan for 1974-78 by the Ministry of Industry. This report embodies the final findings, views and recommendations of the Survey Team.

SUMMARY OF RECOMMENDATIONS

a) An appraisal of the implementation of the Development Programme 1971-73 has brought out that, while the financial outlay of the programme may, by and large, be realised, notwithstanding the deletion of two major projects and spill over of three and four projects to the next plan period, the implementation of the strategy and policy laid down in the programme, especially the key role assigned to the Ministry of Industry in administering them may suffer mainly on account of the inherent deficiencies - institutional, legal, procedural, and human resources of the controlling Ministry. The long contemplated re-organisation of the Ministry of Industry and the strengthening of the necessary technical personnel and assistance has to be expedited, if ambitious programmes of industrial development and further diversification of industrial programmes are to be realised.

b) The country has vast land, low density of population, is rich in livestock and poultry, fish, agricultural and mineral resources. Development of the natural resources through a crash programme in the next five to seven years will raise the living standards of people substantially, reduce the trade and balance of payment deficits, and enhance the country's foreign exchange resources. In the long run, over the next ten to twenty years, intensive development of mineral and metal resource will accelerate the industrial and economic growth of the country.

c) Basic infrastructure facilities like electricity, water, communication exist to support the existing industries. These need to be developed in an integrated manner to facilitate faster development of industrial projects and to realise higher industrial growth in the next five to ten years.

d) The existing industrial structure is characterised by an uneven distribution among the various regions of Somalia and the higher industrial concentration in one or two regions, as compared to other parts of the country, the backwardness of few regions, though gifted with natural resources, lack uniformity and consistency in the spread

of infrastructure facilities etc. This needs to be corrected and remedied, while planning for future industrial growth. Suitable location of identified industries, equitable dispersion of new infrastructure facilities to be created between the regions, preference to the most backward regions etc. may go a long way to remove the existing disparities in industrial growth among the regions. Creation of industrial complexes may also help speedy development of a particular region.

e) The overall objective for economic development could be the realisation of an annual compounded rate of 6% growth per annum for the next five years - 1974 to 1978 - and the target for industry being 15% per annum. The broad strategy should include, inter-alia, development of natural resources, harmonisation of the short term and long term objectives of the manufacturing and other sectors, harmonisation of external and internal trade with the requirements of industrial sector, development of capital intensive industries and adoption of modern and sophisticated technology, demarcation of areas for industrial development by public and private sectors, improving the management and maximisation of the efficiency and profitability of the public sector enterprises, a new policy and programme for development of medium, small-scale and small industries (including traditional industries), optimum combination of Regional dispersion and concentration around industrial complexes, liberalisation of fiscal policy and laws for promoting private investment - domestic and foreign, enactment of a comprehensive law for promotion and regulation of industries and above all creation of necessary institutional and other facilities in the Ministry of Industry for industrial management of public sector enterprises and for industrial planning, programming and implementation. A draft industrial law is proposed at the instance of the Ministry of Industry.

f) The main criteria adopted for selection of identified industrial projects are total net direct and indirect foreign exchange gain (or loss) over a period, income added value potential and per unit of employment potential. However, a pragmatic approach has been brought to bear on candidate industries for assigning the order of preference. 26 industrial projects, 61 project ideas, and a five year programme for development of medium, small-scale and small industries (including handicrafts) have been identified.

g) Identified industrial project[illegible] character - food processing industries, [illegible], flour, pasta, banana powder, industries for [illegible] of livestock and fish, oil processing [illegible] oil extraction), cattle feed industries, [illegible] (foundry and nails manufacturing), textiles, mineral industries (salt, gypsum), packing industry ([illegible] bags manufacturing), leather industries ([illegible] building material industry (cement and cement product, [illegible] wall tiles) etc. Feasibility data for [illegible] by the Survey Team. The programme for [illegible] small industries (including traditional [illegible] financial and technical assistance for [illegible] targets. Several project-ideas covering a variety of industries - oil refining, mineral and metal based industries, engineering industries, consumers goods industries, chemical [illegible], paper stationery and office equipment, packing materials, [illegible] of consumer goods and essential household articles, etc. are also proposed for further studies.

h) The Ministry of Industry has included twenty-two projects identified by the Survey Team in the Development Programme for 1974-78. While seven of them relate to rehabilitation, improvement, or expansion of existing public sector industries, the remaining sixteen projects are the new projects for which feasibility studies are available. The total financial outlay estimated for the proposed projects is of the order of So.Sh. 40 million. The working capital requirements of the new projects will be around So.Sh. [illegible] million. The new industries will yield an additional output (value added) of nearly So.Sh. 130 million by the end of the plan period (1978), raising thereby industries' total output to So.Sh. 230 million. Through import substitution and increased earnings, the projects are expected to realise net foreign exchange gain of So.Sh. 40 million. The pay-back period of the new investment is calculated at five years. The manpower requirements of the proposed projects will be 2855 persons, of which the technical and skilled personnel will constitute 41%, which will call for both special efforts for recruitment and training at home and technical assistance from abroad.

1) Technical assistance for strengthening the Ministry of Industry, development of small-scale industries and short-term expertise for preparation of feasibility studies on selected project-ideas for implementation, selection of technology equipment and machinery contracted for setting up industrial projects, industrial technology, surveys and preparation of design drawings will be needed by the country in the next few years.

CHA[illegible]

S[illegible]

I. Economic Setting:

1. The land area of Somalia [illegible] ,000 [illegible], [illegible] its population [illegible] million. Somalia is thus a country [illegible] population density, less than [illegible] low pressure of population on land, [illegible] standards among Somali [illegible]. However, [illegible] made barriers prevented growth of [illegible] when organized efforts were initiated to over[illegible]. Scarcity of water, [illegible] country [illegible] settled [illegible] created a large peripatetic population wandering [illegible] more [illegible], and in search of [illegible]

2. Absence of railways, [illegible] means of communication, low level of literacy, lack of [illegible] craftsmen [illegible] technical and skilled operatives, [illegible] of research and investigation to [illegible], [illegible] better and more livestock and poultry, [illegible] hidden minerals, [illegible] power [illegible], [illegible] barriers to growth. Above all, centuries of foreign [illegible] exploitation cannot but deepen [illegible] initiative and enter[illegible] people of the land. Foreign exploitation [illegible] low incomes, low levels of consumption, [illegible] scant capital accumulation. [illegible] barbaric, and halting. Lack of [illegible] expanding population resulted in heavy [illegible] goods, which despite exports of banana, live animals, [illegible], led to continually increasing trade and balance of [illegible] deficits, consequent drain of national wealth, and progressive [illegible] people.

3. However, since 1960, when [illegible] became an independent [illegible] through deliberate efforts at improvement, economic deterioration has been giving way to economic progress at a slow and uncertain pace in the early post-independent period, (1960 to 1967), and thereafter, specially since

[illegible] , [illegible] . [illegible] of foreign [illegible] , [illegible] , [illegible] for Gambia, [illegible] relative to country's population, are highly uncertain and [illegible] to be treated with caution. However, a careful assessment of export [illegible] , in conjunction with various measures taken by the Government to improve agriculture and livestock, indicates that during the period , [illegible] , real output in Agricultural and Livestock sectors, probably increased at an annual compounded rate of 3.5 to 4% (see Appendix I). A survey of factory type manufacturing units done by the Statistics Department of the Ministry of Economic and Co-ordination, indicates that the real output in the sector possibly increased at a rapid rate of about 20 per cent a year, over the same period, as shown below:

[illegible] SMALL [illegible]

Industry Group	No. of Estab. 1967	No. of Estab. 1971	No. of persons engaged 1967	No. of persons engaged 1971	Value added D. [illegible] millions 1967	Value added D. [illegible] millions 1971	Net [illegible] D. [illegible] millions 1967	Net [illegible] D. [illegible] millions 1971	Value [illegible] [illegible] [illegible] 1971
Food Manufacturing Industries	17	28	1,[illegible])	[illegible]	[illegible]	4.1	41.8	1[illegible].8	[illegible]
Beverages Industries	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Manufacture of Textiles	20	7	930b)	[illegible]	0.4	1.4	1.1	10.[illegible]	[illegible]
Leather + Footwear Industries	8	11	105	28[illegible]	0.6	1.2	[illegible]	2.[illegible]	[illegible]
Furniture + Fixtures	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	1.[illegible]	2.2	[illegible].7	10.7
Printing , Publishing Industries , etc.	[illegible]	[illegible]	[illegible]	[illegible]	0.[illegible]	4.7	1.7	7.0	[illegible]
Other Chemical Products	[illegible]a)	[illegible]	33	15[illegible]	0.1a)	1.2	1.0a)	[illegible].[illegible]	[illegible]
Structural clay Products + Lime	1[illegible]	[illegible]	[illegible]0[illegible]	[illegible]03	0.2	[illegible].[illegible]	[illegible].5	2.7	122.4
Metal products	[illegible]a)	10	42	10[illegible]	0.2a)	0.4	0.5a)	0.7	29.5
Jewellery etc.	8	10	57	87	0.2	0.2	0.7	0.7	nil
Industries n.e.c.	6	6	[illegible]15	[illegible]2	6.0	1.4	[illegible].7		
All	[illegible]22c)	[illegible]87c)	3736	6205	44.5	114.1	64.0	196.4	

a) in 1968 (b) in 1970 (c) Exclusive of 8 establishments engaged in electricity productions.

a) Covers units employing five or more persons.

Source: Tabulated from 1) [illegible] - [illegible] Department [illegible] and 2) [illegible] Volume I United Nations.

Note: Allowing for [illegible] increase in price over the period [illegible] and [illegible] around [illegible]0%.

4. High growth rates were observed in a number of industries, chemicals (129%) structural clay products ([illegible]), textile ([illegible]), [illegible], food products (30%) beverages ([illegible]), metal products ([illegible]) [illegible] was from a small base. Data relating to [illegible] factory [illegible] units, and cottage and handicraft units, are generally [illegible] developing countries. Somalia is no exception. [illegible], on the [illegible] reasonable assumption that the output in this sector [illegible] a rate of 2 to 3% a year, in line with [illegible] available data on number of persons [illegible] in the [illegible] probable that the output of entire industrial sector [illegible] period 1967-1971, at a cumulative rate of 17 to 1[illegible] per cent [illegible] Appendix II).

5. Rough indications are that in Somalia, the share of [illegible], Industrial, and Services output in Gross Domestic Product [illegible] 40 per cent, 10 per cent, and 50 per cent, respectively (see Appendix III). Empirical evidence thrown up by National Income statistics of developing countries, also indicates that the output of Services sector [illegible] less at the rate at which the combined output of Agricultural and Industrial sectors grow. In Somalia the growth rate of output of [illegible] and Industrial Sectors over the period 1967-1971, comes to 5.7 per cent per year. This is also the average growth rate of Somalian [illegible] over the period 1967-1971.

6. In Somalia an annual average growth rate of 6 per cent, [illegible] the next few years appears to be feasible. Country's resources endowment is sizable, and current level of resources utilization is poor. With the completion of irrigations and ground wate projects, and improvement in cultivation practices, productivity of agricultural land as also the yields of most of the existing crops can be raised substantially. Extension of areas under paddy, wheat, [illegible], cotton, oilseeds, tobacco, [illegible], [illegible], fruits and vegetables, should lead to much higher outputs in the agricultural sector. Cattle feeding, breeding and health care programmes should lead to higher outputs in the animal husbandry sector. Discovery of new mineral deposits, and systematic prospecting, providing and establishing reserves of

iron ore, sepiolite, gypsum, limestone, clay, kaolin, quartz, uranium, salt, tin, marble, barytes, etc. should create substantial investment and employment in a sector, which currently contributes almost nothing to the national output. Fisheries is another rich resource, which is only marginally utilized at present. The existence of rich deposits of coral lime, and sea weeds are other unused resources, which should be available in abundance along the country's 3000 mile long coastline.

7. As far as the contribution of manufacturing sector to the economic growth in Somalia is concerned it will continue to be limited over long periods, unless some dramatic change in factor endowment takes place, such as discovery of sizeable deposits of oil or greater economic co-operation in East Africa takes place. In Somalia the constraint to industrial development is set by several factors. Home markets for most of the manufactured products are small and exports of manufactured products face severe competition from developed countries. Available technical skills allow mainly establishment of simpler types of consumer goods and durable industries. Capital and entrepreneurship are either not available or are shy and unwilling to take the risks.

8. There is nevertheless the need to expand industrial output of Somalia to the maximum extent possible. Most agricultural products need to be machine processed before they could be consumed, used as raw material in other industries, or exported. Thus for example, substantial agricultural development will require establishment of adequate capacities in rice milling, flour milling, cotton ginning, pressing and baling, vegetable oil milling industries, sugar industry, banana packaging industry, slaughtering, and meat packing and preservation industry, tanneries, fish storage and preservation, fruits, vegetables, and fish canning, salt, ice, canning industries, etc. Exploitation of each of the proved mineral resources will need one or more extractive plants. Fuller industrial utilization of products and by-products of agriculture and animal husbandry, forests and mining and quarrying industries should lead to the development of a number of import saving and often export earning industries - pasta, bread and biscuits from flour, rice barn oil, furfural or activated carbon from rice and wheat husk, paper-board from rice and other straws, paper from bagasse, alcohol and alcoholic beverages from molasses, cosmetics from alcohol, ginned cotton, cottong yarn, twine, thread, and cotton fabric, textile printing and garments from cotton fabric, vegetable oils and oilcakes, soap from oil, animal and poultry feed from rice and wheat barn and oil cakes, maize and sorghum, tanned

leather, canned and dried fish, fish meal and [illegible], flour and paste from cereal [illegible], banana fibre, refined salt, caustic soda, chlorine, magnesium and other salts from [illegible], plaster of paris from gypsum, sulphur, [illegible], concentrates, pig iron, and steel from [illegible], precipitated calcium from limestone [illegible], bricks and tiles and clay pipes and [illegible] from clays, [illegible] sands, alumina and aluminium from bauxite, beneficiated [illegible], rutile from heavy sea sands etc. It would also be possible to [illegible] economic size petroleum refinery. This can provide cheap [illegible]. Its by-product naphtha could be the basis of LDC and urea [illegible]. Lime and chlorine could ultimately lead to development of titanium [illegible], titanium metal industries. Agriculture and irrigation [illegible], for manufactured inputs can also support new industries, [illegible] manufactured inputs for expanding agriculture and industry - [illegible] pesticides, and weedicide formulations, fertilizer mixing, agricultural [illegible], sewing thread, garment lables, buttons, buckles, collar bones, yeast, [illegible] pectin, sodium hypochloride (Hypo), boot polishes, furniture polishes and varnishes, builders' and furniture makers' hardware, tin printing, [illegible], card-board and paper board boxes, glass containers and bottles, [illegible] distemper, glues and adhesives, screws, nuts and bolts, and rivets, some others could be established to meet [illegible] of the [illegible] of consumer goods and consumer durables - as the per capita [illegible], and other incomes rise in tune with economic development - cotton and synthetic mixed fabrics, ready made garments, footwear, fountain pens and ball point pens, aluminium and stainless steel utensils, crockery and cutlery, furniture, torch lights, torch light cells and bulbs, electrical [illegible], transistor radios and dry cell batteries for radios, car and truck batteries, etc. Although immediate scope for industrial development in Somalia would be somewhat limited, the long-term potential is quite substantial and significant. But to realize the development potential in the industrial sector to the maximum extent possible, an integrated, interlinked, and a well planned approach embracing all the economic sectors is necessary.

II. Industrial Structure:

9. Industry in Somalia comprise of three distinct sectors:

- Large industrial establishments mostly in the public sector;
- Medium and small-scale industrial establishments, employing

5 or more persons each, in the private sector; and

- Small establishments employing less than 5 persons each in the traditional (private) sector.

Data for the industrial sector, as outlined above, is given in the following table:

TABLE II - INDUSTRIAL ESTABLISHMENTS EMPLOYING 5 PERSONS AND MORE

Nominal type of data	Public Sector	%	Private sector	%
No. of establishments	18	9.4	177	90.6
Total Nos. of persons engaged	3,735	56.5	2,879	43.5
Wages + Salaries paid to employees	24,158,532	75.3	7,861,640	24.7
Gross fixed capital formation	8,194,034	61.2	5,194,781	38.8
Value of gross output	165,137,522	75.2	54,535,291	24.8
Value added	108,016,866	88.2	14,444,577	11.8
Average value added per establishment	6,000,938	-	81,608	-
Average value added per operative	37,299	-	6,928	-

Source: Industrial Production 1971 Central Statistical Department - Mogadiscio.

10. An important feature of the Somali Industry is the leading role of the public sector, as far as establishments employing 5 persons and more are concerned. The Government owns the 18 most important establishments, which employ 3,735 persons or 56.5% compared to 2,879 persons employed by the private sector or 43.5%. Salaries and wages payed by public enterprises amount to So.Sh. 24.2 million or 79.4% compared to So.Sh. 7.9 million or 24.6% by the private sector and the valued added by the public sector amounts to So.Sh. 108 million or 88.2% compared to So.Sh. 14.4 million or 11.8% in the private sector. The average value added by an industrial establishment owned by the Government was more than 7 times higher than in the private sector and the average value added per operative in the public sector was five times higher in the public sector than in the private sector. The public sector was also leading as far as investments were concerned. In 1971 some So.Sh. 8.2 million were invested in the public sector compared to So.Sh. 5.2 million invested by the private sector. In 1972

So.Sh. 16.3 million were invested in the public sector as against So.Sh. 1.7 million in the private sector. The estimated outlay for investment in public sector for 1973 is So.Sh. 91.4 million.

11. In 1971, the year for which latest survey data are available, total manufacturing units employing more than 5 persons and those employing less than 5 persons were 3056.(See Table III). The actual number in existence, specially in the traditional sector was probably much larger than is shown by the labour department's Manpower Survey. About 700 single weavers, home-based handloom units, over 500 camel driven vegetable oil expellers, a large number of hide and skin curing units, and fish drying units, do not appear to have been covered by that survey. The manpower survey does not also claim full country wide coverage. This is also corraborated by the survey data gathered by the Survey Team during its visit to various regions. However, the additional statistics collected by the survey team, especially in the small and traditional sub-sectors has not been taken into account in conducting the structural analysis, since their impact may not be significant in the totality of industrial growth. In terms of number of units, the traditional sector, with nearly 2,900 or (94%) of the total number of units, dominates the structure. Public sector with 18 units or 0.6% of the total units, and the private (factory type) sector with 177 units or 5.8% of the total units appear to occupy a smaller stature in the structural mansion.

12. The total number of employees in industry amounted to 12,200. The actual employment was higher, for the reasons mentioned above. A possible estimate of 13,000 to 14,000 is indicated in discussions relating to sub-sectors. The traditional sector, with a work force of about 5,600 or 46% of persons, dominated industrial employment, as well. Employment in public sector units was also substantial - 3700 persons or nearly 31 per cent of the total industrial workforce. This was mainly due to relatively much larger scales of operations, in public sector units, partly also due to inclusion of plantation workforce in the employment of SWAI. Private sector factory type units employed about 2,900 persons - about 24% of total industrial workforce.

13. As already explained, in terms of output (value added), the public sector industries dominated the industrial structure. With only 1% production units (0.6% of the total) they contributed So.Sh. 108 million (77.55%) of the total industrial output estimated at So.Sh. 139.3 million. The non-traditional industry sector, with 93.6 per cent of production units contributed So.Sh. 16.8 million (12.06%) of the total output. The

TABLE III - TOTAL INDUSTRIAL ESTABLISHMENTS INCLUDING THOSE EMPLOYING LESS THAN [illegible]

Sr. No.	Industry Sub-sectors	Public Sector		Private Sector								
				Factories		[illegible]						
		No. of units	No. of employees	No. of units	No. of employees	No. of units	No. of employees	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Food Manufacturing	4	2044	51	1045	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	21.30
2.	Beverages	0	0	5	200	0	0	[illegible]	[illegible]	[illegible]	[illegible]	2.48
3.	Manufacture of Textiles	1	761	6	33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.40
4.	Leather + Foot-wear	1	150	10	133	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.34
5.	Furniture + Fixtures	2	63	22	359	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.64
6.	Printing, Publishing, etc.	1	106	7	105	5	18	[illegible]	[illegible]	[illegible]	[illegible]	4.68
7.	Other chemicals	1	34	3	105	1	7	[illegible]	[illegible]	[illegible]	[illegible]	1.20
8.	Structural clay products	0	0	23	243	12	35	[illegible]	[illegible]	[illegible]	[illegible]	1.66
9.	Lime	1	20	3	45	20	27	[illegible]	[illegible]	[illegible]	[illegible]	0.14
10.	Metal products	1	20	3	85	240	411	[illegible]	[illegible]	[illegible]	[illegible]	1.69
11.	Jewellery	0	0	10	37	23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.42
12.	Industries, n.e.s.	0	0	6	82	12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.75
13.	Electric Power	6	383	2	36	0	2	[illegible]	[illegible]	[illegible]	[illegible]	9.00
Total Sub-sectors		18	3735	177	2879	2861	3550	[illegible]	[illegible]	107.02	[illegible]	139.30
Total sub-sectors		0.59%	30.67%	5.80%	23.63%	[illegible]	[illegible]	100%	100%	[illegible]	10.2%	100%

Sources of data: (1) Industry Survey Report (1971), Central Statistics Dept. Ministry of Planning and Co-ordination.
(2) Manpower Survey Report. Vol. 2. Aug. 1972 Labour Dept. Ministry of Labour + Sports.

(a) [illegible] inputs
[illegible] value

contribution of the private (factory type) industries was rather meagre. With 177 production units, they accounted for only So.Sh. 14.48 million or 10.37 per cent of the total industrial output. In actual fact, the contribution of the traditional sector would be higher, because of possible underestimation of output from handloom, oil milling, fish processing and hide and skin processing activities.

14. In the product-mix of Somalia's industries, food processing industries, accounted for So.Sh. 101.9 million (or 73.15%) of the total industrial output. Sugar, slaughtering and meat processing industries, made them by far the most important industrial sector. Next important sector was textiles manufacturing mainly due to the existence of a large number of garment making and tailoring units in the country. It contributed So.Sh. 9.4 million or 6.7% of the total industrial output. The output of the traditional sector was more than that of the private sector, factory type. The output of private factory sector in textile manufactures was negligible. The third important sector was electric power industry, which contributed So.Sh. 9 million or 6.4% of the total industrial output. Another sector of some importance was the printing industry with a contribution of So.Sh. 4.68 million, (3.7% of the total) industrial output. The five sectors, together accounted for nearly 94% of the industrial output. The contributions of the remaining sectors, leather and leather products, furniture and fixtures, chemicals, lime, metal products, jewellery and other miscellaneous industries were rather meagre, only about 6%. Except for electric power industry, structural clay products and lime industry and part of metal products industry, all others were consumer goods or consumer durables industries, accounting for some 93% of industrial output.

15. However, nearly So.Sh. 17 million of meat and meat preparations, So.Sh. 10 million of cured hides and skins were exported in 1971. It is, therefore, possible that more than 20% of industrial output was exported in 1971. This indicates some export orientation of industry, even in early stages of industrialisation. Future potential is much greater. This is a special characteristic of the industrial structure in Somalia.

16. Regional distribution of large, small and traditional industrial units is highly uneven, as seen from the table on the following page:

[illegible]:

		[illegible]							
		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Total	[illegible]
1.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2.	[illegible]		11.[illegible]		[illegible]	[illegible]	2.2	63	2.2
3.	[illegible]	–	–	[illegible]	9.3	[illegible]	12.[illegible]	[illegible]	12.[illegible]
4.	[illegible]	–	[illegible]	[illegible]	[illegible]	[illegible]	2.4	65	2.3
5.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.9	105	7.0
6.	[illegible]	–	–	[illegible]	[illegible]	[illegible]	1.9	54	[illegible]
7.	[illegible] ([illegible])	–	–	5	2.4	15	0.6	20	0.7
8.	[illegible] ([illegible])	–	–	–	–	–	–	–	–
9.	[illegible]	–	–	4	1.8	7	0.3	11	0.4
10.	[illegible] ([illegible] E. Region)	[illegible]	[illegible]	14	6.7	112	4.3	[illegible]	4.6
11.	Hargeisa (N. W. Region)	4	22.3	13	6.2	646	24.8	663	23.4
		18	100	209	100	2590	100	2817	100

Source: based on data from Manpower Survey Report Volume 2, 1972.

17. Industrial units are heavily concentrated in and around Mogadiscio. Forty-five per cent of total number of units, 61% of private factory type units and 44% each of public sector and traditional sector units were located in the Mogadiscio area. Hargeisa area in the North-West Region also had some concentrations of public sector and traditional sector units. About 23 per cent of traditional units and 22 per cent (4), public sector units were located in this area. Private sector units in this area accounted for only 7% of the total in that sector. Merca - the Lower Schebelli Area, also had a fair share of industrial units - 12 per cent of all units, 13% of traditional units and 9% of public sector units. Kismayo in the Lower-Giuba area, with 7% of industrial units, and Burao with 4.6% of them, were the other areas, where some clustering of units was found.

18. The uneven distribution of industries between regions was co-related with the development of natural resources of the regions and the availability of infrastructure facilities for industrial growth. Industries based upon

imported inputs tended to be located near about Mogadiscio Port area. High rates of power and diesel oil and high transport costs in the Northern and Central Regions, also discouraged industrial development in these areas. If regional imbalances in industry, are to be corrected, it will be necessary to develop minerals, fisheries, and forest resources in the regions, where these are located. Another incentive for accelerating the pace of industrial development in less developed regions would be to provide infrastructure facilities like power, water, communications and transport to attract investment.

III. Public Sector

SNAI Jowhar (SOCIETA NAZIONALE AGRICOLA INDUSTRIALE):

19. SNAI started its operation, as early as 19[illegible], on a modest production of 600 quintals of sugar per diem. During the past four decades, the factory has gradually expanded its activities and increased its production, and reached a level of production of 1921 quintals per diem for an operating season stretching up to 117 working days spread over two seasons of each campaign. Its continued increasing performance has enabled the country to reduce its import bill on sugar and sugar products. The import of sugar and sugar products have reduced from 10,160 tons of the value of So.Sh. [illegible],000 in 1969 to 50 tons of the value of So.Sh. 80,[illegible] in 1971. The factory was nationalised in May 1970.

20. During the course of the factory expansion to the present heights of production, SNAI has acquired a large industrial complex at Jowhar. The agricultural farm covers an area of 8,000 hectares of land, of which 5320 hectares of land are under sugar cane cultivation. The sugar crop has risen to 4,633,723 quintals per campaign. The percentage of average yield of sugar varied from 12.3 to 13.06%. It has a large network of irrigation canals extending up to 600 kilometers which drains water from River Schebelli for irrigating the large agriculture area under cultivation. It has its own railway network, which operates up to a total distance of over 80 kilometers. On an average 30 locomotives pull about 250 wagons loaded with sugar cane supplies to the factory. It employs 5300 employees during the peak of its operating season of which about 1800 persons are regular employees. SNAI provides various social amenities to their employees like housing, electricity, water, medical and educational facilities to the employees' children, shopping facilities, recreation facilities, etc.

21. The cumulative value of the total assets of SNAI as on 31 December 1971 was of the order to So.Sh. 172 million, of which fixed assets constituted So.Sh. 133 million. Its gross income was of the order of So.Sh. 51,449 million. The total expenditure, including provision, was around So.Sh. 40,765 million. The net profit (after appropriations) earned during the past three years was as follows:

31 December 1969	4,595,314
31 December 1970	4,410,337
31 December 1971	15,704,211 ♦

(♦ annual accounts are under scrutiny)

22. SNAI occupies a pre-eminent position in the nationa, social and economic life of the country, apart from being the largest agro-industrial complex in the public sector. The factory has ample scope for improving management efficiency, reducing costs and increasing profitability, which has been indicated in detail in the report of the UNIDO expert assigned to the Ministry of Industry and on which both the Management and the Ministry of Industry is taking action.

23. During the current development programme, certain new auxillary units were created out of the funds generated by the factory involving investment of over So.Sh. 1 million. The units completed were for manufacturing plastic shoes, plastic bottles, perfumes, shampoos and detergents and a plant for manufacturing rum and liquer. Proper feasibility studies were not conducted before the execution of the projects and marketing problems are likely to arise, which need to be solved to ensure the investment profitable. There is scope for expert of alcoholic products and perfumes, which needs to be explored. A feasibility study for further expansion of sugar production by 10,000 tons per annum has been prepared and is under processing for inclusion in the next plan.

Meat Processing Factory, Chisimaio

24. The Meat Processing Factory, Chisimaio, set up with Soviet collaboration involving a capital outlay of So.Sh. 39.5 million (So.Sh. 24.7 million foreign exchange component and So.Sh. 14.8 Somali expenditure) was commissioned in January 1969. The factory was designed to slaughter 170 cattle per shift on 300 working days

into 10,000 cans per day of 300,000 conventional cans, including stewed meat, boiled meat etc. According to the project report, the factory was expected to realise its investment within a period of two years on full operation. The production attained by the factory after it was commissioned is as under:

Table V

Production of Kimaeti Meat Processing Factory

	1969	1970	1971	1972
Canned meat				
stewed meat	501,306 tins	5,071,[illegible]	11,[illegible],235	12,571,5[illegible]
corned beef	115,445 "	3[illegible],000	-	206,6[illegible]
Meat with bones			4,07[illegible],17[illegible]	4,2[illegible],49[illegible]
Sausages	7,406 kg.	2,42[illegible]	1,640	1,103,[illegible]
Fat	9,726 "	43,905	77,297	
Meat and bonemeal	24,020 nos.		47,323	66,[illegible]
By-products	(Quantity not available)			

The factory has already exceeded its designed capacity during 1972.

In terms of value, the performance is given below:

	1969	1970	1971	1972
Canned meat				
stewed meat	1,065,503	6,522,207	14,664,423	18,228,730
corned beef	339,480			43,220
Meat with bones			8,152,356	8,536,954
Sausages	44,484	12,463	5,740	3,725
Fat	31,838	115,657	231,771	331,104
Meat and bonemeal			4,732	9,933
By-products	140,695	737,715	1,451,729	1,973,407
	1,622,606	7,388,042	24,510,751	29,127,103

The factory has been employing 500 workers and 8 expatriate staff. The workers have mastered the techniques of production of the installed machinery and equipment. Mastering of the proposed new installations for diversifying product-mix is proposed to be achieved during 1973.

25. The sales during 1971 was of the order of So.Sh. 16,315,245 and 1972 So.Sh. 18,270,728. The factory has been able to diversify [illegible] to sell its diversified product-mix.

The gradual improvement in performance and realization of installed capacity is also reflected in the working results as shown below:

	(- Net loss + net gain)
1969	- 1,159,940
1970	- 1,421,685
1971	+ 421,117
1972	+ 1,600,000 (estimated)

The factory was able to generate funds for its own operations and also to meet its expansion requirements from internal resources.

26. The Development Programme 1971-73 provided for a total investment of So.Sh. 2,000,000 for diversification of production and creation of new facilities. The corned beef line has been installed and was scheduled to be commissioned in early 1973. Modifications in the canning line for packing beef in jelly preparation of meat extract are proposed to be carried out in 1973. Plans for setting up a tannery adjacent to the factory to pickle hides and skins are being finalised for execution. Possibility study for expansion of cold storage facilities is under preparation by Soviet collaborators. The factory has incurred an expenditure of So.Sh. 1,600,000 from internal resources for implementing development programme.

27. Utilisation of by-products for increasing its earnings is a major problem yet to be tackled. Additional facilities required to be created for achieving this objective will have to be planned along with arrangements for marketing them. There is scope for improving management - technical production, financial, commercial, and personnel - and these have been spelt out in the report of the UNIDO expert attached to the Ministry of Industry. But action on these suggestions is rather slow.

Somalitex

28. Somalitex was registered as a joint stock company on 27 April 1968 with an initial capital of So.Sh. 30,000, which was subsequently increased to So.Sh. 1,000,000, and paid up in the ratio of 73% Somali and 27%

German Shareholders. The foreign collaborators were to contribute their shares in the form of machinery. A capital reconstruction of the company was effected in August 1970 and the share capital of So.Sh. 14,470,000 was distributed as under:

Government of SDR	6,130,000	42.4%
Somali Development Bank	1,186,000	8.2%
Somali Private shareholders	84,000	0.6%
German Private shareholders	2,600,000	17.9%
German Development Company (on behalf of F.R.G.)	4,470,000	30.9

A loan note capital of the DM 14,000,000 divided into 140 notes of DM 100,000 each and 2 notes of DM 10,000 each - Part I amounting to DM 5,720,000 to be subscribed by DEG and issued against payment in cash according to financial requirements of the company and Part II amounting to DM 8,300,000 were also raised. Foreign shares and loans were intended to supply machinery in the Spinning, Weaving and Finishing Sections. On 31 July 1972 the loan Part I and II stood at So.Sh. 9,685,000 and So.Sh. 18,167,000 respectively.

29. Somaltex started production from October 1968. The year-wise production is given below:

Table VI

Production of Somaltex

Year	Total	Grey Sheet	Bleached Cloth	Dyed Cloth	% planned production
1968	39,272	39,272	nil	nil	0.28%
1969	796,000	796,000	nil	nil	7.02%
1970	3,000,028	2,097,028	854,000	49,000	27.52%
1971	7,018,512	6,123,477	1,570,490	324,545	50%
1972	6,400,000				60%

The production fell short of the expected growth of the mill mainly on account of the reduction in production capacities (only 270 or 360 looms were operational up to the end of January 1972). It has now been established that realisation of the installed capacity of 11 million yards cannot be achieved with the existing plant and machinery. The marginal

increase in production in 1972 including the planned production for 1973 is attributed to the capital replacements implemented during the current development programme. Consequent to increase in production, the sales have steadily increased. The import of cloth of the type manufactured by Somaltex has been reducing. The imports, which were of the order of So.Sh. 27,560,000 were reduced to So.Sh. 3,519,541 in 1972, which is a measure of its contribution to the national economy. The factory has been employing on an average 740 workers and 19 expatriate staff. Workers have attained requisite skills and efficiency in textile production for operating the existing installation.

30. The working results of the factory for the past three years is given below (in So.Sh.):

Total loss	1969	- 5,942,077
	1970	- 5,709,768
	1971	- 4,067,962

The accumulated loss up to the end of December 1972 is So.Sh. 17,293,149 which exceeds the share capital. Non-realisation of the installed capacity, higher operating costs of the old plant and machinery, and low prices of finished products accounted for the cumulative losses.

31. The development plan 1971-73 provided for a capital expenditure of So.Sh. 1,000,000 for strengthening the Spinning and Weaving Departments. However, the capital expenditure during 1971-72 amounted to So.Sh. 4,688,714, for modifying and strengthening the Spinning, Weaving and Finishing Departments and packing unit. The expenditure was financed from loan capital part I. An additional investment of So.Sh. 2 million has been planned for 1973 for further strengthening the preparation, spinning and weaving sections of the mill. But the capital modifications and alterations effected so far have only increased production marginally. The factory has now realised that unless a complete renovation and replacement of the old machinery is made higher production cannot be realised and operation costs cannot be reduced. Such a programme will have a national priority because of the policy of substitution of exports by indigenous production, both in production of textiles and also supply of raw cotton to the mill.

Fish Processing Cannery, Las-Khoreh

32. The Fish Processing Cannery in Las-Khoreh, set up with Soviet collaboration, involving a financial outlay of So.Sh. 43.24 million, has a capacity of processing 7,800 tons of tuna fish into 12 million cans of assorted size 710 tons of fish meal, 79 tons of industrial oil and 73 tons of tuna liver in oil and was commissioned in early 1970 and has been in production since then. During 1970, the Cannery processed 241,851 cans of tuna, 17.6 tons of fish meal and 2 tons of dry fish. During 1971, the Cannery processed 1,087,[illegible] cans, and in 1972, 562,300 cans and 13 tons of fish meal. Two cyclones which hit the factory during late 1971 and 1972 affected the normal operations of the plant. The average number of persons employed by the factory is around 150 and workers have improved their skills and efficiency. The low realisation of capacity was on account of the inadequate catches (592 tons in 1970, 729.8 tons in 1971 and 428 tons of fish during the season). Due to low production and low sales, the factory was also plagued by scarcity of working capital. The accumulated losses up to the end of 1972 were around So.Sh. 2,831,000 according to the accounts finalised by the factory. But this does not include amortisation charges, which alone would come to 4 million per annum. The cannery had initial problems of marketing its products but not the marketing of its main products viz. tuna in oil in different sizes has been more or less solved and long-term arrangements for sale of products have been finalised. But full utilisation of by-products remains to be tackled.

33. In order to provide the factory with adequate supply of raw material and working capital for realisation of installed capacity, the development plan 1970-73 provided for a total investment of So.Sh. 3,500,000 for modification of plant and machinery, and expansion of auxillary facilities including augmentation of the fishing fleet. The factory has reported an expenditure of So.Sh. 1,008,000 up to December 1972. Modification of the canning line with a view to meet the tastes of sophistic ted market has been completed. The budgeted outlay for 1973 is So.Sh. 3,000,000. Orders have been placed for procuring boats, which are

expected to be delivered before the commencement of the next fishing season. Work on extension of pier has not commenced so far. The Somali-Soviet expedition which became operational from December 1972 is expected to supply a part of the fish requirements (about 2000 tons) of the factory. The expedition confined its activities to the southern coast during the ensuing season which will end in April 1973. The expedition is expected to supply fish to the cannery from the next season onwards.

34. The cannery has overcome its teething troubles but is not yet out of the woods. The problems of fish supply and marketing of its by-products viz. fish meal will have to be successfully tackled to enable the factory to earn profits and make adequate returns on the investments already made. Capital expenditure for ensuing steady supply of the requisite quantities of fish will have the highest priority for rendering this plant revenue earning. The management needs to be strengthened and various measures suggested by the UNIDO expert assigned to the Ministry have to be taken to improve its performance and efficiency. (At the time the Survey started the unit was under the Ministry of Industry but has since been transferred to the newly created Ministry of Fisheries.)

Milk Processing Factory, Mogadiscio

35. The milk factory set up with Soviet collaboration involving financial outlay of So.Sh. 11,600,000 (foreign exchange component So.Sh. 5,600,000 and indigenous expenditure So.Sh. 6,000,000) was commissioned in October 1966. The factory was designed to process 600 tons of milk per annum on two shifts for 300 working days into pasteurised milk packed in different sized bottles, yoghurt, and ice-cream. The product mix was later modified to include cheese, butter and ghee. The production of milk achieved by the factory since it was commissioned is as follows:

1966 - 1,051,119 litres
1967 - 879,201 litres
1968 - 1,065,174 litres

1969 - [illegible]1,150 litres
1970 - 1,136,034 (up to November 1971)
1971 - [illegible],000,000 litres
1972 - [illegible],000,000 litres

Although the production has increased during the last two years, realisation of installed capacities is still a distant dream. The factory has been employing on an average 41 workers and 3 expatriate staff. Workers have attained the skill and efficiency in mastering production of the machinery and equipment.

36. As the factory did not prepare its accounts regularly, no idea of the accumulated losses could be obtained. Amortisation charges alone would have depreciated the investment by about 70% by now, not to speak of the operating losses. The factory has been able to generate ways and means for its operation during the last two years. The main obstacle in the realisation of capacities was inadequate supply of raw milk. The development programme for 1970-1973 provided for an investment of So.Sh. 700,000 for setting up a dairy farm for supplying milk to the factory. The project was entrusted to LDA for implementation. The farm was scheduled to commence milk supply by the middle of 1972, but no regular supply of milk has started. The reasons for the delay in supply of milk by the farm need to be looked into with a view to commence milk supply to the factory and also ascertain the likely supply in the future. The factory needs a minimum of 10 tons input of raw milk to reach break-even and after taking into account the availability, including the proposed supply from the new farm, the procurement of balance quantity need to be planned. Unless concerted action is taken to process the capacity and market the output its cumulative losses will deplete the original investment. Capital investments, if any, needed to bridge the gap will constitute the first priority in the capital investment programme of the factory. Depending on the availability of milk, facilities for processing sterilised milk and manufacturing powder milk etc. can be considered. In view of the fact that the factory has been operating for the past seven years replacement of certain machinery and equipment will also assume priority in the capital expenditure programme in the next plan period.

Concluding Remarks for the Public Sector

37. The problems faced by the major public sector units and the solutions for solving them have been indicated in the reports of UNIDO experts assigned to this field in the past. Inadequate raw material supply has prevented the milk factory and fish cannery to realise their installed capacities and hence they are incurring losses year after year. Textile factory reached the maximum effective capacity and needs a major renovation of production units to increase further production. The meat factory has just realised the designed capacity and has been able to diversify production and market it and is now poised for earning higher profits. Economic utilisation of by-products is yet to be achieved in both the fish cannery and the meat factory. The sugar factory can improve efficiency and reduce costs so as to increase its contribution to the exchequer. The existing relationship between the supervising Ministry and the public sector units is vague and imprecise. This has, on the one hand loosened the supervision, control and direction of administering over the units, and on the other hand, allowed the managements of public units to escape their overall responsibility. Such a situation needs to be remedied by framing suitable laws defining the areas of jurisdiction, power, and responsibility of the supervisory Ministry and the industrial units. The law should ensure, inter-alia, that maximum autonomy consistent with responsibility is given to the units to realise the targeted goals and the Ministry is assigned the task of fixing goals for the units and ensure its timely realisation by proper supervision and control. The Ministry should have a techno-economic bias if it is to administer successfully all the industrial units under it. In the sphere of utilisation of internal resources and implementation of planned programmes, the Ministry should have greater control than it is obtaining now, if economic utilisation of rare resources in planned implementation of approved projects, which form an integral part of the industrial plan of the country, is to be realised.

[illegible] and Canning (SOMAL)

[illegible] is the only plant in the private sector processing and canning meat [illegible] Mogadishu. It is a medium-sized plant with a daily [illegible] 150 to 200 heads of cattle and an annual output of about 2.7 million tins of meat and 63,000 tons of processed bones for local use. The entire production of canned meat is for export to Italy and other European countries. Price paid per head of cattle was stated at the time of the visit (February 1972) to be 230 to 250 So.Sh. (about 30$) [illegible] The average wage for [illegible] So.Sh. 10, though the concept of average wage is not very valid owing to widely differing rates.

Fish Processing and Canning

39. One of the three establishments in the private sector located at Alula is a freezing plant and the other two, at Kandala and Hafo, undertake processing and canning of fish. The Alula plant which was damaged by a cyclone in 1972 has five cold storages and an electric power station. In 1971 it processed about 1250 tons of fish, of which more than 1000 tons were tuna and provided employment to about 250 persons. The plants at Kandala and Hafo together processed about 1000 tons of fish in 1971 and provided employment to 250 persons. All of the three plants are working below capacity owing to short supply of fish and the main problem is to obtain more fish from the sea by putting out bigger motor boats and trawlers and by deep sea fishing.

Grain Milling and Grinding

40. This industry, mostly for milling maize, is carried on by small hammer mills consisting of a motor (about 10 HP) and the hammer mill itself. The usual equipment is an axle with pieces of iron or steel attached to it which rotates inside a sieve-cage and breaks the grain fed into it, the crushed pieces passing out through the sieve as cornmeal. There are also some roller mills which grind maize, which has been earlier soaked in water for about 6 hours, through the motion of two small rollers. The product in this case is a pasta, which is

used by small bakeries and teashops. The processing is repeated, if finer product is required. This is essentially a service industry, processing raw material brought by the customer against a payment of 5 cents per kilogram in hammer mills and 10 to 15 cents per kilogram in roller mills depending on the fineness of the product. There are 11 establishments, employing 56 persons. There are also units employing less than 5 persons each in the traditional sector.

Modern Bakeries

41. Bread is an item of daily consumption in all the sizeable urban settlements and bakeries have sprung up all over. 38 bakeries employing more than 5 persons each are located in Mogadiscio (19), Afgoi (2), Jowhar (4), Brava (1), Hargeisa (8) and Kismayo (4). A typical average-sized bakery is owned by one or two proprietors and employs 6 operatives and one or two helpers at a daily wage rate of 6 to 8 So.Sh. per operative. Annual value of output of such a bakery is around So.Sh. 0.2 million. The bigger bakeries produce, besides loaves of bread of different weight and size, biscuits and cakes. Small bakeries employing 5 persons each produce only loaves of bread valued in many cases at less than So.Sh. 100,000 per annum. Data regarding investment - fixed assets and working capital - are not readily available. This industry has a bright future. The main needs of the industry are a continuous and assured supply of material inputs, spare parts for maintenance and replacement and loans for working capital. The dispersed character of the industry, regionally as well as local-wise within each urban settlement, should be preserved and encouraged because the average consumer would like to obtain his daily requirements of bread from a bakery situated within easy walking distance. It has a large counterpart in the traditional small sector.

Confectionery

42. One unit in Mogadiscio processed about 30 tons of sugar in 1971 to produce about 45,000 kilograms of sweets in 1971. It employed 26 persons including 23 operatives at an average daily wage of So.Sh. 6. A much bigger unit, also in Mogadiscio, involving an investment of about

[illegible] and with a maximum capacity of 1500 tons of sweets [illegible] has been commissioned in [illegible]. The initial production of the [illegible] hard boiled sweets with possible [illegible] of jam and marmalade.

[illegible]

[illegible], with water [illegible] for a large part of the [illegible] drinking water in many urban [illegible], beverages are popular [illegible] are commonly used. These are [illegible] are sold under different names, some of which like [illegible], [illegible], [illegible] are well-known. There are five establishments, 4 of them in Mogadiscio and 1 in Brava, engaged in this line of production, providing employment to about 200 persons. One of them is of a relatively large size accounting for the bulk of the total output. The main inputs of this industrial activity are sugar, concentrates, CO_2 gas, crown cork and glass bottles and in 1971 the value of total output was of the order of So.Sh. 5 million. The growth potential of the industry is large because of the increasing population in urban settlements and good scope for establishing units in some locations in northern and central Somalia to cater to the consumption needs of different regions.

Ice Plants

44. Annual production of ice of three small-scale establishments, 2 in Mogadiscio and 1 in Berbera, was of the value of about So.Sh. 200,000 in 1971. Between themselves they employed 16 persons, the average daily wage of an operative being about 6 to 7 So.Sh. There is also a small ice plant in Merca, which works at only half of its single-shift capacity of 5 tons due to limitations of demand. This industrial activity, like the production of beverages, has considerable growth potential but its extension to new locations depends on supply of electricity.

Fruit Processing

45. At Yontoy, 20 kilometres from Kismayo, there is one production unit operating on a small-scale bottling mango juice. Started more than one year ago, it is now processing 350 mangoes a day to fill 500 bottles which find a ready market in the Kismayo town. The process from the stage of extraction of mango juice after the mangoes are boiled to the sterilisation of corked juice - filling bottles by boiling in hot water is relatively simple. Bottles are purchased second hand at So.Sh. 0.13 per bottle, corks are bought at So.Sh. 2.36 per 20 kilograms (7000 corks) and mangoes at So.Sh. 0.1[illegible] per mango. The number of persons employed is 12 of whom 6 are apprentices and daily wages per operative average So.Sh. 4-5. The unit is housed in a poorly built single-room building. The working proprietor has had some training in food industry and, inspite of all the deficiencies of the unit, has made a successful job of it. The main improvements needed are a better and cleaner workplace with proper layout for flow of work, installation of small machines and better arrangements for sterilisation of bottles. The location of the unit at a distance from Kismayo, which is the market for its products, does not permit use of electric power but brings it the solid advantage of proximity to raw materials. The unit deserves both technical and financial assistance.

Cotton Ginning

46. There are 2 units in Mogadiscio engaged in separating cotton seeds from cotton in order to obtain cotton lint. Between themselves they employ 38 persons with the daily wage for operatives averaging So.Sh. 8-10.

Tailoring and Garment Making

47. In numerical size and regional spread, tailoring and garment-making is easily the foremost among the small-scale and traditional industries with a total number of about 840 establishments employing over 1600 persons. Of these only 40 establishments employing more than 5 persons

[illegible] persons and the remaining [illegible] hired subsequently.

Soap, Detergents and perfumes

[illegible] is located in Mogadiscio and most of the units [illegible] operation of laundry soap. Three of the four soap establishment in Mogadiscio are presently laundry soap and one - a relatively [illegible] in the production of [illegible]. Additionally, two units in [illegible] also produce hair oil and perfumes and one unit has recently started making of imported detergents under the sponsorship of [illegible] at Jowhar. Toilet soap was produced by one of the soap units until it was the end of 1972 when it was given up due to inability to sell it in competition with the superior imported soap. The total annual output of laundry soap is about 1200 tons and of soap powder about [illegible] tons, valued roughly at So.Sh. 1.5 million and So.Sh. 3.0 million respectively in 1971. Production of hair oil, perfume and shampoo is roughly valued at So.Sh. 1 million. The main inputs in laundry soap are caustic soda, soda silicate, vegetable oil, animal fat and dues and the main input in detergents is the imported powder. In all about 100 persons are employed in the industry and daily wages for operatives vary from one unit to another between So.Sh. 4 and 8. Production process and technology employed by the laundry soap units are conventional and not very efficient. The producers are conscious of this deficiency and would welcome technical advice and assistance to enable them to improve the quality of the product and reduce cost of production. Recent government ban on imports of laundry soap has created a sheltered domestic market for the producers but their problems of fluctuating and rising prices of imported palm oil and high customs duties on oil and cartons remain and require close examination. There is scope for import substitution in regard to toilet soap but the necessary technical capability to produce a quality product does not exist among the present producers of laundry soap. As regards detergent powder, the installed capacity of Mogadiscio unit is not fully utilised due to limitations of market. Proposed new unit at Jowhar would probably widen the gap between potential and need. There is scope for

widening the market through a well-organised publicity drive followed up by extended retail sales facilities and at cheaper prices. Domestic demand for laundry soap may be expected to increase in coming years as a result of import prohibition, growth of urban population and increasing consumption of soap in the households. The feasibility of establishing a laundry soap unit in the northern region deserves to be examined.

Paints and Varnishes

49. There is one unit manufacturing paints and varnishes from pigments, oxides, resins, solvents, oil etc. In 1971 it employed 16 persons including 3 working proprietors, 12 operatives and 1 other at a daily average wage for operatives of about So.Sh. 12. Total annual production of paints and varnishes is valued at over So.Sh. 200,000. The unit was established in 1943 and it is time to modernise its processes and management.

Furniture and Fixtures of Wood

50. In 1971, there were 28 establishments employing more than 5 persons each in the private sector producing various articles of furniture including chairs, tables, cupboards, meat safes etc. and also windows and doors. Out of these 23 establishments were located in Mogadiscio and 5 in Hargeisa and employed between themselves about 350 persons. A typical small woodworking unit employing 5 working proprietors and 2 operatives has an input valued at about So.Sh. 25,000 of wood, formica, mirrors, nails, locks and hinges, plastic sheets, rubber for cushions, methylated spirit etc. and an output valued at about So.Sh. 60,000. About 90 to 95 per cent of the material inputs including cedar wood, camphor wood, plywood etc. are of foreign origin. The average daily wages of an experienced skilled operative are about So.Sh. 15 and for others range between So.Sh. 7 to 10. The ban imposed by government on imports of furniture has provided a protected market for the industry but this advantage has been partly offset by the recent rise in the price of imported wood and the difficulties of the transitional period following the takeover of imports of wood by the government. The main needs of industry are the ability to import machinery for replacement, reasonable sense of security for exercise of innovation and enterprise and availability of loans, especially for working capital, at reasonable rates of interest.

Printing Press

51. In 1971 there were 7 printing presses in the private sector, 5 in Mogadiscio and 2 in Hargeisa, employing in all 105 persons. Since then, all the printing establishments have been taken over by the government. The best equipped among the presses is the one previously owned by Missions in Mogadiscio. It has two linotype machines and [illegible] offset machines for offset, photo, [illegible], [illegible] and [illegible] cutting and binding. It was working in 3 shifts printing (at the time of visit) [illegible] and textbooks in Somali language, [illegible] and bottles for [illegible], account books, receipt books etc. The other printing presses are much smaller in capacity and turnout and taken together do not add up in performance, measured in terms of total value of jobs done, of this relatively large printing press.

Vegetable Oil

52. Crushing vegetable oilseeds, mostly sesame, into oil is being done in the small-scale sector consisting of three major mills (now out of production) and two small mechanical mills employing more than 5 persons each. Most of the activity lies in the traditional small sector consisting of about 100 mechanical mills employing less than 5 persons each and camel-driven wooden pestle - and mortar crushers. The three major mills with a total daily capacity of 20 tons of seed located in Mogadiscio have been out of production for several years apparently due to non-availability of seed for crushing. This industry predominantly prevails in the traditional sector also.

Plastic Products

53. One establishment in the private sector is located in Mogadiscio and undertakes the production of plastic pipes, rigid and flexible, straps for chairs, brooms etc. by the extrusion process. The number of persons employed in 1971 was 13 consisting of 1 working proprietor and 12 operatives and few apprentices, the daily average wage being So.Sh. 8. Another unit for the production of plastic shoes and sandals (called BATA) and plastic bottles and cups has recently been set up in Jowhar under the name of Diaco jointly owned by SIDA and a private investor. It will

produce plastic bottles in 8 sizes, cups in 3 sizes and crocs and sandals of 5 types. Capacity of the machines for making sandals would be 540,000 pairs per annum on single shift basis and 1 million pairs on double shift basis. Imported plastic sandals sell much cheaper - about So.Sh. 3.50 per pair - than indigenous leather sandals - 10 to 14 So.Sh. per pair - and with a growing demand for plastic sandals for use in homes, it should be possible to operate the unit on single shift basis. A third unit making polythene bags for bananas has been set up in the public sector, as an auxillary unit to the big project manufacturing corrugated ship containers.

Structural Cement and Clay Products

54. This industry geographically well spread out consists at present of manufacture of cement and clay blocks, pipes, lavatory basins, etc. and manufacture of lime. Of the 23 establishments producing blocks etc. in 1971 employing more than 5 persons each and thus identifiable as small-scale establishments, 20 were located in Mogadiscio, 2 in Kismayo and 1 in Hargeisa. Of the 8 lime making units, 4 were in Mogadiscio, 1 in Burau, 1 in Berbera, 1 in Hargeisa and 1 in Borama. It has a traditional counterpart.

Metalwork (Furniture, Cutlery, Hand Tools, etc.)

55. This industry exists at three distinct technical levels which can be easily identified by the nature of equipment used, quality of workmanship and the knowledge and training of craftsmen. To the upper level belong the units producing tabular iron frames of chairs by the process of bending and welding, iron beds, small stools etc. The equipment includes welding sets, drilling machines and other necessary tools. At the middle level are the fabricators of iron buckets, tin cans, water sprinklers etc. who use shears, hammer and anvil and the forge. The lowest level consists of blacksmiths making somewhat crude axes, knives etc. from scrap material with the help of a small blow forge, hammer and anvil in small dingy huts, often combining repair work with sporadic fabrication. Since the three groups cater to different kinds of requirements and clients, all the three can be observed to co-exist in cities like Mogadiscio. In other places like Hargeisa and Kismayo, the first group is either not prominent or does not exist. The first set of establishments, which employ more than

five persons and can be classified as small-scale industry. In 1971, there were 9 such establishments employing 30 persons of which 5, organised as cooperatives, were located at Burao. One of these cooperatives employing 15 operatives and 5 apprentices was engaged in making tubs, milk pails, cooking pots etc. and the other 4, employing 6 to 10 persons each, were making mattocks, axes, spades etc. Of the remaining 4 establishments, all in Mogadiscio, two were engaged in making pipes, door frames, tanks etc. and one in making knives. The fourth unit, which has since closed down, was a relatively large unit, rolling structural rods and angles from imported steel billets. The bulk of the small metal work industry is in the traditional sector.

Jewellery and related articles

56. There were 10 establishments employing 5 or more persons each in 1971, all located in Mogadiscio. The number of establishments employing less than 5 persons each was much larger. The product range of this industry needs hardly to be described, as it covers gold and silver ornaments of various carats and designs, made to order or otherwise. No firm estimate of the value of output is available but it may well be over So.Sh. 1 million. Gold ornaments are made in both 22 carat and 12 carat gold, conversion charges being 3000 to 4000 So.Sh. per kilogram of gold. Wages of operatives vary, depending on skill and experience and the daily rates are around So.Sh. 15 to 30. Persons engaged in this industry, as in some of the other small industries, are becoming conscious of the need of improving their economic conditions, their workplaces, equipment and organisation. They are eager to know how craftsmen in other countries are carrying on their trade. Thirty-seven establishments, small-scale and small, in Mogadiscio are now forming a cooperative society and would shortly move into shops situated around a spacious compound adjacent to the meat and vegetable market.

Hides and Skins Processing and Tanning

57. Quality tanning of hides and skins in Somalia is at present confined to two mechanised medium-sized tanneries in the private sector, one in Mogadiscio and one in Brava, which also undertake the manufacture of footwear. One unit in the public sector in Mogadiscio which was started as a training and demonstration centre is also engaged in tanning and, in its leather utilisation section, in the manufacture of footwear. Each of the two private sector tanneries is tanning over 100 hides (cattle and camel). Mogadiscio tannery is not processing skins now (April 1973) while the Brava tannery processes skins as and when available. Both the tanneries are able to utilise only about one half of their capacity owing to short availability of hides and skins. Possibly, the export drive has impinged on the domestic availability of processed hides and skins. Both the tanneries use wet blue chrome and vegetable tanning processes and produce finished leather partly for their own footwear units and partly for sale in the market. The present finished leather is not yet up to quality standards acceptable to foreign markets. Organisation of a modern tanning industry with higher quality standards would involve radical technical improvement of the entire chain of activities from slaughtering to collection of hides and skins and their preliminary processing.

Footwear

58. Between the two larger units in the private sector (and a third one in the public sector) and the rest of the footwear industry, there runs an easily identifiable line of demarcation. The two units, calzaturificio in Mogadiscio and DREI in Brava, combine manufacture of footwear with tanning and are mechanically well-equipped. Daily production in Mogadiscio unit averages 100 pairs of boots and 600 pairs of sandals and in the Brava unit 50 pairs of shoes and 60 pairs of sandals. The two units employ 80 persons and 32 persons respectively. In addition to these, there are another 7 units in Brava and 1 in Mogadiscio employing 5 to 7 persons each with an average wage level of 7 to 10 So.Sh. per day. These 11 medium or small-scale units employing between themselves about 300 persons do not convey any adequate idea of the extensive traditional shoe-making industry which provides employment to about 600 persons in 250 small establishments.

V. Traditional Small Industries

Fish Processing

59. Numerical estimates of fishermen engaged individually or in groups in catching, drying and salting fish all along the coast are not readily available but this traditional occupation is of both actual and potential importance. A survey of fishing beaches carried out by another body suggests a total of 6000 to 7000 part-time and full-time persons engaged in catching fish in the country as a whole. It may be presumed that many of them are engaged in processing of fish. In the three coastal districts of Adale, Brava and Merca, fish is dried in the sun, salted and sold to vendors. Fish is also exported mainly to Kenya either through exporters in Kismayo or directly through boats sailing to Mombassa. The largest items are lobster and shark. From the district of Adale about 20 tons of dried and salted fish are reported to be delivered to fish exporters in Mogadiscio during the peak-season. Among the 24 important decisions announced by the government early in 1973, one related to the assumption of responsibility by the State for organising cooperatives for dried fish and for finding markets for it abroad. Three cooperatives of fishermen are proposed to be organised in the Kismayo region in addition to the one which is

already functioning at Ras Kimboni. These 4 cooperatives would use a total number of 120 boats, provide employment to 600 fishermen for 6 months in the year and catch about 40 tons of fish per year. Similarly, action is proposed to be initiated to set up cooperatives in Brava where 50 fishermen are said to be operating at present and in Merca where there are about 300 fishermen.

Grain Milling and Grinding

60. About 140 small units employing less than 5 persons each and employing between themselves approximately 450 persons. Regionally the activity is well distributed as is shown by the following figures of number of units and number of workers: Mogadiscio 64 (197); Shalambot and Genale 6 (16); Merca 6 (17); Kismayo 9 (23); Baidoa 7 (22); Gianama 17 (49); Brava 3 (10); Gelib 8 (12); Beletwein 3 (6); Bulo Burti 4 (12); Margeisa 8 (17); Tugwajaleh 2 (5). Machines being used in many of these units are old and while they may be kept operating through repairs, the question of their replacement needs an urgent study. An operative in these small units gets an average of So.Sh. 4 as wages. The working proprietor may have daily earnings up to So.Sh. 20 to 30.

Bakeries:

61. Bakeries employing 2, 3 or 4 persons each are functioning in Mogadiscio, Margeisa, Gabileh, Arabseye, Kismaye and in several other urban settlements. Their total number is around 35 and the total number of workers employed about 100. These bakeries are not as well-equipped as those in the small-scale sector and their daily output is also less. For the rest, their character and problems are similar to those of small-scale bakeries.

Textile Weaving (Handloom)

62. Handloom weaving is a traditional industry in Somalia handed down from father to son over several generations and gives employment at present to about 800 weavers, of whom over 200 are in Mogadiscio. Outside Mogadiscio, the main concentrations of the industry are in Gelib-Merca (60), Merca (120), Brava (250) and Wanlewein (45). The industry in all of these centres is housed in ramshackle sheds

[illegible] on poles with old metal iron scrap sheet and tattered [illegible] as roofing material. The rudimentary equipment used consists of a throw-shuttle pitloom. The weaver sitting at the pit operates the shuttles on warp which has been sized earlier by [illegible] starch by the members of his family. The raw material used consists of hanks of imported coloured yarn of 20, 30 and 40 counts purchased from the market at So.Sh. 4 to 5 per hank. Investment in loom and accessories is about So.Sh. 50 and with repairs, the equipment lasts 10 years or more. The variety of products is limited, the main product being 'Futa' or 'Lungi' - the traditional Somali wear measuring about 4 yards [illegible] of as bale waist garments. Designs of 'Futa' are made by the weavers themselves through various permutations and combinations of coloured and white yarn. The average daily production of a weaver is 6 yards and with 300 working days (work stops during rainy season when pits get filled with water), the average annual production would be around 1800 yards. The total annual production of handloom cloth on this basis would be of the order of 1.5 million yards. The sale price of one 'Futa' piece of 4 yards varies from So.Sh. 15 to 18, depending on the attractiveness of design and count of yarn used. Recent government restrictions on imports of cloth have somewhat widened the home market for hand-woven cloth, although it is not yet reflected in any increase in the market price of 'Futa'. At the same time, import restrictions on yarn might set up a trend towards a rise in the price of yarn and some hardening of price is reported to have taken place already. Imports of cotton yarn and thread, bleached, dyed or mercerised, into Somalia were 92.969 kg. valued at So.Sh. 987,088 in 1971.

63. Handloom industry functions at present on an individualistic or family basis, each weaver buying and selling for himself. There are no cooperatives; nor are there any vicious merchant - middlemen exercising an octopus - like hold on the weavers reducing them to the position of workers. Weavers do take yarn on credit from the yarn merchants when they are short of cash and repay after selling the cloth. Their workplace is unsatisfactory, especially during the rainy season but the weavers have no resources of their own to deploy

for its improvement. They have to compete with cheaper imports of textiles designed by textile manufacturers to suit local taste. Some of them are becoming conscious that they face a grim struggle for survival unless they do something to improve their equipment or change over to mechanical equipment. As for the future development of this industry the following suggestions are made.

i. Facilities for upgrading the skill by classes and change over to fly shuttle frameloons and powerlooms. Demonstration and training are called for to facilitate this change;

ii. Improvement of workplaces should be a high priority and government should by providing building materials under self-help schemes, sponsor and implement a better workplace programme for the weavers. The government has very recently prepared a design for a roofed building to house 18 to 20 weavers in Merca-Jelib. The building will be constructed over an area of 36 m. x 11 m. or 396 m^2 under self-help scheme, the government's share of cost being shared by the Ministry of Interior and the local government. The weavers to be housed in the building will be asked to form a cooperative;

iii. Competition from imported 'Futa'-like fabrics should be checked by regulating or banning imports;

iv. An assured supply of yarn of 20s, 30s and 40s to the weavers is vital to the development of the industry and if imports of yarn are to be discontinued in the future, sufficient spindleage and dying facilities should be installed as part of the development programme of Somaltex, Balad to meet the yarn requirements of handloom weavers.

Tailoring and Garment Making

64. This is the largest industrial activity in the traditional sector comprising about 500 establishments employing 1400 persons, with an extensive regional spread - Mogadiscio 84/ (72); Hargeisa 63 (33); Burao 57 (31); Merca 47 (31); Kismayo 45 (73); Oswajaleh 40 (45); Afgoi 23 (42); Gichar 21 (42); Giamama 19 (32); Shalambot and Genale 15 (34); Baidoa 2[illegible] (55); Brava 13 (22); Bai-te-weine 12 (31); Golib 9 (10). Other places with less than 10 establishments each include Bur Hvaaba, Galkayo, Bulo-Burti, Diso-March, Bossaso, Erigavo, Las-Khoreh, Berbera, Boramo and Arabsayo. There are some more places with only one or two units each. There is hardly any urban settlement of some size which does not have a few tailor establishments. Tailors' cooperatives have been formed in a few places like Hargeisa, partly with the object of making ready-made garments but their expectations of government imposing heavy restrictions on import of ready made garments and giving them other facilities have not materialised. Average daily wages of an operative or the owner-worker in the industry are about So.Sh. 15. The main fixed assets, besides the workplace which is often taken on rent, are the sewing machines costing So.Sh. 500 to So.Sh. 1000 each. Working capital is not always adequate but there is no organised arrangement for getting loans at reasonable rates of interest. Formation of industrial cooperative societies is easily the most effective way of organising the industry for technical and financial self-improvement. Through these cooperatives, assistance of various kinds including loans for replacement of machines and for purchase of materials, advice on new designs for ready-made garments and exploring new markets and supply of cloth at reasonable prices can be channelled.

Furniture and Fixtures of Wood

65. According to the data contained in the report on the Manpower Survey Project, there were in 1971 about 150 small establishments employing one or two persons each of which 113 units employing 191 persons were in Mogadiscio, alone. There were 2 to 8 units each in Kismayo, Hargeisa, Merca, Burao, Shalambot and Genale, Baidoa, Brava and Berbera. The annual value of output of a small unit would be around So.Sh. 10,000 to So.Sh. 15,000 and the articles are generally made on order. The general nature of problems facing the industry and its needs are more

or less similar to those of the small-scale units mentioned in the earlier chapter.

Vegetable Oil

66. The number of small mechanical mills engaged in crushing vegetable oil-seeds into oil is estimated at 100 of which 40 are in Mogadiscio and the rest in Jowhar, Giamama, Gelib and Merca. The total number of camel-driven crushers is not known - one estimate places it as high as 520 - but in Mogadiscio 15 such crushers are said to be operating. The daily processing capacity of a small mechanical mill is about 5 quintals of seed and of a camel-driven crushes 1/3 to 1/2 quintal. Oil yield is 35 to 40 per cent in both cases. Oil cake is fed to owned cattle or sold in the market. Market price of sesame oil in March 1973 was around So.Sh. 6 per cent in Mogadiscio. Daily wages of an operative in a small mechanical mill is about 4 So.Sh. and those of a camel-driven crusher a little less. Annual production of sesame in Somalia has been around 14,000 tons during 1969-71 and is estimated at 17,000 tons in 1972. Groundnut production has fluctuated between 1500 and 3000 tons during 1969-71. On such evaluation as is possible with the rather imperfect data, seed production of this order can be easily taken care of by small mechanical mills and camel-driven crushers. However, if production records a sizeable increase of 30 per cent or more during 1974-1978, additional crushing capacity for about 5000 to 6000 tons of seed (about 25 tons per day) would have to be created. This could be created by setting up or reactivating 3 major mills with a total daily intake of 8 to 10 tons each or by encouraging the establishment of more small mechanical mills with an intake of ½ ton of seed each. Small mechanical mills and camel-driven crushers have in the past shown high survival value as against the major mills, apparently due to the advantage they enjoy of being able to make purchases of seed in small quantities in an unorganised market and of catering conveniently to the needs of customers living within easy distance of the mill or the camel-driven crusher.

Non-metal Items and Clay Products

[illegible]. As appears to the latest obtained in the report of the Manpower Survey Project, there were only 13 units in the traditional sector of which 7 employing 23 persons were in Mogadiscio and 6 employing 10 persons in Merca. Like the small-scale units engaged in the same line, they produce mostly cement and clay blocks.

Metal Work (Cutlery, Hand Tools etc.)

68. The main concentration of this industry in the traditional sector is in Mogadiscio which had 99 units in 1971 with 148 persons employed, followed by Hargeisa 31 (38); Burao 13 (26); Kismayo 13 (26); Afgoi 11 (22); Giohar 10 (21) and Merca 8 (20). A smaller number of units also exists in many other places such as Baidoa, Brava, Bur-Hacaba, Belet-weine, Duso Mareb, Berbera, Gabileh, Arabseyo, and Tugwajaleh. They need better workplaces constructed with government assistance under the self-help scheme, technical advice about improvement of their tools and methods of work and more assured supply of scrap iron and imported tin sheets etc. In some places like Hargeisa and Burao, some cooperatives or pre-cooperatives of blacksmiths have been formed but unless some tangible assistance is provided to such cooperatives no significant benefit will be derived by the member artisans.

Jewellery and related articles

69. In the traditional sector there are about 30 units employing over 60 persons. 16 small establishments are located in Mogadiscio employing 41 persons, 6 in Merca (14 persons), 2 in Giamama (4 persons), 2 in Hargeisa (2 persons) and 3 in Kismayo (3 persons). The small establishments are engaged more in conversion and repair of old ornaments than in making new ones.

Slaughtering

70. Slaughtering is a ubiquitous activity carried on in the meat canning factories, in municipal abatories, in backyards of butchers' shops and in the rural areas by individuals for their daily consumption of meat. The facilities for slaughter in meat canning factories are modern and adequate but elsewhere they are much less so, especially where water availability for post-slaugher cleaning up is poor. A good part of the slaughter is uncontrolled and unsupervised activity carried out by non-professionals. In 1971 there were, according to Statistics of Industrial Production, 4 small-scale butchers' establishments in Mogadiscio employing 5 or more persons and having a daily input of 2 to 4 cattle. The report of the Manpower Survey Project mentions another 250 establishments in Mogadiscio employing 4 persons i.e. 1000 persons engaged in slaughtering activities. For the whole of Somalia the number of persons in this activity would be very much larger, possibly well over 3000.

Hides and Skins Processing and Tanning

71. Out-side the two mechanised tanneries referred to earlier processing of hides and skins consists of air-drying and dry salting in scattered locations all over the country. Air drying of cattle and camel hides is practised sporadically and on a non-commercial scale. Dry salting of cattle hides is concentrated in Mogadiscio and Kismayo and that of camel hides in and around Mogadiscio. Dry salting of skins is practised in the same areas where dry salting of cattle hides is completed. Air drying of skins is practised throughout the northern regions as well as in the Hiran, Upper Juba and Lower Juba regions. Hides and skins produced in urban and village settlements are stated to be superior in quality and weight to those produced in the nomadic sector. Improvements in the existing methods of processing hides and skins have been recommended in a comprehensive report on the hides, skins leather and footwear economy of Somalia (June 1972). One of these is the adoption of suspension shade drying of skins in preference to present air drying. Development of tanning in medium-sized establishments by first setting up units for pickling of skins and production of wet

[illegible] simple tanning [illegible] will be the next step. In the case of hides, production of either wet blue chrome or vegetable semi-finished leather could be undertaken. The pickling plant at Burao which is to become operational in the near future would provide valuable data for decision making, particularly in regard to production of finished leather. In 7 small tanneries located in Brava and 1 each in Mogadiscio and Hargeisa tanning on a small-scale is already being done on a [illegible]-scale with the use of both wet blue chrome and vegetable tanning processes. Gains from semi-processing of hides and skins in Somalia, it is claimed, would be substantial. The price of pickled skins in world markets would be 10 to 15 per cent higher than the price of corresponding raw material, while the margin in the case of wet blue leather and vegetable fringe tanned leather would be 45 to 50 per cent and up to 40 per cent respectively. Full vegetable crust leather in the ready-to-finish state may fetch up to 70 per cent more and finished leather in the form of shoes etc. 100 per cent more than raw hides and skins.

Footwear

72. In the traditional sector, footwear production is a widespread activity but its main concentrations are in Mogadiscio 84 units (133 persons); Hargeisa 63(92); Burao 57 (81); Kismayo 35 (73); Baidoa 26 (55); Merca 39 (81); Tugwajaleh 40 (45); Afgoi 23 (42); Giohar 21 (42); Giamama 19 (32); Shalambot and Genale 15 (34) and Brava 13 (22). Some of the units in urban settlements used untanned hides and skins to make sandals for nomads. Others combine this activity with production of sandals and shoes from tanned or semi-tanned leather. Average daily output is 3 pairs of footwear and the average daily earnings 7 to 8 So.Sh. A typical small unit employing, besides the working proprietor, 2 or 3 operatives and one helper, has an annual input in leather, nails, thread etc. valued at about So.Sh. 30,000 and an output valued at about So.Sh. 60,000.

The traditional [illegible] suffers from all the disadvantages of unorganized industrial activity, viz. difficulties in procuring raw materials at reasonable prices, low quality of the product and low level of earnings. All the same, whatever it produces finds a ready market. Three artisans' cooperatives have been formed in some places like Hargeisa and Burao and rooms/workplaces have been provided under [illegible] scheme. These cooperatives have not received any support by way of technical assistance, loans at concessional rates etc. and they are not, as they ought to be, the instruments of a technical upgrading and development programme.

Salt

73. This industry exists in a big concentration in the extreme northwest at Zeila, Loroshi and Loyado where 410 small units, mostly one-man establishments, employing 356 persons were reported to exist in 1971. Near Mogadiscio at Gezira, there is an important saltern where several hundred tons of salt are produced every year. In the Mudug Region, near Wissil, natural salt lakes have been used by semi-permanent local inhabitants and nomads to make salt which is sold at So.Sh. 1 per quintal and on which the Hobbyo Municipality levies a charge of another So.Sh. 1 per quintal. At Yamani, west of Kismayo, 70 persons working for 3 months in a year on individualistic basis are said to be producing 200 to 250 tons of salt which is sold to Kismayo Meat Factory at So.Sh. 12 per kg. production cost at field level being only So.Sh. 4 per kg. In at least two other places, viz. Lugmayo near Brava and Mongi near Merca, possibilities of making salt are said to exist. No precise estimate is available of the total quantity of salt produced in a year. Most of the salt is used for dry-salting of hides and skins and for salting of fish. This industrial activity needs to be organised, where possible, on a cooperative basis. Technical assistance should be provided for effecting improvements in the methods of salt-making and for refining salt for edible purposes.

[illegible]

74. This industrial activity is ancillary to manufacture of wooden and metal furniture and consists largely in making mattresses of different sizes. Plain or designed coloured cloth is cut and sewn and stuffed with a mixture of coconut husk and cotton, usually in equal proportion. In some cases stuffing is done with cotton alone. The price of husk-cum-cotton stuffed mattresses of 6 x 4 ft. size is about Sh.So. [illegible] of all type of cotton-stuffed mattresses is at Sh.So. 50. The activity is carried out mostly in small units employing less than five persons each and in 1971 there were as many as 27 units in Mogadiscio employing 55 persons, 4 units in Merca, 3 in Kismaye and 2 in Hargeisa.

Cordage, Rope and Baskets

75. There are several plants and trees like sisal in Hargeisa, Burao and Baidoa regions, 'Cow Awe' in Nogal region, 'Dalol' in many parts of the country and palm trees both in the north and south regions, which lend themselves to processing for production of cordage, rope, baskets and bags. Some processing of sisal fibre is already being done by Somali women in a primitive way to make strings and ropes. Coconut stems and leaves are being used for making cord and baskets manually in Merca, the average daily earnings of a worker being So.Sh. 5-6. 24 persons in Merca and 18 in Mogadiscio are engaged in this activity. There has been no effort so far to develop a small-scale industry using small machines or efficient tools. One problem would be to collect sufficient raw material to feed such a unit regularly. It would be worth while to experiment with cultivation of sisal on plantation scale and to install a pilot plant for manufacture of cord, bags etc. from its fibre. A similar small pilot project could be undertaken in the districts of Ainabo and Bender Beila in Nogal region for making bags for carrying fish by processing locally grown 'Cow Awe' trees.

Clay Pottery

76. Pitchers and pots made from locally available clays are a part of the equipment which nomads use for carrying water or milk and which are also a part of the storage accessories in ordinary homes. In 1971 there were 12 one-man units in Merca and 3 units in Mogadiscio employing 7 persons engaged in this industrial activity. Clay pot-making is entirely a manual exercise; no potter's wheel is used; turning is done on a potsherd while the deft female fingers shape the clay. The product is somewhat crude and after baking in fire, sells for So.Sh. 1.50 to So.Sh. 3.0 per pot, depending on the size. In Merca, clay is obtained from nearby El-Jale at the nominal price of So.Sh. 1.50 per quintal and a small proportion of sand is mixed before processing starts.

Handicrafts

77. Artistic handicrafts are somewhat different in their basic character and problems from traditional small industries turning out goods of functional value and it is therefore dealt with as a separate group. For purposes of classification within the group, the nature of raw material used i.e. whether it is of indigenous origin or is imported, has been adopted as the basis.

Imported raw material-based handicrafts:

- Hand-woven cloth (designed)
- Ready-made garments (fancy design including Merca tie-dyed and printed garments);
- Woollen knitted garments;
- Crochet work;
- Embroidered fabrics, 'Kofia' head-gear, embroidered shirts etc.);
- Plastic nylon twine handbags;
- Canvas travelling bags;
- Jewellery - gold and silver;
- Cutlery, spears (off-beat shapes and designs);
- Cotton carpets

Indigenous raw material- based handicrafts

- Wood carving (containers, bowls, spoons, masks, animal figures)
- Wooden sticks (Frimavo wood)
- Stone work (El-Bur stone)
- Leather work (handbags, dik-dik carpets, etc.)
- Horn and bone articles
- Clay pottery (cooking pots, water jars, etc.)
- Coloured hig (sisal fibre) wall decorations, table mats, etc.
- 'Alol' (a product of reeds and cotton thread used in cottage wall)
- 'Kabed' (decorative material woven from 'Galol' tree fibre and cotton thread)
- Palm-leaf mats and baskets
- 'Harrar' (matted roofing material used in rural areas, made from grass and 'Galol' tree fibre)
- Cowrie shell and coral ornamental products.

78. No exact information regarding the nature and structure of the handicrafts industry, their contribution to the overall economic activity, potential for future economic activity and growth, their needs etc. could be gathered. Emporia for handicraft products have been established in Mogadiscio and Burao. These have been useful in bringing together the products in one place for the interested visitor and buyer but their main objective of promoting sales and development of handicrafts has yet to be realised. Further work needs to be done to improve the design, workmanship, finish of the handicraft products, especially those based on indigenous raw materials, promotion and planned growth.

79. A unique handicraft of Somalia is El-Bur stone work including the famous meerschaum pipes and cigarette holders. The sepiolite deposits near El-Bur town have been worked for several generations by local craftsmen for making household articles. Fashioning artistic articles like pipes, incense holders, ash trays, etc. is of more recent origin. El-Bur local government has now sponsored a co-operative of local craftsmen, constructed a large house with a compound and made provisions for electricity and storage of water. The main needs are now assured purchase of products, quick payment to craftsmen and elimination of dependence on middlemen. As the best shafts of sepiolite deposits are said to be getting exhausted, it would be advisable to take steps for their conservation for artistic stone work.

80. Another industrial activity having more potential is the processing of the resin of aromatic plants (frankincense and myrrh) for making incense and perfumes. A small unit in Hargeisa under the name of Warshadda Udunga Dalka is making incenses with the local names of 'Dhai' and 'Bukhoor' by cooking together aromatic woods, sugar and water. Exports of myrrh, which is traded by private merchants, and incense which is bought by the National Trading Agency, are taken together valued at nearly So.Sh. 2 million. Possibilities of small-scale processing of (1) Maidi (2) Beyo (3) Mal-mal (4) Habag Hadi (5) Oum Arabie (6) Qadhoon (7) Hankoki (8) Moqlo and (9) Morkod should be investigated by a specialist and a feasibility study prepared.

CHAPTER TWO

RESOURCES AND INDUSTRIAL UTILIZATION

I. RESOURCE AVAILABILITY

91. All countries have the elemental natural resources endowment - Water, Land, and Minerals - the latter three, in varying measures. It is the manner and the extent of their economic utilization, and the human ingenuity and resourcefulness with which they are used, that make for prosperity or poverty of the people of a country. Industrialization of a country without any great abundance of natural resources is possible, as has happened in a few countries, like UK and Japan, which have achieved great heights of industrialization, with meagre resource endowment, largely through human skills and ingenuity, research, and development of technology. The heights of industrialization reached in USA and USSR are the result of development of own natural resources, with a view to reaching the highest stage of industrialization, with the application of indigenous skill, ingenuity, most modern technology, and continuing research for development. Since modern technology could be imported, resource endowment of a country should lead to more economic, possibly more rapid, and durable industrialization of the country. But most of the natural resources have to be tested as to their suitability for use in industry, the extent of the availability proved and determined, and the feasibility of their economic exploitation firmly established. This again requires scientific skills and technology, which the developing countries have to import. The existence of natural resources in developing countries by itself does not guarantee their industrialisation. Much spade work, planning and organised developmental action, are necessary. The process of conversion of a resource to the stage of an industrial raw material, is tedious and expensive, and may at times, go on for several decades. Because of this, developing countries in the short-run find it necessary to resort to development of import substituting industries based upon imported inputs. Resources development and exploitation also provide a most powerful tool in the strategy

for sub-regional development and growth. This activity generates more incomes and creates more employment at and around the areas of resources. Industries based upon resources begin to be established in cities adjacent to the resource locations. Moreover, value-saving resource-based industries bring in much larger gains in foreign exchange than those using imported inputs. If their products have export markets, net export earnings are also larger than those based upon imported materials, provided, of course, that the resource itself has no export markets.

82. Water is not regarded as direct industrial raw material, but it is basically one of the most essential [illegible] for the existence, survival and growth of all forms of life, and vegetation. In industry, water is used for generation of steam power, as a transportation medium, a diluting agent, solvent and for cleaning and washing operations. As industrial raw material sea water is traditionally used for making salt. It is also used as the basic material for making distilled water and hydrogen peroxide (H^2O^2), and in nuclear countries (in the USSR specially) for the manufacture of Heavy Water (H^2O^3). In Somalia sea water is being used for recovery of common salt (Nacl). Marine byproducts could also be recovered from the brine left over after the recovery of common salt. Distilled water in conventional way is made in beverages plants. Establishment of desalinization plants for making not distilled, but potable water from highly brackish well-water, in as many areas as possible, will go a longway to fill the existing gap for water. Potable or industrially usable water is usually a free or low cost commodity. Desalinised water may cost four times the normal rate of sweet water. But in Somalia this can become an essential industry for settling nomadic tribes. Its extra cost may be regarded as national expenditure on building a vital infrastructure for industrial and economic growth. In Saudi Arabia, Kuwait, and Jordan desalinated water is also obtained from brackish water with the use of specially devised plants. Efforts were also made to harness solar energy, with the aid of a cascade of reflectors, to generate steam from sea water to drive turbines of large power stations. Somalia could profitably watch such developments for future planning.

83. Air is [illegible] not considered as an industrial resource, alth[illegible] technol[illegible] has m[illegible]ble, extraction of oxygen, [illegible] and nitrogen f[illegible] as well as [illegible] nitrous [illegible], liquid nitrogen and a num[illegible] other nitro[illegible] e. In Somalia [illegible] oxygen for [illegible] welding, and for use in hospitals, is extracted from air at Jowhar Sugar Factory.

84. In Somalia, the seas in the North and East coast, are known to be [illegible] of abundant supplies of fish - tuna, mackerel, white fish, shark, shrimps, prawns, lobsters, [illegible], sea weeds, etc. Sea shores, along the [illegible] coastline, are known for heavy black sands, (Magnetite, Ilmenite, Rutile etc.), glass sands, and sea shells. Fish processing industry is in early stages of development. Corals yield chemically pure calcium [illegible]). Ilmenite, Zircon and Rutile, have an export market. Ilmenite is also the basic material for Titanium dioxide, and ultimately for the high priced titanium metal (used in making of spaceships). Rutile and Zircon are the material used for high temperature refractory bricks and lining industry.

85. Relative to the size of population, there is abundance of land in Somalia. With a land area of 260,000 sq. miles (63.8 mill. hectares) and a population of 3 million the land/man ratio is very high 21.3 hectare (55.7 acres) per capita. However, land as a resource has its importance only in relation to its fertility, availability of water, rainfall, and the mineral wealth, and water underneath. In Somalia, out of the total land area of 63.8 million hectares (166.4 million acres), only one aigth is suitable for cultivation, and of the cultivable land only 5 per cent, 400,000 Ha (1,040,000 acres) is under cultivation. Extension of cultivation is difficult, owing to scarcity of non-saline water, and moderate or poor rainfall in most parts of the country. Water for cultivation is available from moderate rains in the Southern Regions, from Juba and Schebelle Rivers in the river basin area. Total flow of waters in the two rivers is estimated at 5.1 million cubic metres - Juba 3.4 million cubic metres and Schebelle 1.7 million cubic metres.

Irrigation projects supply water [illegible] cultivable land. The potentially irrigable area however is 240,000 HA. Cultivation in the rest of the area is [illegible] upon rainfall and floods in the rivers. [illegible] shrub-land is relatively much larger in Somalia. [illegible] of heavy rains, forest area is also small, and most of it is concentrated in the North-eastern region and the Ogo. In the rain-fed regions, the main crops are sorghum, maize, millet, cowpea, groundnut, sesame, cotton and beans. In the irrigated areas, major crops are, banana, sugarcane, papaya, citrus, vegetables, mangoes and other citrus fruits and vegetables. Sorghum, maize, ground nut, sesame, maize, cowpea, paddy, wheat, pulses, fruits, tomato etc. are the crops which can provide immediate exports. Paddy and cotton are other possible crops in irrigated areas.

86. Not much is known about the forests of Somalia. Broadly speaking forest area of the country is small. But it provides [illegible] like incense, myrrh, gum arabic and natural cement. Northern forests also have an unknown stock of mahogany type wood in Erigavo area. Umbrella trees are also a source of gums and charcoal, and 'Gaab' trees in Northern Region provides material for mats, ropes, roofing, animal feed etc. If a Survey can establish exploitability of mahogany, export of mahogany veneer or sawn timber, is a possibility which could reduce the foreign exchange bill for import of cheap timber.

87. More than agriculture, land in Somalia supports a relatively much larger livestock population, despite the scarcity of water and fodder, arid and saline land, and hot and humid climate. Total livestock population is estimated at nearly 26 million - 4 million cattle, 7 million sheep, 13 million goats, 2 million camels and 1.5 million poultry birds. Animal-land ratio comes to 100 animals/square mile, and animal/population ratio, 8.71 animals per person. Similar animal population ratios for other countries are - Kenya 1.1, Uganda 2.9, Nigeria 0.52, India 0.7 and Ceylon 0.18. Livestock is Somalia's most precious active natural resource. It is the country's largest export earner, and provides the major food requirement of the

people. All products based upon livestock are estimated to contribute about 35 per cent of Somalia's GDP. Potential contribution could be about 50 per cent. Its products, meat and milk, and byproducts of slaughtering industry - hides and skins, bones, horns and hoofs, liver, tongues, intestines, kidneys, blood, tail, etc. are the raw material for a number of industrial products - canned and preserved meat, dairy products, tanned leather, meat and bone-meal, horn and hoof meal, glues, gelatine, cat gut, blood meal, liver extract etc. Availability of tanned leather also makes possible low-cost footwear and leather goods industries, for domestic as well as export markets. Cattle population is concentrated mostly in Southern Region. Goats and Sheep are mainly found in the Northern and Central Regions. Camel population is more evenly distributed over the regions of the State.

88. Mineral resources though not quite abundant, are fairly substantial and diversified. Somalia's known minerals are, high quality gypsum, iron ore, salt, limestone, sapiolite, uranium, heavy sands, industrial clays, glass sands, bauxite, asbestos, tin, mica quartz, beryl, copper, tantalite, and last but not least important underground water. Petroleum and gas occurances are also possiblities. Most of the minerals, except, groundwater, clays and sands, are concentrated in the Northern Region. But except for salt, gypsum, limestone, sapiolite, underground water, other minerals are still in the stage of investigation. Development of mineral based industries is therefore a long-term proposition. Short-term possibilities are salt, gypsum, limestone, sapiolite, and underground water. Apart from refined salt and exports, salt would be a basis for caustic soda, chlorine and soda ash industries, and through chlorine, provide the basis for potassium chloride, calcium chloride, BHC, PVC, titanium dioxicde, and even tetanium metal industries, the latter based on chlorine from caustic soda industry, and Ilmenite from heavy sands. Gypsum is a material for cement, plaster of paris, precipitated chalk, etc. industries. It can be also used for making sulphuric acid and recovering sulphur.

II. RESOURCE UTILIZATION

1. Livestock and Poultry:

89. Current (1971) utilization of livestock population is given in the following table:

Table IX - Livestock Utilization (1971):

Livestock	Slaughter		Total	Exports(b) (on hoof)	Total slaughter + export	% Slaughter	% Export
	Municipal(a) + private	Meat Factories					
Cattle	146,020	125,400	271,420	126,105	397,525	68.3	31.7
Sheep + Goats	5,134,000	-	5,134,000	1,492,613	6,626,613	77.5	22.5
Camels	176,332	-	176,332	23,702	200,034	88.1	11.9

(a) Includes clandestine slaughter

(b) Includes unrecorded exports

90. Nearly 10 per cent of the total - cattle population is utilized annually, for slaughter to provide meat, and for export on hoof, mainly to Arabian countries. About 54 per cent of the slaughtered cattle provide beef and veal for domestic consumption. The balance of 46 per cent go to the two meat processing factories, for making canned meat for export to Italy, and other European Countries. In addition to canned meat, the factory at Chisimayo has of late been exporting carcasses. Export of carcass yields lower value as compared to the export of canned meat. Export of cattle on hoof earns foreign exchange to the tune of So.Sh. 18 million but entails outright loss of country's cattle wealth. Since the country has created large canning facilities, export of canned meat is preferable, to export of carcass or cattle on hoof. But the international demand for meat in carcass is likely to increase in future. The present rate of exploitation of cattle is reasonalbe if the total cattle population is in fact around 4,000,000. However, natural growth of cattle population would be like that in other similar countries, namely about 15 per cent a year. Hence, if the real cattle population is around

2.5 to 3 million, the current rate of exploitation (i.e. 400,000 cattle a year) would turn out to be dangerously high (13 to 16 per cent) and may lead to declining cattle population in the future. Cattle exploitation policy needs to be reviewed on the basis of census estimates of cattle population and rates of slaughtering, and exports regulated accordingly.

91. Of all the byproducts of cattle slaughtering, hides are more or less fully recovered and utilized commercially. Bulk of the hides are, however, only sundried or salt dried and exported. Modern tanneries process only about 20,000 hides a year. Hides available in rural areas are generally locally tanned and used for footwear and other products. There is thus scope for developing a modern tanning and leather goods industry in Somalia. Cattle alone would provide 250,000 to 300,000 hides for tanning, if slaughtering industry is modernised or efficient collection system is organised. Other byproducts are only meagrely exploited or just wasted. The extent of availability of byproducts of cattle slaughtering is inedible meat and non-carcass boned: 12,200 tons, Blood 550 tons, Fat 1,630 tons, and carcass bones 9,000 tons; 270,000 each of livers, kidneys, tails, intestines, tongues and a larger number of horns, hoofs etc.

92. Exploitation rate for <u>sheep and goat</u> is even higher. Nearly 26 per cent (over 5 million) of sheep and goat population is slaughtered annually to provide mutton and lamb for human consumption. Slaughtering takes place in municipal or private slaughter places and except for skins, little of byproducts are recovered and processed further. These include 5,000t. of inedible meat and bones, 1,000t. of blood, 1,500t. of fat, 18,000t. of carcass bones, 5 million each of tongues, livers, kidneys, intestines, in addition to horns and hoofs. Nearly 75 per cent of sun and salt dried skins are exported. Modern tanneries tan a fraction of the total supply of skins and the balance is used by village tanners and leather goods makers for turning out various articles. There is scope for tanning of millions of skins in modern tanneries and exporting tanned skins and semi finished and finished leather products. Nearly a million and a half of sheep and goats are exported on hoof, annually to Arabian countries earning

So.Sh. 88 million of foreign exchange. As bulk of the exports are tied up with slaughter of live goats and sheep for religious purposes in Saudi Arabia, it would be difficult to expect any diversion of the live animal export to export of mutton and lamb. But internal consumption is large and modernisation of slaughtering of sheep and goats is essential. It will also help set up tanneries and byproduct processing plants.

93. The rate of exploitation of camel population is about 10 per cent a year, 7.5 per cent for meat and 2.5 per cent for export of live camels, yielding foreign exchange earnings worth So.Sh. 17 million. The meat yield (in carcass) of a camel is high - 200 kg. as against 110 kg. for cattle and 16 kg. for goats and sheep. Camel slaughtering also takes place in municipal or private slaughter places, under unhygienic conditions and recovery of byproducts, except hides, for further processing is meagerly done. The resulting wastage of byproducts is large - 14,000 tons of inedible meat and bones, 900 tons of blood, 1,800 tons of fat, 8,000 tons of bones in carcass, some 179,000 each, of tongues, livers, kidneys, intestines, tails, and a large quantity of hoofs. Nearly all the 175,000 camel hides are recovered, sun or salt dried, and bulk of them used in the country, after crude tanning for various domestic purposes, and for footwear industry as sole leather. Camel hide tanning also needs to be modernised and further processing carried to higher stages of manufacture. Exports form only 12 to 13 per cent of the available supply of camel hides.

94. Milk of cows, camels and goats and sheep is widely used in Somalia. According to FAO estimates per capita animal milk consumption comes to 108 kg., giving a total of about 324,000 tons. The Government Milk Factory at Mogadiscio has a designed capacity of 10,000 litres (20 tons per day - three shifts) but is working at about 5 tons a day. Dairying is a relatively dispersed industry, operating on small to medium scales, located in the centre of livestock areas. Large scale milk processing industry is located in urban centres, and is mostly fed by adjacent areas. Its successful working depends on regular milk supplies in required quantities.

95. Poultry is another natural resource, which needs to be developed on modern and scientific lines. Somalia is estimated to have a poultry population of 1.5 million birds. There is scope for manufacturing processed poultry for export to developed countries. This resource needs to be properly developed in the next few years.

96. The impact of livestock utilization in Somalia's economy is already substantial. Accurate statistics are not available. But indications are that currently livestock and its products and byproducts account for nearly 35% of the gross domestic product in Somalia. Recovery of byproducts currently not being used for further proces sing and setting up modern byproduct based industries, could easily raise this share to 50 per cent of the GDP.

2. Agricultural Resources:

97. In the agricultural sector, Banana is the most developed agricultural resource of Somalia. Banana crop is confined to Juba-Scebeli basin, in the Southern part, in Genale-Celib Area. The area under 62 Banana plantations is estimated at 8,000 HA, yielding in 1972 an output of 223,000 tons. Of this total 134,000 tons was exported, yielding foreign exchange earnings of So.Sh. 120 million, and some 89,000 tons of Banana were rejected for export purposes. The rejected bananas and the fibre content of banana leaves, stems and trunks, offer good industrial possibilities. Rejected bananas can be processed into powder used locally in confectionery manufacture and bakeries and exported after rendering it much less hygroscopic than in its original form. Somalia is short of cheap natural fibre suitable for manufacturdof bags. Local demand for sugar bags is of the order of 900,000 bags. More than a million bags would be required for bagging of 100,000 tons of cement, 30,000 tons of wheat flour, 30,000 tons of rice and 20,000 tons of oil seeds. Banana fibre is found suitable for manufacture of these bags. Banana trunk contains quantities of water rich in vitamin and minerals and could be used as fertiliser. The fibre could also be pulped and used for making cardboard, paper and paper board, and containers for banana for export. This will lead to a saving of some So.Sh. 15 million of foreign exchange currently being spent for import of these containers. To start with the fibre obtained as byproduct of

banana plantations could be used both for manufacture of containers and bags. In course of time, special plantations could be developed, for the fruit, and for fibre, and surplus fibre itself may find export markets.

98. Sugar cane output of 430,000 tons, is currently tied up with the requirements of GNAI sugar factory, and is confined to Jowhar area. With the proposed expansion of the capacity of existing sugar factory, by 10,000 tons, the output of cane will increase by another 100,000 tons, in the same area. The new sugar factory planned to meet increasing domestic demand and develop export market for surplus sugar production, will come up in the Lower Giuba area, if Fanole Reservior is found to be technically feasible. The factory will have a capacity of 50,000 tons of sugar, requiring 500,000 tons of sugar cane. Thus by 1980 or so, Somalia will be producing nearly 100,000 tons of sugar from 1,000,000 tons of sugar cane. Possible by products which could be further processed to yield additional incomes and employment (also foreign exchange), resulting from crushing of a million tons of sugar cane will be:

Bagasse @ 2% of cane	20,000 tons	(Approx. price So.Sh. 30 per ton)
Molasses @ 2.75% of cane	27,500 tons	(Approx. price So.Sh. 100/ton)
Soft industrial wax @ 12 to 13% of filtration cane sugar juice	1,500 tons	(Approx. price So.Sh. 8,000/ton)

Except for some 5 per cent of the total supply of bagasse, the rest can be used as fuel for sugar factory. In view of fuel shortage and high cost of power and diesel in Somalia, this is probably not the best use of bagasse, but a practical use. However, diesel and power costs should come down to reasonable levels with the establishment of a petroleum refinery in Somalia. Then 20,000 tons of bagasse could become available for manufacture of cardboard, gypsum boards, paper, paper boards, etc. This will add 150 to 200 per cent to the value of bagasse. Currently molasses is being converted into alcohol (4.8 million litres valued at about So.Sh. 2 per litre). Part of it is sold as alcohol and the rest used for making cosmetics

and alcoholic beverages - Rhum, Whisky, Gin, Vodka, etc. This is perhaps the most economic use of molasses and alcohol. The value added to molasses will be very high - 5 to 10 times or more of the value of molasses. In the future, however, part of the Molasses may be used for preparation of cattle feed. With the proposed expansion of WVAI and establishment of the new sugar factory, the amount of alcohol from available molasses will be near about 9 to 10 million litres. This is a very large quantity, and special efforts will have to be made early, to develop export markets for alcohol, cosmetics and beverages made from it. The products currently made are of good quality, and acceptable to Western markets. There should therefore be little difficulty in exporting them at good prices, if planned efforts are made to find markets from now on. PVC could also be made from alcohol.

99. The black soil in Giuba-Scebelle basin is eminently suitable for short and medium staple cotton. Before the depression, fair quantity of short and medium staples were grown in this area, and some of it, exported. At present 3,000 HA are being cultivated in Jowhar - Balad area to provide 1,000 tons of cotton lint for the textile mill at Balad. As the capacity of the mill is increased to 20 million yards of cotton fabric, the area under cotton will have to be more than doubled. In addition to cotton lint, the crop will currently yield 2,000 tons ofcotton seed, with an oil content of 8 to 12 per cent by weight. Cotton seed oil could be used for soap making and the residual cake after recovery of oil by solvent extraction process, used for cattle feed, along with other oil cakes, if precaution is taken to prevent toxicity developing cotton seed cake. Delinting of cotton seed itself will support one cotton ginning and baling plant. By 1978, the amount of cotton will be doubled and further expansion of cotton seed oil, solvent extraction plant, and ginning and baling plant will be required.

100. In addition to cotton seed, sesame and ground nut are the main oil yielding seeds. Somalia currently produces about 17,500 tons of sesame seeds and 3,500 tons of ground nuts. The crops are concentrated in Hamadir Region, and are currently used almost wholly for extraction of edible oil. The residual cake, will yield more oil and better oil cakes for cattle feed, if subjected to solvent extraction process. Total production of vegetable oils is 4,500 tons. An equal quantity

is being imported. There is thus scope for import substitution to the tune of So.Sh. 15 million or even more. Oil cake yield at present would be around 9 to 10,000 tons. Ground nut could also be the basis for ground nut butter and flour industry.

101. Current production of maize is estimated at about 70,000 tons from 137,000 Ha widely dispersed over the country. Maize is basically the staple food in Somalia, and the country is not quite self-sufficient in maize. It also supports maize flour industry. However, the crop grows easily everywhere, and could provide the basis for maize starch and maize oil (mascla oil) industries, both having export markets. Similarly manioc (cassava) also can be grown mainly in Lower-Giuba. Current production is 700 tons, and can support a small starch industry, if the area under the crop is doubled.

102. Sorghum is also a staple food in Somalia and is grown on a widely dispersed basis. Current area and outturn are estimated at 330,000 Ha and 140,000 tons. Basically it can support a dispersed sorghum flour industry. As the crop grows easily anywhere and can provide cheap material for fermentation, it has been suggested that if the area under crop could be extended and the yield increased, the surplus may be used to manufacture light 'Beer', in order to replace later on current import of this beverage amounting to So.Sh. 1 million.

103. Fruit and Crops: In addition to bananas, citrus fruit, papaya, mangoes, lemons and also other varities of citrus fruits, are the main fruit crops in the Benadir Region. Grape fruits, and tomatoes, already provide the basis for juice canning and tomatoes paste industries. Papaya juice is also being canned and a small unit near Kismayo is bottling mango juice. Canning industry would normally cater to export demand. For domestic use, consumer generally prefers, fresh fruits, all the year around. To make this possible, development of cold storages suitable for different fruits, located in urban centres is necessary. This will also encourage the cultivators to grow more fruits during the season, and provide fruits to urban consumers throughout the year, at

reasonable prices. Temperate climate fruits - strawberry, [illegible], [illegible], apples etc. could be cultivated in Eriravo and [illegible] and processed for preservation, both for export as well as for internal use.

[illegible]. Other Industrial Crops: Wheat, rice and tobacco are the other crops which need to be processed by machines, before being consumed or used as raw materials for industry. They are now being grown on experimental basis. But for plans are to become self-sufficient, by growing 40,000 tons of paddy on 8,000 HA in the swampy lands South of Mogadiscio and similar quantity of wheat in the Jeswein region and the Northern Region. Paddy and wheat cultivation will lead to establishment of rice milling and wheat flour industries. Rice straw is a good raw material for straw-board and manufacture, and rice bran can be used to extract rice bran oil and residual cake. Rice husk could also be processed to yield activated carbon which is used as refining agent in Petroleum refineries. Rice straw, which will amount to a million tons, could also be used for making kraft paper, writting paper and cigarette paper. This will lead to large savings of imports.

3. Fish Resources:

105. Somalia, with its 3,000 km. of coast line and 45,000 sq. kilometers shelf area, in the Northern and Eastern shores, extending from the Gulf of Aden to the Equator in the Southern most parts of the country, has rich fish resources of a variety of species - tuna, sharks, white fish, mackeral, sardines, lobsters, shrimps etc. The extent of available supplies can be estimated only through a proper survey. But a rough idea of the potential resources can be obtained from the estimated fish resources as well as actual catches in the Gulf of Aden and Indian Ocean, since Somalia owns about 7.5% of the total coastline adjacent to the sea and ocean. The total catches in the Indian Ocean were 2.8 million tons in 1972. The estimated catches possible in the Indian Ocean indicated by UNDP/FAO estimates are around 10 million tons. Based on actual catches, the share of Somalia should be around 210,000 tons and potential resource 750,000 tons. This is without taking into account the resources of Gulf of

Aden. The advantages of long coastline and its proximity to abundant fish resources are however not fully exploited. Statistics of actual catches during seasons are not available. The extent of the possible catches can be worked out on the basis of the export figures and calculated home consumption. The export of fish and fish preparations during the past five years, for which statistics are available, is given in the following table:

Table X: Export of Fish and Fish Preparations:

Year	Quantity in metric tons	Value in So.Sh.
1967	547	491,000
1968	205	239,000
1969	698	2,964,000
1970	602	1,510,000
1971	1,423	2,638,000

106. The highest exports were recorded in 1971. An analysis of the types of fish and fish preparations exported during 1971 and 1970 are given below:

Table XI: Exports

	1971		1970	
	Kgs.	So.Sh.	Kgs.	So.Sh.
I. Fish fresh and simply preserved	1,045,045	1,030,879	577,591	972,074
i- Fish fresh chilled or frozen	37,837	138,099	81,713	429,319
ii- Fish salted dried or smoked	855,151	610,969	477,388	431,090
iii- Crustacea & molluscs fresh chilled, frozen, salted, dried, crustacea in the shell boiled in water	152,057	281,871	18,490	111,665
II. Fish canned & fish preparations	378,883	1,607,071	84,618	538,085

(cont'd)	1971		1970	
	Kgs.	So.Sh.	Kgs.	So.Sh.
[illegible] canned	331,0[illegible]	1,[illegible],292)	[illegible]	533,[illegible]
Other fish canned	7,204	51,779)		
Total -	1,4[illegible],32[illegible]	2,53[illegible],[illegible]	662,209	1,[illegible]10,[illegible]

[illegible]. Based on the export figures for 1971, the total catches for fish processing industry are estimated around [illegible]200 tons; and for 1970, 800 tons. Whether viewed from the angle of actual catches of the Gulf of Aden and Indian Ocean or the potential resources of the Gulf of Aden and Indian Ocean, the catches realised by Somalia, even in the best years of export were very low - 2.14% or 0.6%, as the case may be. An idea of the lost opportunities or benefits could be obtained, if Shrilanka's figures of fish catches - 120,000 tons - with a coastline less than half of Somalia - are compared to the actuals of Somalia.

108. There are various reasons for low utilisation of fish resources. Consumption of fish is very low in Somalia: 0.4 Kg per capita compared to 9.9 kg. in Tanzania, 11.4 kg. in Uganda, 16 kg. in Zambia and 20.8 kg. in Shrilanka. Meat is preferred to fish and the latter's availability is very restricted due to lack of facilities for preservation of fish catches and their transportation to hinterland, rural and urban areas, away from the coastline. Coastal fishing is restricted to areas adjacent to few fish processing units, and urban areas. Even the fish processing units are not fully exploited due to lack of fish supplies throughout the year. As against the installed processing capacity of over 19,400 tons, the actual availability was 3,200 tons in 1971. Development of fisheries was not given the recognition the resources potential deserved in the overall development of the country. In fact, there was no specific allocation for fisheries development in the overall allocation given to industry in the current Development Programme. Investments were confined to creation of one large fish processing unit in the public sector, which was only partially

exploited, even after three years of its commissioning, and three processing units in the private sector. Fish based industries were not developed around the large fish processing units. The absence of a clear cut fisheries policy and long-term programme for its development resulted in haphazard development of a piecemeal nature. Fisheries Surveys were not followed up by quick follow-up action to exploit the results of survey, especially in organising, equipping, and operating on large scale on the high seas. Creation of fish processing units was not matched by organisation and operation of fish catching arrangements for supplying the raw material requirements of the factories. The Somali-Soviet Expedition organised in early 1972 is expected to catch about 4770 tons of fish, which will only meet a fraction of the aggregate requirements of fish processing units. The large body of fishermen - estimated around 600 to 700 spread over the long coastline of the country was neither properly organised nor equipped and their meagre catches during the fishing seasons were subject to price fluctuations of local market. During non-fishing season, they are jobless and move to urban or semi-urban areas for occupation. There are no training facilities for training fishermen in modern fishing methods, techniques, and in use of motorised boats etc. Inadequate marketing facilities, poor transport arrangements, lack of facilities for preservation of fish etc. restricted the demand for fish. Very often Arab Fishermen had to be hired for catching large quantities of fish during season by the large processing units. Export of unprocessed fish was allowed even when processing facilities remained unutilised for want of raw material. There was no discrimination in taxation policy between export of unprocessed and processed fish. The private sector investment was confined to fish processing units only. There was no large scale fishing concerns equipped with motor-boats, trawlers and ships. The boats required by fishermen were mostly imported and financial constraints prevented procurement of adequate quantities of boats by individual fishermen. Facilities of modern fishing harbour and landing piers are almost non-existent in the long coastline.

1.4. The need for development of fisheries, fish processing industries and ancillary industries based on them has been recognised by Government. The creation of a new Ministry of Fisheries is the first step of this new awareness. A long-term policy and programme for development of fish resources and their commercial exploitation for improving the economic well being of the people has to be drawn up. Certain guidelines for evolving the policy and programme are suggested:

i- the new policy announced by the Government at the beginning of the year for promoting fish consumption by the people has to be implemented in a phased manner. As already explained, the per capita consumption is very low and need to be increased gradually. This is also necessary from the national point of view. Meat consumption of Somalia is one of the highest in the world - 28 kg. per capita - as against the world average of 11 kg. and even if half of the consumption is substituted by fish, 42,000 tons of meat could become available for export, which would earn over So.Sh. 150 million foreign exchange. Substitution of 14 kg. meat by fish will need a supply of 42,000 tons of fish, which may seem rather high. Meat shortage is developing in advanced economies and FAO forecasts indicate world shortage of meat mostly confined to developed countries - to the extent of 1.65 million tons of beef and veal alone - by 1980. In such a situation, processed fish is likely to find easy export markets in advanced countries. A national target for home consumption needs to be fixed - say about 10,000 tons for the next five years i.e. a target of 3.3 per kg. per person and ways and means to reach the fish to the people in the urban, semi-urban and rural areas and also to exchange the food habits need to be evolved for realisation of the target for per capita consumption. Food habits can be changed only by patient and hard promotional efforts but a consumption target of 3.3 per kg. is not very difficult to realise over a period of 60 months. This can be raised further so as to obtain a reasonable balance between meat and fish in the food off-take.

ii- The existing fish processing capacities need to be fully exploited for increasing the foreign exchange earnings. Facilities have been created in the public and private sector for processing fish of all species in Las-Khorah, Hobbo, Candala, Belaag and Kismayo.

Facilities	Capacity (input)
1. Fish Processing Cannery Las-Khoreh	7000 tons
2. Mubbo, Kandala	5400 tons
3. Dalmar	5000 tons
4. Predma Kismayo	2000 tons

In all, 20,000 tons of fish will have to be supplied during the fishing season to meet the requirements of the fish processing canneries.

iii- Certain species of fish - like lobster, shrimp etc. are in great demand in frozen form in foreign market, which can earn foreign exchange. The target for catches of crustacea need to be fixed separately with reference to the availability in Southern waters and the demand.

iv- Processing salt dried fish is a home based industry of the fishermen. There are also facilities for processing salt dried fish along the coastline, especially in urban areas. Bulk of these are exported to conventional markets. The exports during 1971 were of the order of 855 tons. There is scope for expanding this trade. A higher target for salt dried fish - especially sharks - and collection of new facilities for large scale drying and salting of fish under hygenic and sanitary conditions is called for.

v- Fisheries also promote fish based industries. The fish processing cannery Las-Khoreh has a fish meal plant to process the fish waste. It has also facilities to manufacture fish oil - tuna liver oil and industrial oil. Consequent on supply of the requisite quantity of fish for the cannery, these facilities can work fully and add to the value of output. New facilities for manufacturing fish meal and fish oil will need to be created in the vicinity of large fish processing units, so as to ensure economic utilisation of fish waste. As already explained, these products have a foreign market, which need to be exploited by suitable marketing and trade arrangements. Utilisation of byproducts will also reduce the incidence on the main product viz. canned or processed fish.

110. Economic development of fishing and fish based industries need to be studied in an integrated way, while estimates of costs and benefits of the joint activity cannot be made without a detailed study, there is little doubt that the benefits in terms of direct and indirect value added, direct and indirect employment, and foreign exchange earnings are quite substantial and highly rewarding. On a target of 50,000 tons of catch over a five year period of which - 20,000 tons for conversion into processed products and export in frozen form and 10,000 tons for direct consumption at home, the total investment requirements would average to So.Sh. 2500/ton. The average value added of fresh fish would be So.Sh. 1500/ton and that of processed fish 2700/ton. Development of fishing and fish based industries in an integrated manner to realise the targets proposed will yield a total value added of about So.Sh. 6.5 million per annum. Employment component of the target would be 4-5 persons for a fish catch of 3 tons per annum i.e. 3000 fishermen for the five year period, and thereafter extension and re-training requirements. Employment likely to be generated by ancillory industries will be in addition.

4. Minerals:

111. Of all the mineral resources, only five - underground water, salt, limestone, gypsum and sapiolite are either being exploited or are nearly ready for economic exploitation. To meet the general scarcity of potable water, underground water areas are being identified and water pumped up, specially to provide drinking water to the cattle and the nomadic population. Often water is pumped up from a depth of 100 to 200 meters. Economics of desalination plants, to render brackish underground water from upper water tables potable, need to be compared with deep potable water wells. If desalination plants turn out to be more economic they could be established over a wide area. Rendering sea water potable, is also a proposition with a critical study in Somalia.

112. Salt is a basic consumption need for men and animals everywhere, and salt industry exists in all maritime countries. Most developing

countries produce salt to meet consumption requirements of men, animal, and simpler types of industries where salt is used as one of the inputs e.g. soap making, curing of hides, fish curing and preservation etc. Being a cheap commodity it is seldom produced for export. In Somalia, however, nearly 300,000 tons of salt was produced by Hordia-Hafun Salt Works, in the North, before the War and the large surplus production was exported. A recent feasibility study has brought out that 3,800,000 tons per annum salt could be raised in near Hafun promoting towards El-Gaf. Recovery of potable water, of which there is scarcity in the Northern Regions is also possible. Bulk of the salt has to be exported to Japan, USA and Central and East African countries. Common Salt (Nael) has a number of basic industrial uses. Through electrolitic process, salt can produce caustic soda, with chlorine as byproduct almost in equal quantity. Caustic soda can be converted into soda ash and used in glass and soap industries. Chlorine is the basis for hydrochloric acid, and in combination with Naphtha - a byproduct of petroleum refineries, produces P.V.C. and Nylon filaments. In combination with Benzene, it produces benzene hexachloride (BHC), a highly useful insecticide. Reaction of chlorine with Potassium and calcium compounds produces Potassium and calcium chloride, which are much wanted fertilisers. Chlorine and Ilmenite are also the basis for manufacture of titanium dioxide and titanium metal. With the large scale plan for salt production it is necessary to study the feasibility of having a complex of all such industries based on salt in Somalia. Such feasibility studies are a proposition, and earlier they are started the better. Local consumption of most of the products will be small or negligible. But with appropriate foreign collaboration, export markets could be secured and much higher foreign exchange could be earned than from export of salt at a very low price. Recovery of magnesium and other salts from the brine is also found to be technically feasible and necessary, for pricing salt at a low level.

113. In addition to the large salt works at Hordia-Hafun, development of fishing activity would require smaller salt works at a number of places along the long coastline of Somalia. In the Southern Region at Adale, near Kismayo, small-one-man salt works supply salt to the local

Kenya. There are hundreds of small salt works also in Zeila in the North. These need to be placed on an organized basis, by bringing them together as cooperatives, so as to improve the quality of salt produced and develop markets on a round the year basis. For preservation of raw fish till it is sold, in addition to salt works, small ice plants are also necessary at a number of locations along the coastal area. As a beginning small salt works and ice plants could be located at all the [illegible] ports which are included in the five year plan. [illegible] salt even from brackish or sea water. For fish preservation fresh ice would be even better suited than sweet water ice. It could also be used for cooling beverages externally, even though it would not be edible ice.

114. Limestone: No definite data regarding established reserves for economic exploitation are available. But the occurances are spread over Berbera, Hargeisa in the North and in Mogadiscio and Merca in the Southern Regions. Berbera reserves are specially large, and will support a 100,000 ton cement factory. Limestone is also used extensively for making building blocks and lime (calcium oxide). It can be the basis for calcium chloride, sulphate and phosphate (all fertilizers) and precipitated chalk used as a filler for many products, and as foundation for face powders, tooth pasters etc. By itself, it is a cheap mineral about So.Sh. 75 to 100 a ton and its value has to be upgraded, by its industrial utilization.

115. Gypsum deposits occur mainly in Hargeisa-Berbera area in the Northern Region. The reserves are known to be large, but no precise estimates are available. In Suria Malableh Area South-East of Berbera in the Northern Region, possible reserves are reported to be 30 to 35 million tons, more than 5 million tons of which are 85 per cent Anhydrite grade. No deep mining is also required to exploit the reserves. It is estimated that annually some 450,000 tons of gypsum could be quarried for export in raw forms, at 75 to 100 So.Sh. per ton and fetch foreign exchange to the tune of So.Sh. 40 million a year. Additional 200,000 tons could be exported in crushed form fetching even larger foreign exchange - about So.Sh. 30 million more

at a price of So.Sh. 150/ton. Gypsum is a relatively cheaper mineral. But apart from export in raw or crushed forms, it has many industrial uses, which can upgrade its value several times, save considerable imports and earn larger exports than it would in raw form. It is already used as building material in place of clay bricks. Heated at less temperature of 110° to 120°C., it yields Hemihydrate - which can be used as cement or wall plastering material. It is also used as a setting agent in manufacturing of Portland cement to the extent of 5 per cent. If used as direct material for superior cement it yields sulphuric acid as a byproduct. It is the basis for plaster of Paris and in the process of manufacture yields sulphur as a byproduct. Crushed gypsum can be used as a fertilizer, for leguminous crops and a filler in paints, paper, pharmaceutical and insecticide industries. It is a soil reconditioner, and can desalinize saline soils. It is also used for making plaster boards, sheets and ceiling panels in combination with wood fibre, animal hair, bagasse etc. and as moulding plaster in foundry and ceramics industries. Mixed with sapiolite it forms a heat insulating plaster. However, specific products based on gypsum need feasibility studies before they could become definite projects. Most products, based on gypsum require large quantities of water of which there is scarcity in Somalia. A pilot plant to produce 450 tons of gypsum is being set up.

116. Sapiolite: Deposits are located in El-Bur area in the central region. The extent of reserves needs to be scientifically assessed. About 4,500 tons of sapiolite a year were being mined and used for making flowervases, jugs, ash trays, tobacco pipes, cigarette holders, statuettes, and artistic wares. It is a soft refractory material which could be used for lining fire places. The world demand is said to be good and further investigations are likely to be beneficial.

117. A number of other minerals including iron-ore, radio-active minerals and bauxite, are found in Somalia, specially in the central and northern regions. But none have crossed the exploratory stage. The present position about these minerals is given below:

Table XII - Potential Minerals Deposits

Sl. No. (1)	Mineral (2)	Location (3)	Quality and extent of deposits (4)	Factors limiting exploitation (5)
1.	Iron ore	Mar Dar in Upper Giuba Area	30 to 40% Fe + 45-55% SiO2: 170 million tons	Extraction, transport 80 miles railway from the area to Kismayu to be built.
2.	Thorium, Uranium + Yttrium	150 to 200 kms. North-West of Mogadiscio	Possible reserves 250,000 tons. But mineral content is small. 290 tons U3O8 20% tons Y2O3	Further exploration necessary to estimate content
3.	Manganese, Copper, Lead Tin, etc.	Northern Region	Manganese occurrences are promising. Others are only traces.	Further investigation necessary.
4.	Beryl	Berbera	Deposits are not workable	—
5.	Monazite, Zircon, Rutile	Coastal areas in North + South	Monazite: 900 tons Zircon: 200 tons Rutile: 20 tons	Further investigation necessary
6.	Feldspar	Hargeisa-Berbera Area	Deposits significant, quality medium to low useful for ceramics and glass industries	-do-
7.	Quarts	Hargeisa-Berbera Area	Quality is good SiO2 content 96 to 98%. Economic potential exists	Further investigation necessary
8.	Bauxite (Nepheline synite)	80 miles North West of Hargeisa	Aluminium content is low, averaging to 20%. Can be used for alumina and aluminium extraction.	Road from source to Berbera necessary for export. Exploitation needs much power and
9.	Asbestos	Hargeisa, Bohol, Nora, Buna in the North	Deposits and Reserves being investigated. Useful for asbestos-cement products and export.	
10.	Kaoline	Daa Mareb and Berbera in the North	Investigations to be made. Useful for ceramics Industry, as a filler and refractory material	Investigations to be made.

(cont'd)

Mineral (2)	Location (3)	Quality and extent of deposits (4)	Factors limiting exploitation (5)
Bentonite	Dusa Mareb and Derbera in the North	Useful plasticiser in ceramics, refining of oils, and wines, and for drilling operations	Deposits to be established
Vermiculite	Bur Galan ridge Nr Bigo, Salai and Berbera in the North	Useful as insulating material	Deposits to be established
Talc	Alka Dehind, Las Durah, Hira and Golan areas	Useful for electro-porcelain, refractory and filler	Deposits to be established
Mica	Hagar, North	Useful in electrical equipment industry and for export	Deposits to be established
Kynite	Miride, Burka Burhaimle and Hora (North)	Useful for high temperature refractory products	Deposits to be established
Graphite	Hamar, Marodile	Important material for crucibles, refractories pencils, electrodes, etc.	To be investigated
Basalt	[illegible]	For insulation, mineral wool	to be investigated

118. Not only for [illegible] development, but also for rapid economic growth of the country as a whole, its regional development and regional integration, as well as significant impact of the welfare of the people, development of the country's nature resources, [illegible] and [illegible] of almost immediate [illegible]. In the short-run, say over the next five to seven years, development of agriculture and poultry, fisheries, [illegible], [illegible], fruits and vegetables, and underground water potential, and their full economic utilisation, will not only raise the living standards of the people of Somalia, it will also substantially reduce the trade and balance of payments deficits and enhance the country's foreign exchange reserves. In the long-run over next 10 to 20 years, intensive development of mineral resources - salt, iron, petroleum, gypsum, limestone, asbestoes, graphite, radio-active minerals, and sands and clays, in that order, will accelerate the growth, and together, development of natural resources in these fields, will lay firm foundations of continuing economic growth in the future.

III. LONG-RUN DEVELOPMENT

119 Development of mineral resources and their full industrial utilisation are long-term propositions in all developing countries. In Somalia beginnings of such development have been made several years ago. However, the progress has been slow. To quicken the tempo and to bring the mineral resources to the stage where they could be used as industrial raw materials or profitably exported, much concerted policy and action are required. The areas requiring special attention are; expediting the process of prospecting, proving and establishing the reserves, determining the quantity and properties of known minerals, organising power and water requirements necessary for their extraction, and appropriate transport system for their economic exploitation. Action is also called for in organizing large financial requirements including foreign exchange for machinery and equipment, through foreign collaboration, or concessions to suitable foreign organisations. Experience so far

indicates the need for a review of the existing policies and arrangements in this area, with a view to ensuring rapid development of the country's mineral resources. Development of underground water resources has been fairly satisfactory. But here also, the tempo needs to be quickened, and a programme evolved to desalinate brackish underground water obtainable from higher water tables.

IV. SHORT-[illegible] DEVELOPMENT

120. Livestock and Poultry: Over the past few years, great efforts have been made to improve the quality of cattle, to enhance the extent of industrial utilisation of cattle and its byproducts, and promote and increase export of livestock and prepared meat products. However, much remains to be done in several areas. Special efforts are necessary to develop separate cattle breeds for meat and milk. Cattle feeding needs to be placed on a scientific basis far more extensively. Cattle prices in particular and livestock prices in general have to be determined on a realistic basis. This will encourage better breeding and feeding practices. To ensure better prices to the breeder, several aspects of cattle utilisation need special attention. To ensure maximum returns to livestock based industries, slaughtering industry should be modernised, so that all byproducts, could be recovered for further processing, and also meat produced under hygienic conditions. Export of cattle, and livestock on hoof in general, should be reduced to the barest minimum. Meat should be made available for final use in canned, or frozen form, both for local consumption and export, rather than in the form of carcasses. Meat is the most important future export earner for Somalia. The present high meat consumption is therefore to be reduced, by substituting it by fish, which is another abundant natural resource in Somalia. Amongst the byproducts, hides and skins should be processed locally to the stage of final manufactured products, for use in the country, and for export markets. Other byproducts, e.g. bones, blood, limbs and organs, offal, horns and hoofs, etc. should be processed to the stage required mainly by export markets. Policies and programmes to realise these objectives, will call for special export promotion

measures, and foreign participation. But they are necessary concomitants to full development and utilization of cattle and livestock resources of Somalia. Poultry development in Somalia is in preliminary stages. It needs to be intensified and spread out everywhere. Current stock of poultry is relatively small, but with appropriate extension service it can be increased rapidly. In the face of developing meat shortage all over the world, surplus of meat and poultry products, also fish products, will have ready export markets, at attractive prices.

121. Fisheries: Development of fishing and fish processing industries in Somalia has been particularly tardy, despite the fact that fish is plentiful in the coastal waters along the 2000 mile coastline of the country, and installed fish processing capacity exceeds over 5000 tons a year, mainly for export purposes. There is also local demand for 1200 tons of fresh fish, which is likely to increase rapidly in view of Government's policy to promote fish consumption and as meat prices go up in response to world trends. Export markets for canned fish, especially of tuna variety are expanding rapidly, especially in the developed countries, both owing to increasing per capita consumption of fish per se and as a good substitute for high priced meat. There is also an export market for dried fish, specially in land-locked developing countries. Altogether, Somalia could well aim at catching some 30,000 tons of fresh fish over the next five years - 20,000 tons for exporting 5000 tons of processed fish, 10,000 tons for local consumption as fresh fish, and the rest as frozen or dried fish. The Government has already recognised the importance of fisheries by creating a separate fisheries Ministry. The main action areas for the development of fish supply, are; organising fishing co-operatives, arranging supply of fishing boats and fishing gear to them, building fishing harbours, building up a fleet of trawlers to catch the fish in the mid ocean areas to meet the needs of processing industries, creation of facilities for storage, transportation of fish and manufacture of fish meal and marketing them and financing all these enterprises. Development of export markets for processed fish and fish meal, and bringing in foreign exchange for new investment in fish-based industries, are also important action areas in this field.

198. Agricultural Resources. To ensure development of sugar cane cultivation necessary for the proposed new 50,000 ton sugar factory in Lower-Giuba, early completion of Fanole Dam is a crucial matter. This is also necessary for the development of irrigated medium staple cotton for the expanding textile industry of Somalia. Somalia is also short of low priced fibre required for manufacture of bags, and parcelling twine. Banana fibre can be used as low priced raw material for making these products. Development of Banana fibre extraction industry and in course of time, of separate plantations for high-fibre yielding banana plants, on a large-scale, is therefore essential. Banana fibre could also be pulped for card-board manufacture. At present Banana leaves, stems and trunks are not being put to industrial use, although the supply is plentiful. A policy for full utilisation of banana resources, including the use of mineral rich water from banana trunks, is therefore urgently required. Oil seeds and fruits and vegetables, are important industrial crops. Development of these crops should therefore be geared to the growing requirements of oil seed crushing, and fruits and vegetables canning and preservation industries.

CHAPTER 3

[illegible]

I. [illegible]

123. Infrastructure facilities are essential for transformation of natural resources into industrial products. The need for providing basic infrastructure facilities was recognised ever since planned development was initiated in the country. The bulk of investment proposed in the short-term development programme was for creation of infrastructure facilities - 70.5% for basic infrastructure facilities like electricity, water, transport, communications, etc. and 3% for social infrastructure development, like education, health, [illegible] facilities etc. This trend continued even under the current development programme and a high priority was assigned for creation of basic infrastructure facilities. Of the proposed total outlay of So.Sh. 999.94 million, 53% was allocated for development of infrastructure facilities, and 14% for development of social infrastructure facilities. A quick survey of the basic infrastructure facilities of the country is made in the succeeding paras.

124. In 1963, the installed electric generating capacity was 7200 kw. spread over fifteen urban and semi-urban areas. A general survey of the electricity sector conducted in 1968 revealed that the installed capacity in Somalia was 12,434 kw. of which Mogadiscio alone accounted for 5,940 kw. and 712 kw. capacity was out of operation. The annual generation was 27,767,000 kwh, of which Mogadiscio accounted for 9,917,000 kwh. The diesel power installations were of different makes and types - 15 of different production aggregates, 24 of Deutz aggregates and 14 of USSR makes. The ownership was diversified - 15 owned by Government, 16 by municipalities and 8 by private owners. The estimated value of the installations, including distribution net work, was So.Sh. 15,420,000, the installations forming 39% of the total value. The value of power stations under construction and repair was estimated at So.Sh. 1,303,000. The average capacity of power station was 320 kw - 241 kw in stations other than Mogadiscio. The cost of generations was reported to be fairly high in all the units, because of the high cost of manufacture and repairs of old plants, and import duty on fuel oil etc. Almost all the large industries owned their own generating stations. The short-term development programme had recognised the need for development of power for accelerating industrial and economic development of the country. In 1971, the installed capacity

was 12,448 kw. spread over 38 units - 15 owned by Government, 1 owned by an autonomous agency, 16 by municipalities and 6 by private ores.

125. The strategy for development of power laid down in the current development programme was to set up a self-supporting public electric supply capable of supplying power needs, current and future, of the country, reliably and cheaply. The programme envisaged an investment of So.Sh. 20.0) million for creating new capacities of the order of 6532 kw. distributed over 14 towns. But about 1/3 of the new capacity viz. 2100 kw. was programmed to be created in Mogadiscio. The performance up to the end of 1972 indicates that LNEE has expanded its capacity by 3,700 kw. and strengthened its distribution system and in so far as other regions were concerned, 30 generating sets of 3,848 kw. capacity were reported to have been received and distributed. The estimated additional capacities proposed to be created during 1973 is 7300 kw. in Mogadiscio. If these projects materialise new power capacity to the extent of 9648 kw. would have been created in the country, mostly in Mogadiscio, by the end of 1973. This will presumably take care of the energy needs of the new industrial units viz. cigarettes and matches factory and Foundry & Mechanical Workshop.

126. The Ministry of Public Works has proposed creation of additional capacities to the extent of 18,000 kw involving a financial outlay of So.Sh. 12,970,000 in the regions during the period 1974-78.

TABLE XXII - PROGRAMME FOR ENERGY

Sl. No.	Name of Station	Capacity to be created (kW)	Estimated outlay (in So.Sh. '000)
1.	Lower Scebeleli	1000	2074
2.	Middle Scebeleli	500	897
3.	Lower Giuba	500	2603
4.	Upper Giuba	800	863
5.	Hiran	300	384
6.	Baidoa	600	713
7.	Bagni	100	200
8.	Berbera	400	1718
9.	Baghdeer	1600	-
10.	Hargeisa	2000	3529
		18,000	12,970

[illegible] power to industry, the overall power requirements of the proposed new units to be created both in the Public and Private sectors in future development programmes have to be borne in view. While the large units may have their own power plants, [illegible] industrial units in the medium and small-scale sector will have to rely on public electric supply systems. Availability of steady, reliable, and cheap energy will facilitate growth of this sub-sector. However, creation of lucrative units should not hamper development of energy of the urban and semi-urban areas. Proper integration and co-ordination of new power resources proposed to be created will avoid duplication of investment and unutilised capacities. Lowering of tariff for energy supplied to industrial units may facilitate greater utilisation for industrial purposes.

127. Water resources are scarce in Somalia, as explained in Chapter 5. Schebelli and Juba Rivers are the two large river basins and the major irrigation potential for agriculture exists in the inter-river area. The Northern Regions have few streams, which supply limited water resources. The rest of the areas mostly depend on groundwater sources. In a country of scanty precipitation and high evaporation, where streams are few and water stored on the surface disappears fast, the ground water forms the most important source of water supply. The demand for water is stated to be on the increase - in the nomadic and agricultural areas, urban centres, range lands, agricultural areas and industrial centres. No precise estimate of the water requirements has been prepared because of lack of accurate demographic statistics and data on water consumption. Mobilisation of groundwater source is estimated to meet the water requirements and hence the search for their location continues. In 1970, the country had 273 boreholls, of which 26% was stated to be non-operational. The development programme envisaged projects for augmenting rural and urban water supply involving a final outlay of So.Sh. 120 million - So.Sh. 20 million for rural water systems, like construction of 75 shallow wells, 1500 berkads, 50 deep wells, and 50 'wars' and So.Sh. 99 million for completion of Mogadishu, Hargeisa and Kismayo Municipal water supply system and So.Sh. 40 million for surveys for research and development. The progress report up to the end of December 1972 indicates completion of construction of 29 deep wells, 112 shallow wells and 285 Berkads and expansion of Kismayo water supply system. The Mogadishu and Hargeisa water supply project are expected to be completed by the first half of 1973. 90% of the programmed outlay is expected to be

implemented by the end of 1973. In so far as irrigation development is concerned, the programme envisaged stabilization of existing facilities - maintenance and repair of irrigation canals, embankment of rivers, Schebelli Pilot Project, and two flood control canals and storage reservoir. Two major projects have not been taken up upto the end of December 1973. Work on maintenance and repair of canals and Schebelli Pilot Project - only proposed are the two major ones. The mineral and groundwater survey (UNDP Project) has been engaged on collection of information on quality and location of groundwater in the country. The project is at its third phase and envisages (i) drilling of 144 exploratory wells with a depth ranging from 50-60 metres to 500-600 metres of sizes 14" to 12" diameter and final one being 8" to 6" diameter (ii) testing of drilled wells with the area to define the availability of water, in quality and quantity (iii) investigation of springs in some specific areas in Northern and Upper Giuba areas (iv) preliminary surveys for definition of location and bearings of the wells and springs and (v) laboratory investigations for analysis of water samples of water bearings. The findings of the survey may facilitate planning of underground water sources in the various regions.

128. Excessive depth of water table and poor quality of water - brackish - are the two major hindrances which prevent large scale development of bore-hole wells. The latter obstacle could be overcome by installing suitable desalination plants of the type explained in Chapter 9. A cost benefit analysis of purification of water drawn from borehole wells has to be conducted with a view to find out the cost of water and work out the feasibility for an integrated water supply system - comprising of net work of borehole wells and desalination plants for development of water resources in arid regions for human beings, livestock, agriculture, and industry - especially of the units proposed to be developed in such regions. The water development agency entrusted with the task of development and distribution of water resources of the country, including surveys and research work, has to draw up a master plan for development of water resources in an integrated manner in the next five or ten years so that the feasility of water supply may become available for industrial development during the period.

129. Road transport constitutes the major means of inland communication. The country's road net work consists at present of about 358 kms. of asphalted road, 3774 kms. of all weather gravel road, 2196 kms. of second class roads and about 9300 kms. of earthen tracks. Road traffic is mostly confined to the roads leading to major seaports of Mogadiscio, Merca, Berbera

[illegible] feeder [illegible] roads [illegible] financial outlay of So.Sh. 19[illegible] million [illegible] development programme. The progress of implementation reports up to the end of 1972 indicates that Afgoi-[illegible] [illegible] kms. has been completed, 140 kms. of Jowhar-Bur Burti Road has been resurfaced and repaired. Progress on other road projects is in progress and [illegible] completed in 1973. The financial provision for completing this work in 1973 is So.Sh. 130 million which forms 61% of the planned outlay. Judged from the physical and financial progress in the first two years of the programme it is obvious that some parts of these projects will spill over to the next development programme. The new projects - roads and surveys for road net works - proposed to be taken during the next development programme are understood to be Burao-Erigavo road 140 kms., Golwein-Gelib road 270 kms., Las-Khoreh-Ainabo Road 118 kms., Gelib-Scialambot Road 350 kms. The necessity to improve the only means of internal communication for political, economic, and commercial reasons needs no emphasis.

130. It is also necessary to link the hinterland to the coast land, the remote areas where agricultural and livestock resources are situated to the urban areas where processing industries are located, the urban areas to the rural areas around them, for increasing the existing mobility of men, material, goods and services with a view to accelerate the pace of industrial development. Both development of agro-livestock based industries and fisheries would need large network of internal communications. It will also pave the way for enlargement of domestic market, which constitute one of the various handicaps of industrialisation of the country.

131. Mogadiscio, Kismayo, Merca and Berbera are the four major ports of the country. Ships are berthed along the wharfs at Kismayo and Berbera only. In the remaining two major ports - Mogadiscio and Merca - and fifteen minor ports, no ocean going vessels can moor in protected waters and all loading and unloading is done by lighterage, while ships anchor in the open sea. Construction of Mogadishu port was envisaged during the last development programme. However, the development programme provided a total outlay of So.Sh. 76 million for the new port at Mogadiscio, which has now been revised to So.Sh. 179 million and the construction work is scheduled to commence in

1973. The modified project consists of a 770 m breakwaters, three berths, a dolphin berth for mooring livestock vessels, a marshalling yard for livestock, an access road, and some large handling equipment. Early completion of the proposed Mogadiscio port will provide the country with a first class port to handle the cargo - both incoming and outgoing - and expand trade and commerce. The closure of the Suez Canal has restricted the scope for activities in Berbera but the opening of the Canal will convert it into a booming trade and commerce centre. This port can serve as the outlet for the finished goods processed in the area both for internal and external consumption. Development of minor ports as an alternative means of communication in lieu of the limitations of internal road communication net work and the inadequate public transport system needs to be considered. In view of the potential for development of fisheries and the proposed targets for home consumption, development of coastal communications may help distribution of fish catches and quick movement of processed fish.

132. The country has no national shipping lines, so essential for development of trade and commerce. Formation of a national shipping line is a declared objective of the Government. A Somali-Libyan Shipping Company - a joint venture between Somalia and Libya - has been formed mostly for coastal transport and also for shipping bananas and livestock to neighbouring countries. Augmentation of its fleet to provide an alternative means of transport between the coastal centres and ports - major and minor has to be considered. In due course, it will be necessary to extend shipping services by own carriers at least to trade with major exporting and importing countries.

133. The capital city and regional headquarters are connected by internal air flights. Mogadiscio, has the best air port, where facilities for jet landing exist. Kismayo airport is proposed to be modernised, by providing it with a modern runway capable of landing Boeing 707 planes, service road of about 12 kms. connecting the airport with the city, air terminal and essential navigational facilities. Modern facilities for improving air traffic in Mogadiscio will be necessary to facilitate air lifting of carcasses and mutton to neighbouring countries. Landing facilities in regional headquarters are backward and will need improvement to facilitate more frequent services and better mobility between places, not serviced by roads. Programmes for setting up flight information centres in a phased manner are under implementation to improve air traffic safety.

134. The existing posts and telecommunication facilities are inadequate to service increasing industrial commercial and trade activities. Programmes

for development of telecommunication network in the country [illegible] (i) establishment of [illegible] Mogadiscio with Mogadiscio with intermediate exchanges (ii) [illegible] automatic telex [illegible] in Mogadiscio [illegible] (iii) development of international communication lines - [illegible] Europe and Mogadiscio-Jeddah are under implementation. A telex printer system with [illegible] international connection is also proposed to be installed.

135. The survey of the existing and proposed basic infrastructure facilities clearly indicates the need and scope for future development, if the planned industrial growth either during the short-term or in the long run is to be realised. The survey team has not been able to obtain information on the future development programmes in the sphere of these facilities from the concerned Ministries, Departments, and Autonomous Agencies. Precise requirements of infrastructure facilities even of the proposed industrial projects to be included in the next plan (1974-78) or ideas on industrial possibilities to be developed in the subsequent plans can be worked out only by detailed studies in the form of project reports or suppliers' requirements for operation of equipment and machinery of a project. The location of the units will also determine the new facilities to be created in the area. Some of the large and complex projects - like new sugar mill, cement factory, Hordio-Hafun Salt Works, Slaughter Houses, Tanning Factory, etc. will necessitate creation of additional infrastructure facilities, whatever be their location. A project like Hordio-hafun salt works can serve multi-purpose needs - both production of finished goods and generation of new auxiliary services. It will therefore be necessary to draw up an integrated development programme for strengthening the existing infrastructure facilities and further expanding them with a view to meet the overall growing needs of industrial development - current and future.

II. REGIONAL DEVELOPMENT:

136. The uneven distribution of industries among the various regions of Somalia and their concentration in the Benadir Region and the city of Mogadiscio, the natural resources and the available infrastructure facilities in the country are discussed in an earlier Chapter. Basically, these determine the location, size and type of industrial unit or industrial complexes to be created in a region, district or city. A quick survey of each region's industrial growth, potential for industrial development, and possible claim for location of any of the industries identified so far is made in the succeeding paras for evolving suitable strategy for industrial planning and

implementation in the future. (The [illegible] statistical information have been [illegible] that the present demarcation of regions is [illegible].)

137. The Benadir Region is intended to include the present capital city of Mogadiscio, central and lower Scebelli regions. Sectorwise breakup of the industrial establishments are given below:

TABLE XIV - DISTRIBUTION OF INDUSTRIES IN BENADIR

	Total	Public sector	Private sector	Traditional sector
Mogadiscio	1274	8	127	1139
Jowhar (Upper Scebelli)	63	2	5	56
Merca (Lower Scebelle)	344	-	19	325
Total	1681	10	151	1520

With an estimated population of over 800,000 and a tending over an area of 57,000 sq. km. this region has the largest number of industrial establishments. The largest industrial enterprises in the public sector of the country are located in this region. Three more units are proposed to be created under the current development programme. Bulk of the private sector investment is also concentrated in this region. The industrial development achieved by this region is due to various reasons - geographical, historical, economic, political and commercial. A fertile hinterland, almost the richest in the country. The most fertile part of the Scebelli valley with agro-pastoral resources connected by good roads to reach the best ports of the country, availability of infrastructure facilities, necessary inputs for industrialisation - capital and labour - all have helped this region to develop faster than other regions. It will neither be economical nor practical to halt or even limit the process of industrial development of this region just to let other regions catch up with the level of industrial growth already achieved by this region. It will be easier to quicken the tempo of the process of industrialisation already realised. As investments will naturally have to be made on the best productive enterprises, this region will continue to attract new industries.

138. The Region has potential for development of industrial complexes based on food processing industries - processing of meat, fish, vegetables and fruits, cereal and sugar cane, textile industries, oil milling industries, building material industries and consumers' goods industries. As and when a refinery is decided to be set up, this region may get the first priority

for obvious reasons. Of the identified projects, apart from the expansion [illegible] of certain large industrial establishments - like [illegible] (Jilib), Mill (Jowhar), Milk Processing Factory (Mogadiscio), Meat Boiling [illegible] (Mogadiscio), Tanneries and Hides and Skins (Mogadiscio) - creation of new agro-industrial units like setting up oil crushing mills, oil seed extraction plants, slaughter houses, modern boat building yard, [illegible] manufacturing unit, building materials industries, chemical industries and [illegible] are proposed for location in this region. In the long run, this region will attract a large share of industrial units for manufacturing consumer goods.

139. [illegible] sq. km. and an estimated population of 700,000, the Hiran region is industrially backward, [illegible] its location in the vicinity of Upper Scebeli. It has rich livestock resources, cattle and sheep. The region lacks the infrastructure facilities for industrialisation. With the opening of Belet-wein-Hargeisa road the industrial development in the neighbouring regions can spill over to this area and an extension of trade and commerce can take place. Traditional and small industries based on animal husbandry and cattle can be encouraged to step up the industrial growth.

140. The Mudugh region is one of the largest areas in Somalia - 115,700 sq.km. but has a low population viz. 300,000. About 20 industrial establishments are located in this region. With traditional pastoral economy, characterised principally by sheep, goats and camel production, there is not much scope for raw material based industries. There are fish resources on the coastal areas which can be developed. Lobster is reported to exist in between Eil and Obbia. Obbia harbour can be used as a fishing harbour for intensifying fish catches. Small fish processing units, especially the tuna and other species of fish and cold storages can be created - the former for export and the latter for home consumption. Fish based industries can be developed later. This area has sepilote deposits, near El-Dur, which the Somali craftsmen have been using for carving vases, jugs, ash-trays, pipes, and various artistic products. At present this is a traditional industry and can be encouraged on a large scale both for domestic sale and export.

141. With an area of 89900 sq. km. and an estimated population of 250,000, the Bossasso Region (Bari and Nugal Regions) has 11 industrial establishments, which include the three large fish processing plants at Hobo, Hasiala, and Bolmog. The coastal waters near the region are rich in fish resources and fish processing capacities to the extent of 10400 tons have already been

created. But the fish catches usually amount to 5000 tons. Further, the proposed national campaign to promote consumption of fish would necessitate planning of additional targets for fish catches. This will involve heavy investment in the national fleet and its components and large scale employment, organisation and training of fishermen. An industrial complex based on fisheries and the ancillary industries can be created in this region, like setting up suitable boat building yards and units for manufacturing fishing equipment and operating supplies, creation of facilities for repairing boats, motors, etc., construction of cold storage facilities near the coast to store the fish catches, construction of fishing harbours, creation of transport facilities to reach the fish to the hinterland, modernisation and expansion of dry fish industry, creation of facilities for processing fish waste like fish meal, fish oil etc. Thus, a large degree of industrial development of this region can be achieved by phased implementation of the programme for better utilisation of the available natural resources and fuller utilisation of capacities created for their exploitation.

142. Large potential for exploitation of salt exists in the Nordio-Hafun area. A project for development of new salt works - salt basins to be located near Hafun promontory with an ultimate net capacity of 3,500,000 tons per annum and the loading system near about Punta Malle involving large financial investment has been proposed. Exploitation of salt works will create necessary infrastructure facilities like urban settlements, communications, power, transport, development of ports, shipping services etc. The neighbouring regions can also benefit from such a concentrated and integrated development.

143. Manufacturing unit for making aromatic and essential oils from frankincense and myrrh can be set up in the region. Collection of the material and its transportation will generate considerable economic activity.

144. Certain mineral deposits like tin, and zinc, are reported in the region. Marble stones are available in the Kandala area. Presence of inferior coal is also indicated. Establishment of sizeable deposits by proper geological surveys and their commercial exploitation can lead to further industrialisation of the region.

145. Extending over an area of 418,000 sq. km. and with an estimated population of over 400,000, the Lower Juba region has 195 industrial

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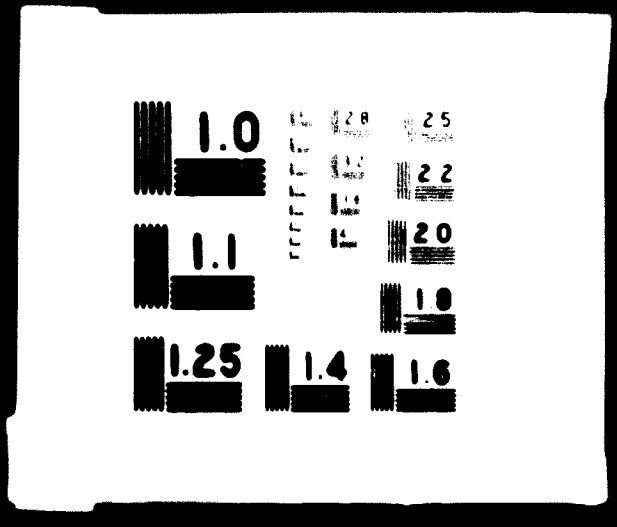

[illegible] Meat Processing Factory, Industrial Marine de Cartonnage Somalia and Peoples Fisheries are the three largest industrial enterprises. A new project for manufacturing corrugated ship container and polythelene bags is under construction. This region has rich potential for livestock, agriculture and fish resources. An industrial complex based on agro-pastoral resources can further accelerate the industrial development of the region. Availability of infrastructural facilities, proposed programmes for their expansion, port, road and air transport and the proposed dam to be constructed at Kaole will facilitate speedy industrialisation.

146. Re-activation of Brama will pave the way for exploitation of fish resources, if the identified projects, location of the following projects in this region seems feasible from the point of the present and future availability of raw material, infrastructure facilities, and for reasons of integrated and concentrated industrial development, oil crushing mill, oil solvent extraction plant, new sugar complex, paper and paper board from bagasse, tannery and shoe making unit, cattle feed plant, banana fibre plant and bag manufacturing unit (from banana trunks), and banana powder plant.

147. The Upper-Juba Region extending over 118,000 sq. km. and with an estimated population of over 400,000, has, at present, 65 industrial establishments but there are no big industrial units. The region has abundant cattle population and offers immense possibilities for development of cattle. Such a programme will necessitate setting up feed lots at suitable locations in the region. Iron ore deposits with an iron content between 35 to 40% and the silica content between 45-55% are reported to exist in Bur Galan and Eldair. Potential reserves are estimated around 120 million tons in Bur Galan and 50 million tons near Dinsor. The UN Survey team has indicated uranium, thorium, and rare earth deposits in the Bur area. The extent and quantum of these deposits need to be surveyed and the feasibility of commercial exploitation needs to be conducted. Industries based on established deposits may facilitate rapid industrialisation of the region.

148. With an area of 48,000 sq. km. and an estimated population of 450,000, the North-West region (Hargeisa Region) has 663 industrial establishments. Berbera, one of the major ports of the country, is situated in this region. The region has potential to develop agriculture, livestock, fish resources, and mineral deposits. But the industrial progress has been tardy. The main

agriculture crops raised and proposed to be expanded further are sorghum, maize, wheat, fruits and vegetables and oil seeds. The possibility of setting up an industrial complex - flour mill, canned vegetables and fruits, beverages, and an oil mill exists. About 80% of the sheep and 20% of the goat population in Somalia are raised in this region. 40,000 heads of cattle on hoof are exported from Berbera. Sheep and goat meat processing industry and ancillary industries for by-products utilisation can be developed. To fatten the livestock - whether for slaughtering or export on hoof, there is need to set up cattle feed industry. Poultry can be developed for export purposes. The Northern Coast - from Zeila to Berbera - has rich fish resources and potential for development of coastal fishing exists. Consequently, fish based industries and ancillary industries like boat building facilities at Berbera, cold storage facilities along the coast, transport facilities to move the fish to the hinterland, modernisation and expansion of the traditional dry fish industry, creation of small fish processing plants to manufacture processed fish etc. can be developed.

149. The region has rich mineral deposits, as explained in the Chapter on resources and possibilities for their commercial exploitation are bright. Cement Plant based on gypsum and lime stone deposits is already under implementation. Feasibility of commercial exploitation of gypsum in a phased manner has already been identified and the proposed pilot plant for experimenting gypsum as building industry, if successful, will open up immense possibilities for expanding the building material industry. Survey of metal deposits and their commercial exploitation for export purposes has been suggested by the UNIDO expert on the building material industry. Skilled artisans and labour are available in the region. Flour mills, oil mills, slaughter houses, shoe-making factory, nails factory, canning of vegetables and fruits - to be located in Hargeisa - and cement plant, gypsum plant, ceramic flour and wall tiles, white wares and household crockery, sanitary and porcelain fittings - to be located around about Berbera - are some of the identified projects suggested to be located in this region. In addition, boat building yards or boat repair facilities, cold storage facilities, and small fish based industries - drying and salting of fish, fish meal plant etc. in Berbera are also feasible. In the long run, crude oil refinery, glass manufacturing industry, sisal fibre manufacturing plant, beverages, gypsum industry, commercial mining of metals for export etc. can be developed. Creation of necessary ancillary facilities both at Hargeisa and Berbera is a necessary pre-requisite for development of proposed new industries.

150. With an area of 139,000 sq. km. and an estimated population of 400,000, the North East Region (Togdheer Region) is the largest region in Somalia. It has 112 industrial establishments. The biggest unit is the fish processing plant at Las-Khoreh, which is operating on low capacity. Organisation and management of 7000 tons of fish catches during the fishing season will constitute the major industrial activity in the region, which in turn will pave the way for creation of fish based industries, ancillary industries for fish catching processing and export, and generate full employment for fishermen and more economic activity in the region. The new pickling plant in Burao should facilitate development of shoe industry, since skilled shoe makers are available in the city. Scope for development of small industries based on animal husbandry exists. Poultry farming can be developed. The possibility of growing vegetables and fruits in Erigavo region, which has high altitude, salubrious climate and water supply from running rivulets need to be surveyed and developed. Canning industry can succeed large scale cultivation of vegetable and fruits for marketing in the needy parts of the country and also for export to neighbouring countries. The saw mill in Erigavo can be modernised and expanded. Feasibility of setting up a unit to process saw dust for manufacturing briquettes, as an alternative to charcoal for use as domestic fuel has to be explored.

151. The uneven industrial growth among the regions, the higher growth obtained by one or two regions as compared to other parts of the country, the backwardness of few regions though gifted with natural resources, lack of uniformity and consistency in the spread of infrastructural facilities etc. need to be corrected while planning future industrial growth within the overall national interests of the country. Suitable location of industries to be set up in future, subject to other conditions for such location being equal, and equitable dispersion of future infrastructure facilities to be created among the regions, preference being given to the least developed of the regions, may go a long way to remove the existing disparities in growth, while at the same time realising the planned industrial growth over a period. However, this is a long-term objective, which has to be kept in view, while planning industrial projects for the future.

152. In this context, another concept, relevant to industrial growth of the country viz. role of growth poles in industrial planning and implementation is discussed. The concept of growth poles normally applied in industrial planning and implementation has limited application in the conditions obtained in Somalia. Limitations of market, except for a few staple food products and consumers' goods, the concentration of purchasing

power in a few urban areas, lack of adequate purchasing power among the rural population, who form the bulk of the country's population and who live on almost subsistence level economy, have tended to create an export oriented economy. Livestock, fish and bananas have found an outlet in the external market, which in turn has led to the creation of processing industries in the vicinity of harbours - Mogadiscio, Kismayo, etc. Harbours can only be deemed stop-overs and not growth poles. Nevertheless, they have served as growth poles in transforming the raw material into finished products with an added value to the economy. Development of the hinterland, from where the requisite raw materials flow into the processing industries can constitute a growth pole for correcting the regional imbalance. Industrial complexes based on Agro-pastoral schemes can widen the basis of industry, and also its spread in the country.

153. Industrial complexes are created by vertical integration or horizontal integration or a combination of both. Normally, a sugar complex or livestock complex, as illustrated in diagram I and II constitute the best example of vertical integration. Horizontal integration of industries is achieved by diversification of products, creation of complementary and ancillary industries around a main industry. An agro-pastoral industrial complex of the type illustrated on diagram III is an example of horizontal integration. Similarly, agro-food industrial complex, agro-chemical industrial complex can also be developed. Resources and facilities of each region will determine the nature and type of industrial complex or large conglomeration to be set up in any of the regions. Equitable distribution of industrial complexes among the regional complexes can facilitate balanced industrial growth in the country.

CHAPTER FOUR

STRATEGY FOR INDUSTRIAL DEVELOPMENT

154. The initial step in a planned strategy is to decide upon the objectives of overall economic development of the country. In Somalia, for instance, the objectives could be:-

(a) to aim at increasing the Gross Domestic Product at an annual compounded rate of 6 per cent a year, over the period 1974 to 1978. This is the target suggested by the United Nations for the current development decade. Such an overall growth rate would mean raising the current per capita income at compounded annual rate of 3.5 to 4 per cent per annum;

(b) to create maximum employment and steadily increase the level of productivity;

(c) to reduce progressively foreign trade and balance of payments deficits;

(d) to reduce progressively income disparities between different classes of earners without dampening incentive;

(e) to bring about more even development between the various regions of the country consistent with the availability of natural resources or infrastructure facilities.

155. The level of gross domestic product (GDP) in Somalia is estimated around So.Sh. 1.650 million. The shares of agriculture, industry and services, are worked out as under:-

Sector	So.Sh. (in million)	% shares
Agriculture	670	40.7%
Industry	153	9.3%
Services	823	50.0%
	1,646	100.0%

If the overall growth of the economy is to be of the order of 6% a year, then in five years' time the GDP should be of the order of So.Sh. 2.200 million. On the reasonable assumption that agricultural sector would grow at a rate of 4.0% a year, and the services sector at an overall rate of 6% a year, the rate of growth of industry, over the next five years, should be around 15% per annum. It is possible that agricultural growth may be higher, if all the self-help programmes for increasing agricultural productions turn out successful, and increased acrage for growing cotton, oil seeds, sugar cane plantations and banana etc. fully materialised. Growth of industry then could be lower, in the range of 10 to 12% a year. On the basis of 15% growth rate, the contribution to GDP from Industry should increase from the level of So.Sh. 153 million in 1973 to nearly So.Sh. 306 million (i.e. by 100%). In other words, industrial output should be doubled over the next five years. This can be the overall target for the industrial plan for the period 1974-1978.

156. The corner stone of the industrial development will, for many years to come, remain the natural endowment of the country and especially livestock, fisheries and agricultural raw materials. The major role of the industrial sector is and will be during the period 1974-78, as well as in the long run, to process to the fullest extent these raw materials for import substitution and/or for export promotion in combining the large scale unit and the medium and small-scale industries. Successful working of old established, and new industries based on country's natural resources will set the pace of industrial growth for a long time to come. Immediate and rapid development of natural resources - livestock, fish and agricultural materials - new commercial crops proposed to be raised - cotton, oil seeds, tobacco, fruits and vegetables - timber and wood available in the first regions, commercial exploitation of mineral resources, gypsum, iron ore, salt, limestone, mica, etc. is of vital importance for rapid development of industries in the country. It is equally important to increase the yields of existing and proposed agricultural and other resources, through the application of modern practices and research, and establish adequate

linkages between the development of resources and the resource needs of industries based upon them. Combined, and well integrated planning of specific resources and related industries, is essential. Most of the industries containing development potential are import substitution industries. It is therefore important to evolve integrated policies for imports of manufactured products, import tariffs and development of related import substitution industries, with the specific purpose of avoiding supply shortages, losses of revenue from import duties, and determining prices of import substituting manufactured products in the light of accounting prices of imported goods.

157. Harmonization of the short-term and long-term objectives of the manufacturing sector and other sectors such as construction, mining, energy, infrastructure facilities (roads, harbours, ports, water system, etc.) should be secured in order that each one of these sectors consumes the maximum of items produced by the manufacturing sector and supplies it with the maximum of input. This will pave the way for widening the national market rapidly and avoid duplication, wastage, and idle capacity. Shortage of water, high fuel and power costs, and inadequate transport facilities, are serious barriers to rapid and continuing development of industries. Much is being done to ensure adequate water supply through irrigation and ground water projects. But in areas where only brackish water is available the feasibility of setting up desalinization plants needs to be studied, and water made available for industrial and domestic use on subsidised basis, the subsidy being treated as an infrastructure cost. There is dearth of natural fuel in Somalia, and the only industrial fuel for most industries is high priced diesel oil. Power costs are also high because of high priced diesel used for power generation. One way to lower the fuel and power costs in industries immediately, is to remove or lower the import duty on diesel, and make up the loss by a sales or purchase tax on a few semi-essential or unessential consumer goods and durables. However, long-term strategy would be to establish a petroleum refinery in Somalia, make fuel oil available at reduced price and make up the loss on diesel through higher prices of kerosene and other fractions. With large potential for salt production, Somalia should develop caustic soda, chlorine, soda ash hydro-

chloric acid industries for export markets, glass and calcium chloride industries for domestic markets, and plan for development of PVC, and other industries based on Naphta from Petroleum Refinery. Country's transport and communications systems also need to be developed so as to make these services cheaper, and provide the essential infrastructure for growth of industries on regional basis. Development of iron ore, gypsum, petroleum and other minerals will require quicker transport facilities. Better communication facilities will make the people much more mobile, which will quicken the process of settling the nomadic population, and expedite not only regional development, but integration of various regions. With the location of cement plant, fish, and fruit processing industries in the North-East Region, and salt fish and ancillory industries in the North-west regions, it would become necessary to develop coastal shipping, which will provide cheap transport service for industrial and agricultural products between Northern and Southern Regions. Co-ordinated development of road, and coastal shipping will further assist the growth of industry and natural resources on regional basis. Power development is essential for industrial growth. Power planning has to be done in advance for rapid industrialisation. Planning for meeting power needs over next 10 to 15 years should be undertaken from now on.

158. Long-term industrial strategy should also set up progressive steps for harmonising external and internal trade with the requirements of the industrial sector. Sound external outlets for new manufacturing projects should be proved before starting the implementation of these projects. Customs regulations, export credits, export facilities, export agreements with the main importers should be streamlined and foreseen before the production is started. Close co-operation in this field between ministerial departments dealing with industry and external trade is essential. Internal market should also be carefully surveyed. Main markets, main distribution channels, preferences of the potential buyers and their psychological motivations, should be known and taken into account before starting the production of a new consumer item.

Adaptation of consumer products destined for the internal markets should be a constant concern. Organising gross and retail trade facilities covering the whole country and spreading from the important centres towards remote places should constitute one of the basic measures for unifying and widening the national market and introducing habits of consuming manufactured goods.

159. For a country with small markets for manufactured products, and a very low population density, it is an important strategy to plan for development of capital intensive industries operating on modern technology, so that export markets could be developed on a competitive basis. There is much scope for development of export markets for a number of existing as well as new resource-based industrial products, a strategy has to be evolved to realize this objective. However, development of export markets is always a difficult proposition, and intensive export development efforts have to be made continuously on an organised basis. The country has gained expertise and skill in manufacturing livestock-based and fish-based products for export markets. But export of livestock on hoof still continues. Fish catch is yet to be organised on a larger scale. There is prima-facia scope for developing export markets for products based on sugar factory alcohol, byproducts of meat factories, tanned leather, leather products footwear and other leather goods, fish meal, canned fish and canned fruits and vegetables. Some of the import-based manufactured products also offer scope for exports, from developing countries having skilled and low-wage labour force. These are labour-intensive manufactured products, which developed countries find increasingly uneconomic to produce owing to high and rising labour costs, e.g. factory made shirts, children's and teenagers dresses, uniforms, leather footwear and leather products, small and medium size wooden products, foundry products, etc. It would be profitable strategy for Somalia to test out survey and develop export markets in selected developed countries.

160. The public sector industries will continue to play a domestic role in industrial development of the country. Policies and strategies relating to the development of industries coming under the purview of the

state sector will have a vital bearing on industrial growth. The performance of the public sector units will have a decisive effect on the national economy of the country. Consolidation of the existing public sector industries and increasing their profitability should constitute an important strategy and objective for management of the public sector enterprises. Legislative, institutional, and economic measures required for realising this objective should be taken and enforced by the controlling Ministry. In so far as the future industrial development is concerned, it may be desirable to define the sphere of public sector to facilitate its own development and also to pave way for the development of private sector industries. The sphere of public sector may possibly be defined to include the following industries:

i- industrial projects relating to defence or of a strategic character or of the category of public utilities essential for industry;

ii- major industrial projects involving large investments which can be expected to be found from government sources only;

iii- projects involving bilateral government-to-government aid agreements;

iv- new projects, the bulk of whose output is for export to foreign countries. (Existing projects in the private sector exporting the bulk of their output and functioning satisfactorily may be allowed to continue in the private sector);

v- Projects producing a vital article of consumption in which achievement of national self-sufficiency is necessary, e.g. sugar, oil, pasta, etc.;

vi- Industrial projects taken over from the private sector on grounds of mismanagement or prolonged closure due to technical and financial reasons;

vii- Development, exploitation and processing of minerals.

Suitable institutional arrangements in the Ministry of Industry have to be created - Department for management of public sector enterprises with technical services, personnel and training, technical, commercial, finance and accounts, department of industry planning and development - evolution of industrial policy, long-term and short-term, planning, implementation and appraisals, industrial research and statistics. Certain technical inputs for the reorganised Ministry will also be necessary to enable it to play its assigned role.

161. The potentialities for industrial growth in the private sector need to be fully exploited for allowing it to play its due role in the industrial development of the country. Industries other than those earmarked for public sector investment may be expressly declared open for development by the private sector. Harmonizing the development of both public and private sectors for planned realisation of the industrial growth of the country should constitute a permanent foundation of the long-term industrial strategy. A clear and unequivocal declaration of policy for the development of industries in the private sector - including handicrafts is urgently needed at this stage of industrial evolution in Somalia. It would encourage the potential enterpreneur and dispel lingering doubts about the government's intentions in regard to the continuance of the private sector. It will enable this sector, whose contribution to the overall industrial development of industrial growth has not been negligible, to grow further and increase its contribution to GDP. The proposed declaration should provide, inter-alia, (a) the role of the private sector, especially medium and small-scale industries, in building up the industrial economy of the country; (b) emphasize the State's readiness to provide full scope for the creative enterprise and skills of Somali investors acting in collaboration, where necessary, with well-reputed foreign firms and, (c) set down the various incentives, concessions and aids, which government is willing to provide for the encouragement and expansion of industrial activities in this sector. The basic elements of such policy could be:

i- to recognise the positive role of medium and small-scale industries in the modern private sector;

ii- to define the criteria for deciding which industries would be taken up in small-scale sector;

iii- to indicate measures for upgrading the skills and productivity in the traditional private sector;

iv- to establish institutional agencies in order to facilitate joint discussion and action for tackling current problems and difficulties and accelerating growth both in the modern as well as in the traditional private sector;

v- to provide different kinds of assistance and incentives - fiscal, financial and technical - for the promotion of new enterprises and consolidation of existing ones; and

vi- to promote a more balanced pattern of industrial development as between different regions of Somalia through the rapid growth of medium and small-scale industries as well as the traditional industries and handicrafts.

The policy declaration should feature in the law for the [illegible] and organization of industrial activities to be enacted. [illegible] strategy would also raise questions regarding integration of large-scale, medium scale, and small-scale industries. A new [illegible] and policy for the development of all sectors, large, medium and small-scale industries and traditional small industries and handicrafts is called for.

162. There is at present no definition of 'medium' and 'small-scale' industries in Somalia and no law to protect and assist them. The concept of 'medium' and 'small-scale' industry, as distinguished from large industry is, however, well understood. It is a debatable point whether such a definition should be given in terms of (a) amount of invested capital (fixed and working capital) or (b) value of machinery and equipment excluding the value of land and buildings, or (c) value of all fixed assets including land, buildings, machinery and equipment, or (d) number of workers employed etc. Various aspects of the question have to be carefully considered, before arriving at a final view. 'Large', 'medium' and 'small-scale' are terms, which are relative to the structure of the industrial economy of a country. In Somalia, the term 'large' may appropriately be used to include the major projects in the public sector and about half a dozen large establishments in the private sector. Although there are a few establishments in the public sector, which are relatively small and a few in the private sector, which are relatively large, the position, by and large, is that the public sector coincides with large industry and the private sector with medium and small-scale industry. The balance of advantage, at present, lies in adopting the existing demarcation line between public and private sectors, as the basis of differentiation between 'large industries', on the one hand and 'medium and small-scale industry', on the other.

163. Adopting a pragmatic approach, it may be adequate to work on the basis of the following categorization of industries:

1. Major or large establishments (public sector);
2. Medium and small-scale establishments employing more than 5 persons each (private sector);
3. Small traditional units employing less than 5 persons each (traditional private sector).

The proposed proposition seems to me the most practical under the present circumstance. Nevertheless, if for purposes of planning, policy and preparation of development programmes, it is considered essential to draw a sharp line of division between large, medium and small-scale, and traditional small industries, it may be drawn in terms of the number of workers employed, as follows:

Large Industries: those which employ more than 50 persons per establishment.

Medium and Small-scale Industries: those which employ between 5 and 50 persons per establishment.

Traditional small Industries: those which employ less than 5 persons per unit.

164. Next in importance to the question ofdefinition is the framing of criteria for deciding whether a new project should be taken up on large scale or small scale. The general disposition in developing countries is to prefer large projects using modern machinery and equipment and involving substantial investment because of their operational efficiency as well as prestigious value. In certain lines of manufacture, efficiency and cost considerations dictate that a large project be preferred to a small one. In Somalia where export promotion and foreign exchange earnings are high priorities, in the export industries one large project may be found preferable on considerations of efficiency and low cost of production to two or three small ones.

165. In several other lines of manufacture, there would be a strong case for preferring projects in the medium or small scale sector because:

i- medium and small-scale industries help in achieving a more balanced development between different regions, as more than one unit can be established to meet the total demand, e.g. grain mills, soap units, etc.

ii- these industries being less capital intensive, their employment potential for a given investment is greater and they are better adapted, from that point of view, to meet the problem of increasing unemployment, and

iii- they provide scope for encouraging private initiative and enterprise, mobilising private savings and for bringing to bear on production and marketing the flexibility of private ownership and management.

Particularly in the manufacture of consumption goods like grain milling, bakery products, ready-made garments, footwear, wooden and metal furniture, metal fabrication including aluminium utensils, soap etc., it would be better to have a relatively large number of units with a regional spread than one or two large units catering to the entire home demand.

166. Which lines of manufacture should be assigned to, or encouraged in, traditional small sector is a more difficult question to decide. The issues here are moe complex than they appear to be on a superficial view. Left to themselves, some of the traditional small industries would be driven to the wall by competition from large or small-scale units in the same line and gradually die out. What sustains them at present is the home market. Because of low per capita income and low levels of living, it is essentially a price market and the averabe consumer prefers a cheap, even though a crude, product. The small producer is able to market his products because his expectations in regard to return on his labour are modest - 4 to 6 shillings for unskilled and 7 to 10 shillings for semi-skilled work - and he is able to get that much return on labour is a crucial factor in the situation and would be most suitable guide in deciding which traditional industries should be assisted and encouraged to continue. Those traditional industries which cannot yield a wage equal to that prevailing in other alternative occupations for the same level of skill should be technically upgraded to a point where the workers can earn that wage or return on work. This would involve both increasing productivity per hour of work and improving the quality of the product. If an industry is capable of being technically upgraded and reorganised so as to yield a return on labour as indicated above, it should be considered viable and should be rendered every possible assistance including technical advice, working capital and assured supply of raw materials. On the other hand, if its techniques and form of organisation are so primitive that it cannot satisfy the criterion given above, it should be considered non-viable and allowed gradually to fade out. Illustratively, if in the next five years, the daily wage expectation in Somalia for unskilled and semi-skilled work rises to, say, 10 shillings and 16 shillings respectively, a

traditional industry like the camel-driven oil-seed crusher would have to be put in a position to yield this much return on labour by suitable technical and other assistance. If even with such assistance it fails to yield the required return, it would have to go down as casualty in an age of economic and social change. Generally, it may be stated that traditional small industries like small bakeries, tailoring establishments, shoe-making units, grain milling units, oil processing units, etc. may meet the requirements of the above criterion.

167. Both medium and small-scale industries and traditional small industries need an organisation through which they can help themselves and obtain help from government and institutional agencies. An appropriate form of organisation for medium and small-scale industries is an Association of Industries or a Chamber of Commerce. Medium and small-scale industries owned and managed by private enterpreneurs have to come together only for limited purposes and, therefore, a less intensive form of organisation through which they can discuss their common interests, co-operate for specific action and seek to influence government policy in their favour would be adequate. Medium and small-scale establishments in the private sector have already set up a Chamber of Industry and Commerce in Mogadiscio which has been functioning for some years but it has to assume a more active role.

168. Traditional small industries are a dispersed sector, the number of units is large andthe cohesive factors bringing them together are often inoperative. For these industries, the most appropriate fo.m of organisation is the industrial co-operative society. They have to be brought together for a large number of common purposes such as joint purchase of raw materials, joint sale of finished goods, loans for fixed or working capital, utilisation of technical advice and assistance, hiring of commong workplace etc. and, therefore, a more intensive form of co-operation through industrial co-operatives is necessary. The concept of industrial co-operation, the processes to be undergone for forming industrial co-operatives and the policy to be implemented in relation to them have not yet fully crystallised.

Several industrial co-operatives are at present co-operative only in name; they have no share capital, no co-operative purchase of raw materials and sale of finished products and no co-operative borrowing for their common needs. They have received no help from government. The members of these co-operatives function on individualistic basis, each buying and selling for himself. The only bond among them seems to be sitting and working under the same roof, the building having been provided by the government (Hargdisa shoe-[illegible]' co-operative) or a tacit agreement to sell the products of their labour at a uniform price (Burao blacksmiths' co-operative). For reaching a large number of dispersed units, mobilising them for self-help and channelling technical advice and assistance and fiscal and financial aid to them, co-operatives are undoubtedly an effective instrument. At the same time, it must be said that no useful purpose is served by nominally banding together these units into co-operatives without going through the formalities offorming a co-operative which would function in a co-operative way. Necessary support has also to be given to the co-operatives by way of technical advice and assistance, loans at moderate rates of interest and supply of raw materials at reasonable prices. The law on Co-operatives Soicieties promulgated in 1969 does not include industry among the main fields of activity to which the Law would apply but it does mention Handicraft Co-operatives among "all other categories of co-operatives". Considering the large number of establishments and workers employed in traditional small industries and handicrafts, the industrial co-operatives should be given a separate categorisation like the agricultural co-operatives. The provisions of the Law of 1969 need to be modified to embody the special needs of industrial co-operatives.

169. As explained in para 0.9 above, the institutional arrangements in the Ministry of Industry to initiate, implement and co-ordinate the development programme in the sphere of medium and small-scale industries should be an exclusive department of medium and small industries (including handicrafts). The technical assistance in the form of a small-scale industries expert well versed on small industries based on agriculture livestock and fisheries and short-term

expertise in specialised fields like tanning, leather manufacturing, [illegible], metal fabrication, handloom, artistic handicrafts, etc. should be utilised to provide the necessary technical components for the department.

4.5. Another important long-term strategy related to the optimum size of industrial plants in different sectors under the prevailing conditions in Kerala, is the optimum combination of regional distribution and concentration around the main cities of industrial plants. The study of the resources, infrastructure facilities, the potential for development in each region, and the feasibility of setting up industrial complexes - horizontal or vertical or conglomerate type - has been presented in earlier chapters. A strategy to integrate the regional aspirations consistent with national interests available resources, facilities, and other potential has to be evolved while planning for future industrial development. A policy to implement the programme has to be laid down for the guidance of the executing agencies and private investors so that choice of new projects falls in line with the overall national objectives viz. elimination of regional disparities in industrial growth and realisation of balanced growth among the regions and accelerating overall industrial growth of the country. The proposed industrial development department should lay down the policy and guidelines for regional and national development in the industrial sector. Induction of development officers in the regional offices may facilitate regional planning from bottom and effective implementation of approved plans/programmes/projects.

4.6. Financing industrial development is a difficult problem in all developing countries. Both domestic savings and surpluses, and stock of foreign exchange, are short of requirements. Domestic financial resources could be augmented through higher direct and indirect taxation, mobilization of savings, spread of banking habits, and public borrowings. Foreign exchange resources could be augmented by import-substitution in agriculture and industry, and export promotion of high value adding products. In addition, foreign collaboration, foreign investment, foreign participation under bilateral agreements, soft loans and outright grants from friendly nations, are the usual methods of augmenting foreign exchange resources. The need for foreign

collaboration or foreign investment is often urgent in case of new industries worked on modern technology. Developing countries find it increasingly difficult to employ these methods of finding foreign exchange, in absence of a firm and declared liberal policy in regard to foreign investments. The existing foreign investment law needs to be modified to encourage private or government foreign capital participation in industrial investments. Declaration of a policy specifying industrial fields where foreign investment is welcome, the rules and regulations governing it, and facilities and concessions that would be given to foreign investors, is a sound and necessary strategy to attract requisite foreign assistance in industrial development of the country.

172. The magnitude and dimensions of capital investment required for industrial development will be quite large. Indigenous private capital has been traditionally shy, in Somalia. Moreover in a Socialistic Society, private capital tends to be increasingly wary of investment in industry. Government will thus be faced with the twin problem of finding increasingly larger financial resources for the requisite planned growth of industries, and growing shyness or reluctance of privat capital. In the medium and small-scale industry field, solution to the problem is sought through tax exemption to investors, tax holidays, credit facilities, concessional duties and power rates, establishment of industrial estates, provision of common facilities, technical assistance, extension services, and so on. In developing countries with small internal markets, such measures to attract private capital to industry, often result in growth of monopoly or oligopoly, and consequent exploitation of the people. In recent times, therefore, even in the field of small and medium scale industry, Governments of small developing countries, have found it necessary to supervise and regulate these industries. Some Governments have started joint-stock companies for mobilising privat capital for industrial development, in which private capital is invited to purchase 49% of the shares and the Government buys the balance of 51% of the shares. But the Government sets up and runs one or more large enterprises. Some Governments participate in the equity capital to the extent of 51 per cent and exercise control over business, through a

Government Director, on the board of private companies. In the Handicraft and traditional industry field, private capital is attracted through formation of co-operatives, and provision of credit facilities and extension services [illegible] to the co-operatives. In the large-scale industry, the approach is to establish industrial development corporations in the public sector and invite private capital to purchase shares to the extent of 49 per cent. Alternatively, specific industry corporations are established in the public sector and the private capital is not invited to participate in the capital of the corporations. In Somalia, levels of taxation and private savings are relatively lower, and increase in consumption relatively more rapid, than in many developing countries. With small local markets, shortages of technical and skilled manpower, and the need to develop export markets for establishing economic production units large scale and medium-scale industries in the country have to be capital intensive, and based upon modern technology. Investment requirements of industrial development will therefore be sizeable. In the absence of private enterpreneurship to finance and run large and medium scale industries the state has either to own or manage them. The financial resources of the Government may not be adequate to meet the growing demands of development. Harnessing of indigenous private savings for industrial development is therefore essential. The need to deploy modern technology, develop export markets and conserve foreign exchange, also calls for industrial development in partnership with private foreign investors as well. Establishment of a joint secgor in industrial field is a means of realising such mutual co-operation.

173. The short, medium and long term requirements of the industrial sector and those of the training and education system should be co-ordinated in order to supply the industrial sector with the skilled man-power and managerial staff needed. To achieve these goals the needs of the industrial sector should be periodically and carefully assessed and forecasted and the education system should aim, among other things, to meet these needs. It is the only way to avoid to be confronted with the situation prevailing in

most of the developing countries where the industrial sector faces shortage of skilled man-power and the country, as whole, is confronted by unemployment among educated people. Shortage of trained cadres is likely to arise and hence a policy for obtaining requisite technical skill and skilled technicians will have to be developed in due course. Managerial skills will also need to be developed both by institutional and on-the-job training at all levels.

174. There is need for enlarging statistical surveys. Industrial Statistics should give more details for grasping the prevailing situation in the industrial sector and for providing sounder basis for designing the future industrial development. The annual statistical publication called "Industrial Promotion" should divide the inputs into imported and local and the outputs into exported and locally sold. This will allow to measure from year to year the progress of the import substitution, the export expansion and local market development policy. This statistical publication should also collect statistical data on the level of skilled manpower employed and the jobs offered in order to give an idea about the main gaps that should be filled by the education and training systems. Long-term industrial policy will not only need more elaborated statistical data but also national accounts data. Without national accounts it would be difficult to device a sound policy taking into account the objectives of the different economic sectors. It would be impossible to evaluate and pinpoint the industrial progress. National Accounts is a powerful tool for combining the data of the balance of payment, those of the current and development budgets, the accounts of the banks and those of the industrial units, and other aggregates such as consumption, production, capital formation, savings, salaries and wages. Without national accounts it would be rather impossible to produce a coherent development plan. Action has to be taken to prepare national accounts as early as possible.

175. A comprehensive law for promotion and regulation of industrial activities has to be promulgated. The present law for regulation and control of foreign investments including investments in industry, was enacted in 1960 but extended and modified in 1968. This contains provision for registration of foreign investments and their transfer

and alienation, for treatment of foreign enterprises [illegible] not less favourable than received by other national enterprises, payment of equitable compensation in case of expropriation, transfer abroad of profits as well as of salaries, wages, allowances etc. of foreign personnel upto specified limit, custom and fiscal exemptions, restriction on employment of unskilled foreign personnel beyond 5 per cent of the Somali personnel employed by the enterprises and obligation to employ Somalis in accordance to the manpower plans and provide for their training in the enterprises. The Commission on Foreign Investments is the organ for control and implementation of the provisions of the law. There is need for a law to promote, regulate and control industrial activities in the country. The law should specify, among other things, procedure for creation, expansion and reactivation of all industrial enterprises in spheres of public and private sector, incentives for small scale industries and traditional industries, the machinery and procedure for effective implementaion of its essential provisions. The lynchpin of this machinery should be provision for inter-ministerial consultation not only for promotion and regulation of industry but also for ensuring integrated and co-ordinted industrial development of the country. A draft law is proposed on appendix IV.

176. Various institutional measures have been suggested in the past - like the creation of an industrial development corporation, Reorganisation and strengthening of the Ministry of Industry, strengthening the Somali Development Bank, but none of them have fully materialised so far. The appraisal of the current development programme, explained in Chapter four, has fully brought out the deficiency and weakness in the existing institutional arrangements for implementing the industrial programme. The need to reorganise the Ministry of Industry and to man it with adequate techno-economic cadres is a necessary pre-requisite for planning and realisation of future industrial growth and for improving the efficiency and performance of state-owned enterprises. The reorganised Ministry will need certain technical inputs and the proposed project for strengthening the Ministry of Industry submitted by Government for technical assistance from UNIDO is the minimum requirements needed

for the next five years. Apart from the expertise provided in the project, the Ministry will also need technical assistance in the form of short-term expertise for preparation of feasibility studies on selected projects ideas for implementation, selection of technology, equipments and machinery contracted for bilaterally or by open tenders on commercial basis, for execution of large projects, preparation of design drawings for setting up large projects, further surveys on adhoc project ideas, and selected technological processes either of the ongoing industries or new ones to be set up in future (e.g. food processing industries, textile, salt and chemicals, commercial exploitation of minerals and metals, leather, forestry, boat building, mechanical and electrical industries, etc.). Technical assistance in the form of fellowships and training courses on industrial management, industrial technology, maintenance and repairs, industrial engineering and inventory control, industrial planning and appraisals, accounting and costing, etc. will also be needed to train the national personnel.

[illegible]

[illegible]

[illegible]

177. [illegible] strategy for industrial development has been outlined in earlier [illegible]. It is necessary to [illegible] specific criteria in identifying and selecting new industrial projects, so as to ensure [illegible] resources allocation, both [illegible] the short-term and long-term development programme.

[illegible] scarcity [illegible] foreign exchange, [illegible] the foreign exchange component. This has been one of the constraints in implementation of development programmes in Somalia. Industrial development in particular, even when it is resource-based, requires much foreign exchange, not only for importation of machinery and equipment, but also for imports of current inputs, inventory of raw materials, intermediates, packing materials, fuel, replacement requirements, and often for import of technology, and specialised personnel, and repayment of earlier foreign borrowings for industrial development. To make the best possible use of available foreign exchange resources, it becomes imperative initially to examine the list of candidate industries in the light of their respective total foreign exchange requirements. Since the main objectives of industrial development are to bring about large increases in income and employment potential of individual projects per sector, as well as, possible related increases in income and employment in the industrial as well as other sectors with which they are linked, income and employment must also be increased as rapidly as possible. Hence the growth rates possible with given amounts of foreign exchange expedition become relevant in considering the relative preferences for developing different candidate industries. Often, foreign exchange spent in developing industries would reduce the outflow of foreign exchange through import substitution, or augment exchange earnings by way of exports of industrial products. These aspects, therefore, provide important guides in identifying notionally more useful industries for inclusion in an industrial plan. All these considerations for

preferring an industrial project for inclusion in an industrial plan can be combined into three specific criteria for selection of industries which would maximise income and employment over the plan period, namely:-

a. total net direct and indirect foreign gain (or loss) (measured in accounting prices) over the plan period;
b. total net direct and indirect foreign exchange gain (or loss) per unit of direct and indirect income added value potential;
c. total net direct and indirect foreign exchange gain, per unit of employment potential.

Application of these criteria to a list of candidate industries would result in preference being given in the plan to industries which would yield to the country maximum gain (or minimum loss) of foreign exchange through industrial development, and lead to establishment of new industries, which would maximise income added value and employment from industrial development.

179. These criteria are comprehensive in the sense that they cover a large number of specific criteria normally used in assigning priority to candidate industries in any development plan. Development of resource-based industries having large import substitution effect and export possibilities is given top priority because that will meet large demands and lead to large income and employment creation. However, such development may often require considerable foreign exchange for the development of the indigenous resource itself, and the priority may not be correctly assigned. Maximum exchange gain criterion will lead to priority for resource-based industries with large markets and links with other sectors, which involve minimal exchange expenditure, on import of machinery and equipment, inputs, working capital and replacement requirements, all taken together. Criteria mentioned in (b) and (c) above will lead to selection of industries, which would lead to optimisation of income and employment and use of labour-intensive methods of production to the extent necessary in the light of foreign exchange availability. Industries

[illegible] under these categories will turn out products for mass [illegible] at home or abroad, if exports are possible and mechanism [illegible] exploitation exists. Another class of industries in the [illegible] will be those manufacturing consumer goods having large [illegible] at home and for export, and which substitute imports, [illegible] earn much foreign exchange for import of inputs and machinery and [illegible]. Next in importance will be the class of resource-based industries with export orientation, having no markets, but making high value added products. Resource-based import substituting consumer [illegible], and intermediate goods, industries with no large markets, or skill [illegible] industries could also have some priority. Sectoral inputs and investment goods based upon imported materials, with relatively small markets at home will be the residual categories of priority industries.

180. These criteria are for selection of new industries. However, in developing countries, at a given time, there are existing projects for which foreign exchange has been spent, but which have large unused capacities. Many of the existing industries also do not utilise their by-products and waste products for further processing. There are also projects which are in the pipeline. They have been selected for implementation, in some cases after their technical and economic feasibilities are established and in few others for other reasons. Obviously in a development plan these categories of industries will have priority over all the new industries.

181. Application of criteria based on foreign exchange gain (or loss) requires considerable data, which is not available, or if available, is not reliable. Moreover, in Somalia, if natural resources and industries are developed rapidly, labour scarcity, rather than abundance, even in the unskilled category, appears to be a major problem. One solution to cure this seems to be to adopt capital intensive technology. The criteria for minimising exchange requirements per unit employment will have to be suitably modified in selecting industries for development in Somalia.

182. In the circumstances, the candidate industries need to be examined in the light of a broad pragmatic categorization of industries, which adequately reflects the exchange gain criteria discussed above, for assigning suitable order of preference to existing projects, as well as new ones. Categorisation of industries according to the order of preference is shown below:-

a. existing industries having large unused capacities, including non-utilisation of by-products and waste products, which would be utilised profitably, for import substitution, and for export earning;

b. spill-over of industrial projects from the earlier development programme;

c. resource-based, import substituting, and export-oriented industries, having large home and/or export markets over the plan period whose feasibility has been established;

d. industries based upon imported inputs, having significant import substitution effect;

e. resource-based, not much import saving, but good export potential;

f. industries with moderate, or small, but high value adding market;

g. resources based or exchange saving intermediate industries;

h. skill developing industries.

Identified Projects

183. The industrial projects identified by the survey team grouped according to the categorisation explained above are detailed in Appendix V. Choice of projects for inclusion in the forthcoming Development Programme would depend on the government's decision on selection of projects for inclusion in the programme, the allocation and availability of financial resources for the next Development Programme (1974-78), the source and likely flow of technical know-how for individual projects, and the Ministry's and other implementing Agencies' potential to execute the programme to be drawn up for the period. A programme for development of (a) medium and small-scale

industries (b) traditional small industries and handicrafts in the next five years is given separately in the Appendix VI and VII. The feasibility or pre-feasibility data of the identified projects are given in Appendix IX. The industrial project classified under categories A to H, component of the programme for development of medium, small-scale and traditional industries and project ideas are discussed in the preceding paragraphs.

Somaltex

191. Somaltex has reached its effective capacity in the production of grey, bleached and dyed cloth as concerned. Further increase in production is held possible only if complete replacement of the existing second hand machine for all the lines of production is made. The replacement plan is intended to realise the production of 11,000,000 yards to be achieved by 1974-75. Subsequently, the mill is proposed to be expanded so as to realise the production of 20,000,000 yards by 1978, as shown below:

Table XV

Production Plan of Somaltex - 1974-78

(figures in 1000 yards)

Year	Production	Sales				
		Grey	Bleached	Dyed	Printed	
1973	6,000	5,000	5,000	1,000	-	5,000,000 yards t be imported to produce and sell 11,000,000 yards
1974	10,000	5,000	5,500	1,500	1,000	3,000,000 yards t be imported to produce and sell 13,000,000 yards.
1975	15,000	5,000	5,500	1,500	3,000	
1976	15,600	5,000	5,500	2,000	3,100	
1977	18,900	5,000	5,500	3,000	5,400	
1978	20,000	5,000	5,500	3,500	6,000	

A two phased programme of capital expenditure outlay has been drawn up.

185. I Phase: The first phase is intended to facilitate production of 11,000,000 yards. Modernisation of the machines in the spinning, weaving and finishing sections and establishment of a modern textile printing mill are planned for the first phase. The components of the project outlay are given below:

	So.Sh.
A. Modernization of the mill	
i. Spinning mill	3,791,000
ii. Preparatory weaving mill	2,101,600
iii. Weaving mill (240 looms and airconditioning plant)	7,805,000
iv. Finishing division	892,000
v. Contingencies	1,070,400
	15,660,000

B. Installation of 120 additional looms 11,551,000/=

C. Setting up a textile printing mill - So.Sh. 6,690,500. (A market survey for setting up the textile printing mill is proposed to be carried out before designing the printing mill. The outlay is estimated after taking into account the possible cost of the renovated finishing division.)

D. A yarn-dying production unit - So.Sh. 900,000. (In order to meet the present demand for dyed yarn from the Somali weavers to make handwoven cloth, the import of which has been stopped from 1973 onwards, Somaltex plans to set up a unit to make 100 tons/annum. The unit will supply yarn to the weavers. Incidentally this will strengthen the existing traditional sectors in the country which is plagued by a shortage of dyed yarn.

E. Twisted yarn is proposed to be manufactured to facilitate production of various types of cloth which have a demand in the market. Production of 200 tons/year for Nos. 40/2 involving a financial outlay of So.Sh. 600,000 is planned.

F. An agricultural plan for raising cotton production in Balad and Gichar is under implementation. There will be surply cotton after meeting the expanded requirements of the mill. A cotton ginning mill for processing the cotton, part of which would be exportable quality, is planned. The unit will have an output of 1800 tons/year. The total investment proposed is So.Sh. 2,500,000.

G. Ancillary units: A knitting unit for producing underwear, which is at present imported, is proposed to be set up involving an outlay of So.Sh. 100,000 and a carpinal dyeing and bleach unit involving a financial outlay of So.Sh. 1,100,000 is planned.

H. Investment in increasing auxiliary facilities for meeting the first phase expansion requirements estimated to cost So.Sh. 1,400,000 is also proposed. The Company management has planned to complete the first phase in a period of 3 years - expansion from 1973 and ending in 1975. However, depending on the authorisation of the plan expenditure, the outlay will have to be phased out.

186. II Phase:

i.	Construction of spinning and cloth store	So.Sh.	3,400,000
ii.	Spinning mill		4,441,700
iii.	Preparation of weaving mill		490,600
iv.	Weaving mill (120 new looms)		3,903,500
v.	Contingencies		665,200
	Total	So.Sh.	12,800,000

A training programme to upgrade skills and technical supervision for operating the new looms and machinery is also envisaged so as to master production and realise efficiency within the period planned.

187. The entire investment programme in the first phase has been planned on the assumption that consequent to scrapping the existing old plant and machinery, a capital reconstruction of the company will take place wiping out the obsolete assets and share capital liabilities depreciated on account of cumulative losses. This will cut out the deadwood in the present capital base and render the investment profitable reasonably promptly. By the time the investment in both the phases is completed, the indigenous cotton production is expected to meet the mill's requirements of raw cotton. Self-sufficiency in cotton textiles and also the raw material required to process them - incidentally saving in foreign exchange in both ways - will be the ultimate gain of the proposed programme, notwithstanding the heavy investment outlay involved in a period of 5 years.

SNAI

188. A gap between projected demand and indigenous supply of sugar has been estimated by the consultants who prepared the feasibility report for the new sugar mill. Expansion of SNAI so as to facilitate additional production of 500 tons of sugar per day (i.e. raising the existing capacity from 1800 tons per day to 2300 tons per day) from 1975 onwards has been technically found feasible as far back as 1969. This will necessitate expansion of existing facilities in the industrial and agricultural sectors of the mill. An additional investment of So.Sh. 40,000,000 - So.Sh. 20,390,000 for industrial sector and So.Sh. 19,610,000 for the agricultural works has been estimated for the expansion. Investment in the industrial sectors is proposed for expanding existing facilities in the preparation of sugar cane, evaporation machinery, pans and cristallizers, centrifugal machinery, steam raising boilers, dryers and transportation, power plant expansion, turbo-alternators, pumps and accessories, and miscellaneous balancing machinery. Expansion of acreage under sugar cane cultivation is - from 5,500 hectares to 10,000 hectares - in the next two to three years envisaged to increase the sugar cane supply and also the yield by cultivation of virgin lands for the existing mills. The proposed investments are for land clearance and irrigation works, machinery and equipment for cultivation, motorised transportation to site and back, transportation of vehicles to sites, sugar cane transportation track lines and crop machinery. The expansion project will be beset with several problems, the most important of which will be limitations of water supply and salination of soil. Certain new projects for utilisation of Scheebelli Water is already under consideration and if it could be designed or located to suit the water requirements of SNAI, the problem of water may be solved. Alternatively, utilisation of underground water may have to be considered. The project is attractive in the sense that it has been held technically feasible as far back as 1969 and the only new investigations are required to be conducted to overcome the known limitations, mostly on the agricultural sector. The whole project can be realised in a period of 24-30 months. The

additional cost (except the amortisation cost) of sugar produced by the expanded plant can be absorbed by certain planned reduction in the operational cost of processing the existing capacity. The comparative low cost of the sugar produced in KSI vis-a- is the cost of the sugar produced by a new sugar complex is another added reason for taking up the expansion.

Milk Processing Factory, Eldoret

[illegible]. The factory has not been able to realise its installed capacity of 20 tons per day mainly due to inadequate supply of raw milk. The factory has to procure 10 tons of milk per diem to reach break-even. Certain technological modifications will be required to produce sterilised milk, condensed milk, canned buttern and marketable size of ice cream to diversify sales mix and to cope with the increased supply of milk, since the pasteurised milk may not be marketed in large quantities and cannot reach other parts of the country, where milk and milk products are needed. The plant has been in operation for over 8 years and certain replacements have become necessary. The plant has not built up any amortisation fund for capital replacements, because of the operating losses, ever since it was commissioned, which will need to be financed through additional investment. A programme has to be drawn up for this purpose. A dairy farm involving a capital outlay of So.Sh. 700,000 implemented during the current development programme has not started supplying milk. The quantity of milk likely to be supplied by the farm from time to time has to be ascertained and the balancing requirements (rated capacity minus likely supply including present supply of 5 tons per day on an average) have to be worked out and arrangements for obtaining the requisite quantity of milk by procurement locally or neighboring areas have to be finalised. A cooling vehicle for procuring milk from adjacent areas up to a distance of 60 km. has been suggested involving a financial outlay of So.Sh. 300,000. But before any such procurement scheme is finalised arrangements for collection at convenient points accessible to the mobile vehicle within few hours on each day have to be finalised.

190. Depending on the availability of raw material supply, sterilisation of milk to store for longer periods and facilitate wider marketing has been proposed. Installation of sterilisation machine involving a capital outlay of So.Sh. 6,500,000 has been proposed. A filling machine together with its lining at an estimated cost of So.Sh. 1,500,000 is proposed to be installed. Installation of machines to manufacture either condensed milk or powder milk (both these are at present imported in Somalia) estimated to cost So.Sh. 500,000 is suggested to diversify product mix and sales mix. The existing facility is for manufacturing certain sizes of ice creams, which are not easily marketable. New ice cream machines at an estimated cost of So.Sh. 400,000 is proposed. In order to expand the production and marketing of butter, the packing process needs to be sophisticated. Butter tinning machine estimated to cost So.Sh. 500,000 is proposed. Capital modification and alteration for existing machinery and proposed installations involving an investment of So.Sh. 300,000 is estimated. The total capital expenditure outlay is So.Sh. 5,000,000. Before each of these programmes is implemented a proper feasibility study, including marketing and pay-back periods, has to be calculated to avoid idle investment and excess capitalisation in a factory already over-capitalised and providing no return on investment.

Foundry and Mechanical Workshop (Expansion)

191. The project report for setting up the Foundry and Meachnical Workshop prepared by the consultants commissioned by UNIDO envisages a comprehensive production programme for the foudry and mechanical workshop to be realised in two phases. The first phase - production of 450 tons (250 tons grey casting, 50 tons non-ferrous metals casting, 130 tons steel structures and 20 tons forging and bolts) and the mechanical workshop to machine castings for spareparts and processing them by cutting, binding, forging, welding, turning, milling bring etc. has been taken up in the current development programme. The project work is still in the drawing stage and is likely to spill over in to 1974. The second phase for increasing the casting production to 1500 tons per annum (700 tons grey cast iron castings, 200 tons non-ferrous metals castings, 500 tons steel structure and 100 tons forging and bolts) which will cover the needs of industry, agriculture,

water and power works etc. is proposed for inclusion in the latter part of the next development programme. The project report already exists. The consultants have been commissioned for design drawings for both the stages. Service and auxiliary facilities would have been created by the time the existing project is completed. An investment outlay of So.Sh. [illegible],000,000 of which the foreign exchange component (excluding technical assistance, if any, that may be obtained from UNIDO) is around So.Sh. 3,000,000.

Fish Processing Cannery, Las-Khoreh

11. Augmentation of the fishing fleet, and extension of the pier was programmed to be completed during the current development programme. Certain expansion of the fishing fleet is expected to be completed by the end of the current development programme. But the factory's fishing fleet was partly damaged during the two cyclones which hit the area in 1971 and 1972. The Somali-Soviet Expedition contracted for a period of two years is estimated to supply 1057 tons of tuna to the cannery. If the cannery is to realise its installed processing capacity, 7000 tons of fish per annnum has to be supplied. Even if the present expedition continues for a longer period arrangements for catching additional 5000-6000 tons during the fishing season have to be made, more or less on a permanent basis, as a part of the fisheries complex. The dimensions of the fish resources needed for exploiting fully the existing fish processing facilities in the region have been indicated separately. Planning of fish catches for Las-Khoreh will also have to be made in the overall planning for supplying the fish requirements of all the processing units and the organisational and management means to be devised for achieving the objective. Meanwhile, as interim measure, a minimum number of two ships, two trawlers and 50-60 motor boats may have to be provided before the next fishing season. An alternative to heavy capital investment would be to hire fishing companies on short-term basis on fair rent or commission basis for supplying the cannery with adequate raw materials. The estimates have to be worked out and hence are not included in the feasibility data for such a fleet.

193. The existing cold storage facility is intended to store 300 tons of fish. In the event of the fish catches becoming available to match with processing capacity, the cold storage facility may need to be expanded. Assuming a daily input of 20 tons per day for a fishing season estimated up to 200 days, the cold storage facility should store about 1400 to 1500 fish, if the installed capacity is to be realised. A gap of about 500 to 600 tons of cold storage facility is likely to arise, which may have to be planned to be implemented to make the cannery self-sufficient in so far as the raw material is concerned. An estimated outlay of So.Sh. 1,000,000, mostly in foreign exchange is indicated. A feasibility study has to be conducted before deciding on the investment. The feasibility of extending the pier was envisaged even when the factory was built and a feasibility report has been prepared by the collaborators. Recent cyclones have damaged the existing pier. A floating pier for loading and unloading carcasses may also be required. Extension of the pier by 250 meters and providing a float pier are estimated to cost So.Sh.2 million of which the foreign exchange component is estimated at So.Sh. 1.4 million. It will be necessary to exploit fully the existing fish meal plant. Installation of package boiler for operating the fish meal plant continuously is suggested. The estimated outlay is So.Sh. 300,000 mostly in foreign exchange requirements. Simultaneously, marketing arrangements for fish meal have to be organised on a large scale both inside and outside the country. The feasibility data is confined to the investments only.

Meat Processing Factory, Chisimaio

194. The feasibility study for expansion of existing cold storage facilities is under study. The expansion is intended to facilitate the storage of carcasses so that increased slaughtering and export of carcasses can be rendered feasible. An estimated investment of So.Sh. 2,500,000 is provided in the industrial development outlay indicated in Appendix V. The current development programme provides for setting up a pickling plant but the project is expected to spill over to the next development programme.

Boat Building Yard

195. The Boat Building Yard, Mogadiscio, is at present manufacturing 6.5 meter boats equipped with 21 h.p. engines which have been held to be inefficient to operate and uneconomic to manufacture further. The output of the yard is very small, as compared to the requirements. The feasibility of manufacturing 8 meter length boats equipped with 30 h.p. engines is under study. Simultaneously, increasing the output to eighteen motor boats per annum is being considered. It will be necessary to expand the building berths to facilitate increased output of boats. Suitable working capital will have to be provided to plan and realise the proposed manufacture of 18 boats per annum. The financial estimate provided for this is provisional and will need further revision after the project is prepared.

Flour Mills

196. The present import of cereals and cereal products is 130,000 tons at a value of So.Sh. 105,000,000. The feasibility for setting up flour mills has been prepared and found feasible. The economic capacity of the mill worked out in accordance with the feasibility studies so far prepared is 7000 tons per annum. Prior to preparation of feasibility reports, the Development Bank has set up a grain mill at Mogadiscio in November 1972 with a capacity of 2400 tons per annum, involving a financial outlay of So.Sh. 2,500,000. It is understood that wheat will be grown in Tug-wajaleh and Afgoi regions to meet the demand of 30,000 tons. It is proposed that four plants of 7,000 tons capacity per annum may be set up in (i) Northern and (ii) Southern Regions based on the availability of local wheat likely to be raised in both the regions in the near future. The total cost of four plants is estimated at around So.Sh. 12,800,000. The proposed investment has to be phased with reference to the wheat production to be raised. The foreign exchange component will be around So.Sh. 7,160,000. The existing flour mills in the traditional sector are expected to be strengthened consequent to the availability of other grains.

Oil Mills

197. The present import of oil is 4,300 tons per year at the value of So.Sh. 13,300,000. The demand is estimated to rise to 5,000 tons by 1975. The feasibility studies indicate an economic capacity of 6 to 8 tons per day (1800 to 2400 tons per annum). The major oil bearing seeds production sites are planned in Bonadir and Lower Giuba regions on geographical and ecological considerations. A traditional sector for processing oil seeds already exists and is to be activated by study of the supply of seeds. Three plants of 2400 tons each (output) are proposed to be installed in northern regions as well as southern regions, where seeds are expected to be grown by them. The total cost is estimated at So.Sh. 8,121,700 of which the foreign exchange component is So.Sh. 4,920,000. The phasing of the units should be synchronised with the programme for raising oil seeds and the resource availability during the plan period.

Oil Extraction and Solvent Plants

198. The oil cakes contain 4 to 6% of oil even after crushing seeds. If the oil is allowed to remain in oil cakes, it becomes rancid for consumption by cattle. Its extraction by solvent plant extraction process will assist the economy in several ways. This extracted oil can be refined and deodorised completely. De-oiled cakes can be stored for longer periods for cattle feed. Based on the expected input of 13,000 tons of oil seeds into the proposed three oil mills, 10,800 tons of net oil and 10,000 tons of de-oiled cakes for cattle feed. The location of the proposed oil extraction/solvent plant is suggested near the location of the new oil mills to avoid problems of transportation of cakes, their storage and losses both quality and quantity. A 150 ton-size plant is feasible. The estimated investment for a 150 ton oil extraction/solvent plant is So.Sh. 800,000 if it is located in the vicinity of the larger oil mills and avails itself of the auxiliary and other facilities available in the oil mills. Creation of three units is proposed involving a financial outlay of So.Sh. 2,400,000. The whole expenditure proposed will be for importing equipment and supplies. The construction of such a plant can go along with the construction of the oil mill. The feasibility of utilisation of the oil cakes likely to be generated by the small scale and traditional

[illegible] entrance to the [illegible] able, it is [illegible] if not more, will becom[e] [illegible] [illegible] ident extraction [illegible] will, of [illegible] [illegible] market [illegible] [illegible] [illegible] will be available in sizeable quantities, [illegible] process of this material are [illegible] and established.

Hordio-Hafun Salt [illegible]

199. Hordio saltern produced about [illegible] to [illegible],000 tons per annum before the Second World War. Large potential for exploitation of salt exists in the Hordio-Hafun area. An economic plan for the development of new salt works - salt basins to be located near Hafun promontory towards El-Gafi for exploiting Hordio and Hafun peninsula lagoon with an ultimate net capacity of 3,300,000 tons per annum, and the loading system near Punta Malale (Southeast of Hafun) has been prepared by a consulting firm commissioned by the government. The salt works are proposed to be phased out in 49 months and are estimated to involve a total financial outlay of So.Sh. 398 million.

200. The proposed salt works will be spread over 24,000 hectares, varying in depth from 3/5 meters to the medium sea level, which can be enlarged to increase yield/output later. The main components of the project are the technical works, comprised of the main installations and machinery and evaporation basins spread ober the area of 65 hectares for production, gathering, stocking and shipment of the processed salt of certain specifications, the cannected auxiliary and supporting facilities for water (if necessary by installation of suitable size desalination plants) power transport (inland and sea), communication networks and social utilities like urban centres and connected facilities spread over an area of 118 hectares of land to

support an estimated population of 4000 people. The salt works will ultimately employ about 622 personnel. The entire production is [illegible] to be exported to Japan, some countries in Asia, East and Central African countries at economic prices at which they are being exported to these countries at present. Phasing of completion of salt works and realisation of full capacity has been calculated as below:

Table XVI

Phased Programme for Exploitation of Salt

Production (tons)	% of ultimate capacity	Construction time (months)	Starting of [illegible]
950,000	25	15	[illegible]
1,900,000	50	21-22	[illegible]
2,850,000	75	27	[illegible]
3,800,000	100	37-38	[illegible]

201. The investment outlays fro building different sizes of works to obtaining gradual realisation of capacities has been estimated as below:

Table XVII

Investment Outlay
(in million of Shillings)

Capacities of works/annum	Installation cost	Operating cost	Starting cost	Total
950,000 tons	112,800	9,444	32,213	154,457
1,900,000 "	133,578	17,000	24,966	235,544
2,850,000 "	291,480	23,333	18,120	333,013
3,800,000 "	357,771	30,105	10,105	397,981

202. The estimated unit cost ranges from So Sh. 10.50 per ton to 8.34 per ton, which the consultants have compared to So.Sh. 20.86/20.02 per ton obtained in old plants in southern Sicily and 12,000 yen per ton (33 dollars) in Japan. Taking into account the transportation costs and allowing adequate margin, the salt works can deliver salt at US$ 6.5[illegible] at destination ports in Japan as against the lowest price of US$ 7.[illegible] paid by Japan now for importing salt into that country. On realisation of ultimate capacity of 3,800,000 tons per annum a net return of 3% on investment has been worked out. The pay back period of the whole project is calculated as 11 years. These estimates need further scrutiny. Profeasibility data based on certain corrections are given in Appendix

203. The project has immense possibilities for developing the entire northern region apart from placing Somalia in the International Salt Market. A technical evaluation of the feasibility report, the problems regarding the size of the works, technical survey of the proposed works (land, geological, geotechnical, bydrographic and thalassological surveys, metrological surveys etc. recommended by the consultant), supporting facilities, the resources for investment, technical collaboration, market arrangements, planning and execution of the project decided by the government and organisational and administrative matters for execution of the project etc. has yet to be determined.

Sugar Complex, Lower Giuba

204. The feasibility study for setting up a new sugar complex in the Lower Giuba in Bardera, Jonte Area, in the proposed "Giuba River Scheme" covering an area of 8,000 hectares of land, has been prepared. The study brings out the feasibility of establishing a new sugar mill with a capacity of 50,000 tons of sugar per annum and supporting sugar cane plantation covering an area of 6856 hectares of land ultimately, yielding 454,410 tons of sugar cane, all to be realised in a period of seven to eight years. The sugar mill will receive sugar cane through conveyor belts, extract juice by crushing, purify juice through clarification process, evaporate water by boiling, crystalise sugar, separate sugar crystals from the syrup by centrifuging process, dry and then pack the sugar. Bagasse is proposed to be utilised as fuel for generating steam and power. But 2% bagasse is proposed to be utilised for manufacturing panels for house building. Molasses is proposed to be utilised for manufacturing cattle feed. The mill will have auxiliary facilities like steam, power plant, generating station, transformer, water supply system and the chemical laboratory. The mill will employ 541 persons for an operating period of 288 working days. The infrastructure facilities like agricultural services, farming centres villages, roads, workshops, training centres, construction works etc. are also proposed as a part of the complex.

205. The estimated investment for the project is So.Sh. 247,865,000, (excluding the working capital requirements of So.Sh. 22,000,000) of which the foreign exchange component will be So.Sh. 157,928,000 - the outlay for plantations So.Sh. 101,096,000 (foreign exchange component So.Sh. 46,629,000) and the industrial sector 147,000,000 (foreign exchange component So.Sh. 111,299,000).

206. Sugar consumption has increased from 25,500 tons in 1963 to 45,900 in 1970, about 80% at an average rate of 10% per annum. The per capita sugar consumption has been estimated at 15.4 kg., which is higher than the figure for East Africa (8.3 kg.) but lower than the world average of 20.6kg[1/]. The existing production of 45,000 tons per annum has more or less met the country's demand. Imports have gradually decreased, from 15,033 tons in 1964 to 45 tons in 1971. According to FAO forecasts, the per capita consumption will rise to 17.6 kg. in 1975 and 21.5 kg. in 1980. The feasibility report assumes that the annual consumption will increase to 67,750 tons by 1978 and 95,329 tons by 1985. An estimated gap of 30,000 tons between sugar consumption and production by 1980 has been foreseen, which will widen to 50,000 tons by 1985. An increase in sugar demand in developing countries is forecast by FAO projections (Asia and East Africa +5.7%, Africa +4.7%) and hence the scope for export of sugar in non-sugar producing countries, some of which have trade links with Somalia, like Lybia, Southern Yemen, Sudan, and Saudi Arabia from the proposed mill in the intervening period has been estimated. Adequate justification for a new sugar complex in Lower Giuba has been worked out both on grounds of projected indigenous demand and export possibilities. Financial collaboration by intending importing countries will be an additional incentive to launch the project.

207. The estimated investment is 50% equity and 50% loan at 6% repayable in ten years. The project is estimated to yield 80% of the initial investment in a ten year period, although initially it will generate negative cash flow for the first two years. In addition, the contribution to the Somali economy and the balance of payments is rated considerable. Employment potential of the project is about 4,000.

1/ Source: FAO Agricultural commodity projections 1970-80.

208. The feasibility study needs to be further examined from the techno-economic angle, especially in the context of the general scheme of irrigation system proposed to be developed in the area and the water requirements of proposed state farms, banana plantations, LDA, etc. selection of most suitable land and phasing of plantations to the availability of water, the technology proposed to be adopted. By-products utilisation in the light of the experience gained in SNAI (like utilisation of molasses for alcohol production, bagasse for manufacturing cardboard or cattle feed or both; after meeting the feed requirements, etc.) the investments in both agricultural and industrial sectors, operating costs, and above all, tieing up the size of the plant to the size of the market - both internal and committed external market, linked to the collaboration or financing arrangements. During the interim period, the expansion of the sugar mill at SNAI seems preferable, if found technically feasible, both to cover the existing gap and the projected demand for sugar in the immediate future.

Cattle Feed Plant

209. Somalia has an estimated cattle population of over 4 million. The cattle are normally fed by grasing. In the dry season cattle lose weight for want of good fodder and water. Preparation of cattle feed and their storage in suitable locations will facilitate proper feeding of cattle in all seasons. The cattle feed is intended as a supplementary diet for fattening the cattle in the holding grounds and ranches. The cattle feed consists of formulations of bagasse, molasses, bone powder, meat meal, blood meal, fish meal, stalks, wheat, brans de-oiled cakes, and yeast etc. This has high protein content, rich minerals and glucids. Even assuming a supplementary feed of $\frac{1}{2}$ kg. per head for the cattle population passing through holding grounds for slaughtering and export purposes a minimum of 18,000 to 20,000 tons capacity for manufacturing cattle feed need to be

created. An optimum size plant will have a capacity of 3,000 tons output. Four plants for manufacturing 12,000 tons of cattle feed are proposed. The estimated investment will be about So.Sh. 2,000,000 of which the foreign exchange component will be So.Sh. 800,000. A feasibility study has to be conducted before deciding the size, the technological process, location, and the phasing out of the proposed new plants for manufacturing cattle feed.

Plant for Manufacturing Pasta

210. Somalia is importing wheat flour and pasta. The imports for the past four years are given below:

Table XVIII

Somalia Imports of Wheat Flour and Pasta

Year	Wheat Flour		Wheat Pasta	
	Tons	So.Sh.	Tons	So.Sh.
1968	11,552	7,689,205	6,870	6,255,037
1969	18,958	10,030,923	11,689	10,554,001
1970	22,054	14,680,815	11,917	11,601,808
1971	33,143	22,745,438	16,538	16,254,823
	21,627	13,771,595	11,753	11,166,432

211. Experimental research on cultivation of wheat near Afgoi and Tug-Wajaleh conducted by the Ministry of Agriculture is reported to be satisfactory. If the experiments prove successful, and the cultivation of wheat in the Lower Scheballi and north over an area of 10,000 hectares succeeds, then the problem of creating facilities for processing wheat into pasta and other wheat products will arise. Establishment of flour mills has already been proposed.

212. A study on possible reservicing of the existing old plant (Bargaal Plant via Brigavo) has been conducted. Revisioning of the old plant has been held technically unfeasible and economically unsound. The study suggests construction of a modern plant with a potential capacity of 250 quintals of pasta per diem with an annual production of 7,000 tons. The product mix of pasta has to be decided after studying the tastes of consuming clientele. An estimated investment

of So.Sh. 8,500,000[1/] has been indicated with a foreign exchange component of over So.Sh. 5,100,000. But it is not clear whether it includes the mill for flour also. However, a feasibility study should also cover the alternative of manufacturing pasta from imported wheat flour for the interim period until the agricultural campaign to raise the wheat become successful. Meanwhile, the estimates of financial outlay indicated in the study referred to above have been adopted for inclusion in the list of identified projects.

Banana Fibre Bag Manufacturing Plant

213. Banana is one of the major plantations of Somalia. About 7000 hectares of land are under banana plantations and each hectare is planted with 2500 banana trees. Each banana trunk weighs about 50 kg. on an average. This yields about 875,000 tons of raw material, which is practically not used at present. The proposed corrugated ship container factory in Jamama district in Kismayo Region will use a small part of it for making cardboard. Banana trunk will be crushed on the spot in the plantation, into a moving press. The press juice will be used as a fertilizer of a good quality. The dry fibre will be transported in a compact form to the cardboard factory. The same process should be applied for reaching the raw material for making banana fibre and fibre bags. The process for developing banana fibre from banana trunks has been developed and proved successful in South America. Banana fibre is recognised as a good material for manufacturing bags. A feasibility study for setting up a unit has been carried out. These bags can be used for packing sugar, grain, seeds, with polyethylene lining which can be used for packing cement, salt etc. Banana fibre bag has the same property as hessian or plastic bags. It will protect against humidity and wastage. A project for manufacturing 2 million bags production annually is proposed. Such a plant can utilise about 140,000 tons of banana trunks. The estimated turnover is So.Sh. 7 million. This production will save by import substitution an appreciable amount of foreign currency. The estimated investment of 15 million So.Sh. is based on the existing feasibility study.

Slaughter House, Hargeisa

214. A feasibility study for setting up a slaughter house in Hargeisa for exporting meat from sheep and cattle to Tripoli (Lybia) has been prepared. A slaughter house with a daily capacity of slaughtering 500 head of sheep and 70 head of cattle with cooling facilities - pre-cooling and freezing rooms to keep a day's production of meat and cold storage room to store the meat for two slaughtering days, with a cushion to store by-products or extend storage for a few days, if the turnover slowdown due to transportation problems has been projected. The live animals form 85-90% of the total export from Somalia and the bulk of the live animals is exported from northern regions to the traditional market, Saudi Arabia. About 546,000 head of wether have been exported in 1970 and 608,000 in 1971. Cattle is scarce in the region, but about 25,000 head of cattle are estimated to be driven on hooves from other parts of Somalia to this region. In order to meet the requirements of the proposed slaughter house, holding grounds for developing sheep and cattle are suggested in the report. The estimated investment is So.Sh. 3,179,000 of which the foreign exchange component is So.Sh. 2,121,000. Working on an effective capacity of slaughtering 110,000 sheep and 6,000 head of cattle per annum, and on calculated costs (although the prices of sheep and goat are not reliably known) and the estimated export price the project has been held economically feasible. But the entire project is based on certain assumption regarding the availability of goat and sheep (which at present are mostly being exported to the traditional market in Saudi Arabia) availability of the buyers' transport plane twice a week regularly and carrying 22 tons per flight, extension of the runway at Hargeisa Airport to 12,000 ft. for the Boeing 707 to land and take off, a fair price for the meat processed in the proposed slaughter house and the availability of facilities like water, power, holding grounds, etc. As an export-oriented industry for sale of meat instead of sheep, goat and cattle or hoof sold to traditional markets, the project seems attractive and if the financing of the project is linked to the marketing and the sale price linked to world market meat price the project can be realised.

Further technical feasibility studies need to be conducted before deciding the technological process and equipment are decided. The project has been included in the list of identified projects for future development.

Meat Processing Factory, Mogadiscio

215. The feasibility study has proposed setting up a slaughter house for slaughtering 25-30 cattle/hour, 10-5 heads/hour of dromedaries and 150-185 heads/hour of sheep and goats per diem. The estimated input of cattle in the first year of operation is 92,000 cattle, 18,150 dromedaries and 245,750 sheep and goats, which would rise steadily year after year to 113,800 cattle, 23,820 dromedaries, and 322,350 sheep and goats by 1985. In addition to slaughtering facilities, the plant will have a refrigeration system with a capacity to keep 400 cattle, 400 sheep and goat carcasses and also conservation of bowls. A meat tinning plant for processing corned beef and boiled meat (1.5 million corned beef tins and 10 million boiled meat tins to be processed out of 20,000 cattle/year) has been proposed. The plant will have its electric supply and other services. The estimated investment is So.Sh. 38,366,000 of which the foreign exchange component is So.Sh. 28,386,000. The whole project is planned to be completed in 36 months. 60% of the investment is assumed to be equity capital, which has been calculated to be returned in an 8 year period, after meeting amortisation charges.

216. The present demand for meat of all kinds (cattle, sheep, goat and dromedaries) in Mogadiscio and suburbs has been estimated at 37,944 tons. Per capita consumption of meat at Mogadiscio is estimated at around 62 kg. for Mogadiscio (as against 44 kg. for Somalia as a whole) consumption is expected to increase with the increase in population and improvement in standard of living. The demand for local consumption and meat in the region has been estimated at 114,000 cattle head, 15,100 dromedaries and 406,500 sheep and goats. The projected demand is 163,000 cattle, 22,100 dromedaries and 593,500 goats and sheep. No accurate idea of the

availability of livestock for slaughtering and their projected growth has been worked out. This is essential before deciding the size and product mix of the new plant. The existing meat processing unit in the private sector is not fully working and its requirements will have to be taken into account in planning raw material for new units. The feasibility of slaughtering different types of animals in the same slaughter house for different purposes - local consumption as meat, meat for canning for export purposes and export of carcasses etc. - need to be further examined from the technical, practical and hygenic points of view. The processing of meat for local consumption should suit the prevailing habits, and problems of distribution and sale will arise. It appears from the feasibility report that the proposed slaughter house is intended to replace the existing municipal slaughter house and, if so, erection of a large new facility will displace a large number of skilled personnel engaged in slaughtering business and their rehabilitation will have to be planned. In addition to a slaughter house, a tinning plant, and by-products utilisation of the plant - bones, flesh, bowls for livestock feeding - have been proposed. At present even the by-products of the Meat Processing Plant at Mogadiscio are not fully utilised, as also those of the slaughter houses situated in the city. While planning new facilities for utilisation of by-products, the overall needs of the region should be kept in view. There is a canning facility in Sopral Mogadiscio and meat processing factory in Kismayo, which need to be fully utilised. The balancing capacities only need to be created to avoid idle capacities and unprofitable investment. Further studies in respect of the areas linked to the proposed new slaughter house need to be made. Meanwhile, the project is included among the identified projects and the estimated outlay indicated in the feasibility report has been incorporated in the dimensions of industrial development proposed by the Survey Team.

Banana Dehydration Plant

217. A project for manufacturing banana powder by utilising the discarded banana was included in the Development Programme 1981-83 but has not so far been taken up for implementation. About 20,000 tons of banana are rejected per annum out of a total raising of [illegible] million quintals per annum. The rejected bananas are used partly for local consumption but the bulk of it is either given to cattle or not utilised at all. In order to promote exports of fruits more rigorous and strict standards are proposed to be employed by EMB and consequently, the quantity of rejected bananas will increase. The quantity of the rejected bananas likely to become available in the future is estimated at around 40,000 tons. The banana powder has multiple uses and is commonly used for manufacturing baby food of all types, confectionery, ice cream etc. As the raw material for manufacturing the banana powder is available in plenty and at a low cost, and since the banana powder has demand abroad, the feasibility of setting up a unit to utilise the waste material and also to earn foreign exchange needs to be considered. A plant with a capacity of 30,000 tons input for single shift operation is suggested. Technological and market problems are likely to be encountered in setting up the proposed project, which need to be solved by suitable collaboration with foreign manufacturers and reputed sellers of food products made out of banana powder. Freeze drying of banana chunk has also been suggested to EMB for exporting to Italy for manufacturing yoghort but the process is rather expensive and whether the yoghort can absorb its and also the full production will need to be studied before considering the scheme.. The other process viz. spray drying or drum drying has been in use in a number of manufacturing units and the products have wider uses. The proposed investment indicated in the project data sheet is based on the existing feasibility report prepared by EEC consultants and will need to be modified in the light of the technology adopted and present day prices for equipment and supplies.

Tannery

218. Raw hides and skins form a major export of Somalia. The quantity and value of exports in 1971 was of the order of [illegible] and So.Sh. 5,755,465 respectively. The number of hides and skins exported for the selected years is given below:

Table XIX

Hides and Skins Export
(1000 pieces)

Year	Goat	Sheep	Cattle	Camel
1967	3,035.8	1,147.9	112.6	[illegible]
1968	1,531.1	1,536.3	137.8	[illegible]
1969	2,532.6	1,367.0	107.2	[illegible]
1970	2,136.2	2,010.0	210.1	15.5
1971	2,326.1	1,456.3	378.0+	(not available)

Source: Foreign Trade Returns 1967-1971

(A recent study has brought out that the real export of hides and skins - especially goat and sheep skins - is much higher because of the undeclared and unrecorded flow to neighboring countries. The estimated foreign currency losses through under-declared exports of hides and skins is estimated at around So.Sh. 2,942,500.

The estimated production of hides and skins per annum is 4,332 camel hides, 239,420 cattle hides and 5,092,000 sheep and goat skins. Highest raisings of camel hides, cattle hides are in Benadir region. The highest raisings of sheep and goat skins are in Burao and Hargeisa regions. Lower Juba area has a fairly high raising of cattle hides.

219. The prospects for world trade in hides, skins and leather are rated bright. The major market for raw hides and skins - about 95% of world import - are the OECD countries, which account for 80% of the world's exports of hides and skins. The developing countries account for a minor and decreasing share in world exports of raw hides and skins - about 20% in terms of value in 1967/68. The share of developing countries in world exports of leather, in particular semi-finished leather, has been increasing at the rate of 8.3% per annum, and

accounted for about 2% of the total world leather export. A rapid increase in trade of leather footwear within the developed countries is also noticed. There is almost ready acceptance of raw hides and skins in foreign markets but semi-finished leather should conform to the requirements of foreign buyers, as its subsequent finishing into leather products would depend on the facilities available in the importing country. Compared to raw hides and skins, the price of the pickled skins is 10 to 15% higher, blue leather 45-50%, full vegetable crust leather in the ready-to-finish state 70% and finished leather up to 100% higher. The advantage of exporting processed leather and leather products, as against the existing practise of exporting raw hides and skins is obvious. The increase in value added by substituting export of raw hides by processed leather and leather products will fully justify investment in a modern tannery and leather processing unit near the source of raw material. Technical, financial and marketing collaboration may facilitate early realisation of such a project. An investment of So.Sh. 2,000,000 for setting up a tannery to process 100,000 nos. of hides and skins has been provided in the plan.

Nails Factory

220. A feasibility study for establishment of a factory for manufacturi nails and screws has been conducted. A factory for manufacturing 210-38 tons of nails has been found feasible. The present import of nails is around 210 tons of nails and the projected demand for nails 285.6 tons by 1980. The proposed factory, even at 50% utilisation, is estimated to be profitable. The total investment is estimated at So.Sh. 519,000 of which the foreign exchange component is around So.Sh. 340,000.

Cement Tiles Factory

221. The feasibility of manufacture of cement tiles with a minimum output capacity of 30,000 sq. meters of tiles per annum, which is the estimated present demand has been brought out in a recent study conducted by the technical unit of the Ministry of Planning and Co-ordination. The recommended plant is of a minimum capacity of 25,000 to 60,000 sq. meters per annum with semi-automatic machinery with a

total investment of So.Sh. 955,000 of which the estimated foreign exchange component is So.Sh. 420,000. The raw materials required for manufacture of cement tiles is cement, colours for cement, local grit, sand, granulated marble and grinding which for honing machines and except for local grit and sand, which are locally available, all other materials will have to be imported initially. Consequent to setting up a cement plant another major item of raw material will become available. (The construction of the factory may have to be phased with the commissioning of the cement plant.) The estimated cost of manufactured cement tiles compares favourably with the local prices of imported tiles. The pay-back period is calculated to be about 6-7 years.

Cement Factory

222. A preliminary report on the possibilities of construction of a cement factory has established the feasibility for setting up a cement factory at Berbera with a capacity to produce 100,000 tons per annum. The estimated investment for the proposed factory and the auxiliary facilities like water supply system, power, communications, geological exploration and mines, and training of personnel etc. is So.Sh. 68.44 million. The raw material required for the factory viz. limestone (95,000 tons), clay (70,000 tons), gypsum (3,000 tons) are located in Berbera (Mihindulle District). The cost of production of cement is estimated to be higher than the CIF price of imported cement into Somalia. The retail price is calculated to be competitive compared to the retail price of imported cement. The cement factory has been decided to be set up with financial and technical aid from the Democratic Peoples' Republic of Korea. The details of financial aid and technical assistance, equipment and supplies as also the work plan for construction, commissioning etc. has yet to be finalised. The exact amount of foreign exchange requirements is not known but is estimated at So.Sh. 35 million, based on the estimated cost of components of the project and assumed foreign exchange portion for purposed of arriving at the dimensions of development outlay for the proposed industrial projects.

Medium and small-scale Industries

223. Phased development programmes giving physical targets and financial outlays for (a) medium and small-scale industries and (b) traditional small industries and handicrafts are shown in Appendix VI and VII.

i. Long-term fixed assets: For medium and small-scale industries, creation of a climate of confidence through an industrial policy declaration and enactment of industrial law would by itself have developmental impact. Many of the existing establishments in this subsector have surplus of their own to invest. There are also quite a few other persons who have money to invest but have very little knowledge of industry. However, some existing establishments and prospective entrepreneurs do need loans from governmental or institutional agencies to supplement their own resources for the purpose of their modernising the existing units or starting new ones. The loans should be of long or medium term, repayable over a period of 7 to 12 years, with a moratorium of 2 years after commencement of production or completion of modernisation. The loans should be available for construction of factory buildings and purchase of machinery and equipment. Certain industrial possibilities under this sub-sector are given in Appendix X, along with salient data concerning them.

ii. Working Capital Advance: Another well-known requirement of these industries -both for operating existing project and installing new ones - is money for purchase of and stocking of raw materials, stocking of finished goods prior to sale and payment of wages. Provision has to be made for short-term advances for working capital.

iii. Integrated services: In addition to loans for financing acquisition of fixed assets and working capital needs, some of the medium and small-scale establishments need services of various kinds such as help in procuring raw materials at reasonable prices, advice and assistance for the solution of their technical problems, assistance in introducing a proper system of accounts etc. Such services are appreciated especially if they are readily available. Establishment of integrated services centres which would provide these services in an integrated manner for both medium and small-scale industries as well as traditional small industries and handicrafts would be pivotal to the whole development programme. To this institution the

entrepreneur would be able to turn in need as his friend, philosopher and guide. These centres should be organised for broad groupings of industries and located in places where these industries exist in some concentration. Their work would be concerned with daily problems of a practical nature and rendering of assistance in the field and for supervision of the utilisation of loans given.

. What is immediately necessary and practicable is a programme for construction of reasonably good worksheds in small clusters of 5 to 10 or even bigger clusters of 20, 30 or 50, depending on number of artisans, and situated within easy distance of the proposed integrated services centres. A start should be made with the industry groups which need this assistance most viz. handloom weavers, blacksmiths, shoe-makers, furniture makers etc. The programme should be of sizeable proportion to make an impact and to keep its costs low. It should be implemented under self-help schemes. The artisans should be formed into industrial cooperatives but membership of a cooperation need not be a pre-condition in every case for allotment of a workshed. It would be a good argument if local governments were utilised as agencies for construction of worksheds and the Ministry of Public Works prepares the design in consultation with the Ministry of Industry.

iv. <u>Loans and integrated services</u>: Loans for purchase of small machines and advances for working capital should be made available in the traditional sector generally through industrial cooperatives but individual artisans and craftsmen should also be able to get them on suitable terms and conditions. The use of credit should be supervised through the proposed integration services centres. Apart from credit, the main need common to many of the traditional industries is an assured supply of raw materials at reasonable prices. A certain standard of workmanship exists in many of these industries and with suitable technical assistance and supply of better tools and small machines can be upgraded further. Marketing of finished products is not a serious problem at present and almost all that is produced can be quickly sold but improvement of productivity and reduction of costs are matters which need urgent attention. These require technical assistance which should be routed through the proposed integrated services centres.

Handicrafts

224. Development of traditional small industries producting artistic goods or handicrafts, as they are called, have to be approached in a somewhat different way. Market for the products of these industries with their present design, workmanship and finish is limited, both abroad and at home. Opening of emporia and sales depots as a measure for increasing sales cannot help beyond a point. The basic and vital need of these industries is improvement of design, workmanship and finish. The promotional effort would have to be organized on industry basis and to begin with, one or two short term exports should go into the problems of selected handicrafts. A notable aspect of the development of handicrafts is that where imported materials of good quality are used, for example, in making children's ready-made garments, embroidered fabrics and crotchet work, the product is much better in finish and general appeal than when indigenous materials of inferior quality such as wood or leather are utilised. It is suggested that the industry experts should particularly look into the question of improving the quality of indigenous raw materials used for making handicrafts.

v. Central Promotional Unit: A Central Promotional Unit for assuming overall responsibility for implementation of development programmes would inevitably be located in the Ministry of Industry. This should be a department for small-scale industries headed by a director and supported by necessary expertise.

vi. Short-term industry expertise: Medium and small-scale concerns in some of the industries, e.g. soap, paints, plstic, bakeries etc. would benefit if their problems are studied in depth by specialists in these fields. These studies should be of short duration and the recommendations of the experts should be related to the implementation of development programmes for the respective industries.

vii. Grants and Subsidies: Among those engaged in production in both small-scale and traditional industries, an awareness of the working of new economic forces shaping their own destiny can be detected. This is coupled with an eagerness to know what is happening in their own sphere of industry in other countries and a desire to adopt improvments which would strengthen their economic position in a competitive world. Foreign tours, demonstration centres, pilot plants, participation in exhibitions would be of great value in the present phase of development of these industries.

Traditional Small Industries Producing Utility Goods

225. i. Provision of contructed worksheds: One feature common to many of the traditional small industries and handicrafts is the small cramped workplace with insufficient storage space. The resulting confusion hampers smooth flow of work and imperceptibly dampens productivity. An adverse impact on productivity is visible and direct when during rain work has to be stopped by the handloom weavers.

ii. Relevance of industrial estates: One suggestion sometimes offered for dealing with this problem is the construction of industrial estates. Industrial estates at the present stage of development may not be an answer to the problem. The industrial units are at present at a rather low level of technology, earnings are insubstantial and while in some places the artisans are functioning in close proximity in sizeable number, in others only a few partisans are at work. Industrial estates appear to be, in relation to the present conditions of industries, too sophisticated, too expensive an instrument for providing improved workplaces, especially if their construction is to conform to certain norms and standards in regard to provision of utilities like electricity, water supply, internal and approach roads and facilities like tool rooms, etc. If economic rent is charged to the occupants of sheds in these estates, the occupancy rate is likely to be low. It is not implied here that industrial estates should be ruled out for all time. After some years, maybe five or ten, when these industries come up technically and organisationally, there would be scope in bigger urban settlements, especially in the capital of Nagaland, to set up an industrial estate.

CHAPTER SIX

IDEAS ON INDUSTRIAL PROJECTS

226. Certain preliminary ideas on potential or possible industrial projects to be developed in future are given in Appendix VIII. Some of the ideas, especially those likely to come in the sphere of larger units, are discussed in this Chapter.

Crude Oil Refinery:

227. Somalia has been importing petroleum, petroleum products, gas (natural manufacture). The imports for the past five years are given below:

Table XX - Imports of Petroleum and Products:

Years	Quantity in M.T.	Value (So.Sh.)
1967	76,660	15,217,000
1968	52,424	14,340,000
1969	66,950	19,149,000
1970	72,018	20,265,000
1971	62,065	18,950,000

The average imports per annum is 66,000 tons at an average value of So.Sh. 17,584,000. Oil and fuel still forms the basic motive power for transport, energy, and industry in the country. The demand for petroleum and petroleum products is likely to increase with increased economic and industrial growth. Assuming an average growth of 12% to 15%, the projected demand for the next fifteen years is as under:

Period	Tonnage
1973-78	120,000 - 142,000
1978-83	203,000 - 286,000
1983-88	340,000 - 575,000

It is desirable to plan on a long-term basis, when the question of investment on a crude oil refinery is contemplated. Prospecting for oil has been going on by private oil companies and when oil is struck the feasibility of setting up refineries based on indigenous crude will become bright. Until then, the possibility of setting up a crude oil refinery needs to be investigated and decided upon as a part of industrial development of the country. The survey team learnt during discussions with Somalia Petroleum Agency that the possibility of setting up a crude oil refinery with foreign collaboration is under discussion. While planning a new refinery it is desirable to look at immediate and long-term needs. Either a big capacity should initially be planned based on long-term needs or an economic capacity should initially be created with possibilities of expansion, as an when needs expand, without causing any dislocation to the original complex. As Somalia is a country of large distances with poor communications possibility of diversification of units to be located near large consuming centres to be invertigated. The preliminary finding of the Survey Team is that a crude oil refinery with a capacity of 150,000 tons involving an initial investment of So.Sh. 30,000,000 with possibilities of subsequent expansion to 300,000 tons or creation of new facilities of smaller sizes in Bossaso or Berbera should be considered. A feasibility study is suggested before deciding on the requirements, size of refinery, location, investments, etc.

Glass Ware Plant:

220. Present imports of glass-ware products is in the range of 500 tons per annum costing over a million shillings. The availability of glass sands in Northern parts of Somalia has been hinted but a survey has to be conducted to explore the feasibility of commercial exploitation. Demand for glass bottles for beverages and milk industry will grow in future. Tumblers and other kitchenware items are imported. The imports for 1971 was 473,003 kgs. valued at So.Sh. 1,099,223. The demand can be expected to rise to So.Sh. 1,700,000 by 1975. A semi-automatic unit manufacturing 500 bottles and tumblers per shift can produce enough to meet local demand. The estimated cost of equipment

and buildings for such a plant may be around So.Sh. 1,500,000. In addition cost of civil engineering and ancillary facilities, may have to be incurred.

Desalination plants:

229. The need for discovering and processing water resources is imminent in Somalia. One of the possibilities is to explore ways and means to process the brackish water available in major parts of the country. Two known processes for conversion of brackish water to potable domestic water are commonly used viz. Reverse Osmosis process and Sirothern process. Both processes have been found feasible and economical in other countries but their suitability and feasibility in Somalia has to be studied and evaluated. The most important advantage of reverse osmosis process is its simplicity in respect of ambient temperature and low energy consumption with a salinity of 5000 ppm. The plants can be designed to varying capacities ranging from 10,000 gallons to 100,000 gallons per diem. The investment outlay varies from So.Sh. 1.475 to So.Sh. 1.225 per cubic metre of water processed . The investment varies from So. Sh. 100,000 to So.Sh. 600,000 per plant, depending upon the capacity. Australian Commonwealth Scientific and Industrial Research Organisation under Imperial Chemical Industries has developed Sirothern Chemical process and claims to be potentially cheaper. This process is particularly valuable for drilling water but may not be suitable for sea-water. The details of costs are not available. A pilot plant of either type could be tried for testing its efficacy and reliability before investment on a commercial scale is considered and increased investments are planned.

Plant for Processing Fruits and Vegetables:

230. Vegetables and fruits are grown in Erigavo and Hargeisa regions. The scope for increasing cultivation exists if they could be marketed. Units for processing such products already exist in Benadir Region. The feasibility of setting up a unit to process vegetables and fruits in the high altitude regions needs to be studied - both for export purposes and also for internal use.

Steel wire-drawing mills:

231. At present there is no plant for the wire-drawing of steel rods. Many products can be made from wires drawn from imported rods. The final product is a high value added item. The billet making plant, when installed, can help further future expansion programme work. This is the basic mother industry for development of other industries in a developing country.

Wire Products Factory:

232. Wire products are used for the manufacture of wire-netting, screws, bolts and nuts, automobile nuts, fittings and fixtures. These products have high added value. One plant of 600 to 1000 tons annual capacity is envisaged in the beginning for meeting the local demand. This is mainly for import-substitution. (The exact figures for import is not available since they are not identified as such in the Foreign Trade Returns in the past.)

Manufacture of Sawdust briquettes:

233. Sawdust is a byproduct of saw mills. Saw mills are said to exist in Brigavo Region. Briquettes can be made out of them for substituting and supplementing charcoal. The heating value of these briquettes is good. Charcoal is consumed by people both in the urban and rural areas. Its consumption has to be restricted because of limited availability and price. Availability of alternative cheap fuel will be useful to the national economy. A feasibility of study of the avilable sawdust needs to be conducted for deciding the size of the plant, its location, and the investment needed for setting up the unit.

Manufacture of Oil Paints and Varnishes:

234. At present there is only one factory in Somalia manufacturing paints and varnishes on a modest scale. The imports for 1971 was 444,207 kg. of the value of So.Sh. 1,682,160. In order to make a modern plant to meet the needs of Somalia, there is a necessity to set up a new plant. The import of pigments, plasticisters, resins

and drying agents, solvents etc. will be necessary. But the final products can fetch high added value. There are various types of paints viz. Ready-mixed paints, enamel or varnish paint, anti-corrosive paints, anticuling paints, metallic paints, fireproof paints, industrial automotive quick-drying paints, luminous paint etc. to suit various requirements. Laboratory testing of paints has to be set up for (a) durability test and (b) fading test by radiation and exposure to carbon arc or mercury-vapour lamp. A feasibility study should be conducted before setting up the project.

Medical Formulations and Tabletting Plant:

235. The feasibility of setting up a pharmaceutical unit to manufacture tablets, capsules, formulations etc. by importing bulk drugs and intermediaries needs to be studied. Such a unit will have health purposes for the people. At present all drugs and medicines are imported. In 1971, the import was 309,149 kgs. of the value of So.Sh. 5,535,292. Finishing bulk drugs into formulations, will be cheaper than exporting formulations, tablets and capsules. Manufacture of indigenous gelatin will also facilitate encapsulation. The proposed pharmaceutical institute under the Ministry of Health can also collaborate technically with the proposed industrial unit. Technical collaboration, especially with the prospective sellers of bulk drugs, may be helpful in early realisation of the project.

Manufacture of Soft Industries Wax:

236. Raw material for wax is a byproduct of sugar viz. filtration cakes, and can be extracted easily. Wax is required for paper industry, cloth industry, oils paint and varnish industry and other ancilliary industries. The actual import of wax is not known. The capital investment for processing the byproduct into wax is not high but the final product has high added value. At present SNAI Giehar is throwing away this filtration cake, which has about 10% wax. Technical collaboration will be required for setting up a unit for manufacturing wax and its products.

Manufacture of Starch from Maize:

237. Starch belongs to the group of carbohydrates in which are included sugar, gums and cellulose and is composed of the elements of carbon, hydrogen and oxygen. The average starch yield of different plants is given below:

Wheat	18 to 20% of starch
Maize	55 to 65% "
Rice	70 to 79% "
Millet	50 to 53% "

The starch is used in the textile industry for yarn sizing, dressing cloth and calico printing, in the formentation industry for preparation of dextrine, confectioners glucose, corn syrups and sugars and in the food industry as corn flour, arrow-foot, preparation of custard and sauces and confectionery and also in the laundry work. The feasibility of local manufacture of starch from local maize needs to be studied to decide the size of the plant, its location and investment.

Manufacture of Papain from Raw Papayas:

238. Papaya fruit is grown largely in Somalia. It contains an Enzyme, the papain, a protease, which can degrade proteins in smaller molecules. This property can be used in various ways. In cattle feed, degradation of the hard proteins facilitates digestion of bonemeal. Use of Protease often permits the use of nitrogenous offal, which is better used than simple soil fertiliser. Papain can also be utilised in human diet for preparation through hydrolyse of peptone amino-acids concentrates from vegetable proteins. One of the most spectacular use of papain is its use as a meat tenderiser. The papain can also be used in washing formulation for blood spotted hospital linen. Finally, papain can be used for certain processes in textile industry, brewery, film, a photography, cheese industry and tannery. "Bitter Papaya" is more useful for making papain. The estimated investment will be around So.Sh. 300,000 for setting up a plant of 8 tons capacity per annum. Technical collaboration will be needed for setting up the plant.

Manufacture of insecticides:

239. Natural pyrethrine is known to be good insecticide and is claimed to be less toxic in effect. Pyretheum chrysanthemum cenerariao folia is cultivated in Japan and Kenya. The plants are normally cultivated in high altitudes of 1,500 metres and above. There is demand for natural pyrethrine abroad but the main market can be local, since it can be used extensively in agricultural campaigns. The feasibility of cultivating pyrethrine in the high altitudes of Brigavo needs to be studied and experimental projects started before setting up any pilot plant for processing it. Pyrethene extraction will be useful in processing aromatic oils also.

Manufacture of aromatic and essential oils:

240. Frankincense and myrrah are produced in Northern parts of Somalia. At present they are exported in natural form. The exports for the past three years is given below:

Table XXI - Exports of Frankincense and Myrreh:

Year	Quantity (tons)	Value (So.Sh.)
1969	1.100	1,810,000
1970	1.200	1,903,000
1971	1.201	2,098,000

There is a market abroad for vetiver, patchoui, galabanum (ferua galbaniflora), Geranium, Mircia acres, Beroamottee, Ginger, Camomile etc. The feasibility of processing the local incense into popular aromatic and essential oils needs to be studied, as the latter would bring added value. A pilot plant experiment may precede commercial exploitation on a large scale. This should be linked to the project for growing pyrethrine and processing it for manufacture of insecticides. Its location in areas where citrus fruits are grown (orange, lemon and lime) may widen scope for extraction of essential oils from skin, leaves and flowers (Neroli and Petigrain). Pyretheum plant is known as chrysenthamum. The flowers of this plant are used for the extraction of insecticides. It can also be processed in the same installation as certain aromatic raw mterials. A plan of economic capacity may be 50 tons per annum. There will be need for technical with foreign manufacturers and buyers.

Sisal fibre Manufacturing:

241. Sisal shrubs are grown wildly in Somalia and is available throughout the year. No exact idea of the quantity grown is available. Sisal fibre is used for cordage and binding materials for packing in Kenya. Sisal fibre is quite strong and can be used for various purposes. There is demand for these products abroad. They can substitute imported material. The processing unit will be labour-intensive. One of the pre-requisites for setting up a unit will be the availability of water, since water is required in great quantity for the manufacturing process. The economic capacity of a plant is about 50 tons of fibre output, which may cost less than So.Sh. 100,000. As the raw material is grown all over the country the sisal fibre manufacturing industry can be started. A feasibility will have to be completed to decide its location.

Yeast recovery and vinegar production from byproducts of sugar:

242. Yeast is a byproduct of alcoholic fermentation from diluted molasses. Yeast involved in alcohol production is a saccharomyees, which is rich in protective proteins and vitamin B group. The dryed yeast contains about 50% of proteins. Yeast is a supplementary food. It is commonly used in bakeries. It can be used in cattle feed at the rate of 2 to 5%. Yeast as a cattle feed can also be marketed at more or less the same price as meat-meal.

243. Vinegar is another product of fermentation by a micro organism named Myoederma aceti. It can be produced from diluted alcohol. The retail sale price of vinegar in Somalia varies from So.Sh. 6 to 10 per litre. The present demand is met by imports from Italy and Australia. The feasibility of manufacturing yeast and vinegar from the molasses and alcohol produced in SNAI needs to be studied further. Considering the fact that about 10,000 tons of molasses are produced per annum and the limitations of distillations of the whole of it to make consumable liquor, and taking into account the present imports of yeast and vinegar into the country, and equitable distribution of molasses for manufacturing alcohol, yeast, and vinegar may benefit the economy. Techno-economic feasibility has to be conducted before setting up the project.

Bone-meal Plant:

244. The country generates large quantity of bones - about 18,000 to 20,000 tons per annum and only a part of it is utilised, and that takes in a primitive form. Consequent on setting up of new slaughter house and evolving suitable mechnism for collection of bones from the bushes - estimated to be sizeable - the availability will further increase utilisation of this byproduct to fetch increased added value assumes greater importance. Although there is a bone and meat-meal plant in the Meat Processing Factory at Chisimaio, it is not fully utilised for want of market.

245. Bones can be used for manufacturing 'bone and meat-meal' for cattle feed, and gelatine to make good phosphates for phosphorous deficiency in cattle to manufacture phosphate fertiliser (bone ash) and meatsfoot oil for leather industry and textile industry etc. Pure meatsfoot oil fetches a very high price and its production is quite economical where large quantities of animals are slaughtered and bones are available. A feasibility study has to be undertaken to estimate the availability of bones and locations, identify problems of collection and transportation and location of industrial units for its utilisation and marketing of the end products.

Fish Meal Plant:

246. Fish meal is a highly valuable protein feeding material with every high content of digestable pure protein. It is a good feeding material from the point of view of amino-acid distribution, since it contains large quantities of lysins, methionine and cystine. The fish meal potential export market. Peru has been one of the largest producers of fish meal in the world. Its production has reduced recently due to ecological reasons and inadequate supply of fish. The supply is not able to meet the demand. The prices quoted for fish meal (in February 1973) was as high as So.Sh. 350/- per quintal (i.e. So.Sh. 3,500 per ton), for the protein content of 72% and So.Sh. 3,260 for fish meal of 65% protein. These are CIF prices for a minimum lot of 20 tons for shipment at a time. Comparatively, the price of meat-meal was about So.Sh. 151 per quintal

for 60% protein and So.Sh. 120 for 50% protein content, and the price of de-oiled ground nut cake, was So.Sh. 168 per quintal. Ethiopia is exporting oil cakes to Europe and has started solvent extraction plant for minding de-oiled cakes in large quantities.

247. Fish meal plant is an essential part of any fish-processing cannery of large sized fishing vessel. The Las-Khoreh Fish Processing Cannery has a fish meal plant but it is not utilised due to technical and marketing problems. The other fish processing units has no big fish meal plants and hence the fish waste is wasted. About 26% of fish is only realised in processing industry and the rest viz. 74% is wasted, which needs to be recovered through fish meal products, which fetches a good price. Any fishing vessel should also sort out the fish catches and reject all non-edible fishes or process them in a fish meal plant either aboard the ship or at nearly coast depending on availability of facility. When a fishing fleet or even a single fishing vessel is large enough to contain a small compact plant, fish-meal facility provided in one of the vessels. Simultaneously, marketing facilities need to be created both internally and externally, especially in the European Common Market countries.

Assembly of Agricultural Tractors below 25 Horse Power:

248. The use of agricultural tractors is gaining ground in the country in view of the various campaigns launched for raising food and commercial crops. Considering the large areas of virgin land available in the country and low density of population the demand for tractors will increase. At present the country is importing tractors. The value of imports during 1971 was of the order of So.Sh. 2,218,874.

249. If an assembly plant for assembling tractors is set up, the cost of CIF prices of parts will be reduced considerably. ONAT, Mogadiscio can be used as an assembling unit. An economic unit can be one which can assemble about 500 tractors. ONAT has requisite organisation for repairs of 600 tractors spread over all the districts of Somalia. Only balancing equipments need be provided.

Manufacture of spare parts can also be taken up later on, which will benefit economy serially. Technical collaboration with foreign manufacturers of agricultural tractors will be necessary on a long-term basis for the successful implementation of the project.

Assembly of Office Machines:

250. Various types of office machines are in use in Somalia. These are at present imported. The total import during 1971 was 24,151 kgs. of the value of So.Sh. 879,557. Setting up an assembly plant of about 1,000 Nos. seems to be preferable to direct import of whole machines. It will generate many other diversified products assembly in future. The feasibility of standardising the machines in use and setting up a technical collaboration with the manufacturers of standardised machines to be used in future is a necessary pre-requisite before setting up an assembly unit. Creation of facilities for repair and maintenance adjacent to the assembly plant will improve the skills and efficiency. Such a unit will also generate employment.

Assembly of domestic sewing machines:

251. Tailoring is a flourishing industry in the small industry sector, especially in the traditional sector. Sewing machines are imported. The import during 1971 was of the order of So.Sh. 291,826. But one year's import figures do not give on an exact idea of the need. Consequent on setting up co-operatives and extending this activity to the rural areas, the demand is bound to increase. Construction of the foundry at Mogadiscio will provide the facility of castings, which are essential for assembly of sewing machines. A unit for assembly of sewing machines seems plausible. Such a unit will be labour intensive. It will lead to further diversification.

Assembly of pumps for agricultural purposes:

252. A unit to assemble pumps is feasible. Where water level is not below 20 feet, such pumps can serve by coupling with the diesel engines below 10 HP. At present these are imported. In 1971 the

value of import was of So.Sh. 2,729,956. This assembly will later on incite other diversification activities like manufacture of diesel engines of low HP etc. The product-mix for the proposed foundry and workshop includes castings for use in agriculture and water works departments.

Assembly of Refrigerators:

253. Refrigerators are in great demand in Somalia. This item is imported now. The import in 1971 was 101,187 kg. valued at So.Sh. 1,747,620. Every household in the urban area may own one in the long run. An assembly unit to assemble standard sizes - 4.5 cubic feet or 7.5 cubic feet as the case may be is feasible. The cabinet can be manufa tured in the foundry complex as it will have extra capacity for pressing etc. Only steel sheets are to be imported for the manufacture of cabinet and then enamelling in an oven at Mogadiscio. Technical collaboration is essential for successful implementation of the project. This Industry may lead to the manufacture of air compressors of various types required. The castings of these compressors can be manufactured later in the foundry complex proposed to be set up in Mogadiscio.

Assembly of Transistor Radios:

254. Transistor radios are commonly used and its demand is likely to increase with improved standards of living. These are imported and total import in 1971 was 37,222 kg. of the value of So.Sh. 780,338. A unit to assemble radio is feasible. Printed type circuits for the manufacture of radios of all types are available. Such a unit will be labour intensive industry requiring good skill and can provide employment for skilled and trained women. This assembly can later on lead to more intricate type diversification for electronic assembly. Technical collaboration with reprinted radio manufacturing company will facilitate successful implementation of the project.

Assembly of Truck-trailors and body building on chassis:

255. Road transport being the main means of communications, heavy and light vehicles are in common use. Because of the climatic conditions, type and nature of roads or lack of roads in many parts of the country, these are fast wearing items in Somalia. At present trucks, buses etc. are imported. The total import in 1971 was of the order of So.Sh. 13,956,252. The demand for vehicles will increase with improved communication system planned for implementation. Trucks and chassis with engines are very bulky and shipping costs are rather high. If the components are imported in bulk, the assembly for these items could be undertaken at Mogadiscio. This is a labour intensive industry, though calls for precision work. Technical collaboration will be needed for setting up the unit. This assembly can later on lead to further diversification for the assembly of other auto items, which are imported at present. Such a unit can also undertake manufacture of spare-parts, which are imported at present. It can have a tie-up later with ONAT, Mogadiscio for further useful work. The training imparted to the workmen can be used later in various regions for the "on-spot" repair of tractors etc.

Assembly and Manufacture of bicycles:

256. Bicycles are not in common use in Somalia. The imports during 1971 was of the value of So.Sh. 140,922 only. But with greater urbanisation and creation ofbetter road transport facilities, its use is bound to spread in urban, semi-urban and flat country areas. Encouraging its use may render the rural flock more mobile and lessen the pressure on public and government transport in urban areas. Local availability may push up the demand. Creation of an economic unit for initial assembly and subsequent manufacture in a phased manner, needs to be studied. Such a unit will generate employment and skill needed for future diversification. The spareparts manufacture can also be undertaken by the unit. Foreign Collaboration and technical assistance will be needed for realisation of the project.

Assembly of Diesel Engine below 20 HP:

257. Diesel engine is an essential consumer item from the national point of view. This is imported at present. It is not shown separately in import statistics, but is assumed that 6,517,646 kg. of the value of So.Sh. 26,796,979 was imported. These are required for pumps, fishing motor boats, propeller, village flour mill, compressor pumps etc. This item can be manufactured by CNAT, Mogadiscio along with the other items like agricultural tractors etc. and can be easily diversified for future industries. Technical collaboration will be needed for setting up the unit.

Manufacture of CO2 dry-ice snow flakes or cubes:

258. Manufacture of Co2 dry in snow flakes or cubes can become an essential ancillory industry for food processing industry - especially for preservation of meat, fish, etc. This dry-ice has a sublimation temperature of "minus 80 degree centigrade" under ordinary atmospheric temperature. This is a byproduct of distillery at Giohar and can be easily compressed for the manufacture of "dry-ice". Country is already faced with the problems of transportation and preservation of fish along the large coast line. The flakes of dry-ice can be put inside polyethelene bags and fish can be stored for long distances in insulated van. The feasibility of setting up units for manufacturing Co2 dry-ice, snow falkes or cubes adjacent to energy centres needed to be studied for deciding the capacity, no. of units, locations, investment, and phasing out implementation.

Manufacture of plastic products:

259. New units for manufacturing plastic bottles, polythelene bags, plastic show-wares, have been set up. Plastic house-hold articles like buckets, kitchen wares, toys etc. can substitute metallic ones which may be cheaper. The lighting sheds and fixtures can be manufactured from PVC raw materials imported. Volume of imports is not shown as a separate item in foreign trade return but the import of lighting fixture in 1971 is estimated around 176,005 kg. of the value of So.Sh. 1,125,177. This industry could be diversified for

the manufacture of electric switches by the use of dies etc. and other suitable alternative uses in domestic kitchen wares. The feasibility of setting up a unit to manufacture diverse plastic products needs to be studied.

Manufacture of Brake Fluid Oil:

260. Castor seeds are reported to grow wildly in the forest areas. Castor seeds can be crushed in an efficient mill to produce castor oil. If it is refined and deodorised with low FF value, the addition of diacetone in 50% proportion will turn into "Brake Fluid Oil". There is a large demand for brake fluid oil, which is at present imported. The import is not shown separately but the demand can be worked out with reference to the automobile in use. A unit for manufacturing 1000 tons of brake fluid may be economical. It will save foreign exchange and also generate employment for village farmers in spare time for collection of seeds from wild trees. Technical collaboration may be needed for producing quality oil. A feasibility study of available seeds, location, the demand for oil projections is suggested to decide the size of the plant, its location and investment.

Manufacture of batteries for cars and trucks:

261. All batteries are imported. The import in 1971 was 331,686 kg. of the value of So.Sh. 1,409,803. These are essential items. There are no facilities for reconditioning batteries. The replacement requirements are quite high. The used plastic container could be reused again and again. Lead and antimony paste has to be imported. All replacement requirement could be manufactured in Somalia. Local manufacturer even with imported material may reduce the cost of batteries. Once the manufacturing unit is fully established the feasibility of exports to neighbouring countries can be considered. Technical Collaboration for setting up a unit to manufacture batteries and also reconditioning batteries will be needed.

White wares/household crockery:

262. At present the local demand of household porcelain crockery is met by imports. In the Northern part of Somalia, there are good occurrences of raw materials required to manufacture these items. Detailed geological survey of the deposits is yet to be made. The process of manufacture is simple. The required raw materials is wet ground in rotary mills. The slip is pressed in filter press. The pressed cakes are de-aired in vacuum extruders. The resulting body product will be formed in gypsum forms in automatic shaping machines connected with the dryer. The shaped cups, saucers and plates are then fired in periodical kilns at 850 degree centigrade and glazed and fired at 1,350 degrees centigrade. The white wares can be decorated to suit local tastes. These products need great care at all stages of manufacture. Final products should be packed well to avoid breakage during transportation. The geological survey for exploiting the raw material should first be completed before setting up the project. A feasibility study by specialists in this industry should be conducted before setting up the project.

Paper and paper board:

263. At present, entire requirements of paper and paper board are imported to meet the demand of 15.000 tons per year. The requirements are estimated to increase to 24.300 tons by 1978. These products can be manufactured from bagasse. The plant should be situated near the sugar factory complex, so as to avoid unnecessary transportation costs. A sugar mill of 50,000 tons output can generate about 123,000 tons of bagasse. Even if part of bagasse is used for the generation of steam and power house, considerable quantities of bagasse can be found for various other uses. A paper and paper board factory of 15.000 tons per annum could be supported by a sugar complex of 50.000 tons output.

264. The paper industry has grown considerably. The pattern of production costs varies according to the process adopted, the size of plant and its location. The medium size plant of 50 tons capacity

per day (viz. 1[illegible],000 tons per year) is possible with NSSC process (neutral sulphite semichemical process) for bleached variety and with the recovery of chemicals. An idea of production costs can be obtained from the following data:

Fibrous raw material etc.	32%
Chemicals	18%
Other materials	3%
Power, steam, water etc.	10%
Labour and maintenance	7%
Supervision, overhead etc.	4%
Amortisation costs	26%

The feasibility of setting up a plant by utilising the bagasse that is likely to become in the expanded sugar factory in Jowhar has to be conducted. While planning the new sugar complext at Lower-Juba, setting up a plant to manufacture paper and paper-board should be considered.

Glue and Medical/Industrial Gelatine:

265. Glue and gelatine can be manufactured from bones, horn pith and other soft parts of animals, like rejected hides, skins, trimmings, etc. Gelatine is glue of the highest quality. Gelatine is of edible and technical types. The edible one is manufactured under sanitary conditions from fresh material derived from slaughtered and properly inspected animals. The manufacturing process of gelatine is simple. First, the glue stock is washed and soaked. Afterwards, it is limed for several weeks. Then the material is thoroughly washed, delimed and neutralised by addition of mineral acids. The clean, soft stock then becomes ready for extraction. The quality of the product depends on the temperature. The highest quality is obtained, when it is cooked at low temperature. Boiling yields glue of the lowest quality. The liquor or soup which contains collagen is drawn off from each cooking. After filtration and sedimentation, the stock is subjected to the most critical process - drying. Large scalefactories use vaccum evaporators or concentrators, whichreduce the moisture content to such an extent that after chilling,

the gelatine can be cut into sheets for drying in a drying tunnel. The other process of spray-drying or drum-drying can also be used depending upon the previous working. The bones contain generally 33 to 36% organic substance, bone collagen or ossein which is the mother substance of gelatine or glue. Gelatine can be obtained by boiling ossein or by boiling degreased bones by petrol and in water acidified with hydraulic acid which separates gelatinous substance. Ossein is obtained by soaking the bones in weak acid which dissolve the mineral components, leaving organic matter i.e. ossein untouched . Preparation of feasibility report should precede setting up the project.

Sanitary and porcelain factory:

266. Sanitary and porcelain needs are met by imports. The estimated consumption is about 16,595 pieces of the value of So.Sh. 3,933,000. An increase of 7% in housing activities is forecast during 1974-78 plan period. It is reported that there are good occurrences of requisite raw materials in the Northern part of Somalia, to sustain the manufacture of all these household items for sanitation work and plumbing. Detailed geological survey of the deposits is yet to be conduoted. Manufacturing process for making these products is simple. The requisite raw materials is wet ground in rotary mills. The slip is then pressed in filter press. The pressed cakes are de-aired in vacuum extruders. The resultant cakes can be formed to desired shapes in gypsum forms by pressure. The shaped product will be fired in periodical kilns at 850 degrees centigrade and glazed and fired at 1,300 degree centigrade. Great care has to be taken for packing and handling these products at each stage of production so as to avoid the wastage/breakage in manufacture. Geological survye has to be completed for establishing the feasibility of commercial exploitation of the raw materials. Technical collaboration will be needed to manufacture quality products.

Sandcrete blocks:

267. These blocks are at present manufactured indigenously from imported cement. About 3,000,000 blocks are produced annually. The process employed is to wash sand with water, screen and mix properly in a mechanical mixer. Blocks are shaped by vibration and pressure. The blocks are cured for about 14 days in covered sheds. The process can be mechanised to improve quality and quantity. The estimated demand is 10,000,000 blocks by 1974 and 13,000,000 blocks by 1978. In order to meet the increasing demand, and also in view of the possibility of local cement production in the near future, setting up new units for a capacity of about 10 million blocks is proposed. The plant can be located either in Mogadiscio, being the main consumption centre or near the cement plant to be located at Berbera. From the conception stage to commissioning should not exceed three years.

Asbestos sheets and pipes:

268. The demand of roofing sheets has been estimated around 1,800,000 square metre annually. 1,250,000 square metre of galvanished iron corrugated sheets and asbestos sheets are imported annually. The use of iron sheets is wide spread on account of the lower price in Somalia not withstanding its lesser durability (viz. life or iron sheets is 3-4 years, while asbestos sheets is 12 to 15 years.) The process for manufacturing is simple. The asbestos will be refined and screened after grinding. It will then be mixed with cement and water and the resultant product will be transferred to shaping machine. After shaping the sheets, these will be pressed for corrugations and finally transferred to curing areas. More or less the same process is used for making pipes except the last stages, when the shaped pipes will be transferred to the curing areas. A geological survey of asbestos deposits has to be conducted. Feasibility report for setting up the plant based on survey findings will facilitate planning the size of the plant, the location and investment.

New Industrial Possibilities:

269. Certain industrial possibilities in the medium and small-scale sector are given in Appendix VIII. Salient data on some of them are given in Appendix X.

Fisheries:

270. The realisation of the targetted 30,000 tons of fish catches referred in earlier paragraphs, will necessitate detailed planning of the means required for catching the fish during the fishing seasons. The various survey conducted so far have spelt out the type of fishing facilities required for large scale fishing in the coastal area and on the high seas. The Somali-Soviet expedition composing of two vessels of type SRTM and two trawl boats of dwt. 697 equipped with fishing gear and implements and supported by 10 motor boats is estimated to catch 4770 tons of fish - 1087 tons of tuna, 2373 tons of fish of all kinds, and 1310 tons of crustacea. Assuming that the expedition succeeds in realising the planned catches, and continues to function on a regular basis, it will be necessary to plan the balance catches to fulfil the planned objective viz. 25,230 tons.

271. Coastal fishing has to be organised to supply catches for the domestic market. To realise a target of 10,000 tons, 250-300 motor boats will be required. The existing country boats can augment the proposed new fleet. Import of these boats may irvolve a financial outlay of So.Sh. 15 to 18 million. Local manufacturer would require setting up new boat building yards, the number of units being decided by the turn over of boats per annum by each unit and the period planned to supply the proposed number of boats and the availability of local skills, materials and financial resources. Technical assistance will also be required to design, manufacture, and commission the boats by trained fishermen.

272. Long distance and deep sea fishing on high seas will need suitable trawlers, mother ships and supporting fleet. The types of trawlers, the number of trawlers, the natures of trawlers to be used in different parts of the coast line, the number of ships and the quantum of supporting

fleet required etc. need to be studied and the cost of investment worked out in detail for implementation. A rough idea of the type of trawlers, capacities the required number for estimated catches and appropriate costs are given in Appendix XI. It will be seen therefrom that a fleet of 25 trawlers, 250 motor boats and supporting equipments will involve an aggregate investment of the order of Rs.25 crores, (US$ 50 million). The estimates are rough and will need to be updated to present day costs and prices. The phasing of investment will depend on the availability of resources, absorption capacity to invest delivery period for obtaining the trawlers and boats, and other national constraints.

273. In addition, investment will also be required to create infrastructure and other ancillary facilities to facilitate implementation of the programme proposed above.

i- At present fishermen are scattered all along the coastline. To facilitate coastal fishing and quick transportation of fish from the trawlers and ships, fishing harbours need to be developed and the existing ones need to be strengthened. Suitable sites have to be chosen for the new harbours. A phased programme for development of new ones and strengthening the existing one has to be drawn up.

ii- To facilitate quick transportation of fish from the trawlers and supporting boats, extension of existing piers or creation of new ones adjacent to the large processing units have to be carried out. Construction of new piers will also involve sizeable financial outlay.

iii- To facilitate storage and transportation of fish catches, especially those harvested by coastal fishing, large number cold storage facilities need to be created all along the coastline. The size, capacity, and the number have to be determined with reference to distances to be covered between the fishing catching and consuming areas, the number of fishermen and the estimated quantity of their catches and the period of preservation. Fish vans or vehicles with cold storage facilities may have to be provided for transportating the fish to the urban and semi-urban areas and major consuming processing units within the minimum time lead.

iv- Both coastal fishing and long distance and deep sea fishing will necessitate trained fishermen, skilled and semi-skilled personnel. Government have already announced the policy to form fishermen's co-operatives and launches on a programme of development of selected areas for intensive fisheries development. Fishermen may have to be provided with suitable habitation, essential supplies, mobile training facility and minor workshops for repairs of boats, nets and other fishing equipments.

274. There is only one Boat Building Yard and even after the proposed modernisation its production will be less than 20 boats per annum. Construction of modern building yards for indigenous manufacture of boats may have to be undertaken on a bigger scale, if the requirements of boats to obtain the targetted fish catches are to be met. To catch 30,000 tons of fish a fleet of 400 to 500 boats, 250 for the coastal fishing and 250 to support the national fleet for the long distance and deep sea fishing, may be required. The requirements will double in future while the replacement requirements of the existing boats will also arise. It will therefore be necessary to set up modern building yards round about the harbours, where other facilities for construction of boats exist. Assuming a turn over of 50 boats per unit per annum and three boat building yards, a period of 3 to 4 years - after the commissioning of the boat building yards will be required to manufacture the boats required for implementing the first phase of the programme. The new facilities will also need skilled and experienced personnel - designers, carpenters, navigators, mechanics and electricians, fitters, etc. As the implementation of the programme cannot obviously wait until all the boats required are manufactured locally, a mixed policy of procurement and indigenous construction, preferably with the technical and financial collaboration with suppliers of boats selected for outright procurement may, on the one hand, help launching part of the programme early, and on the other hand, stabilise and consolidate over a period, local boat building industry. The feasibility of obtaining UNDP/FAO/UNIDO assistance need to be explored in setting up the boat building yard industry.

275. New facilities for processing fish waste need to be created along the coast at suitable locations depending on the availability of fish waste, power, and other facilities. Of the programmed catches for fish processing industries viz. 20, [illegible] tons, a minimum of 11,000 to 15,000 tons of waste can be generated. Apart from fully utilising the existing facilities at Las-Khoreh, it will be necessary to set up package fish meal plants in the vicinity of other processing units also. On the coast, setting up small package plants of the type suggested in para. 70 may be considered. By-products utilisation will pay itself and will also reduce the cost of processed fish.

276. New facilities for imparting knowledge and skill for the fishermen may have to be created. The turn over of existing marine school will not be adequate to meet the programme for development of fisheries. Managerial skills will have to be developed for operating the proposed fleet, fishing industries, and connected trade and maritime activities.

277. An estimated investment of the magnitude of over So.Sh. 60 million and the working capital required for operating the national fleet, the former mostly in the form of foreign expenditure, will necessitate large borrowings from abroad. Assuming that the earlier investment is financed by loans or credits, with a pay back period of 10 years, the annual repayment obligations, after the national fleet has gone into operation will be around So.Sh. 6,000,000 million which will need to be recovered from the sale of fish. A catch of 30,000 tons planned should realise gross earnings of the order of So.Sh. 45 to 50 million. This can be achieved if an average ceiling price of So.Sh. 1.50 per kg. for fish is fixed. Price structure may allow for variations depending on the nature, quality and demand - internal and external - of fish, the overall objective being realisation of gross earnings required to fulfil the repayment obligations over a period of 10 years. This will reduce the margin of profit earned by the processing units, which can be compensated to certain extent by reduction in cost realised by fuller exploitation of capacities and utilisation of waste products.

278. An alternative to large capital investment initially is to hire fishing companies for specified periods. This will avoid immediate borrowings on a large scale and indebtedness over a period. This will also enable fixation of a lower ceiling price for fish. The fishing companies may have to be paid hire charges, which may cover expenses and rent of the fleet. Hiring fishing companies may also facilitate early implementation of the project. There are some obvious disadvantages in hiring fleet for exploiting the fish resources. The danger of the contractors sub-letting parts or whole of fishing contracts is inherent in the arrangement. Country's reliance on the vagaries of the fishing company exposes the whole programme to great risk arising out of insecurity and uncertainty. The facility of training Somali Fishermen on operating large fishing fleets will be lost. Non-fulfilment of stipulated catches for one or other reason will entail great loss to the nation. These could perhaps be avoided to a great extent by built-in safeguards in the contract for hiring the fishing company. Arrangements envisaged in the Somali-Soviet expedition seem to avoid some of the pitfalls of hiring a fishing company and extension orduplication of such facilities to meet the total requirements may be a solution to the problem. The advantages of a national fleet are obvious. It enables the country to programme its fishing operation to the best national advantage. It eliminates dependence on foreign companies for exploiting the fish resources off the coast. It can promote fisheries and fish based industries on an enduring and long-term basis. It supplements the maritime facilities already existing on the coastal waters. But, large initial investment, especially foreign exchange requirements, time involved in acquisition of the components of the fleet and its subsequent gestation period, the need for technical assistance for some period even after the fleet is organised etc. are few of the handicaps.

CHAPTER 7

APPRAISAL OF CURRENT INDUSTRIAL DEVELOPMENT PROGRAMME AND PROPOSED PROGRAMMES :

I. Appraisal of Current Programme

279. The Development Programme 1971-1973 indicated that "Projects and policy measures are suggested to strengthen the industrial base in the country by re-organising the existing industries in the public sector and by starting new ones. The programme has also laid stress on the role of private sector in the country, specifically in industrial development by assigning to it important tasks under the overall policy guidance of government in socially desirable production activities". The Government is determined"to spear-head development through direct engagement in economic activity - both in political and economic grounds but encouragement of private enterprise, foreign or local, consistent with public interest and conducive to national development. Except in certain fields, which are considered to be of key character, private enterprise is permitted to engage in any economic activity. Where desirable government will establish joint ventures with private enterprise - local or foreign".

The main targets of the Programme were:

i. the consolidation and improvement of the existing industrial enterprises;
ii. intensification of efforts on the establishment of agro-industries which have the greatest impact on the major natural resources;
iii. the establishment of import substituting industries;
iv. the establishment of programmes for small-scale industries;
v. the establishment of institutional framework for industrial development. This will involve the establishment of improvement of development banks, industrial corporation, industrial advisory services, etc.;
vi. the carrying out of industrial survey and feasibility studies for future industrial programmes and projects;
vii. integration of the principles of concentration and dispersion in industrial planning and implementation.

The Ministry of Industry was expected to perform a key role in encouraging local entrepreneurs, both through supply of services and financial credit in addition to its role in overall supervision and control of management of government-owned industrial establishments and organising promotional measures for large projects.

280. Of the total outlay of So.Sh. 1000 million proposed in the development programme, the share of manufacturing, mining and electricity was of the order of So.Sh. 129 million. The share of manufacturing industry was So.Sh. 87.045 million. This was higher than what the earlier short-term development programme 1968-1970 allocated viz. So.Sh. 38 million out of a total outlay of So.Sh. 705 million. In absolute figures the investment allocated to these three sectors in 1971-73 were more than three times higher than the 1968-1970 programme.

281. Twelve projects involving a total financial outlay of So.Sh. 32,650,000 were for expansion, modification, and strengthening of the existing public sector units and can be deemed to have come under the target outlines in (i) above. Seven projects involving a financial outlay of So.Sh. 55,545,000 were for creation of new industries, including the development of small industries and handicrafts. Of the proposed new industries, three projects were based on agricultural output, one project was for setting up a packing industry for improving the earnings of banana export, and one for a pilot study to pave the way for commercial exploitation of one mineral deposit of the country. In addition, one consumer based industry, which is also an import substitution industry was proposed, although the exact financial outlay was not indicated. These projects can be considered to implement the targets indicated in (ii), (iii) and (iv) above. All the investments proposed were in the public sector and no project or particular area of industrial development was specifically earmarked for private sector investment, notwithstanding the broad strategy and policy indicated in the programme,

and consequently, no enterprise in private sector development came up during the plan implementation period except one confectionery unit, involving a financial outlay of So.Sh. 1,770,000.

282. A programme for development of small-scale industries and handicrafts was drawn up but could not be implemented due to non-allocation of funds in the first two years of the plan period. The budget for 1973 provided an allocation of So.Sh. 1,000,000. Neither consolidation of the existing medium or small-scale industries or setting up of new small-scale industries took place during the plan period. Creation of institutional framework including re-organi-sation of the Ministry of Industry, enactment of legislation, evolving systems and procedures did not progress and hence the target no. v remains yet to be implemented. It is still in the formulation stage as the basic pre-requisite - the institutional and technical base - to enable the Ministry of Industry to play the key role assigned to it for industrial development of the country has not been built so far. The bifurcation of the late Ministry of Industry and Commerce made as early as 1971 was to be followed up by a complete re-organisation of the Ministry of Industry so as to transform it into a techno-economic Ministry competent to provide the leadership and guidance for accelerating the industrial development of the country. A certain amount of technical assistance to strengthen this Ministry was also planned to complete the institutional framework for implementation of the policies, programme and projects. A comprehensive industrial policy declaration spelling out the strategies programmes for industrial development and providing the guidelines for action by individual entrepreneurs in industrial fields has yet to be made. Industrial law to facilitate implementation of the industrial policy has yet to be put on the statute book.

283. Although the development programme spelt out three regional complexes for industrial development, and advocated the harmonious blending of the principles of concentration and dispersion in industrial planning and implementation, three new industrial projects were located in one region, thereby adding to the regional imbalances.

264. The programme envisaged investigation of certain projects without allocation of any funds. Various surveys, feasibility studies, pre-feasibility studies etc. were undertaken by the Ministry with the cooperation of the Ministry of Planning and Co-ordination. Considerable spade work in this sphere was undertaken mainly due to the initiative of the Ministry of Planning and Co-ordination and these are discussed in Chapter 8, dealing with project identification. The Industrial Survey by the UNIDO is one of the latest ones preceding the preparation of the plan for 1974-78. The implementation of target no. vi was quite substantial during the first two years of the plan period.

265. The various disabilities and short-comings referred to above have naturally handicapped the Ministry of Industry in the implementation of the current development programme. Of the 12 projects proposed to be taken up by the Ministry of Industry in the development programme, two projects were left to be implemented by the Somali Development Bank, two projects by the Banana Board and the Bank of which only one was implemented, one was transferred to the Ministry of Livestock and Forestry and Range and five projects were entrusted to the public sector units concerned under the Ministry of Industry for implementation. Two projects were directly taken up by the Ministry for implementation, excluding the programme for small-scale industries and handicrafts. Of the projects entrusted to the public sector management, one big project was dropped, as it was found technically not feasible. The Ministry's role in implementation of programmes in the industrial units under its control was diminished. Even in respect of programmes implemented by units under its administering control, its role was not very efficient - from the stage of planning to commissioning and even periodical appraisals became difficult because of lack of correspondence between the supervisory unit and the implementing authority.

286. The main constraints in implementation of programmes as a whole mentioned in the appraisal of performance by the Ministry of Planning and Co-ordination viz. uncertainty of foreign funds and administrative bottlenecks were present in an intensified manner in the industrial sector. 56% of the proposed outlay was estimated to be financed from foreign sources - grants (So.Sh. 1,971,000), loans (So.Sh. 9,360,000), and suppliers' credit(So.Sh. 38,500,000). Up to the end of 1972, the foreign exchange expenditure on implementati of the programme was 32.4% of the total expenditure. The expenditure financed from domestic sources constituted 72% of the total expenditure. It did not generate funds, as planned in the development programme of the planned outlay for 1973, the estimated foreign exchange expenditure is 46.2%. According to the present estimates 96.9% of the financial outlay of the programme for 1971-73 is expected to be spent. The ultimate composition of the aggregate expenditure on the implemented programme will be 42.5% foreign expenditure and 57.5% domestic expenditure. The quantum of funds estimated to be financed from autonomous agencies was 92% of the total outlay to be financed from internal resources. But this was not linked to the cash flow of the autonomous agencies and was found to be unrealistic at the time of preparation of the annual budget. The administrative difficulties in implementation of the programme have already been explained in para 0.8 above.

287. The progress of implementation of the development programme in the industrial sector in terms of total financial expenditure was 36.6% up to the end of 1972, 45% in 1971, 34.1% in 1972, as against the overall performance of 48.9%. The Ministry of Industry was ranked the 15th position in the order of achievement, in the performance range of 25-50% in terms of programmed outlay. The planned outlay for 1973 proposes to realise 78% of the planned outlay which includes a foreign expenditure component of 46% thereby achieving 96.9% of the programmed outlay. The progress of implementati of the development programme up to the end of 1972 and the programme for 1973 is shown in the following table.

Table VIII

Progress of Programme 1971-73
(So.Sh. 000)

Sl. No.	Name of Project	Plan 1971-73	Expenditure 1971	Expenditure 1972	Estimated outlay 1973	Estimated Plan outlay	Estimated plan fulfilment in %
1.	Kismayo Meat Factory	2,000	1000		4460	5460	273.0
2.	Las-Khoreh Fish Factory	3,500		1008	3000	4008	114.5
3.	Somaltex	1,000	4680.7			4680.7	468.1
4.	Fruit Plant	4,160		7238		7238	170.2
5.	Corrugated Cardboard boxes	22,000		3469.5	40711.3	44180.8	200.8
6.	Grain mill	13,000		2600		2600	20.0
7.	Pilot project for gypsum	1,100			2331.4	2331.4	211.9
8.	Small-scale industry	1,500			1000	1000	66.7
9.	Sugar factory	25,000	776.6		3100	2886.6	19.5
10.	Banana dehydration plant	12,000					
11.	Foundry	1,785		303	6870	7173	401.8
12.	Confectionery			1770		1770	
	TOTAL	87,045	6457.3	16398.5	61482.7	84328.5	96.9

888. Appraisal of performance by financial expenditure figures or estimated financial outlay for 1973 is likely to be misleading. The physical progress of implementation of the projects is as follows:

i. In Chisimaio Meat Factory, the corned beef has been installed. The construction of tannery and the expansion of cold storage facilities are still either at tender stage or at the feasibility study stage.

ii. In Las-Khoreh Fish Cannery, the canning line has been modified. Boats have been ordered for adding to the fishing fleet. The work on extension of the pier has not progressed. The programmed outlay is for 1973 for completion of both these projects.

iii. The dairy farm for supplying milk to the milk processing factory has been set up by the ADC but no supply of milk has commenced.

iv. The grain mill and the fruit processing plant has been commissioned by the Somali Development Bank.

v. The plan for manufacturing corrugated ship containers is under implementation and is expected to be commissioned by early 1974. The polythelene bag plant, which was not conceived at the project stage but was added later has been commissioned. Both of these projects were implemented by the Bank.

vi. The expansion of the sugar factory for which the financial outlay was programmed has been deferred. Instead, certain auxillary unity for manufacturing liquor, perfumes, daas, plastic bottles have been set up. Deletion of sugar expansion programme should reduce the programme of the Ministry of Industry by 28% (i.e to So.Sh. 62,795,000 from So.Sh. 87,795,000).

vii. In Somaltex, certain modifications and strengthening of the Spinning, Weaving and Finishing Departments have been completed. Additional outlay of So.Sh. 2,000,000 proposed for 1973 is for further strengthening of preparations and the Spinning and Weaving Sections of the mill. The actual outlay at the end of the plan period is likely to be around So.Sh. 6,680,714, as against the original programmed outlay of So.Sh. 1,000,000. The wide gap between plan and realisation is an instance of either mal-planning initially or omission to include the plan in its entirety in the Ministry's plan or both but the performance has, fortunately, in this case turned out creditable.

viii. The project for setting up a banana dehydration plant has been deferred for technical reasons.

ix. The foundry project is at the design drawing stage. The programmed outlay for 1973 is for completion of civil engineering works subject to arrival of machinery and equipment by the middle of 1973. The estimates have been revised to So.Sh. 6,617,000 excluding the technical assistance programme.

x. The project for commercial exploitation of gypsum has undergone major revision. What is proposed now is a pilot plant for experimentation of gypsum as a house building material. The estimated outlay for the revised project is So.Sh. 2,331,000. The proposed outlay for 1973 is subject to the arrival of foreign experts and equipment.

xi. Small-scale industries and handicrafts programmes are still at the planning stage and the programmed outlay for 1973 is for implementation.

xii. The cigarettes and matches factory is under implementation.

xiii. Preliminary work on a cement factory has started although the financial outlay has been provided in the budget for 1973.

289. The programmed outlay for 1973 is So.Sh. 61,482,700 of which the foreign exchange component is So.Sh. 28,441,400. The largest outlay proposed is for setting up the corrugated card-boxes factory involving a financial outlay of So.Sh. 40,711,300 of which the foreign component is So.Sh. 20,000,000. The capital outlay proposed for the projects to be implemented by the Ministry is So.Sh. 20,598,400 of which the foreign loans and grants amount to So.Sh. 10,531,400. An outlay of So.Sh. 2,000,000 proposed for Somaltex, included in the budget for 1973 but not in the programme for 1973 indicated in the progress of implementation and programme prepared by the Ministry of Planning and Co-ordination, is likely to be utilised during the year. Capital outlay programme in Kismayo Meat Factory and Las-Khoreh Fish Processing Cannery may be implemented, though not for the exact projects for which it was initially intended in the programme. Proposed outlay in SNAI may also be utilised. Considering the progress of implementation of projects in the past, it is reasonable to assume a certain spill over to the forthcoming plan 1974-78, which would naturally assume highest priority in the order of projects to be included in the next plan. The fact that the estimated fulfilment of the plan as a percentage of the planned expenditure approximates the metamorphosis in individual projects that has happened between conception and realisation.

290. The appraisal of the current industrial programme brings out certain lessons which need to be borne in mind while planning for the future industrial development.

i. The industrial programme unless backed by means to implement it - institutional, technical, legal and other facilities - cannot be translated into action and results.

ii. Individual projects included in the development programme should have proper feasibility reports, plans of implementation, and allocation of resources, including location of precise source of funds, where

foreign exchange is involved. Effecient machinery for implementation, periodic reporting, and appraisal by the Ministry are necessary pre-requisites for effective plan implementation. Contracting of equipment and supplies, prompt preparation of designs and drawings, construction and commissioning according to the schedule initially prepared, induction of operating personnel at the right time, training of managerial and technical cadres sufficiently before the project is commissioned, preparation of commissioning schedule and procurement of necessary stocks of material and supplies for initial operation, satisfactory testing and proving of capacities and efficiencies etc. should proceed according to the approved work plan for implementation.

iii. Resources for the projects included in the programme should be tied up more realistically so that uncertainty of funds whether indigenous or foreign at implementation stage can be reduced to the minimum.

iv. It will be necessary to create suitable mechanisms - institutional, legal and procedural - to facilitate direct investment on projects intrusted to the Ministry of Industry for implementation. In the absence of such facilities the Ministry's role in the implementation of the development programme is confined to mere conception of the project. In cases where projects are entrusted to the Development Bank for execution, proper coordination and mutual consultation between the Ministry of Industry and the Development Bank should exist and necessary rules should be framed to ensure this objective.

v. The Ministry of Industry should have the technical inputs to enable it to perform the pivotal role assigned to it in implementation of programmes. Close cooperation between the technical personnel in the units and the Ministry should prevail at all stages with a view to ensure speedy and successful implementation of the plan projects.

vi. The areas in which technical assistance is required for strengthening the Ministry of Industry have been indicated in the project document for UNDP/UNIDO assistance prepared by the Government and the team considers that it constitutes the minimum requirements in the field of industry and fully endorses it.

11. The Development Programme 1974-78:

291. The Ministry of Industry and the Ministry of Fisheries have included twenty-three projects identified in Appendix V vide projects shown against serial Nos. 1 to 8, 9, 11, 14, 15, 17 to 26 in the Development Programme for 1974-1978. Of these, seven (vide serial Nos. 1 to 6 and 14 of Appendix V) relate to modernisation, improvement or expansion of the existing public sector industries (including the one under implementation in the current programme) and two (vide serial Nos. 7 and 8 of Appendix V) are spill overs from the current Development Programme and the remaining sixteen projects (vide serial Nos. 9, 10, 11, 15, 17 to 27 of Appendix V) are the new projects for which either feasibility or pre-investment studies have been made in the recent years. In terms of number of industrial enterprises the new ones would aggregate to 30 factories. In addition, certain components of medium small industries and small industries (including handicrafts programme) out of the programme indicated in Appendices VI and VII have also been included. If these are ultimately included in the national plan for 1974-78, a quick reappraisal of the earlier studies, both from the technical and economic points of view is suggested before implementation. Most of these projects are assumed to be created in the public sector, because of the largeness of the investment requirements, and their national importance. Few of them may be assigned to private entrepreneurs, even in accordance with the present policy adopted by the Government. Some of them fall under the category of medium and small-scale industries.

292. Consolidated data relating to these projects based on the feasibility data presented on Appendix and other studies made by the Survey Team are given in the following tables.

TABLE XXI

CONSOLIDATED DATA RELATING TO INDUSTRIAL PROJECTS PROPOSED FOR IMPLEMENTATION DURING 1974-1978:

Sl. No.	Particulars	Existing Projects	New Projects	Aggregates	Remarks
		(Figures in millions of Somali Shillings)			
1.	New Fixed Capital	114.94	241.61	356.55	
2.	New Working Capital	20.60	31.89	52.49(x) (75.0)	(1) Owing to closure of Suez-Canal, large stocks of inputs will be required. A higher estimate of say, So.Sh. 75 million would be more appropriate.
3.	Foreign Exchange component of new fixed capital	87.04	150.66	237.60 (x)	Basic data can be referred to in individual project data sheets on appendix.
4.	Total foreign exchange for working capital during 1974-78	10.60	17.50	28.10(2) (40.0)	(2) Higher estimate, So.Sh. 40 million, would be more appropriate for the reason mentioned above at (1). The estimate for the whole period 74-78, is made on basis of gestation periods for each project and an assumed capacity use of 30% in 1st year, 70% on 2nd year and 100% in 3rd year, and onwards.
5.	Gross value of new output by the end of 1978	92.58	230.09	322.67	
6.	New value added: End 1978	52.10	79.52	131.62	
7.	Value of material inputs used in 1978	40.48	150.57	191.05	
8.	Total foreign exchange for imported inputs (1974-78)	29.01	50.82	79.83 (3)	(3) Vide remarks against (2) above.
9.	Depreciation during 74-78	31.00	31.00	62.00	
10.	Net profit before tax:				
	(a) In 1978:	35.22	34.28	69.50	
	(b) During 1974-78:	62.61	77.62	140.23 (4)	(4) Vide remarks against (2) above.
	(c) As % of fixed capital (1978)	11.57%	25.91%	19.5%	
11.	Total Foreign Exchange gain during 1974-78	157.70	362.17	519.87(5)	(5) Equals gross import substitution during 74-78, due to new outputs, plus gross value of possible exports, both in respect of products of 27 projects.

Sl. No.	Particulars	Existing projects	New Projects	Aggregates	Remarks
		(Figures in millions of Somali Shillings)			
(a)	Import substitution	79.28	186.60	265.88 (6)	(6) Import substitution during 1974-78, equals total output of products of 27 projects, if they are imported. Ex-factory price is used. Output during 1974-78 is estimated as in latter part of (2) above (i.e. excluding spill over projects).
(b)	Exports	78.42	175.57	253.99 (7)	(7) Value of exportable output of products of the proposed 27 projects (i.e. excluding spill-over projects) during 1974-78.
12.	Foreign Exchange for import of products of 27 projects to meet demand output gap during '74-78	34.40	85.60	120.00 (8)	(8) Total demand output gap during 1974-78, equals sum of gaps likely to occur in each year during the period. Gap in each year equals estimate demand less production from capacities existing since 1973, less production from the proposed projects. For new projects production in the first year after the gestation period is expected to be 30% of new capacity, 70% in the 2nd year and 100% in the third year and thereafter. In case the total gap during 1974-78 is very large, it is reduced worth a value to restricting imports.
13.	Additional employment total No. of persons	1006	1,849	2,855	
	(a) Managerial + Administrative personnel	38	76	114	
	(b) Technical + Engineering personnel	56	89	145	
	(c) Skilled operatives	169	369	538	
	(d) Semi-skilled operatives	155	687	842	
	(e) Unskilled workers	588	628	1,216	

Sl. No.	Particulars	Existing Projects	New Projects	Aggregate	Remarks
		(Figures in millions of So. Shillings....)			
14.	Foreign Exchange for employment million Somalo Shillings	5.86	8.26	14.12	
15.	Net foreign exchange gain (+) or, loss (-)	- 9.83	+ 49.33	+ 39.50 (9)	(9) Gain comprises value of New Exports (or export potential), both at ex-factory prices. Losses, comprise foreign exchange for fixed assets, imported imputs for use in production and for additional stocks, for payment to foreign employees in foreign currency, and for import of products of 27 projects, in order to keep reasonable balance between total demand and total supply.
16.	Coefficients:				
	(a) Net foreign exchange gain (+) or loss (-) / Value Added	- 0.093	+ 0.21	+ 0.146	
	(b) Net exchange gain per employee	- 9,830	+270,000	+ 138,000	
	(c) Fixed capital (1974-78) / Value added	- 2.21	3.02	2.71	
	(d) Fixed Capital per employee	114,900 So.Sh.	130,600 So.Sh.	124,900 So.Sh.	
	(e) Net profit before tax / Fixed Capital	11.57%	25.91%	19.5%	
	(f) Pay-back period	8.65 years	3.86 years	5 years	
	(g) Estimated total net profit before tax:				
	i - In 1978	35.22 millions So.Sh.	34.28 million So.Sh.	69.50(10) So.Sh.	(10) Both from 27 proposed projects only.
	ii - During (1974-1978)	77.62 millions So.Sh.	62.61 million So.Sh.	140.23 (10) So.Sh.	

293. It will be seen from the above table that these projects together should on a conservative basis yield an additional output (value added) of the order of So.Sh. 132 million at the end of the planned period viz. 1978, raising the total industrial output from So.Sh. 153 million in 1973 to So.Sh. 285 million by the end of 1978. In addition, a growth of So.Sh. 5 to 10 million may be generated by the existing private (factory) sector and the traditional sector. Total value added from the industrial sector may well increase from So.Sh. 153 million to So.Sh. 290 million or even So.Sh. 300 million during the period 1974-78. Nearly 40 per cent of the growth will be due to modernisation, improvements and expansion of existing capacities in the public sector.

294. Investment required for the possible growth during 1973-78 will be of the order of So.Sh. 360 million. The implicit ICOR (Incremental Capital Output Ration) will be 2.7, a most reasonable ratio considering the relatively capital intensity, and mechanised character of the proposed projects. Nearly 67 per cent of the total investment (fixed capital) i.e. So.Sh. 240 million, will be for machinery and equipment (including imported materials for factory buildings). This is also the foreign exchange requirement for fixed assets. The balance investment, So.Sh. 120 million, represents the cost of new factory premises, not involving foreign exchange.

295. The proposed development, will require additional working capital to the tune of So.Sh. 55 million, for full capacity utilisation, of which So.Sh. 28 million may form the foreign exchange component. These estimates are based upon the data available in existing feasibility studies, made in different years and also based on the assumption that normal shipping channels, for importing requisite inputs, would be available to Somalia. The Suez Canal is still not open and normal shipping routes for importing inputs from Europe are not available. To be realistic, therefore, industries in Somalia will have to keep larger stocks of imported inputs and spares and components and require at least some So.Sh. 75 million of working capital. This will also raise the estimate of foreign exchange requirements for working capital from So.Sh. 28 million to So.Sh. 40 million.

296. Proposed projects will create new outputs having a gross value of So.Sh. 323 million, requiring nearly So.Sh. 190 million of material inputs - raw materials, intermediates, chemicals, packing materials, consumable stores, power, fuel, oil lubricants and water and the expected growth in the private sector and the traditional sector will need another 5 to 7 million So.Sh. worth of inputs - in all about So.Sh. 200 million. Nearly 40 per cent of

ti - During (1974-1978) 77.62 millions So.Sh. 62.61 million So.Sh. 140.23 (100

input requirements for the proposed industrial growth will need foreign exchange worth So.Sh. 80 million over the period 1974-78.

297. The total foreign exchange requirements of the proposed industrial growth during 1974-1978 is estimated as under:-

Foreign Exchange	So.Sh. (in millions)
Additional fixed capital	240.00
Imported material inputs	80.00
Stocks of imported raw materials etc.	40.00
Total	360.00

The annual average requirement of foreign exchange is So.Sh. 72 million.

298. In addition, there will be need for foreign exchange to replace the existing machinery and equipment, so as to maintain the current level of industrial output. Some replacement will also be required for the new machinery and equipment, towards the end of the period 1974-78. The total depreciation charges for new machinery and equipment for the proposed projects comes to So.Sh. 62 million, during the period 1974-78. On this basis, replacement requirements for new investment during 1974-78 may be between So.Sh. 10 to So.Sh. 15 million in 1978. For the existing stock of capital, an indirect estimate is made on the basis of an average capital output ratio of 2.5 and the value added estimate of So.Sh. 153 million, in 1973. The total capital stock in industry in 1973 at replacement prices, would, therefore, come to So.Sh. 382 million or So.Sh. 400 million, of which nearly So.Sh. 290 million relate to the existing public sector projects, included in the present proposals. About 70 per cent of the total fixed capital will be for machinery and equipment i.e. So.Sh. 280 million. Annual replacement requirements for existing stock of machinery and equipment, would be about 5 to 7 per cent of the total i.e. So.Sh. 18 to 20 million a year and So.Sh. 90 to 100 million for the five year period, 1974-78. Including a small amount for replacement requirement for new investment, a total of So.Sh. 100 million will be a reasonable estimate of annual replacement requirements - all requiring foreign exchange.

299. The gross value of existing industrial production will be in the region of So.Sh. 350 million, with a total material input requirement of So.Sh. 150 million, 50 per cent of which will be imported materials requiring foreign exchange of So.Sh. 75 million a year. Total foreign exchange

requirement for this purpose during 1974-78 will, therefore, approximate to So.Sh. 375 million.

300. Current working capital on the basis of 3 months' input stock would be some So.Sh. 40 million, of which 50 per cent will need foreign exchange for imports i.e. So.Sh. 20 million a year or 100 million over the period 1974-78.

301. Some foreign exchange will also be required for payments to expatriate employees and for training materials abroad. For 1974-78, the proposed development will need So.Sh. 15 million of exchange for this purpose. A similar amount will be necessary during 1974-78 in respect of existing industries. In all, therefore, a total of So.Sh. 30 million of foreign exchange will be required during 1974-78. The existing and new foreign exchange requirements, to be met during 1974-78, is summarised in the following table:

TABLE XXII FOREIGN EXCHANGE REQUIREMENTS (1974-78) SO.Sh. MILLIONS

Category	Existing Industries	New Industries	Total
1. Fixed Assets	0	240.00	240.00
2. Material inputs	375.00	80.00	455.00
3. Input stocks	100.00	40.00	140.00
4. Replacement requirements	100.00	15.00	115.00
5. Employment and Training	15.00	15.00	30.00
Total (1974-78)	590.00	390.00	980.00
Annual Average	118.00	78.00	196.00
6. Product imports to keep demand supply balance	-	120.00	120.00
Grand Total	590.00	510.00	1,100.00
Annual Average	118.00	102.00	220.00

302. In addition, foreign exchange will also be required to import finished products proposed to be made in Somalia, in order to maintain adequate supplies of these products and avoid shortages of essential commodities during the

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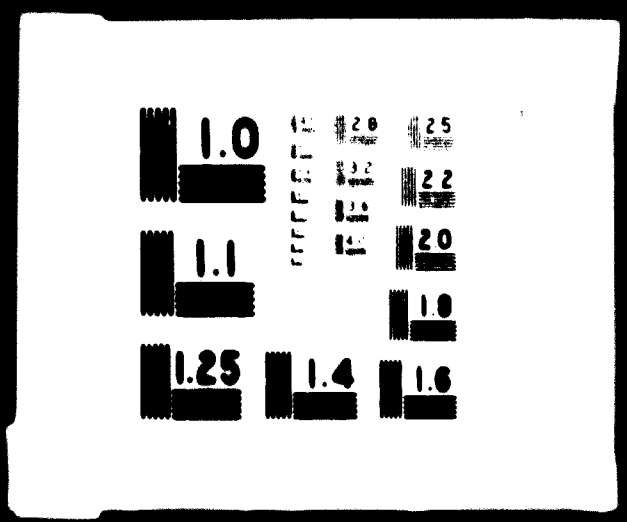


existing projects of the new projects. Thus, for example, although 100,000 tons of cement will be produced in Somalia by 1978, the demand for cement is likely to increase during the period 1974-78 and some 60,000 tons costing So.Sh. 45 million may have to be imported during the period, if the demand for cement is to be met fully. Demand could also be met partly by using substitutes like lime, gypsum, clay products etc. An estimate of exchange requirements for these purposes made on an assumption to import minimum quantities of such products, e.g. cloth, sugar, cement, flour, pasta, etc. comes to So.Sh. 120 million for the period 1974-78, or an average of So.Sh. 24 million per annum. The total foreign exchange required to implement the proposals, without creating dislocation in essential supplies, would therefore be So.Sh. 1,100 million over the 5 year period 1974-78, or averaging to So.Sh. 220 million a year. Expenditure for proposed projects and import of products to keep on a reasonable balance between demand and supply during 1974-78, will be So.Sh. 510 averaging to So.Sh. 102 million a year. As against this amount of gross foreign exchange requirements, the proposed projects should lead to saving of current foreign exchange expenditure to the tune of So.Sh. 260 to 270 million, during 1974-78, through import substitution and earn additional exchange, through exports to the extent of So.Sh. 250 to 260 million, both totalling to So.Sh. 510 to 530 million. For the proposed projects, there is, therefore, likelihood of having some net surplus of foreign exchange during 1974-78. The volume of actual replacement needs of existing machinery and equipment, and national economic policies about maintaining calculated imbalances between demand and supply of products like sugar, cotton cloth, cement etc. could raise the level of this surplus. The proposed projects, if implemented fully during the period 1974-78 within the gestation period indicated in the individual project data sheet are also likely to create sizeable investible resources by their own operation during the five year period, in the form of net profit before tax, to the tune of So.Sh. 70 million by 1978, and about double that amount over the five year period. The return on new fixed assets in industry would be about 20 per cent, with a pay back period of 5 years.

303. Manpower requirements of the proposed industrial projects add up to 2,855 persons. In 1971, the total industrial employment was estimated around 12,200 persons. By 1973, it will have reached a level of 13,000 persons. The new employment arising out of the proposed projects is 21.2% more than the existing level, yielding a 4.0% annual rate of growth in employment, corresponding to 13.5% growth in the industrial output. If the projects included in the current development programme - cigarettes and match factory, corrugated ship containers factory, fruit and vegetable processing plants, etc., the output and employment of which will spill

over during the period 1974-78, and the additional employment in traditional and small-scale industries are taken into account, new employment during 1974-1978, may be of the order of 3,500 or so, and the growth rate may be at a level of 4.9% per annum. This is normally considered a low rate of employment growth in industry, especially in developing countries, where the problem of unemployment is usually very serious. In Somalia, however, the degree of mechanisation in industry is much higher and technology deployed much more modern than in most developing countries. Adoption of modern technology and a high degree of mechanisation have been assumed for the proposed projects also. The rate of growth in employment is therefore bound to be low. This also implies, a rapid increase in labour productivity through the use of more modern technology. This is necessary in Somalia for several reasons.

304. With small domestic markets for most of the products, and the need to earn increasingly larger foreign exchange year after year, export markets have to be developed and expanded for all resource-based industries of the country. This aim cannot be realised unless reasonably priced, resource based products of quality and standards acceptable in export markets are manufactured in the country, with the use of modern technology. There is also no great risk of aggravating or worsening the unemployment position in the country. With a very low density of population and about 85% of the population traditionally attached to livestock activity and agriculture, the problem of unemployment as such, as it is understood in industrialised countries is largely confined to real urban areas which, probably, have a total population of 400,000 persons. The manpower survey of 1971 indicates a rate of 45% for non-agricultural unemployment. This prima facie seems to be too high a rate of unemployment, for any country. A recent IMF document (restricted) estimates urban unemployment at 20 per cent of the urban labour force, of some 150,000 persons. This gives a figure of 30,000 unemployed, or about 3 per cent of the country's total labour for estimated at 1 million persons. Even on the basis of 45%, urban unemployment would be 67,500 or 6.75 per cent of the total labour force of the country. These are not high rates for a developing country. This is not to ignore the problem of unemployment. But industrial growth by itself, cannot absorb all or even the bulk of unemployed population anywhere. In developing countries, and specially in Somalia, development of Agriculture and live-stock fisheries, minerals, construction and trade and commerce will provide an effective solution to the unemployment problem. The large manpower requirements of these developments and the smallness of total labour forces in Somalia, seem to indicate chronic shortages of even unskilled manpower, as growth in these sectors gathers momentum.

305. Manpower shortage is already acute in managerial, administrative, and technical personnel required by industries. According to the manpower survey, there are more than 200 foreign supervisory, technical and skilled personnel employed in existing industries. The survey also highlights shortages of supervisors for production processes, foundars, formers, pattern makers, fitters, supervisors - chemical and related product processes, quality control officers, food processing specialists, tanners foremen, and a variety of skilled operations for a number of industries. The categories of workers in surplus, who could be trained for industrial jobs, were mechanics, electricians, and carpenters.

306. A break-down by categories of the estimated manpower requirements of the proposed projects are given below:

TABLE XXIII - MANPOWER REQUIREMENTS:

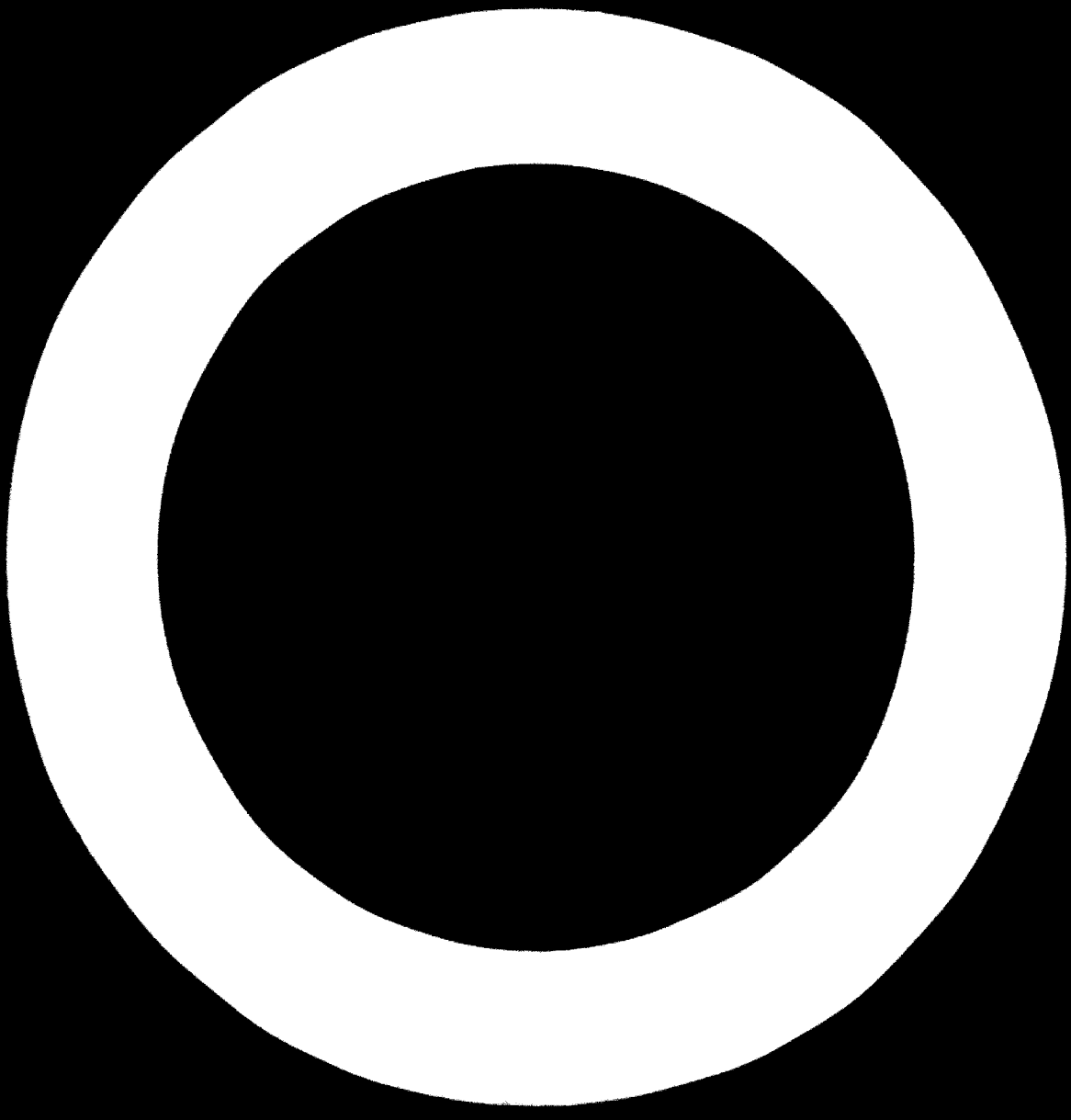
Category	No.	%
Managerial and Administrative Personnel	114	4.0
Technical and Engineering Personnel	148	5.2
Skilled Operators	538	18.8
Semi-skilled operators	842	29.5
Unskilled workers	1,216	42.5
Total =	2,855	100

307. Out of 27 projects, 10 major ones - sugar mill expansion, banana fibre bags plant, Mogadiscio Slaughter House, Cement Factory, Foundry and Mechanical Workshop, Oil Mills, Floor and wall tiles factory and flour mills - will account for 89 per cent of new employment and require 99 (98%) of new managerial and administrative personnel, 107 (74%) of technical and engineering personnel and 1,199 (87%) of skilled and semi-skilled operatives. The largest number of managerial and administrative personnel will be required for foundry and mechanical workshop, and Mogadiscio Slaughter House. The Foundry will also require the largest number of technical and engineering personnel, some 200 skilled and semi-skilled operatives and few unskilled operatives. The largest number of skilled and semi-skilled operatives, 256, will be required for the banana fibre extraction and fibre bags plant, followed by foundry (199), Mogadiscio slaughter house (160), cement plant (154), and Banana Powder Plant (120). Almost every one of the proposed projects, will require one or more foreign technical and management specialists in the industry concerned, and their employment will probably need So.Sh. 14 to 15 million of foreign exchange, on the assumption that half of their

emoluments will be in foreign exchange. Even some of the skilled operatives for projects like foundry, fibre bags plant, banana powder plant, paper, etc. may have to be imported.

308. Recruitment of a large number of specialised personnel for different types of industries, who will not only organise and manage and operate these industries, efficiently, but train the Somali personnel for taking over from them in the shortest possible time, will no doubt present formidable problems, as is experienced by all developing countries. But a practical approach would be to obtain them from or on recommendation of machinery suppliers from abroad, from amongst those with successful experience in running plants equipped with the same machinery and equipment. For this purpose, not only negotiations, but official visits to observe them operate and manage the machinery and equipment to be imported, will be highly rewarding. For other categories of managerial and technical and skilled personnel, the openings should be advertised in suitable papers abroad, giving detailed job descriptions and terms and conditions of work in Somalia, and actual recruitment made by a peripatetic Committee in the countries concerned, after personal interviews and discussions and verification of the facts mentioned in applications. Simultaneously, junior and middle level managerial, technical and skilled Somalian personnel, with basic qualifications should be recruited as probationers and apprentices, through a National Industrial Employment Commission, composed of technicians, economists, administrators, and foreign advisers, where considered necessary. Selection of semi-skilled and unskilled personnel should be left to the plant managers of concerned projects. As the requirement for different types of skills and specialities become known, special programmes should be organised for formal and apprentice type training in different plants, so as to fill the existing vacancies and build up a supply of personnel with basic theoretical and practical backgrounds to meet the increasing demand for specific types of skills and managerial talents, in the industrial field. In view of the overall shortage of scientific and technical training facilities in Somalia, a pragmatic approach to training for specific types of skills and talents, through short-term programmes geared to the needs of industries will be most rewarding.

309. Higher level managerial and technical personnel can also be obtained in joint venture projects, under bilateral agreements, or private foreign investment arrangements. The feasibility of obtaining technical assistance from UNIDO on specified specialities should be explored.



VOLUME II

APPENDIX I

Estimate of Gross Domestic Product (GDP) From Agricultural Sector, for 1967 and 1971 at 1970/1971 Prices:

1. Statistics required for estimation of GDP for Somalia's agricultural sector are not available. Economic commission for Africa (ECA), and Food and Agricultural Organization of the United Nations have made estimates of Somalia's GDP. But these are aggregates, at current prices and cover the period 1965-70. The method of estimation is also not known from published sources. Hence an effort is made to evolve rough estimates of agricultural GDP at constant prices, on basis of available data, and on many assumptions, some of which may not be altogether valid. The purpose is to have an idea of the levels of real agricultural output for 1967 and 1971, and of the real rate of growth during the recent past.

2. The main data sources used for making the estimates are: (1) Annual Mid-Year Report January-June 1972. Agricultural Development Corporation (2) Statistical Abstract: Somalia: Department of Statistics (3) Foreign Trade Returns of Somalia: 1971 (4) Economic Survey of Africa: 1970 (ECA) United Nations (5) Agricultural Commodity Projections 1970-80, VOL.II, FAO of the United Nations (6) Statistic furnished by the Ministry of Agriculture.

T A B L E

Products	Production Quantity (M.T.)		Price per	Gross value of production So.Sh. (Million)	
	1967	1971		1967	1971
Durra	[illegible](a)	[illegible]	750	75.00	76.80
Maize	68,000(a)	68,600	[illegible]	[illegible]	57.40
Ground nuts	800	8,000	375	0.30	3.00
Banana	134,000	134,000	430	84.50	57.80
Sugar Cane	276,700(b)	430,000	400	110.7	172.00
Sesame	6,000	14,000	770	4.6	10.80
Cotton	840	1,500	1,200(a)	1.00	1.80
Tobacco	30	120	2,000	0.06	0.24
Manioc	700	700	300	0.21	0.21
Grape fruit	300	3,000	817	0.25	2.50
Fish (catch)	3,000(a)	4,000(a)	2,000	6.00	8.00
Livestock Sold:					
a- Cattle Nos.	39,000(a)	46,000	145	5.70	6.70
b- Goats Nos.	215,000(a)	251,400	36	7.70	9.10
c- Sheep Nos.	6,500(a)	7,733	48	0.30	0.35
d- Asses Nos.	750(no)	889	135	0.10	0.12
e- Camel Nos.	12,000(no)	14,295	260	3.10	3.70
Animal Export(c)	51,150 MT	57,884 MT	2,000	102.3	115.80
Hides + Skins	-	-	-	17.5	31.4
Milk (d)	310,000 MT	324,000 MT	400	124.0	129.6
TOTALS =				596.08	689.12

(a) Estimates based on trends in recent past
(b) Based on sugar production in 1967
(c) Trade Return 1967-1971 of the Ministry of Commerce
(d) Based on FAO Estimates of per capita consumption and population growth rate of 2.5% a year.

Deducting from the gross value of output, input requirements at 10%, value added for 1967 and 1971 comes to So.Sh. 336.5 million, respectively. The compounded annual growth rate of value added in agricultural sector during 1967-1971 comes to 3.7%.

APPENDIX II

Industrial GDP + Growth Rates for the Economy, 1967 + 1971

1. GDP for Agricultural Sector as estimated in Appendix I, comes to So.Sh. 484 million for 1967 and So.Sh. 600 million, for 1971. The implicit compounded annual growth rate is 5.5%.

2. In 1967 and 1971, value added by industrial units employing 5 or more persons, came to So.Sh. 57.5 million and 122.5 million respectively+. The figures of employment for units employing less than 5 persons are available in the manpower survey report No. 2. In 1971 some 5600 persons were engaged in this sector. The value added by them may be estimated at around So.Sh. 16.8 million (i.e. at a rate of So.Sh. 3000 per year. The output of small-scale sector is assumed to have increased at the rate of 2.5% per annum during 1967-1971) Thus the total industrial output in 1967 and 1971, would come to:

	1967 So.Sh. mn.%	1971 So.Sh. mn.%	Annual growth rates
Industries covered by Survey	57.5(79.0%)	122.5 (87.9%)	20.8%
Industries not covered (small scale units)	15.3 (21%)	16.8 (12.1%)	2.5%
	72.8 (100)	139.3 (100)	17.6

+ Industry Survey: 1971, Ministry of Planning and Co-ordination after adjustment for prices changes and coverages.

APPENDIX [illegible]

[illegible]: 1967-1971:

1. Appendices I and II, give the value added by agricultural and industrial sectors of Somalia's economy in 1967 and 1971. Combining these estimates, we get the value added estimates of what is called the material production sector, as distinguished from the services producing sectors:

Sector: Material Production Sector	Value added (So.Sh.) millions				Growth rate % P.A.
	1967	Share %	1971	Share %	
1. Agriculture	536.5	88.1	620.20	81.7	3.7%
2. Industry	72.8	11.9	139.30	18.3	17.6%
TOTAL =	609.3	100	759.5	100	5.7%

2. Emperical evidence derived from GDP estimates of developing countries shows that the share of the GDP from services sector in the total GDP, is around 50 per cent; also that the GDP of the services sector grows overtime, at more or less the same rate, as does the material products sector. On this basis, estimates of GDP from services sector in 1967 and 1971, would come to So.Sh. 609.3 million respectively. The shares of the three major sectors and their growth rates, during 1967 and 1971, would therefore come to:

Sectors	Value added So.Sh. mn.				Growth Rate % P.A.	1973 (assumed)	
	1967	%	1971	%			
Agriculture	536.5	43.3	620.2	40.5	3.7%	670	40.7%
Industry	72.8	6.7	139.3	9.5	17.6%	153	9.3%
Services	609.3	50.0	759.5	50.0	5.7%	823	50.0%
Aggregate GDP	1218.6	100	1519.0	100	5.7%	1,646	100

NOTE: During 1971-73 agricultural output is assumed to grow at about 4% a year and industrial output at about 10% a year.

APPENDIX IV

Draft

Somali Democratic Republic

Ministry of Industry

Law No._____of_____197?

Promotion and Regulation of Industrial Activities

The President
Of the Supreme Revolutionary Council

HAVING HEARD: the Council of Secretaries of State

TAKING NOTE: of the approval of the Supreme Revolutionary Council

Hereby Promulgates
the following Law:

CHAPTER I

Preliminary Provisions and Definitions

Art. 1

This Law may be cited as 'The Promotion and Regulation of Industrial Activities Law'.

Art. 2

This Law is deemed to amend any Law or provision which is contrary to it or which restricts any of its provisions.

Art. 3

In this Law unless the context otherwise requires:

"Enterprise" means an enterprise in the field of industry including Manufacturing and Mining;

"Public Enterprise" means an enterprise in which government has invested the entire capital and which it manages directly or through an agency or commission;

"Private Enterprise" means an enterprise in which the entire capital has been invested by private persons and which is managed directly or through an agency or organisation including a cooperative society by private persons;

"Joint Enterprise" means an enterprise in which both government and private persons have invested capital in agreed proportions and which is managed by either or both of them as mutually agreed upon;

"Existing" means prior to the promulgation of this law;

"New" means brought or come into being or established after the promulgation of this law;

"Project" means any establishment in the field of manufacturing or mining;

"Competent Authority" means the Director-General of the Ministry of Industry or any other person or body designated by the Secretary of State for Industry to perform the duties and exercise the powers of the Competent Authority under this law.

"Ministry" means the Ministry of Industry;

"Secretary" means the Secretary of State for Industry;

"Committee" means the Committee for the Promotion and Regulation of Industrial activities.

CHAPTER II

Assignment of Industrial Activities:

Art. 4

The categories of industrial activity described below shall be deemed to reserved exclusively for public enterprises:

(a) Industries relating to defence or of a strategic character or of the category of public utilities essential for industrial development;

(b) Industries involving government-to-government bilateral aid or investment agreements;

(c) Industries the entire or bulk of whose output is for export to foreign countries;

(d) Industries producing a vital article of consumption in which achievement of national self-sufficiency is necessary;

(e) Development, exploitation and processing of minerals;

(f) Industries involving large investment or whose development is vital to interest of national development and which may be so designated from time to time.

Art. 5

All categories of industrial activity not specified in Article 4 of this Law shall be deemed to be open to private enterprise and joint enterprises.

Art. 6

Not withstanding (c) of Article 4, existing private enterprises in this category of industrial activity shall be permitted to continue subject to their functioning efficiently and in the national interest.

CHAPTER III

Take over of Private Enterprise

Art. 7

Except in cases of grave mismanagement, prolonged closure and resort to objectionable trade practices, private enterprises shall be given maximum freedom and reasonable facilities to pursue their lines of industrial activity.

Art. 8

In cases of grave mismanagement, prolonged closure and resort to objectionable trade practices, the management of a private enterprise may be taken over by government for such period as may be notified at the time of take-over.

Art. 9

On the expiry of the period under Article 8, government shall either return the management to private enterprise or take over the ownership of its assets after payment of an equitable amount as determined by competent and proper valuation.

CHAPTER IV

Committee for Promotion and Regulation of Industry

Art. 10

For the purpose of promoting and regulating industrial activity, a Committee to be known as 'the Committee for Promotion and Regulation of Industry' is constituted as follows:

1)	Secretary of State for Industry	Chairman
2)	Director-General, Ministry of Foreign Trade	Members
3)	Director-General, Ministry of Internal Trade	
4)	Director-General, Ministry of Planning and Coordination	
5)	Director-General, Ministry of Finance	
6)	Director-General, Ministry of Fisheries and Marine Transport	
7)	Director-General, Ministry of Mining	
8)	Director-General, Ministry of Labour and Sports	
9)	Director-General, Ministry of Public Works	
10)	General-Manager, Somali Development Bank	
11)	Director-General, Ministry of Industry	Member-Secretary

The Committee shall meet at least once in two months. The Committee may invite nominees of any Ministries not represented on the Committee to attend a meeting if their assistance is required in discharge of its functions. Chairman and five other members shall constitute the quorum for the meeting. The decisions of the Committee shall be taken by a majority of votes of the members present. The Committee may invite any person to attend its meetings and assist in its deliberations but without his having the right to vote.

Art. 11

The Committee shall exercise the following functions:

1- Consider applications from existing public, private or joint enterprises for registration and accord or withhold approval;

2- Consider applications from new public, private or joint enterprises for licence for establishment of a factory and commencement of production and accord or withhold approval;

3- Consider applications from existing enterprises for licence for enlargement of capacity, addition to, or modification of, existing line of production and accord or withhold approval;

4- Consider cases of enterprises suffering from grave mismanagement or prolonged closure or having recourse to objectionable trade practices and recommend the course of action including the cancellation of registration certificate or licence, as the case may be;

5- Consider cases of enterprises, Suo-moto or on application, for the grant of incentives and facilities including tax exemptions, customs duty rebates or exemptions, acquisition of land at favourable rates, special treatment regarding supply of power and any other measure which has the effect of promoting and stimulating production in the enterprises;

6- Consider any other matter having a bearing on production and growth in any of the sectors or sub-sectors of industry, specially small-scale industries, traditional small industries and handicrafts, and make recommendations.

CHAPTER V

Concessions, Incentives and Facilities:

Art. 12

The Committee shall undertake periodical reviews of the following and make recommendations with a view to enhancing the rate of growth of industry:-

1) Tariff exemptions and concessions on imported articles used in enterprises;

2) Import tariff rates on finished articles and raw materials of the same industry;

3) Quantum of imports in relation to the progress of home production and the scope for prohibition or reduction of imports;

4) Income tax exemptions;

5) Electricity tariff for industrial uses;

6) Government pruchases of the products of home industries;

7) Allotment of land for establishment of new enterprises on favourable terms;

8) Credit facilities available to industry and the terms and conditions thereof;

9) Any other concession, incentive or facility necessary for industrial activity.

The first such review shall be made within six months of the constitution of the Committee and the recommendations of the Committee shall be communicated to all the Ministries concerned.

Article 13

The Secretary of State may consider and make recommendations on granting financial concessions and facilities to small-, medium and small industries, with special reference to the following:-

a) Preparation of feasibility studies and model schemes of small-scale industries for the guidance of local investors and entrepreneurs, free of charge;

b) [illegible] of plots on allotment to existing and new small entrepreneurs and also to co-operatives of workers in small-scale industries on rent or hire purchase basis;

c) Supply of [illegible] on priority basis or at concessional prices/rates;

d) Provision, free of charge, of the services of engineers and technicians to advise prospective individual entrepreneurs and workers as well as industrial cooperative societies;

e) Organization of study tours abroad for groups of artisans and establishment of exhibition for display of products of small-scale industries.

CHAPTER VI

Registration and Licensing:

Article 14

Every existing enterprise employing 5 and more persons shall be registered by the Competent Authority by adopting such procedure as the competent Authority may deem appropriate for the purpose.

Article 15

Every new enterprise seeking to invest an amount of So.Sh. 200,000 or more in fixed assets shall apply for grant of licence to the Competent Authority in form prescribed for the purpose by the Secretary of State.

Article 16

The Competent Authority shall, after preliminary examination of the application place it before a meeting of the Committee for Promotion and Regulation of Industry for consideration and decision.

Article 17

A new enterprise shall not undertake construction of factory buildings or commencement of production unless it has been granted a licence by the Competent Authority.

Article 18

An enterprise which is not registered or has not been granted a licence shall not be entitled to any concessions, incentives of facilities detailed in Articles 12 and 13 of this Law.

CHAPTER VII

Miscellaneous Provisions

Article 19

The Secretary of State for Industry may issue any rules, regulations or orders which he deems necessary for putting into effect the provisions of this Law.

Article 20

The Competent Authority shall maintain a register in which all information relating to public, private and joint enterprises employing five and more persons shall be recorded and shall keep such information in complete secrecy. No person other than the Competent Authority shall have access to such information which shall only be used for the purposes of this Law.

Article 21

The provisions of this Law and all the rules, regulations, orders and resolutions made in accordance with it shall have effect from the date of issue.

Article 22

This Law shall be published in the Official Bulletin and shall have effect from the date of issue.

Appendix J

IDENTIFIED PROJECTS

1. Category A (Existing Projects)

Sl. No.	Name of the Project	Proposed Programme for modification Addition, Expansion of the Existing Ones	Total	Foreign
1.	Somaltex, Balad	I Phase: Modernisation of the mill, setting up printing unit, yarn dyeing, twisting yarn, spinning, knitting, surgical dressing + bandages + outfit + installation of additional 120 looms	[illegible]	[illegible]
		II Phase: Installation of additional 120 looms for production 20 million yards per annum	12,500,000	6,250,000
2.	SNAI, Jowhar	Expansion of capacity by 10,000 tons of sugar output. Investment both in the industrial and agricultural sector and ancillary facilities	[illegible]	[illegible]
3.	Milk Factory, Mogadiscio	Augmentation of Milk Supply, creation of facilities for making sterilised milk, milk powder, ice-cream, and canning butter	[illegible]	[illegible]
4.	Fish Processing Cannery Las-Khoreh	Creation of facilities for increasing fish supply, including fishing fleet and ancillary units, extension of Pier, expansion of cold storage facility, installation of package to run the fish meal plant continuously	[illegible]	[illegible]
5.	Boat Building Yard, Mogadiscio	Modification to increase output of boat by 16 per annum	1,000,000	[illegible]
6.	Meat Processing Factory Chisimaio	Expansion of cold storage facility, setting up a pickling plant to process raw hides and skins, and creation of facilities for utilisation of other by-products like bone, blood, horns, hooves, liver, intestines, etc.	[illegible]	[illegible]

Appendix V

CATEGORY B (Spill over from the current Development Programme)

Project	Proposed capacity		Estimate Financial Outlay for 1974	
	Total capacity	Unit capacity	Total	Foreign Exchange
- Gypsum Pilot Plant			+ 1,620,000	620,000
- Foundry and Mechanical Workshop	450 tons	450 tons	4,000,000	2,000,000
(Any other projects included in the Current Development Programme, which will remain incomplete in December 1973 and which will need to be carried forward to the next development programme, along with the residual outlay and work.)				

+ figures are approximate and more realistic figures will be available by December 1973.

Appendix V

CATEGORIES C, D, E, F, G (New Projects)

Sl. No.	Name of Project	Proposed capacities			Estimated Financial Outlay	
		Total capacity	Unit Capacity	No. of Units	Total	Foreign Exchange
9.	Flour Mills	28,000 tons	7,000 tons	4	12,800,000	7,160,000
10.	Oil Crushing Mills	7,200 tons (output)	2,400 ton	3	8,200,000	4,920,000
11.	Oil extraction + Solvent plants	500 tons	165-170 tons	3	1,890,000	1,050,000
12.	Salt Works - Hordio-Mafun	950,000 tons	950,000 tons	1	373,626,000	250,000,000
13.	New Sugar Complex	50,000 tons	50,000 tons	1	247,900,000	136,000,000
14.	Foundry + Mechanical Workshop(After Expansion)	1,050 tons	1,500 tons	1	5,000,000	3,000,000
15.	Slaughter House, Margoisa	2,300 tons	2,300 tons	1	3,200,000	2,200,000
16.	Meat Processing Factory, Mogadiscio			1	38,400,000	28,400,000
17.	Cattle Feed Plant	12,000 tons	3,000 tons	1	2,000,000	1,200,000
18.	Cement Plant, Berbera	100,000 tons	100,000 tons	1	68,800,000	50,000,000
19.	Tannery (Pickling Plant)	100,000 Nos.	100,000 Nos.	1	2,000,000	1,500,000
20.	Pasta Manufacturing unit	7,000 tons	7,000 tons	1	8,500,000	5,100,000
21.	Banana Fibre Bag Manufacturing Unit	2,000,000 Nos.	2,000,000 Nos.	1	15,000,000	12,000,000
22.	Banana Dehydration Plant	752,000 Kgs.	752,000 Kgs.	1	71,000,000	40,000,000
23.	Cement Tile Factory	60,000 sq.mt.	60,000 sq.mt.	1	955,000	400,000
24.	Cement Products Factory			1	2,000,000	
25.	Nails Factory	380 tons	380 tons	1	572,000	344,000
26.	Glue and gelatine Manufacturing unit	200 tons		1	1,230,000	490,000

Appendix VI

Development Programme for Rahim and Small-Scale Industries - 1974-78:

Budget	Physical Targets					Total	Financial Outlay (000 So.Sh.)					Total
	1974	1975	1976	1977	1978	1974 - 1978	1974	1975	1976	1977	1978	1974 - 1978
1. Loans for factory construction + purchase of machinery + equipment (No. of Borrowers)	10	10	10	10	10	50	0.500	0.500	0.500	0.500	0.500	2.500
2. Advances for working capital (No. of Borrowers)	10	10	10	10	10	50	0.500	0.500	0.500	0.500	0.500	2.500
3. Integrated services centres for technical advice, testing of raw materials, product design, finishing facilities etc. (Nos.)	2	2	2	2	2	10	0.300	0.300	0.300	0.300	0.300	1.500
4. Department for Medium, Small-scale + Traditional Small Industries	Common to medium, small-scale + traditional Industries						Provision to be made in Ordinary Budget					
5. Services of short-term Industry experts (15 man-months)	6	6	3	-	-	15	Provision to be requested in UN Technical Assistance Programme					
6. Grants + Subsidies (Study tours abroad for groups of industries, trade fairs + exhibitions etc.)	- Tours etc. to be organised as and when necessary						0.200	0.200	0.200	0.200	0.200	1.000
						Total =	1.500	1.500	1.500	1.500	1.500	7.500

Appendix VII

Development Programme for Traditional Small-Industries and Handicrafts (1974-1978)

Project	Physical Targets					Total	Financial Outlay (000 Sh.)					Total
	1974	1975	1976	1977	1978	1974 - 1978	1974	1975	1976	1977	1978	1974 - 1978
1. Provision of constructed worksheds - Nos. (One shed with average 40 m^2 covered area)	200	100	200	200	200	1000	1.600	1.600	1.600	1.600	1.600	8.000
2. Loans for purchase of tools equipment + small machinery (No. of artisans to be aided)	100	150	200	250	300	1000	0.150	0.225	0.300	0.375	0.450	1.500
3. Advances for working capital (No. of artisans to be assisted).	100	150	200	250	300	1000	0.150	0.225	0.300	0.375	0.450	1.500
4. Integrated Services Centres for technical advice, testing + Supply of raw material, pre-processing, product design + finishing etc. (Nos.)	2	2	2	2	2	10	0.300	0.300	0.300	0.300	0.300	1.500
5. Department for Medium, small scale + Traditional small industries	Common to medium + small-scale + traditional industries						Provision to be made in the Ordinary budget					
6. Services of short-term industry experts (30 m/m)	12	12	6	-	-	30	Provision to be requested in the UN Technical Assistance Programme					
7. Grants + Subsidies (study tours, for groups of artisans, etc.)	Tours etc. to be organised as and when necessary						0.200	0.200	0.200	0.200	0.200	1.000

[redacted]:

1. [redacted]
2. [redacted]
3. [redacted]
4. [redacted]
5. Ice Plant
6. [redacted]
7. Plant for Processing Fruits and Vegetables
8. Wire Drawing Mill
9. Wire products factory
10. Factory for Manufacturing Briquettes from Saw Dust
11. Paints and Varnishes Factory
12. Pharmaceutical Plant
13. Manufacturing of soft industrial wax
14. Manufacturing Unit for Starch
15. Manufacture of Papain
16. Manufacture of Insecticides
17. Manufacturing Unit for Making Gypsum Products
18. Manufacture of aromatic and essential oils
19. Sisal Fibre Plant
20. Yeast Recovery and Vinegar Production from by-products of sugar
21. Bone Meal Plant
22. Fish Meal Plant
23. Shoe-making units
24. Assembly of Agricultural Tractors (below 25 hp)
25. Assembly and phased manufacture of office machines and equipments viz. typewriters, calculating machines, calculators, punching machines etc.

Appendix VIII (2)

26. Assembly of domestic Sewing Machines

27. Assembly of water pumps (viz. centrifugal, reciprocating and screw types) from cast iron castings to be obtained from Foundry Project to be set up in 1974. (Electric Motor or Diesel Engines to be imported for Coupling them.)

28. Assembly of refrigerator 4 cu. ft. or 7.5 cu. ft. capacity.

29. Assembly of Radio sets based on printed circuit collaboration basis for progressive manufacture of components simultaneously.

30. Assembly of truck-trailors and body-building on chassis.

31. Assembly and manufacture of bicycles.

32. Manufacture of porcelain fittings, sanitary ware, porcelain electric switches, insulators of low tension work, similar ceramic items and the manufacture of non-ferrous screws, etc.

33. Assembly of Diesel engines below 20 hp by the import of components, manufacture of cast iron castings in Foundry Project to be set up with maximum indigenous content over a period.

34. Manufacture of glass bottles and glassware for domestic and kitchen uses, etc. on a progressive basis.

35. Manufacture of dry-ice flakes and cubes from CO_2 gas.

36. Manufacture of plastic products.

37. Manufacture of Brake Fluid Oil.

38. Manufacture of batteries for car and trucks.

39. Manufacture of dry cell batteries for transistor radios, torches, etc.

40. Manufacturing unit for white wares/House Hold crockery.

41. Sandcrete blocks factory.

42. Asbestos sheets and pipes factory.

Appendix V III (3)

Industrial Possibilities on Medium and small-scale sector:

43. Pencil Manufacture
44. Aluminium utensils
45. Laundry soap (North Region)
46. Toilet soap (Mogadiscio)
47. Spectable frames
48. Fruit canning (north region)
49. Pesticide formulation
50. Beverage plant (north region)
51. Saw mill
52. Metal workshop
53. Power-looms
54. Bonemeal
55. Small modern tanneries
56. Agricultural implements and hand tools
57. Oil mill-cum-rice huller
58. Fountain pens (ordinary quality)
59. Plastic electrical accessories including PVC insulated wire
60. Ready-made garments
61. Chalks, plaster of paris, putty.

Appendix IX

Feasibility Data No. 1

1. Project Modernisation/Expansion of Somaltex
2. Construction Period: 24 months.
3. Number of shifts: 3 of 8 hours each.
4. Number of working days in a year: 300.
5. Location: Jalalaqsi.

Market situation	1973		1978	
	Quantity yards	Value So. Sh.	Quantity yards	Value So. Sh.
6. Demand:	15,000,000	28,400,000	20,000,000	50,000,000
a) Import:	7,000,000		nil	nil
b) Export:	nil		nil	nil
7. Existing capacity	13,000,000		20,000,000	50,000,000
8. Existing Production	12,000,000 +		20,000,000	50,000,000
9. Cap	3,000,000		nil	nil

+ including 7,000,000 yards grey clothes imported and processed.

Capital Expenditure + Exploitation data	Year of full capacity 1978	
	Quantity	Value So. Sh.
10. Input		20,820,000
a) imported		7,320,000
b) local:		13,500,000
11. Fixed capital in 1978 (modified/expanded Projects)		95,223,000
a) Foreign currency:		67,000,000
b) Local currency:		28,223,000
c) Fixed capital in 1973 (present project):		40,872,000
12. Replacement costs: Phase I		41,551,000
Modernisation costs: Phase II		12,800,000
a) Foreign currency: i		34,173,000
ii		9,834,000
b) Local currency: i		7,378,000
ii		3,965,200
13. Working capital: 3 months		10,000,000
a) Foreign currency: 3 months		3,000,000
b) Local currency: 3 months	800 t of cotton	7,000,000

Appendix IX (2)

	Quantity	Value L.E.
14. Annual turn-over - Total: Yards	20,000,000	[illegible]
(A) Main production: _____		
(B) Other: _____		
(C) By-products: _____		
Ex-factory sales price unit of (A):	1 yard	2.[illegible]
- CIF import price per unit of (A):	1 yard	1.[illegible]
15. Added value:		29,180,000
16. Cost of production:	20,000,000	43,133,000
- cost per unit of production:	1 yard	2,[illegible]
17. Total employment:	730	4,899,000
a) Managerial and administrative:	15	360,000
b) Technical and Engineering:	10	200,000
c) Skilled operators:	605	3,025,000
d) Semi skilled operators:	40	152,000
e) Unskilled operators:	60	162,000
18. Foreign Exchange component in Employment: (included in column 17)		1,000,000
19. Depreciation at 7.5%		7,150,000
20. Miscellaneous expenses:		3,500,000
21. Interest on borrowed capital. Total:		6,764,000
- on investment at 6%		6,164,000
- on working capital at 6%		600,000
22. Net profit before tax:		6,867,000
23. Ratios:		
22/11 = 7.2%		
22/14 = 13.5%		

24. Justification of the project:

1) Recovery of depleted capital due to cumulative losses and further strengthening of unit with a view to achieve import substitution and better return on investment.

2) Utilisation of local cotton planned to be produced and income for cotton growers.

3) Diversification of cotton products and improvements on textiles.

4) Providing yarns to the hand looms weavers, who exist in the traditional sector.

24. (continued.....)

b) Increase of efficiency and profitability

Planned reduction in cost per yard if the additional capital is found by way of shares capital or free credit, without interest liabilities, return on investment will increase.

c) Difference between present CIF price and projected cost price may not materialize since the real price in 1978 for imported textile cannot be correctly foreseen, as also the local cost of cotton versus imported cotton.

25. Special conditions for implementation of the project:

1) Growing of 3000 t of cotton in 10,000 ha by 1978 planned by SOMALCO.

2) High yielding cotton seeds to be supplied to farmers by agricultural development corporation.

3) Water irrigation supply to farmers.

4) Co-operative farming to share equipment facilities.

5) Ginning plant and bale pressing plant in Balad (outside Somaltex Area).

6) Training of farmers and growers.

7) Training of operators by SOMALTEX abroad and locally.

8) Price of clothes by 1976 is to be So.Sh. 2.5 per yard average.

26. Remarks:

1) In 1973, 7,000,000 yards have been imported for processing in Somaltex and are included in 12,000,000 yards production.

2) The value shown against serial No. 10 is based on current consumption figures adjusted to the experienced modification requirements.

NOTE: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Higher sales prices than what are obtained now have reckoned for turn-over figures.

Average cost and price of grey cloth only have been adopted for calculation costs and prices of bleached and printed cloth will be higher.

APPENDIX IX

Feasibility Data No. II

1. Project: Expansion of SNAI
2. Gestation Period: 24 months
3. Number of shifts: 3 of 8 hours each
4. Number of Working days in a year: 210 days
5. Location: Jowhar

Market situation	1973		1978	
	Quantity tons	Value So.Sh.	Quantity tons	Value So.Sh.
6. Demand:	55.000 +	10,395,000	74,000	13,986,000
a) Import	50	80,644	-	-
b) Export	-	-	-	-
7. Existing capacity:	46.800+++	46,800,000	56,800	62,480,000
8. Existing Production:	42,000	7,940,000	56,000	10,580,000
9. Gap:	13,000	910,000	18,000++++	3,406,000

Capital Expenditure + Exploitation data for expansion of capacity by 10,000t. of sugar	Year of full capacity 1976	
	Quantity	Value So.Sh.
10. Input:		2,260,000
a) imported:		260,000
b) local:		2,000,000
11. Fixed capital in 1978 (expansion only):		40,000,000
a) foreign currency:		19,610,000
b) local currency:		20,390,000
c) fixed capital in 1973 (existing projects):		50,000,000
12. Replacement costs:		
Modernisation costs: a) foreign currency b) local currency	Not relevant	
13. Working capital: (1) months		4,400,000
a) foreign currency: months		100,000
b) local currency: months		4,300,000
(1) for expansion only		

(cont'd)

	Quantity	Value So.Sh.
14. Annual turn-over - Total (Expansion)		12,250,000
a) Main production: Cane sugar	10,000 t	
b) " : Alcohol	500 t	
By-product: Molasses	9,000 t	
Ex-factory sales price unit of (a):	1 kg.	2.60
Import price per unit of (a):	1 kg.	1.89
15. Added value:		12,350,000
16. Cost of production:		11,536,000
-cost per unit of production: Sugar	1 kg.	1.10
17. Additional employment:	690	2,956,000
a) Managerial and Administrative:	nil	nil
b) Technical and Engineering:	10	177,000
c) Skilled operators:	10	114,000
d) Semi skilled operators:	96	749,000
e) Unskilled operators:	494	1,720,000
18. Foreign Exchange component for additional employment: (included in column 17)	80	196,000
19. Depreciation @ 8.5%		3,420,000
20. Miscellaneous Expenses:		104,000
21. Interest on Borrowed Capital: Total:		2,796,000
-on investment @ 6%		2,400,000
-on working capital @ 9%		396,000
22. Net Profit before tax:		814,000

23. Ratios:

22/11 = 2%
22/14 = 6.6%

24. Justification of projects and Evaluation:

1) To fill the gap in demand and supply has to be bridged till new sugar complex is set up on Lower Juba.

2) Expansion of existing factory involves less capital investment than creation of new one.

3) Expansion is limited to 10,000t. taking into account the technological and agricultural limitations in expansion of SNAI.

4) The existing factory is expected to generate bulk of resources required for implementation of the expansion programme. The balancing requirements are assumed to be met by new investment on expansion in the shape of government loan/credit and not in the form of social capital.

25. Special conditions for implementation of the project:

Both land and water development programme should precede creation of industrial facilities. Allowing the land to remain and allow for about

12 months and the trend towards excess land salinity need to be eliminated.

26. NOTES:

+ assuming an increase in rate of 3.5% for population and 2.5% for sugar consumption per capita.

++ Inputs are for 1971.

+++ 46,854 tonnes produced in 1969.

++++ assuming that no sugar plant is created in Lower Juba

+++++ the ex-factory sale price estimated after taking into account existing cost ex-factory for the present output and the estimated cost for the increased output envisaged in the expansion.

NOTE: All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Data No. III

1. Project: Milk Factory - Augmentation of supplies, diversification of productions and improvements in technological processes.
2. Gestation: 18 months
3. Number of shifts: 2 of 8 hours each.
4. Number of Working days in a year: 365 days
5. Location: Mogadiscio

Market situation	1973		1978	
	Quantity liter/day	Value So.Sh.	Quantity liter/day	Value So.Sh.
6. Demand (1)	undetermined			
a) Import	nil		nil	
b) Export	nil		nil	
7. Existing capacity:	20,000		20,000	
8. Existing Production:	6,900		20,000	
9. Gap:	Precise evaluation not possible.			

Annual Expenditure and Exploitation data (on total capacity basis)	Year of full capacity 1985	
	Quantity per day	Value So.Sh.
10. Input: liters	20,000	8,900,000
a) imported:		600,000
b) local:		8,300,000
11. Fixed capital in 1978 existing and modified project		16,500,000
a) foreign currency:		12,000,000
b) local currency:		4,500,000
12. Replacement costs (3)		2,500,000
Modernisation costs:		-
a) foreign currency:		2,000,000
b) local currency:		500,000
13. Working capital: 2 months		2,000,000
a) foreign currency months		nil
b) local currency months		2,000,000
14. Annual turn-over - Total liters/day	20,000	12,280,000
A) Main production: Milk		
B) Other: butter, yoghort, ice-cream, cheese, flavoured milk, etc.		
C) Byproducts: nil		
Ex-factory sales price unit of (A): milk	1 liter	1.60
-CIF import price per unit of (A):	nil	nil
15. Added value:		3,380,000
16. Cost of production: All products		11,931,000
-cost per unit of production: (4)		
17. Total employment: both existing and additional	110	591,000
a) Managerial and administrative:	6	120,000
b) Technical and Engineering:	2	30,000
c) Skilled operators:	40	176,000
d) Semi-skilled operators:	32	123,000
e) Unskilled operators:	30	72,000
18. Foreign Exchange component in Employment: (included in column 17)		
19. Depreciation @ 7.5%		1,240,000
20. Miscellaneous expenses:		200,000
21. Interest on Borrowed capital: Total:		280,000
-on investment @ %:		500,000
-on working capital @ 9%:		180,000
22. Net profit before tax:		659,000

(cont'd)

	Quantity per day	Value So.Sh.
23. Ratios:		
22/11 = 4%		
22/14 = 5.3%		

24. Justification of projects and Evaluation:

1) The plant is over 6 years old and no major replacements have been effected due to cumulative losses and hence the need for investment has arisen;

2) Improvement in technology by sterilisation (VTIS ALFA LAVAL Process) is essential for better storage and for diversifying market;

3) Assumption of raw material availability is assured by L.D.A. for supply for both the shifts in 1976. Until now the supply is scantly (160 liters a day).
The existing excessive capital investment, poor return on the investment, limitation of raw material, and market for finished products point ot the need for restricting further investments. Investment calculation have been made on the basis of prices known to the team. The new investment outlay has to be calculated.

25. Special conditions for implementation of the project:

1) Retention of the existing system of glass containers is suggested to avoid new investments in plastic/paper container installation being costly;

2) Crown capping is to be adopted for hygienic necessities;

3) Aseptic filling is indispensable for filling out of jar sterilized milk;

4) Alfa Laval VTIS flash sterilisation is suggested as it gives the best organoleptic qualities to the processed milk;

5) Great attention to the washing of used/return empty bottles is suggested;

6) Refrigerated vans for collection of milk from villages to the milk factory for augmenting supplies;

7) Possibility of creating cold storage facility/chilling units should be set up at the collection centers;

8) A dose of about 4% of hydrogen peroxyde is suggested to be added to the milk in containers for better conservation during transit.

26. Remarks:

(1) Demand potential is estimated to be identical to the present capacity in two shifts production. It can also increase:

(a) by manufacture of chocolate flavoured milk
(b) other milk drinks
(c) cheese yoghourt and other dairy products
(d) by sales promotion and propaganda.

(2) The realisation of full capacity is prevented due mainly to lack of raw material now and in the near future.

(3) Production of milk powder proposed by the factory is not included.

(4) Purchase price for 1 liter of milk is assumed at So.Sh. 1,00 to 1, .

(5) Interest at 2.50% for existing capital investment and 6% for additional investment (i.e. 2.5 million) is suggested.

NOTE:- All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices. Unit cost of all products are not indicated. Only gross cost and value estim

Feasibility Data No. IV

1. Project: Foundry and Mechanical Workshop (Expansion)
2. Gestation Period: 3 years
3. Number of shift : 1 of 8 hours each
4. Number of Working days in a year: 300 days
5. Possible Location: Mogadiscio

Market Situation	1975		1978	
	Quantity Tons	Value So.Sh.	Quantity Tons	Value So.Sh.
6. Demand:	780	5,700,000	1,665	12,200,000
a) Import:	700	5,700,000	-	-
b) Export:	-	-	-	-
7. Existing capacity:	unit under construction	-	1,500	10,983,000
8. Existing Production:	nil	-	1,500	10,983,000
9. Gap:	780	5,700,000	-	1,217,000

Capital Expenditure and Exploitation Data	Year of full capacity 1978	
	Quantity	Value So.Sh.
10. Input:	-	4,320,000
a) imported:	-	2,120,000
b) local:	-	2,200,000
11. Fixed capital in 1978 (expanded project)	-	12,470,000
a) foreign currency:	-	5,740,000
b) local currency:	-	6,730,000
c) fixed capital in 1973 (existing projects)	-	300,000
12. Replacement costs: 3%	-	180,000

(cont'd)

	Quantity	Value So.Ch.
13. Working capital: 6 months	-	3,900,000
a) foreign currency: months	-	1,[illegible]
b) local currency: months	-	2,60[illegible],000
14. Annual turn-over - Total	1,500	10,9[illegible],000
(A) Main production	-	-
(B) Other:	-	-
(C) Byproducts	-	-
Ex-factory sales price unit of (A):	1 kg.	7.32
-CIF import price per unit of (A):	-	not available
15. Added value:	-	6,663,000
16. Cost of production:	-	9,067,000
-cost per unit of production:	1 kg.	6.04
17. Total employment:	281	3,074,000
a) Managerial and administrative:	37	1,866,500
b) Technical and Engineering :	45	450,000
c) Skilled operators:	150	540,000
d) Semi-skilled operators:	49	117,500
e) Unskilled operators	-	-
18. Foreign Exchange component in Employment (included in column 17)	-	1,500,000
19. Depreciation @ 5.1%	-	637,600
20. Miscellaneous expenses:	-	721,500
21. Interest on Borrowed Capital. Total	-	311,500
-on investment @ %	-	311,500
-on working capital @ %		
22. Net profit before tax:		1,915,400
23. Ratios:		
22/11 = 13.4%		
22/14 = 17.4%		

24. Justification of projects and evaluation:

1) Import substitution

2) Foreign currency earning (import of raw material instead of finished products)

3) Labour intensive

4) High added value

5) High profitability on completion of expansion increases the base for further industrialization.

Special conditions for implementation of the project:

- restriction on imports
- [illegible] for artisans, local and abroad.

The data is based on the available project report.

Note: 1) prices are stated in constant Somali Shillings.
2) [illegible] balanced by increase of prices.

Feasibility Data No. V

1. Project: Las-Koreh Fish Processing Factory - Expansion of facilities.
2. Gestation Period: 2 years.
3. Number of shifts: 1 of 8 hours each
4. Number of working days in a year: 200 days in 1972 and 280 days after expansion
5. Location: Las-Koreh

Market situation	1972		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand: Local	500,000	1,100,000		
a) Import:	negligible			
b) Export:	relatively	unlimited		
7. Existing capacity	7,800	23,000,000	7,800	25,000,000
8. Existing Production	1,141,100 (cans)	2,033,000		
9. Gap: unlimited				

Capital Expenditure and Exploitation Data	Year of full capacity 1978(1)	
	Quantity	Value So.Sh.
10. Input:		14,321,000
a) imported:		10,000,000
b) local:		4,321,000
11. Fixed capital in 1978 (New Projects)		47,000,000
a) foreign currency:		26,400,000
b) local currency		20,600,000
c) Fixed capital in 1973 (existing projects)		43,300,000
12. Replacement costs:		
Modernisation costs:		3,000,000
a) foreign currency:		2,700,000
b) local currency:		300,000
13. Working capital: months		5,000,000
a) foreign currency: months		3,500,000
b) local currency: months		1,500,000
14. Annual turn-over - Total:	12,000,000 (cans)	
(A) Main production: tuna fish in cans	12,000,000	
(B) Other:		
(C) Byproducts: Fish-meal	710 tons	
Industrial Oil	79 tons	
Ex-factory sales price unit of (a):	per can	2.00 to 2.50
-CIF import price per unit of (a):		2.50
15. Added value:		9,278,000
16. Cost of production:		22,372,000
-cost per unit of production:		1.80
17. Total employment	223(2)	1,639,500
a) Managerial and administrative:	7	140,000
b) Technical and Engineering:	11	165,000
c) Skilled operators:	7	56,000
d) Semi-skilled operators:	172(2)	416,000
e) Unskilled operators:	26	62,500
18. Foreign Exchange component in Employment: (included in column 17)	10(3)	400,000
19. Depreciation @ 7.5%: including fishing fleet		3,315,000
20. Miscellaneous expenses:		700,000

(cont'd)

	Quantity	Value So.Sh.
15. Added value:		30,184,000
16. Cost of production:		33,219,000
Cost per unit of production:		-
17. Total employment:	500	1,898,000
a) Managerial and administrative:	10	200,000
b) Technical and Engineering:	20	120,000
c) Skilled operators:	125	500,000
d) Semi-skilled operators:	125	450,000
e) Unskilled operators:	220	528,000
18. Foreign exchange component in Employment: (included in column 17)		500,000
19. Depreciation @ 5%		3,190,000
20. Miscellaneous expenses:		**1,100,000**
21. Interest on Borrowed Capital. Total:		**2,515,000**
- on investment @ 6%:		**2,155,000**
- on working capital @ 9%:		360,000
22. Net profit before tax:		22,381,000
23. Ratios: 22/11 = 56% 22/14 = 46%		

24. Justification of projects and Evaluation:

1) High added value due to high export prices

2) Recovery and utilisation of all byproducts

3) Increase the profitability of the enterprise.

25. Special conditions for implementation of the projects:

1) Extension of cold storage facilities to store carcasses for export purposes.

2) Installation of balancing machineries for manufacture of trapezoidal cans.

3) Dies for manufacture of 100 gr. 140 gr. 235 gr. and 410 gr. round cans.

4) Expatriates to assist mainly on baoteriological and organoleptic laboratories to follow the foreign market specifications.

5) Export on frozen carcasses must be increased for next export orders when the prices are above 5 So.Sh. per kg.

6) Development of port/airport facilities to handle additional export of canned meat and carcasses.

7) High purchase price must be assured to cattle owners as an incentive for higher breeding and rentabilization of feed lots and cattle feed.

8) Census of cattle population is indispensable in order to avoid depletion of natural wealth.

26. Remarks: + increased slaughtering than what is envisaged in the project report is feasible.

(Price for frozen carcass is assumed at So.Sh. 5 per kg. Higher price for cattle is envisaged consequent on creation of feed lots to fatten the cattle. Even then margin is attractive.)

NOTE: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Feasibility Data No. VII

1. Project: Boat Building Yard (Expansion)
2. Construction Period: 24 months.
3. Number of shifts: 1 of 8 hours.
4. Number of working days in a year: 300
5. Location: Mogadiscio.

Market situation	1973		1978	
	Quantity per year	Value So.Sh.	Quantity per year	Value So.Sh.
6. Demand:	60 +	2,400,000	60	2,400,000
a) Import:	figures not available ++			
b) Export:				
7. Existing capacity:	15	600,000		
8. Existing Production:	15	600,000	60	2,400,000
9. Gap	45	1,800,000	nil	

Capital Expenditure + Exploitation data	Year of full capacity 1975	
	Quantity	Value So.Sh.
10. Input		1,284,000
a) imported:		1,272,000
b) local:		12,000
11. Fixed capital in 1978 (expanded)		2,000,000
a) Foreign currency:		1,200,000
b) Local currency:		800,000
c) Fixed capital in 1973(existing projects):		1,000,000
12. Replacement costs:		-
Modernisation costs:		1,000,000
a) Foreign currency:		800,000
b) Local currency:		200,000
13. Working capital: months		660,000
a) Foreign currency: 6 months		600,000
b) Local currency: 2 months		60,000
14. Annual turn-over - Total	60	2,400,000
A) Main production:		-
B) Other:		-
C) By-products:		-
Ex-factory sales price unit of (A):		40,000
- CIF import price per unit of (A):		56,000 to 90,000

	Quantity unit	Value So. Sh.
15. Added value:		1,116,000
16. Cost of production:		1,821,000
- cost per unit of production:		39,200
17. Total employment:		
a) Managerial and administrative:	16	191,200
b) Technical and Engineering:	2	100,000
c) Skilled operators:	2	40,000
d) Semi-skilled operators:	5	25,000
e) Unskilled operators:	5	19,000
	3	7,200
18. Foreign Exchange component in Employment: (included in column 17)		80,000
19. Depreciation at 7.5%		108,000
20. Miscellaneous expenses:		60,000
21. Interest on Borrowed Capital. Total:		178,400
- on investment at 6%		120,000
- on working capital at 9%		58,400
22. Net profit before tax:		578,400

23. Ratios:

22/11 = 29%
22/14 = 24%

24. Justification of projects and Evaluation:

1) To supply boats to fishermen and fish processing units.
2) To facilitate and encourage coastal fishing.
3) To develop indigenous boat building industry with a view to reduce import of boats at higher prices.
4) To give work to fishermen through fishing co-operatives.
5) To supply and assist fishing industry.
6) To train skilled workers on boat building industry.

25. Special conditions for implementation of the project:

1) Organisation of co-operatives.
2) Standardised equipment and spare-parts.
3) Construction of boats according to prescribed standardisation adapted to local acceptance.
4) Modernisation of the present boat building yard, additional testing facilities for boats.
5) Facilities for training and instruction.
6) Technical collaboration for production from FAO.

26. Remarks: ♦ The demand is estimated by the Ministry of Fisheries and Maritime Shipping.

♦♦ Orders have been placed abroad for 20 boats to be delivered by December 1973.

NOTE: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Feasibility Data No. VIII

1. Project: Flour Mill (4 units)
2. Gestation Period: 24 months.
3. Number of shifts: 2 of 8 hours each.
4. Number of working days in a year: 300.
5. Possible Location: Mogadiscio/Hargeisa/Kriyyo/Kismayo

Market situation	1973		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand	51.000	35,000,000	81,000	55,000,000
a) Import:	48.000+	33,000,000	-	-
b) Export:	(Project not intended for export)			
7. Existing capacity	3.000++	2,000,000	31,000	21,300,000
8. Existing Production:	3.000	-	31,000	-
9. Gap:	43.000	-	50,000	-

Capital Expenditure + Exploitation data	Year of full capacity 19	
	Quantity	Value So.Sh
10. Input: Wheat + Power + fuel		17,100,000
a) imported: Fuel/Electricity		300,000
b) Local: Wheat 600 So.Sh./ton	28,000 t	16,800,000
11. Fixed capital in 1978 (New Projects)	-	12,800,000
a) Foreign currency:		7,160,000
b) Local currency:		5,640,000
12. Working Capital: 3 months		3,200,000
a) Foreign currency months		300,000
b) Local currency: months		2,900,000
13. Annual turn-over - Total:		23,600,000
(A) Main production: Wheat flour +++ +	20,000 t	19,600,000
(B) Other:		-
(C) By-products: Offal (cattle feed)	8,000 t	4,000,000
- Ex-factory sales price unit of (A):	100 kg.	98
- CIF import price per unit of (A):	100 kg.	98
14. Added value:		6,500,000
15. Cost of production:	20,000	19,694,000
- Cost per unit of production:	100 kg.	98

\+ indicates wheat flour and wheat flour products in 1971.
++ indicates the local village grinding by traditional way for 4 plants. as stated at serial No. 5.
+++ One ton of wheat yields about 720 kg. of wheat flour.

Feasibility Data. No. IX

1. Project: Oil Crushing Mills (for edible oils) - 3 units.
2. Gestation period: 24 months.
3. Number of shifts: 1 of 8 hours each.
4. Number of working days in a year: 200
5. Possible location: Lower Juba/Benadir/Hargeisa (for location of 3 units).

Market situation	1972		1978	
	Quantity tons	Value So.Sh.	Quantity tons	Value So.Sh.
6. Demand : Oil	8,800	27,300,000	11,300	35,000,000
a) Import:	4,300			
b) Export:				
7. Existing capacity:	4,540			
8. Existing Production:	4,500	14,000,000	10,500	32,600,000
9. Gap:	4,300	13,300,000	800 +	2,400,000

Capital Expenditure + Exploitation data	Year of full capacity 1978	
	Quantity	Value So.Sh.
10. Input:		13,960,000
a) imported:		1,960,000
b) local: Oil seeds	15,000 t.	12,000,000
11. Fixed capital in 1978 (New Projects)		8,200,000
a) foreign currency:		4,200,000
b) Local currency:		3,280,000
c) Fixed capital in 1973 (existing projects)		nil
12. Replacement costs:		nil
Modernisation costs:		nil
a) Foreign currency:		nil
b) Local currency:		nil
13. Working capital: 3 months		5,700,000
a) Foreign currency: months		700,000
b) Local currency: months		5,600,000
14. Annual turn-over Total:		19,350,000
(A) Main production: Oil	6,000 t.	18,000,000
(B) Other:		
(C) By-products: Oil cake	9,000/10,000	1,350,000
- Ex-factory sales price unit of (A):	1 kg.	3.00
- CIF import price per unit of (A): 1971	1 kg.	2,82
15. Added value		5,390,000

	Quantity	Value So.Sh.
Total employment:	68	376,000
a) Managerial and administrative:	4	100,000
b) Technical and Engineering:	4	40,000
c) Skilled operators:	16	70,000
d) Semi-skilled operators:	32	76,800
e) Unskilled operators:	12	28,800
17. Foreign exchange component in Employment: (included in column 16)	-	160,000
18. Depreciation at 7.5%	-	960,000
19. Miscellaneous expenses:	-	200,000
20. Interest on Borrowed Capital. Total:	-	1,058,000
- on investment at 6%:	-	770,000
- on working capital at 9%:	-	288,000
21. Net Profit before tax:	-	3,406,000

22. Ratios:

22/11 = 31.2%

22/14 = 16.9%

24. Justification of the project:

1) Import substitution by processing locally cultivated wheat.

2) Recovery of offal for cattle feed.

3) Availability of wheat flour for pasta manufacture plant, bakery, confectionary, etc.

4) Roller flour mill is automatic and less labour required.

25. Special conditions for implementation of the project:

1) The price of wheat produced in Tug-Wajaleh is So.Sh. 160 per quintal delivered in Hargeisa, which is 2.7 times of the CIF imported Price. (So.Sh. 0.59 per kg.). The basis adopted for mamuring plant for wheat flour is 0.68 per kg. A price of 60 cents per kg. which is slightly lower than the price for CIF wheat (59 cents) has been adopted. In order to encourage wheat cultivation difference in price may be taken as a subsidy.

2) Wheat must be grown in order to supply factories. Experiment of high yield mexican varieties in Afgoi are encouraging. In Tugwajaleh there is a programme for 3,000 ha. next year. Private farmers can also be involved for an amount of 20,000 ha. if incentive measures are taken.

3) Profit margin can be slightly reduced, but the correlative increase of price available for wheat is small - maximum So.Sh. 700 per ton.

Note: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

	Quantity	Value So.Sh.
16. Cost of production:	6,000	17,150,000
- cost per unit of production:	1 kg.	2.86
17. Total employment:	190	1,065,000
a) Managerial and administrative:	6	240,000
b) Technical and engineering:	18	360,000
c) Skilled operators:	30	150,000
d) Semi-skilled operators:	60	228,000
e) Unskilled operators:	36	97,000
18. Foreign Exchange component in Employment: (included in column 17)		120,000
19. Depreciation at 8%		660,000
20. Miscellaneous expenses:		495,000
21. Interest on Borrowed Capital. Total		1,000,000
- on investment at 6% :		490,000
- on working capital at 9%:		510,000
22. Net profit before tax:		2,170,000

23. Ratios:

22/11 = 26.4%

22/14 = 11.2%

24. Justification of projects and evaluation:

1) Import substitution
2) Use of local increasing production of seeds
3) Increase in consumption
4) Recovery of oil cakes for solvant extraction plants
5) Hygienic processing and storage.

25. Special conditions for implementation of the project:

1) Solvent extraction plants to be located near the proposed mills.
2) Proximity to oil seed cultivation.
3) Proximity to cattle feed plants.
4) Proximity to location of cattle feed lots.
5) Availability of oil seeds at the present price of So.Sh. 80 per quintal.
6) The factory sale price must be So.Sh. 3 per kg.

26. Remarks: * about 600 T of oil can be recovered from oil cakes by oil solvent extraction plant.

Note: All prices are indicated in constant Somali Shillings
Increase of costs being balanced by increase of prices.

Feasibility Data No. X

1. Product: Oil Solvent Extraction Plant for 3 units.
   Operation Period: 12 months.
   Number of shifts: 1 of 8 hours each.
   Number of working days in a year: 300.
5. Possible location: Mogadiscio, Afgoie, Margherita.

Market situation	1973		1975	
	Quantity tons	Value So.Sh.	Quantity tons	Value So.Sh.
6. Demand:	8,900	27,400,000	800 t +	
a) Import:	4,300			
b) Export:				
7. Existing capacity:	nil		600 t(oil)	
8. Existing Production:	nil		600 t(oil)	
9. Gap:	4,300	13,300,000		

Capital Expenditure + Operation data	Year of full capacity 1975	
	Quantity	Value So.Sh.
10. Input		1,881,000
a) imported		375,000
b) local: 1,020 t of oil cakes at 150 So.Sh./t.	10,000	1,506,000
11. Fixed capital:		1,890,000
a) Foreign currency:		1,050,000
b) Local currency:		840,000
12. Working capital: 2 months		402,000
a) Foreign currency 2 months		102,000
b) Local currency: 2 months		300,000
13. Annual turn-over Total		3,240,000
(A) Main production: Oil So.Sh. 3/kg.	600 +	1,800,000
(B) Other:		nil
(C) By-products: decoiled cake So.Sh. 160/kg.	9,000t++	1,440,000
Ex-factory sales price unit of (A):	1 kg.	3.00
- CIF import price per unit of (A):	1 kg.	2,82
14. Added value:		1,359,000
15. Cost of production:	9,600 t	2,710,400
- Cost per unit of production: Oil(600T)		2.11 ++
16. Total employment:	33	448,200
a) Managerial and administrative	3	240,000
b) Technical and Engineering:	6	120,000
c) Skilled operators:	8	39,600
d) Semi-skilled operators:	9	39,200
e) Unskilled operators:	6	14,400

+ assuming that the plant is constructed by the end of 1974.

		Quantity	Value So. Sh.
17.	Foreign Exchange component in employment: (included in column 16)		240,000
18.	Depreciation at 7.5%		141,000
19.	Miscellaneous expenses:		90,000
20.	Interest on Borrowed capital. Total:		149,600
	- on investment at 6%		113,400
	- on worked capital at 9%		36,200
21.	Net profit before tax:		529,600

22. Ratios:

23/11 = 28%

23/14 = 16.3%

23. Justification of projects and evaluation:

1) Net return on investment fully justifies the investment. The projects are feasible even without taking into account any value for oil cakes. If its value is reckoned, the return will further enhance.

2) Renders feasible recovery of extra edible material from oil cakes.

3) Manufacture of deoiled cakes. Deoiling prevents rancidity and permits longer preservation, better acceptance by cattle and poultry.

4) Use of by-products.

5) High added value.

6) High profitability.

7) Oil cake has nutritive value for cattle and poultry because of its high protein content. The CIF price for ground nut cake is So.Sh. 168 per quintal.

24. Special conditions for implementation of the project;

1) Arrangements for collection of oil cakes for the mills.

2) Short distance for oil cake supply.

3) Cultivation of oil seeds.

4) Proximity of unit to oil crushing mills as possible.

5) Protection against solvent explosion dangers.

25. Remarks: + See oil crushing mills for edible oils.

++ Deoiled cakes can be prescribed better due to the absence of oil and avoids possibility of rancidity.

+++ This value is obtained excluding the value of cake in the input.

Note: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Pre-Feasibility Data No. XI

1. Project: Nordio-Hafun Salt Works.
2. Construction period: 49 months.
3. Number of shifts: 3 of 8 hours each.
4. Number of working days in a year: 300
5. Possible location: Hafun Promontry (towards El-Gafi)

Market situation	On completion of Project			
	Quantity	Value So.Sh.	Quantity tons	Value So.Sh.
6. Demand:				
a) Import:	(Export-oriented Industry)			
b) Export:	At present exports are negligible			
7. Existing capacity:	nil			
8. Existing production:	nil			
9. Gap:	Gap is the extent of non-exports		3,800,000	63,384,000

Capital Expenditure + Exploitation data	Year of full capacity	
	Quantity	Value So.Sh.
10. Input:		
a) imported:		
b) local:		
11. Fixed capital: on completion of project		357,710,000
a) Foreign currency:		250,000,000
b) Local currency:		107,710,000
12. Working capital: 4 months requirements		15,916,000
a) Foreign currency: months requirements		10,000,000
b) Local currency: months requirements		5,916,000
13. Annual turn-over - Total:	3,800,000 tons	63,384,000
(A) Main production: Salt	3,800,000 tons	63,384,000
(B) Other:		
(C) By-products: (Not reckoned)		
Ex-factory sales price unit of (A):	Ton	16.68
- CIF import price per unit of (A): (By importing countries mainly Japan)	Ton	So.Sh. 55 to 70
14. Added Value	Not worked out since data is not available.	
15. Cost of production:		50,041,478
- cost per unit of production	per ton	13.34

16. Total employment:	[illegible]	4,000,000
a) Managerial and administrative:	[illegible]	
b) Technical and Engineering:	[illegible]	
c) Skilled operators:	163	
d) Semi skilled operators:	400	
e) Unskilled operators:		
17. Foreign Exchange component in employment: (included in column 16)	45	400,000
18. Depreciation:		
19. Other expenses:		
20. Interest on Borrowed Capital. Total:		
- On investment at 6%		
- On working capital at 8%		
21. Net profit before tax:		
22. Ratios:		
22/11 = 2.3%		
22/13 = 1.6%		

23. Justification of projects and Evaluation:

i) Large export earnings by exploitation of the available natural resource in the area.

ii) Will pave the way for the industrialisation of the whole region and creation of new infrastructure facilities like power, communication, shipping, and port development.

iii) Both the project and the ancillary facilities which need to be created will generate employment opportunities for skilled, unskilled and other labour.

iv) The feasibility report has established techno-economic feasibility for the project.

v) Development of Salt works may provide economical industry in the country.

vi) The estimated unit cost looks attractive compared to the present day international prices and the CIF prices of importing countries mainly Japan.

[illegible] considerations for implementation of the project:

i) The feasibility study needs to be further examined both from the technical and economic points of view to determine the size of the works and the ancillary facilities to be developed over a period.

ii) Because of the large investment involved, special institutional and financial facilities need to be created before embarking on the project.

iii) The desirability of linking up financing and technical know-how for setting up the salt works with the potential buyers or distributors needs to be considered.

iv) A phased development, if found tenable technically and economically, of the salt works, seems desirable.

25. [illegible]: i) A summary of the project given on Chapter 8 of Vol. I of the report is based on the existing feasibility study. The financial estimates contained therein have been revised especially to make good certain omissions e.g. the study left out any interest on capital investment except running cost.

ii) Figures of turnover, sales price, and operating expenses are based on existing feasibility study. Amortisation of investments has been provided on the entire installation cost indicated in the study.

iii) 1/3 of running cost is provided as working capital and interest at 6% provided on that in the cost of production.

iv) Starting and operating expenses provided in the capital structure has been excluded. They are presumed to be met from working capital and sales turnover. Working capital is estimated at 1/3 rd of the total turnover to cover imports of fuel and other operating material. Foreign investment is estimated as also the foreign exchange portion of the working capital since the study does not contain these estimates.

v) Foreign exchange component of employment is estimated at 10% of the total cost of employment.

vi) Running costs indicated in the existing study show only lump sum figures. No break-up of operating costs, material, fuel, overheads etc. are available.

vii) Depreciation is based on figures provided in the present study, which is stated to exclude the depreciation as social costs of total investment.

viii) The gaps in the data are on account of missing links in the existing study.

Feasibility Data No. V

Project: New Sugar Complex

. Depreciation period: 5 years.

. Number of shifts: 3 of 8 hours each.

. Number of working days in a year: 210

. Possible location: Lower Kota (near [illegible])

Market situation	1978		[illegible]	
	Quantity tons	Value So.Sh.	Quantity tons	Value So.Sh.
5. Demand:	55,000	57,200,000	[illegible]	[illegible]
a) Import:	50	80,444	-	-
b) Export:	nil		1[illegible],000	
7. Existing capacity:	4[illegible],000		10[illegible],000	
8. Existing Production:	42,000	46,200,000	93,000	10[illegible],000,000
9. Gap:	13,000	11,000,000	-	

Capital Expenditure + Exploitation data	Year of full capacity 1[illegible]	
	Quantity	Value So.Sh.
10. Input:		11,305,000
a) imported:		200,000
b) local:		11,105,000
11. Fixed capital in 1978 (New Project)		248,000,000
a) Foreign currency:		136,000,000
b) Local currency:		112,000,000
12. Working capital: months		22,000,000
a) Foreign currency: months		nil
b) Local currency: months		22,000,000
13. Annual turn-over - Total:		61,863,000
(A) Main production: Sugar	50,000 T	55,500,000
(B) Other: Bagasse panels		5,000,000
(C) By-products: Molasses		1,363,000
Ex-factory sales price unit of (A):	100 kg.	111
- CIF import price per unit of (A):	-	-
14. Added value:		50,558,000
15. Cost of production:		51,148,000
- cost per unit og production: Sugar (1979)	100 kg.	108.28
16. Total employment:	3,057 ++	15,086,000
a) Managerial and administrative:	4	132,000
b) Technical and engineering:	50	886,000
c) Skilled operators:	63	720,000
d) Semi-skilled operators:	478	3,730,000
e) Unskilled operators:	2,462	9,608,000

	Quantity	Value Lo. S.
. [illegible] component in Employment: (included in column 16)		500,000
[illegible]. Depreciation 7 at		17,470,000
[illegible]. Miscellaneous expenses:		519,000
[illegible]. Interest on borrowed capital. Total:		6,768,000
on investment at %:		
- on working capital at %:		
21. Net profit before tax:		10,715,000

22. Ratios:

21/11 = 7.3% on sugar factory investment = 147 million L.S.

21/13 = 7.4%

23. Justification of projects and evaluation:

i - To meet the increasing demand for sugar and to avoid imports.

ii - If surplus quantity will be available for export to Lybia, Yemen, Sudan and Saudi Arabia, etc.

iii - Cultivation of 8000 ha. of land will generate employment for people in the area.

iv - High added value.

v - Labour intensive.

24. Special conditions for implementation of the project:

1) Creation of water facilities for irrigation should precede sugar cane growing;

2) Training of staff and workmen to operate the factory.

3) Housing for staff and workmen.

4) Technical and Financial Collaboration.

The data is based on the feasibility report available.

25. Remarks: + 1978 is not the year of full capacity (37,000 T) full capacity is realised in 1979 with 50,000 tons of sugar.

++ Of whom 400 - 500 are seasonal. Sales prices excludes local taxes levies etc.

NOTE: All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Gate No. XIII

1. Project: Cattle Food Plants (4 Nos.)
2. Gestation Period: 12 months
3. Number of shifts: 1 of 8 hours each
4. Number of Working Days in a Year: 300 days
5. Possible location: Mogadiscio/Kismayo/Merao/Berbera

Market situation	1971		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand:	for 200,000 cattle		300,000 cattle	
a) Export:	140,000 T of cattle feed		210,000 T of cattle feed	
7. Existing capacity:	72T pilot plant		24.000 T	
8. Existing Production:	72 T		24.000 T	
9. Gap:	139,028		176.000 T	

Capital Expenditure and Exploitation Data for 4 plants	Year of full capacity '78	
	Quantity	Value So.Sh.
10. Input:		4,944,000
a) imported: Fuel, etc.		144,000
b) local: offal, byproducts, maise offal, molasse		4,800,000
11. Fixed capital in 1978 (New Projects)		2,000,000
a) foreign currency:		1,200,000
b) local currency:		800,000
c) Fixed capital in 1973 (existing projects):		not available
12. Working capital: 2 months		820,000
a) foreign currency: 2 months		20,000
b) local currency: 2 months		800,000
13. Annual turn-over - Total:	24,000 T	6,000,000
(A) Main production: Cattle feed	24,000 T	6,000,000
(B) Other:	nil	nil
(C) Byproducts:	nil	nil
Ex-factory sales price unit of (A):	1 kg.	25 cents

(cont'd)

	Quantity	Value So.Sh.
14. Added value:		1,056,000
15. Cost of production:		5,633,800
- cost per unit of production:	1 kg.	22 cents
16. Local employment:	30	226,000
a) Managerial and administrative:	2	80,000
b) Technical and Engineering:	10	80,000
c) Skilled operators	2	8,400
d) Semi-skilled operators	10	38,000
e) Unskilled operators	8	19,200
17. Foreign Exchange component in employment: (included in column 17)		
18. Depreciation & 7.5%:		150,000
19. Miscellaneous expenses:		120,000
20. Interest on Borrowed Capital. Total:		193,800
- on investment & 6%:		120,000
- on working capital & 9%:		73,800
21. Net profit before tax:		366,200
22. Ratios: 21/11 = 18.2% 21/13 = 6.1%		

23. Justification of projects and evaluation:

1) To improve livestock and fatten the cattle before either slaughtering of export of cattle on hoof (100 days in feed let).

2) The K7 pilot plant has proved that adult cattle gains weight at the rate of 1 kg. per day overall (that is 100 kg. per 100 days).

3) Increase of 100 kg. on 240 kg. original weight for a total weight of 340 kg. means 42% increase in weight and a much better quality. If all cattle passes through feed lots before off-take assuming that the cattle population is 3,400,000 heads 42% increase by cattle feed represents 1,400,000 extra cattle.

24. Special conditions for implementation of the project:

1) Supervision and Veterinary Services are indispensable

2) All holding grounds should have their feed lots in order to use the cattle feed produced.

3) Good water supply.

4) Good roads and short distance for raw material supply to the factory.

5) Good roads and short distances for finished product movement.

NOTE: All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Data No. XIV

1. Project: Pasta Manufacturing Plant
2. Gestation Period: 12 months
3. Number of shifts: 1 to 3 of 8 hours each.
4. Number of working days in a year: 300 days
5. Possible location: Mogadiscio

Market situation	1973		1978	
	Quantity tons	Value So.Sh.	Quantity tons	Value So.Sh.
6. Demand: (CIF)	17,000 T	16,600,000	25,000 T	24,600,000
a) import: 1971	16,540	16,255,000	nil	nil
b) export:	nil	nil	nil	nil
7. Existing capacity:	460	nil	7,000	
8. Existing Production:	nil	nil	7,000	14,000,000
9. Gap:	16,540	16,255,000	18,000	

Capital Expenditure and Exploitation data	Year of full capacity '76+	
	Quantity	Value So.Sh.
10. Input:		10,030,000
a) imported: fuel, electricity, packaging, etc.		3,030,000
b) local: wheat flour, (So.Sh. 1,00/kg)	7000	7,000,000++
11. Fixed capital in 1978 (New Project)		8,500,000
a) foreign currency:		5,100,000
b) local currency:		3,400,000
12. Working capital: 3 months		3,500,000
a) foreign currency: (requirement) 3months		1,000,000
b) local currency: 3 months		2,500,000
13. Annual turn-over - Total	7000	14,000,000
A) main production: Pasta	7000	14,000,000
B) Other: nil	nil	nil
C) Byproducts: nil	nil	nil
Ex-factory sales price unit of (A):	1 kg.	2.00
- CIF import price per unit of (A):	1 kg.	1.015
14. Added value:	7000 T	3,970,000
15. Cost of production:	7000 T	12,910,000
- Cost per unit of production:	1 kg.	1.53

	Quantity	Value So.Sh.
16. Total employment:	64	490,000
a) Managerial and administrative:	2	80,000
b) Technial and Engineering:	2	60,000
c) Skilled operators:	30	150,000
d) Semi-skilled operators:	20	76,000
e) Unskilled operators:	10	24,000
17. Foreign Exchange component in Employment: (included in column 16)		100,000
18. Depreciation á 7.7%		655,000
19. Miscellaneous expenses:		910,000
20. Interest on Borrowed Capital. Total:		825,000
- on investment á 6%		510,000
- on working capital á 9%		315,000
21. Net profit before tax:		1,090,000
22. Ratios:		
21/11 = 12.8%		
21/13 = 7.8%		

23. Justification of projects and evaluation:

1) In view of the feasibility of raising local wheat and processing it into flour, manufacture of pasta to meet local consumption is suggested.

2) Import substitution

3) Pasta is practically the staple food in Southern Somalia and has increasing demand.

4) For the best year increase in consumption has been of 18% per year - from 1973 only 10% increase has been adopted.

5) The pasta produced is of B grade made from tenders wheat. Grade A pasta made from Semola has to be imported.

24. Special conditions for implementation of the project:

1) cultivation of 10,000 ha. of wheat producing 30,000 tons of wheat and supporting mills to flour it.

2) technical assistance for pasta manufacture.

3) feasibility report for the proposed plant should be made before deciding investment.

25. Remarks: +Assumed that in 1976 all requirements of pasta will be covered fully by local production.

++The value adopted is based on the estimated cost of local production of wheat flour.

NOTE: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Feasibility Data No. XV

1. Project: Banana Fibre-bag Manufacturing Unit
2. Gestation Period: 36 months
3. Number of shifts: 1 of 8 hours
4. Number of working days in a year: 300 days
5. Possible location: Jamama

Market situation	1973		1978	
	Quantity (nos.)	Value So.Sh.	Quantity (nos.)	Value So.Sh.
6. Demand:	1,600,000	4,600,000	3,700,000	12,950,000
a) import:	1,600,000	4,600,000	1,700,000	5,950,000
b) export:	nil		nil	
7. Existing capacity:	nil		2,000,000	7,000,000
8. Existing Production:	nil		2,000,000	7,000,000
9. Gap	1,600,000	4,600,000	1,700,000	5,950,000

Capital Expenditure and Exploitation Data	Year of full capacity 1977	
	Quantity	Value So.Sh.
10. Input:		1,673,000
a) imported: Diesel oil, etc.		1,133,000
b) local: trucks	135,000 T	540,000
11. Fixed capital in 1977		15,000,000
a) foreign currency:		12,000,000
b) local currency:		3,000,000
12. Working capital: months		1,500,000
a) foreign currency months		500,000
b) local currency months		1,000,000
13. Annual turn-over - Total:	2,000,000bags	7,000,000
(A) Main production:	2,000,000 "	7,000,000
(B) Other:	nil	
(C) Byproducts:	nil	
Ex-factory sales price unit of (A):	1 bag	3.50
- DIF import price per unit of (A):	not available	
14. Added value:		5,327,000
15. Cost of production:		6,088,000
- cost per unit of production:	1 bag	3.044

(cont.)

	Quantity	Value So.Sh.
15. Total employment:	329	1,333,000
a) Managerial and administrative:	2	142,000
b) Technical and Engineering:	7	270,000
c) Skilled operators:	28	203,000
d) Semi-skilled operators:	228	567,000
e) Unskilled operators:	84	151,000
17. Foreign Exchange component in Employment (included in column 17)		
18. Depreciation @ 9.7%		1,450,000
19. Miscellaneous expenses:		185,000
20. Interest on Borrowed Capital. Total:		1,035,000
- on investment @ 6%:		900,000
- on working capital @ 9%:		135,000
21. Net profit before tax:		912,000
22. Ratios:		
22/11 = 6.1%		
22/13 = 13%		

23. Justification of the project:

1) import substitution industry

2) use of local rawmaterial available which is wasted now.

3) the future requirements of packing of cement with polyethelene lining, packing of salt, sugar from Lower Juba, Grains and Oil seeds etc. proposed to be raised in different parts of the country.

4) Labour intensive industry. Collection of trunks and its transportation to manufacturing unit will provide employment to unskilled persons including unemployed workmen.

5) The yield brings high added value to the economy.

24. Special conditions for implementation of the project:

1) The factory must be located in the vicinity of plantations

2) Extracted juice from banana trunk is said to be excellent fertilizer and should be obtained as a byproduct gain of the industry.

3) Good roads for transportation are required.

4) Housing for staff and labour of the proposed factory.

5) Technical assistance will be needed for implementing the project.

25. Notes: (i) The estimates are based on the feasibility report available locally and will need to be upgraded to suit present day prices.

(ii) All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Data No. XVI

1. Project: Slaughter House
2. Gestation Period: 24 months
3. Number of shifts: 1 of 8 hours
4. Number of Working days in a year: 300 days
5. Possible location: Hargeisa

Market situation	1973		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand:) a) import:)	proposed unit is an export oriented unit to substitute export of cattle. Sheep on hoof to conventional market.			
7. Existing capacity:	nil +		6,000 cattle) 110,000 sheep)	10,050,000
8. Existing Production:	nil		-do-	
9. Gap:				

Capital Expenditure and Exploitation Data	Year of full capacity '75	
	Quantity	Value So.Sh.
10. Input:		10,318,000
a) imported:		268,000
b) local:		10,050,000
11. Fixed capital in 1978 (New Project)		3,200,000
a) Foreign currency:		2,200,000
b) local currency:		1,000,000
12. Working capital: months		1,600,000
a) foreign currency: months		160,000
b) local currency: months		1,440,000
13. Annual turn-over - Total:		18,060,000
(A) Main production: mutton and carcass:		16,750,000
(B) Others:		
(C) Byproducts: (Hides and Skins and others)		1,310,000
Exfactory sales price unit of (A): ++	per kg. mutton	8.60
- CIF import price per unit of (A):	" " beef	4.65
14. Added value:		7,742,000
15. Cost of production:		11,463,000
- cost per unit of production	kg/mutton	4.9
	kg/beef	4.9

(cont'd)

	Quantity	Value So.Sh.
16. Total employment:	29	214,000
a) Managerial and administrative:	2	42,000
b) Technical and Engineering:	5	67,000
c) Skilled operators:	12	73,000
d) Semi skilled operators:	-	-
e) Unskilled operators:	10	32,000
17. Foreign Exchange component in Employment: (included in column 16)		nil
18. Depreciation á 9.8%:		313,000
19. Miscellaneous expenses:		46,000
20. Interest on Borrowed Capital +++. Total:		572,000
-on investment á 12%:		
-on working capital á 12%:		
21. Net profit before tax:		6,600,000

22. Ratios:
21/11 = 200%
21/19 = 36.5%

23. Justification of projects and evaluation:

1) Increase in export earrings because of the contribution of export of carcass and mutton instead of cattle on hoof and the byproducts earnings.

2) Belts prices can be obtained for shepherds

3) Help industrialization of the region.

24. Special conditions for implementation of the project:

1) Higher prices are likely to be obtained from importers that means large benefits. This situation must be taken care of to offer higher prices to the shepherds.

2) Holding grounds and feed lots for sheep/goats and cattle are essential for fattening by livestock development agency before slaughtering - the price offered - permits use of cattle feed. Fattening is an easy way to increase export without waiting for increase of animal population. An increase of 30% in weight can easily be obtained.

3) International airport for jet air freighting on longer landing grounds is required in Hargeisa at least 12,000 feet.

25. Remarks: The data is based on the existing feasibility study.

+ At present about 600,000 heads of wether and 25,000 heads of cattle driven on hoof from other parts of Somalia are exported from in the northern parts of Somalia.

++ Prices indicated are offered by Libyan Importers. The profit would admit covering of sales prices. The sales unit is 1535 T of mutton and 765 tons of beef.

+++ Interest calculated on a flat rate of 12% - both for amortisation and repayments.

NOTE: All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Data No. XIII

1. Project: Slaughter House and Cannery
2. Gestation Period: 36 months
3. Number of shifts: 1.5 of 8 hours each
4. Number of working days in a year: 300 days
5. Possible location: Mogadiscio

Market situation	1973		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand:	17,500		24,000	
a) import:				
b) export:				
7. Existing capacity	13,200			
8. Existing Production:			20,000 T +	
9. Gap:			4,000 T	

Capital Expenditure and Exploitation Data	Year of full capacity 197	
	Quantity	Value So.Sh.
10. Input:		44,839,500
a) imported:		5,167,000
b) local:		39,672,500
11. Fixed capital in 1978 (New Projects)		39,848,000
a) foreign currency:		19,300,000
b) local currency:		20,548,000
12. Working capital		2,000,000
a) foreign currency:		250,000
b) local currency:		1,750,000
13. Annual turn-over - Total:		56,352,000
(A) Main Production: meat	16,293 T	35,750,000
(B) Other: canned meat and extracts		14,980,000
(C) Byproducts: and hides		5,622,000
Ex-factory sales price unit of (A):		
- CIF import price per unit of (A):	100 kg.	218
14. Added value:		11,512,500
15. Cost of production:		
- cost per unit of production:		

(cont'd)

		Quantity	Value So.Sh.
16.	Total employment:	315	1,948,300
a)	Managerial and administrative	2	120,120
b)	Technical and Engineering	20	184,470
c)	Skilled operators	155	997,390
d)	Semi-skilled operators	134	622,860
e)	Unskilled operators	4	11,440
17.	Foreign Exchange component in Employment (included in column 16)		80,000
18.	Depreciation @ 7.5%		3,000,000
19.	Miscellaneous expenses:		514,700
20.	Interest on Borrowed Capital. Total:		2,570,000
	- on investment @ 6%		2,390,000
	- on working capital @ 9%		180,000
21.	Net profit before tax		3,479,000

22. Ratios:

23/11 = 8.7%
23/14 = 6.2%

23. Justification of projects and Evaluation:

1) In 1978 the cattle meat consumption in Mogadishu is estimated around 10,000 T (93,000 cattle head) and the total meat consumption (all animals) around 24,000 T. The capacity in one shift will not be adequate.

2) Present municipal slaughter house needs reorganisation for many reasons (hygiene, recovery of byproducts, hide generation, better control, etc.)

3) If local consumption is restricted export of canned meat and frozen carcasses provides better profits and foreign exchange return.

4) The proposed reconstruction of Sopral Factory will have a gap in processing capacity for sometime, which will need to be bridged by creating alternative facility.

24. Special conditions for implementation of the project:

1) Exact census of cattle in the area should be taken and supply position assured for determining the capacity of the plant for slaughtering and processing for export.

2) Availability of cattle has to be fixed up with the Livestock Development Agency in advance.

3) Holding grounds and fattening in feed lots to gain 30% in animal weight should be provided.

4) Cattle feed production.

25. Remarks: + Plus production of 2,200 T of canned meat.

NOTE: All prices are indicated in constant Somali Shillings.
Increase of costs being balanced by increase of prices.

Feasibility Data No. XVI[illegible]

1. **Project:** Banana Dehydration [illegible]
2. **Gestation Period:** 24 months
3. **Number of shifts:** 1 of 8 hours
4. **Number of working days in a year:** 200 days
5. **Possible location:** (In the vicinity of banana markets or collection centres for export.)

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6. **Demand:** Intended for export purposes and market investigations to be conducted to know the foreign market.
7. **Existing capacity and production:** nil
8. **Proposed capacity:** 30,000 + 34,6[illegible]0,000

Capital Expenditure and Exploitation Data		Year of full capacity 197[illegible]	
		Quantity tons	Value So.Sh.
9. Input:		29,120	17,030,000
a) imported:			7,420,000
b) local:		29,120	9,610,000 ++
10. Fixed capital in 1978			71,000,000
a) Foreign currency:			40,000,000
b) local currency:			31,000,000
11. Working capital:	**2 months**		5,300,000
a) foreign currency:	**2 months**		2,650,000
b) local currency:	**2 months**		2,650,000
12. Annual turn-over - Total:		3,640 T	34,630,000
(A) Main production:		3,640 T	34,600,000
(B) Other:		nil	nil
(C) Byproducts: Skins comfort		3,000 T	30,000
Ex-factory sales price unit of (A):		1 kg.	9.5
- CIF import price per unit of (A):		not available	
13. Added value:			17,600,000
14. Cost of production:			28,367,000
- cost per unit of production:		1 kg.	7.79
15. Total employment:		192	1,500,000
a) Managerial and administrative:		10	800,000
b) Technical and Engineering:		12	100,000
c) Skilled operators:		40	176,000
d) Semi-skilled operators:		80	304,000
e) Unskilled operators:		50	120,000

(cont.)

	Quantity	Value So.Sh.
. Foreign Exchange component in Employment: (item in column 15)		800,000
17. Depreciation @ 7.5%		5,050,000
18. Miscellaneous expenses:		2,100,000
19. Interest on Borrowed Capital. Total:		2,607,000
- on investment @ 6% on 50% loan		2,130,000
- on working capital @ 9%		477,000
20. Net profit before tax:		6,263,000

21. Ratios:
21/10 = 8.8%
21/13 = 10.1%

22. Justification of the project:

1) Utilization of rejected banana - varying between 20 to 40% of present production. According to Banana Board Annual Report dated March 1973 the total banana export in 1972 was 133,900 tons. The rejected banana at 30% rate will be about 600,000 tons.

2) Export market for finished product exist mainly EEC countries. Internal market can be created by promotion.

3) Utilization of waste will bring profitability on banana economy.

4) Foreign exchange earnings for the country.

5) High added value.

23. Special conditions for implementation of the project:

1) Technical and Financial Collaboration with a view to marketting is essential. Association with will known manufacturers with large distribution channels (like Gerbes, Nestle, etc.) is suggested, especially for sale as baby food and diet.

2) Regular manufacturing, precise technical control, good warehousing, control for quality and creation of hygienic conditions in production units and regular supply of agreed quantity of bananas throughout the year for the manufacturing unit.

3) Colour and flavour should conform to the tastes of sophisticated buyers.

24. Remarks: + 30,000 of banana fruit as input/output being 3,640 tons of banana powder.

++ at the price of 330 So.Sh. per ton of banana.

The capital investment estimate are based on EEC Project made for Somalia.

NOTE: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Feasibility Data No. XIX

1. Project: Tannery
2. Gestation Period: 2 years- 24 months
3. Number of shifts: ½ of 8 hours
4. Number of working days in a year: 300 days
5. Possible location: Kismayo

Market situation	1970		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand				
a) import:				
b) export:	Export-oriented market unlimited			
7. Existing capacity:	Number of hides available in 1978:			100,000
8. Existing production:				
9. Gap:		nil		

Capital Expenditure and Exploitation Data	Year of full capacity 1976	
	Quantity	Value So.Sh.
10. Input:		2,689,000
a) imported:		739,000
b) local:	100,000	1,950,000 +
11. Fixed capital in 1978 (New Projects)		2,000,000
a) foreign currency:		1,500,000
b) local currency:		500,000
12. Working Capital: 2 months requirements.		840,000
a) foreign currency:		252,000
b) local currency:		588,000
13. Annual turn-over - Total	100,000	4,370,000
(A) Main production		
(B) Other		
(C) Byproducts		
Ex-factory sales price unit of (A):	per unit	43.70
- CIF import price per unit of (A):	nil	nil
14. Added value:		1,681,000
15. Cost of production:	100,000	3,479,000
- cost per unit of production:	per hide	34.79

(cont'd)

	Quantity	Value So.Sh.
16. Total employment:	55	237,000
a) Managerial and administrative	1	21,600
b) Technical and Engineering:	1	14,400
c) Skilled operators	5	36,000
d) Semi-skilled operators	14	63,000
e) Unskilled operators	34	102,000
17. Foreign Exchange component in Employment: (included in column 16)		-- ++
18. Depreciation @ 8.75%		175,000
19. Miscellaneous expenses:		183,000
20. Interest on Borrowed Capital. Total:		195,000
- on investment @ 6%		120,000
- on working capital @ 9%		75,600
21. Net profit before tax:		891,000
22. Ratios:		
22/11 = 44.5%		
22/13 = 20.2%		

23. Justification of projects and Evaluation:

1) The existing geasibility study is for a pickling plant and it is very sketchy and it does not give the basic information data required to check the conclusion.

2) Further feasibility study for a tannery is required.

3) All figure and tables are derived from Hendrikson report dated June 1972.

4) The price of So.Sh. 30 per fresh hide is not consistent with the one adopted by CITACO in the report So.Sh. 19.

24. Special conditions for implementation of the project:

1) The installation of pickling plant at Kisimayo is not advisable if the products will not be exportable.

2) Foreign collaboration for manufacture and export from raw hide to finished leather is suggested to maintain the flow of exports.

3) The proposed pickling plant at Burao will not produce tanned leather of quality fit for export purposes.

25. Remarks: + the price of 19 So.Sh. per hide is average price given by CITACO. Report for Mogadishu Slaughter House.

++ Technical Assistance for Pickling Plant can be given by Mogadishu Leather Centre.

Feasibility Data No. XX

1. Project: Nails Factory
2. Gestation Period: 12 months
3. Number of shifts: 1 of 8 hours each
4. Number of Working days in a year: 300 days
5. Possible location: Hargeisa

Market situation	1971		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand:	210 T	378,000	420 T	755,000 +
a) import:	210 T			
b) export:	nil	nil	nil	nil
7. Existing capacity:	nil	nil	380 T	
8. Existing Production:	nil	nil	380 T	1,102,000
9. Gap:	210 T	378,000	40	70,000 ++

Capital Expenditure and Exploitation Data	Year of full capacity 1978	
	Quantity	Value So.Sh.
10. Input:		623,820
a) imported:		612,140
b) local:		11,600
11. Fixed capital in 1974		572,000
a) foreign currency:		343,600
b) local currency:		228,400
12. Working capital: months		395,500
a) foreign currency: months		195,500
b) local currency: months		200,000
13. Annual turn-over - Total:	380 T	1,102,000
(A) Main production:	380 T	1,102,000
(B) Other:	nil	nil
(C) Byproducts:	nil	nil
Ex-factory sales price unit of (A):	1 kg.	2.9
-CIF import price per unit of (A):	1 kg.	2.15 +++
14. Added value:	380 T	478,200
15. Cost of production:	380 T	900,395
- cost per unit of production:	1 kg.	2.38

(cont'd)

	Quantity	Value So.Sh.
16. Total employment:	9	75,080
a) Managerial and administrative:	1	28,600
b) Technical and Engineering:	1	11,440
c) Skilled operators:	5	28,600
d) Semi-skilled operators:	1	3,580
e) Unskilled operators:	1	2,850
17. Foreign Exchange component in Employment: (included in column 16)		nil
18. Depreciation @ 6.1% ++++		93,500
19. Miscellaneous expenses:		38,095
20. Interest on Borrowed capital. Total:		69,900
- on investment @ 6%:		34,300
- on working capital @ 9%:		35,600
21. Net profit before tax:		201,600
22. Ratios:		

21/11 = 35.2%
21/13 = 18.2%

23. Justification of projects and evaluation:

1) Import substitution
2) Promotion of national private industry
3) High profitability
4) Possible diversification of products-mix like screws, bolts, nuts, etc. by few balancing machines later.

24. Special conditions for implementation of the project:

1) Import of machinery
2) Import of raw material
3) Restriction of imported nails and later screws and bolts after the factory commences production so as to protect the local industry.

25. Remarks: + Location suggested because of the possibility of private investment on the proposed project.

++ Increase estimated at 15% per year, although the feasibility prepared by the technical unit in the Ministry of Planning and Co-ordination has estimated increase in consumption @ 4% per annum and the value reckoned at present average prices.

+++ Negligeable - and the gap can be made good by increased production.

++++ Depreciation calculated on an average rate of 6.1% in fixed assets.

NOTE: All prices are indicated in constant Somali Shillings.
Increase of costs being balanced by increase of prices.

Feasibility Data No. XXI

1. Project
2. Gestation Period:
3. Number of shifts:
4. Number of Working Days in a year:
5. Location:

Market situation	1971		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand:	70,000 T	10,500,000	150,000	22,500,000
a) Import:	70,000 T	10,500,000	50,000	7,500,000
b) Export:	-	-	nil	nil
7. Existing capacity:	nil	nil	100,000	15,000,000
8. Existing production:	nil	nil	100,000	15,000,000
9. Gap:	70,000 T	10,500,000	50,000	7,500,000

Capital Expenditure and Exploitation Data	Year of full capacity'75-76	
	Quantity	Value So.Sh.
10. Input:	100,000	19,310,000
a) imported:		14,000,000
b) local:		5,310,000
11. Fixed capital in 1978 (New Project)		68,440,000
a) foreign currency:		50,000,000
b) local currency:		18,440,000
12. Working capital: approximately 3 months		3,660,000
a) foreign currency: months		2,760,000
b) local currency: . months		900,000
13. Annual turn-over - Total:	100,000	31,000,000
(A) Main production:	100,000	31,000,000
(B) Other:	nil	nil
(C) Byproducts:	nil	nil
Ex-factory sales price unit of (A):	1 ton	310
- CIF import price per unit of (A):	1 ton	150
14. Added value:		11,690,000
15. Cost of production:	100,000	25,310,000
-cost per unit of production:	1 ton	253

(cont'd)

		Quantity	Value So. Sh.
16.	Total employment:	284	3,000,000
a)	Managerial and administrative:	There will be more available when the project report is finalized.	
b)	Technical and Engineering:		
c)	Skilled operators:		
d)	Semi-skilled operators:		
e)	Unskilled operators:		
17.	Foreign Exchange component in Employment: (included in column 16)	10	800,000
18.	Depreciation + & %		4,500,000 +
19.	Miscellaneous expenses:		1,000,000
20.	Interest on borrowed Capital. Total: - on investment & %: bilateral agreement - on working capital & %:		nil
21.	Net profit before tax:		5,690,000
22.	Ratios: 21/11 = 8.3% 21/13 = 18.3%		

23. Justification of projects and evaluation:

1) Import substitution
2) Basic industry for overal ldevelopment
3) Exploitation of local mineral resources
4) Facilitate construction of projects, Juba and Shabelle dams with local cement.
5) Heavy capital investments
6) Estimated raw material cost is excessive.
7) The cost is high compared to the cost of cement in the international market.
8) Wet process may prove costly.
9) Export will not be possible without government subsidies

24. Special conditions for implementation of the project:

1) Feasibility of obtaining dry process needs to be considered
2) Quarrying of resources to be started early
3) Roads and good water supply to commence early
4) Housing for personnel not included in the project estimate.
5) These facilities need to be created before the project is commissioned.

25. Remarks: + Project gives 2,000,000 So.Sh., that is a rate of 20 sh./ton or 2.9% of the investments which is very low even for one shift and a portion for 3 shifts.

NOTE: All prices are indicated in constant Somali Shillings Increase of costs being balanced by increase of prices.

Feasibility Data No. XX'I

1. Project: Ceramic Floor and wall tiles
2. Gestation Period: 24 months
3. Number of shifts: 2 of 7 hours each
4. Number of Working days in a year: 300 days
5. Possible location: Berbera/Hargeisa

Market situation	1974		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand: Sq.m.	117,634	11,763,400	156,849	15,684,900
a) import:				
b) export:				
7. Existing capacity:	2,000	200,000	82,000	5,248,000 +
8. Existing Production:	2,000	200,000	82,000	5,248,000 +
9. Gap:	115,634	11,563,400	74,849	7,484,900

Capital Expenditure and Exploitation Data	Year of full capacity 1976	
	Quantity	Value So.Sh.
10. Input:	-	2,401,180
a) imported:	-	1,478,300
b) local:		922,880
11. Fixed capital in 1978 (New Projects)		4,563,200
a) foreign currency:		2,663,200
b) local currency:		1,900,000
12. Working capital months		1,013,500
a) foreign currency months		739,000
b) local currency months		274,500
13. Annual turn-over - Total:	82,000	5,248,000
(A) Main production		
(B) Other		
(C) Byproducts:		
Ex-factory sales price unit of (A):	1 sq. meter	64.00
- CIF import price per unit of (A):	1 sq. meter	100.00
14. Added value		2,846,820
15. Cost of production:		3,866,180
- cost per unit of production	1 sq. meter	47.20

(cont'd)

	Quantity	Value So.Sh.
16. Total employment:	128	633,000
a) Managerial and administrative:	10	110,000
b) Technical and Engineering:	2	100,000 (+)
c) Skilled operators:	25	170,000 (+)
d) Semi-skilled operators:	25	95,000
e) Unskilled operators	66	158,400
17. Foreign exchange component in employment (a) + (b) (included in column 16)		160,000
18. Depreciation á 7.8%		356,000
19. Miscellaneous expenses:		100,000
20. Interest on Borrowed Capital: Total:		365,000
- on investment á 6%:		274,000
- on Working capital á 9%:		91,000
21. Net profit before tax:		1,381,820
22. Ratios:		
23/11 = 30.3%		
23/14 = 26.3%		

23. Justification of projects and evaluation:

1) Import substitution
2) Possibilities for export
3) Use of local material
4) Increase of the quality of buildings
5) Reduction in cost of building materials (Below CIF prices)
6) Labour intensive activity
7) High added value
8) High profitability.

24. Special conditions for implementation of the project:

1) Geological investigation of existing raw material and its mining.
2) Proximity of factory to the raw material
3) Good water supply and its storage
4) Good roads to avoid breakage and vehicle wearness
5) Township and housing for workers and staff
6) Power house
7) Foreign technical collaboration and training

25. Remarks: + Ex-factory value

UNIDO Adviser in National Building Agency under Ministry of Public Works was consulted for availability of raw materials and housing programme for demand for 1974-78.

NOTE: All prices are indicated in constant So.Sh.

Increase of costs being balanced by increase of prices.

Feasibility Data No. XXIII

1. Project: Glue and Medical Industrial Gelatin
2. Gestation Period: 12 months
3. Number of shifts: 1 of 8 hours
4. Number of working days in a year: 300 days
5. Possible location: Mogadiscio

Market situation	1973		on completion of project	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand:	Export Potential Exists			
a) import:				
b) export:	Export oriented			
7. Existing capacity:	nil			
8. Existing Production:	nil		200 T gelatin	
9. Gap:	Does not arise		500 T Glue	

Capital Expenditure and Exploitation Data	Year of full capacity 1976	
	Quantity	Value So.Sh.
10. Input: Fresh bones, and others	-	725,000
a) imported:	-	200,000
b) local: fresh bones and others	3500 T	525,000
11. Fixed capital (on completion of project)	-	1,915,000
a) foreign currency:	-	1,145,000
b) local currency:		770,000
12. Working capital: 2 months requirements	-	200,000
a) foreign currency: months		50,000
b) local currency: months		150,000
13. Annual turn-over - Total:	700 T	1,800,000
(A) Main production: Glue (2000 Sh./ton)	500 T	1,000,000
(B) Other: Gelatine (4000 Sh./ton)	200 T	800,000
(C) byproducts: Fertilisers	-	-
Ex-factory sales price unit of (A):	A) 2.00/Kg.	
- CIF import price per unit of (A):	B) 4.00/Kg.	
14. Added value:	-	1,075,000
15. Cost of production:	-	1,354,000
- cost per unit of production:	-	-

(cont'd)

	Quantity	Value S.Sh.
Total employment:	24	220,000
a) Managerial and administrative:	2	80,000
b) Technical and engineering:	2	100,000
c) Skilled operators:	5	22,000
d) Semi-skilled operators:	5	19,000
e) Unskilled operators:	10	24,000
17. Foreign Exchange component in Employment: (included in values 16)		80,000
18. Depreciation á 7.5%		143,500
19. Miscellaneous expenses:		90,000
20. Interest on Borrowed Capital. Total:		161,000
- on investment á 5%:		115,000
- on working capital á 9%:		46,000
21. Net profit before tax:		445,000

22. Ratios:

21/11 = 23.2%
21/13 = 24.8%

23. Justification of projects and evaluation:

1) High added value for a small or volume of production.

2) utilisation of byproducts of cattle like hoffs, horns, bones, tanneries, offal etc. which are not utilised at present, but which are available in plenty.

3) Glue gelatine are at present imported. Gelatine for medical purposes os obtained in Mogadiscio at the price of 80 shillings per kg. This is at present imported. This could be substituted by indigenous production.

24. **Special conditions for implementation of the project:**

1) **Proximity to the slaughter house**

2) **Hygienic condistions (medical gelatine)**

3) **Bone collection from different regions of Somalia from cattle, camel, sheep and goats.**

4) **Collection of wasted leather cutting for glue production.**

5) **Fresh bones are reserved for gelatine manufacture**

6) **Technical collaborations for: a) feasibility study**
b) production

25. **Location of Mogadiscio is suggested because of the proximity like raw material, availability of ancillary facilities, possible location of the pharmaceutical centres in the vicinity, and accessibility to the main consumingdientile.**

NOTE: All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Data No. XXIV

1. Project: Paper and Paper Board
2. Gestation Period: 12 months (linked to new sugar complex)
3. Number of shifts: 3 of 8 hours each
4. Number of Working days in a year: 300 days
5. Possible location: Proximity to sugar factory.

Market situation	1973		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand: +	15.000	24,500,000	24,300 ++	56,000,000
a) import:	15.000	34,500,000	9,300	
b) export:	nil	-	nil	
7. Existing capacity :	nil	-	15,000	34,500,000
8. Existing Production:	nil	-	15,000	34,500,000
9. Gap:	15.000	34,500,000	9,300	21,500,000

Capital Expenditure and Exploitation Data	Year of full capacity 1978	
	Quantity	Value So.Sh.
10. Input:		13,060,000
a) imported:		11,650,000
b) local: Bagasse at So.Sh. 30/ton	47,000 T	1,410,000
11. Fixed capital in 1978 (New Projects)		75,000,000
a) foreign currency:		52,500,000
b) local currency:		22,500,000
12. Working capital: months		6,575,000
a) foreign currency: 6 months		5,825,000
b) local currency: 2 months		750,000
13. Annual turn-over - Total:	15,000 T	34,500,000
(A) Main Production:	15,000 T	34,500,000
(B) Other:	nil	nil
(C) Byproducts:	nil	nil
Ex-factory sales price unit of (A):	1 kg.	2.30
- CIF import price per unit of (A):	1 kg.	2.23
14. Added value:		21,440,000
15. Cost of production:	15,000	26,037,000
- cost per unit of production:	1 kg.	1.735

(cont'd)

	Quantity	Value So.Sh.
16. Total employment: (3 shifts)	542	2,750,000
a) Managerial and administrative:	10	300,000
b) Technical and engineering:	20	300,000
c) Skilled operators:	90	396,000
d) Semi-skilled operators:	352	1,336,000
e) Unskilled operators:	70	168,000
17. Foreign exchange component in employment: (included in column 16)		250,000
18. Depreciation á 7.5%:		5,625,000
19. Miscellaneous expenses:		1,750,000
20. Interest on borrowed capital. Total:		2,842,000
- on investment á 6%:		2,250,000 +++
- on working capital á 9%:		592,000
21. Net profit before tax:		8,463,000

22. Ratios:

21/11 = 11.25%
21/13 = 24.5%

23. Justification of projects and evalution:

1) Import substitution and increasing consumption estimated at the conservative rate of 10% per year.
2) Utilisation of bagasse produced in excess in the future sugar complex in Lower Juba.
3) Great added value
4) Good profitability
5) Labour intensive
6) Paper made from Bagasse is of high quality
7) Recovery of pith.

24. Special conditions for implementation of the project:

1) Existence of Lower-Juba Sugar Estate
2) Supply of water essential for paper manufacture
3) Power house for township
4) Housing and township for workers and supervision
5) Port facilities and roasd
6) Feasibility study.
7) Process recommended - Neutral sulphite Semi chemical process with bleaching.

25. Remarks: + In 1971, 12700 T of paper and paper board have been imported for the value of 28,400,000 So.Sh.

++ Increase rate calculated from 1967 to 1971: 9.4% adopted from 1971 to 1973 and from 1974 to 1978.

+++ 50% equity; 50% Loan á 6% interests.

NOTE: All prices are indicated in constant Somali Shillings. Increase of costs being balanced by increase of prices.

Feasibility Data No. XXV

1. Project: Shoe Factory
2. Gestation Period: 12 months
3. Number of shifts: 1 of 8 hours
4. Number of working days in a year: 300 days
5. Possible Location: Hargeisa/Berbera

Market situation	1969		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand	89,000	505,000	120,000	683,000
a) import:	89,000	505,000		
b) export:	nil	nil	envisaged	
7. Existing capacity:			15,000	
8. Existing Production:			15,000	435,000
9. Gap:	89,000		105,000 +	

Capital Expenditure and Exploitation Data	Year of full capacity 1978	
	Quantity	Value So.Sh.
10. Input:		209,895
a) imported:		21,195
b) local:		188,700
11. Fixed capital in 1978 (New Projects)		232,400
a) foreign currency:		130,000
b) local currency:		102,000
c) fixed capital in 1973 (Existing projects):		nil
12. Working capital: months		146,500
a) foreign capital months		15,000
b) local currency months		131,500
13. Annual turn-over - Total:	15,000	435,000
(A) Main Production	15,000	435,000
(B) Other	nil	nil
(C) Byproducts	nil	nil
Ex-factory sales price per unit of (A):	1 pair	29.00
- CIF import price per unit of (A):	1 pair	5.69
14. Added value:		225,105
15. Cost of production:	15,000	318,200
- cost per unit of production	1 pair	21.20

(cont'd)

	Quantity	Value So.Sh.
16. Total employment:	22	75,000
a) Managerial and administrative: (owner)	1	18,000
b) Technical and Engineering:	1	9,000
c) Skilled operators:	20	48,000
d) Semi-skilled operators:	nil	nil
e) Unskilled operators:	nil	nil
17. Foreign Exchange component in Implement: (included in column 17)		nil
18. Depreciation á 7.7%		15,900
19. Miscellaneous expenses:		17,405
20. Interest on borrowed Capital: Total		27,130
- on investment á 6%		13,945
- on working capital á 9%		13,985
21. Net profit before tax		116,800

22. Ratios:
22/11 = 50%
22/13 = 26.6%

23. Justification of projects and evalution:

1) Import substitution

2) the average CIF Price of imported shoes in 1969 was less than 6 shillings. That price is to be compared with 29 shillings as the average price of produced pairs.

3) Domestic requirement will go up consequent on increasing standard of living.

4) Labour intensive and high added value.

24. Special conditions for implementation of the project:

1) Quality must be sufficient to justify the envisaged price and the likely price of imported shoes

2) Restriction on certain types of imports and stoppage to protect the local industry.

3) If export to European countries is envisaged brand names and foreign financial/technical collaboration are essential

4) The factory should be in proximity of the tannery

25. Remarks: + The total Somali imports in leather foot-wear increased from 14,000 pairs in 1965 to about 186,000 Pairs in 1969 that is doubled import figures each year. (+ 100%). We adopted for the period starting from 1970 and ending in 1978 the very prudent increase rate of 35% per year in order to take in account any possible saturation of the market.

NOTE: All prices are indicated in constant Somali Shillings.
Increase of costs being balanced by increase of prices.

Feasibility Study No. [illegible]

1. Project: Sandcrete Blocks
2. Gestation Period: 18 months
3. Number of shifts: 2 of 7 hours each
4. Number of Working Days in a year: 300 days
5. Possible Location: Mogadishu

Market situation	1973		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand: +	10,000,000	7,800,000	13,[illegible]	[illegible]
a) import:	6,900,000	5,382,000	5,[illegible]	3,9[illegible]
b) export:	-	-	-	-
7. Existing capacity:	3,100,000	2,418,000	8,100,000	6,3[illegible]
8. Existing Production:	3,100,000	2,418,000	8,100,000	6,3[illegible]
9. Gap:	6,900,000	5,382,000	5,125,000	3,995,000

Capital Expenditure and Exploitation Data	Year of full capacity	
	Quantity	Value So.Sh.
10. Input:		2,378,000
a) imported:		525,000
b) local		2,353,000
11. Fixed capital in 1978 (New Projects)		1,550,000
a) foreign currency:		950,000
b) local currency:		600,000
12. Working Capital: 2 months		605,000
a) foreign currency: 2 months		90,000
b) local currency: 2 months		515,000
13. Annual turn-over - Total:	5,000,000	3,900,000 ++
(A) Main production:	5,000,000	3,900,000
(B) Other	-	-
(C) Byproducts:	-	-
Ex-factory sales price unit of (A):	1 piece	0.78
- CIF import price per unit of (A):	-	-
14. Added value:	5,000,000	1,022,000
15. Cost of production:	5,000,000	3,677,500
- cost per unit of production:	1 piece	0.735

	Quantity	Value So.Sh.
16. Total employment:	88	457,500
a) Managerial and administrative	2	120,000
b) Technical and Engineering:	5	100,000
c) Skilled operators:	5	25,000
d) Semi-skilled operators:	18	68,500
e) Unskilled operators:	60	144,000
17. Foreign Exchange component in Employment (included in column 16)	-	80,000
18. Depreciation á 8%	-	125,000
19. Miscellaneous expenses	-	70,000
20. Interest on Borrowed Capital. Total:	-	147,500
- on investment á 6%	-	93,000
- on working capital á 9%	-	54,500
21. Net profit before tax:	-	222,500
22. Ratios:		
22/11 = 14.3%		
22/13 = 5.7%		

23. Justification of projects and evalution:

1) Use of local coment likely to become available by the time the project is set up.

2) Facilitate building activities both public and private.

3) High added value

4) Improving the quality of Sandcrete blocks used in construction.

5) Labour intensive unit.

24. Special conditions for implementation of the project:

1) Cement should be available from Berbera cement factory

2) Local sand from Mogadishu.

3) Township colony for workers and staff

4) Power line extnesion to the site

5) Water availability for curing, setting and water storage

6) Good roads.

25. Remarks: + Estimates of demand are made by the UNIDO Expert in Building Material. An increase of 7% in Housing has been assessed for forecasting demand in 1978.

++ Capital expenditure and exploitation data based on prices and costs collected by the expert in Building Material.

+++ Hollow concrete blocks size - 20x20x40 cm.m.

NOTE: All prices are indicated in constant Somali Shillings.

Increase of costs being balanced by increase of prices.

Feasibility Data No. XXVII

1. Project: White wares/household crockery.
2. Gestation Period: 24 months.
3. Number of shifts: 2 of 7 hours each, (excluding one hour for cleaning).
4. Number of working days in a year: 300
5. Possible location: Berbera/Hargeisa.

Market situation	1973		1978	
	Quantity	Value So.Sh.	Quantity	Value So.Sh.
6. Demand: 2.50/piece	1,600,000	4,000,000	3,000,000	5,400,000
a) Import	1,600,000	4,000,000	1,639,000	2,950,000
b) Export	nil	nil	nil	nil
7. Existing capacity	nil	nil	1,360,800	2,450,000
8. Existing production:	nil	nil	1,360,800	2,450,000
9. Gap:	1,600,000	4,000,000	1,639,200	2,950,000

Capital Expenditure + Exploitation Data	Year of full capacity	
	Quantity	Value So.Sh.
10. Input		689,000
a) imported		586,100
b) local:		102,900
11. Fixed capital on completion of the project		4,692,000
a) Foreign currency		2,692,000
b) Local currency		2,000,000
c) Fixed capital in 1973		nil
12. Working capital: (2-3) months requirements		388,000
a) Foreign currency 3 months requirements		300,000
b) Local currency 2 months requirements		88,000
13. Annual turn-over - Total:	1,360,800	2,450,000
(A) Main production	1,360,800	2,450,000
(B) Other	nil	nil
(C) By-products:	nil	nil
- Ex-factory average sales price unit of (A):	per piece	1.80 +
CIF import price per unit of (A):	per piece	1.80 ++
14. Added value		1,761,000
15. Cost of production:		1,827,600
- cost per unit of production average	per piece	1.34

	Quantity	Value So.Sh.
16. Total employment:	57	388,000
a) Managerial and administrative	2	120,000
b) Technical and Engineering	5	100,000
c) Skilled operators	10	44,000
d) Semi skilled operators	20	76,000
e) Unskilled operators	20	48,000
17. Foreign Exchange component in Employment: (included in column 16)	-	60,000
18. Depreciation at 7.8%	-	364,200
19. Miscellaneous expenses:	-	90,000
20. Interest on Borrowed Capital. Total:	-	316,400
- on investment at 6%	-	281,500
- on working capital at 9%	-	34,900
21. Net profit before tax:	-	622,400

22. Ratios:

22/11 = 13.2%

22/13 = 25.4%

23. Justification of projects and evaluation:

1) Import substitution
2) Use of local materials likely to be available
3) Export possibilities to neighbouring countries
4) High added value
5) Labour intensive industry
6) High profitability

24. Special conditions for implementation of the project:

1) Minerals availability and its mining (Feldspar Kaolin, quarts, gypsum).
2) Nearness to the sources
3) Good water supply
4) Good roads for transport of finished products
5) Township and housing for workers and staff.
6) Technical assistance, preferably from a country highly developed in manufacture of such products.

25. Remarks: + With decoration
++ Without decoration.

UNIDO Adviser in National Building Agency under Ministry of Public Works was consulted for the future availability of raw materials for this manufacturing factory in 1977. A sample Survey for demand was conducted by UNIDO Adviser in Ministry of Public Works.

NOTE: All prices are indicated in constant Somali Shillings.
Increase of costs being balanced by increase of prices.

Feasibility Data No. XXVIII

1. Project: Sanitary and Porcelaine Factory
2. Cestation Period: 24 months
3. Number of shifts: 2 of 7 hours each (Excluding one hour for cleaning)
4. Number of Working days in a year: 300
5. Possible location: Berbera/Hargeisa.

Market situation	1974		1978	
	Quantity prices	Value So.Sh.	Quantity prices	Value So.Sh.
6. Demand:	16,595	3,983,000	22,278	5,347,000
a) Import:	16,595	3,983,000	12,018	2,884,000
b) Export:	nil	-	-	-
7. Existing capacity:	nil	-	10,260	2,463,000
8. Existing Production:	nil	-	10,260	2,463,000
9. Gap	16,595	3,983,000	12,018	2,884,000

Capital Expenditure + Exploitation data	Year of full capacity	
	Quantity	Value So.Sh.
10. Input		297,800
a) imported		251,850
b) local		45,950
11. Fixed capital		4,060,000
a) Foreign currency:		3,060,000
b) Local currency:		800,000
12. Working capital: 6 months requirements		200,000
a) Foreign currency: 6 months requirements		130,000
b) Local currency: 1 months requirements		70,000
13. Annual turn-over - Total	10,260	2,257,200
(A) Main production:	10,260	2,257,200
(B) Other:	nil	nil
(C) By-products:	nil	nil
Ex-factory average sales price unit of (A):	1 piece	220
- CIF import price per unit of (A):	1 piece	240
14. Added Value:		1,959,400
15. Cost of production:	10,260	1,666,400
- average cost per unit of production:	1 piece	160

	Quantity	Value So.Sh.
16. Total employment:	58	408,000
a) Managerial and administrative:	2	120,000
b) Technical and Engineering:	6	120,000
c) Skilled operators:	20	76,000
d) Semi skilled operators:	20	48,000
17. Foreign Exchange component in Employment: (included in column 16)	-	80,000
18. Depreciation at 8%	-	316,000
19. Miscellaneous expenses:	-	93,000
20. Interest on Borrowed Capital. Total:	-	261,600
- on investment at 6%:	-	243,600
- on working capital at 9%:	-	18,000
21. Net profit before tax:	-	650,000
22. Ratios:		
22/11 = 16%		
22/13 = 29%		

23. Justification of projects and Evaluation:

1) Exploitation of local natural resources, Feldspar, quartz, white clay dolomite or sepiolite, marble or calcite, gypsum.

2) Export possibilities to neighbouring countries.

3) High added value.

4) Realisation of import substitution.

5) Higher quality and durability for building construction.

6) Labour intensive industry.

7) Potential for future expansion possible.

24. Special conditions for implementation of the project:

(A proper feasibility study needs to be conducted before setting up the project.)

1) Low humidity climatic conditions for natural drying of items.

2) Near the sources of minerals (Northern Somalia).

3) Provision of good water and storage.

4) Township for workers and staff.

5) Training of skilled and furnace maintenance.

Special care for manufacture and packing for transport of finished product be taken to avoid breakage.

25. Remarks: • Value not ascertainable and hence estimated based on a random survey conducted by UNIDO expert in respect of imported price as well as for the quantity imported up to 1971 and projections for use in housing calculated for 1974 and 1976.

[illegible]

Feasibility Data No. XXIX

1. Project: Asbestos Sheets and Pipes
2. Gestation Period: 24 months
3. Number of shifts: 3 of 8 hours each.
4. Number of working days in a year: 300.
5. Possible location: Mogadiscio +

Market situation	1973		1978	
	Quantity sq. metres	Value So.Sh.	Quantity sq. metres	Value So.Sh.
6. Demand:	1,160,000	17,400,000	1,800,000	27,000,000
a) import:	1,160,000	17,400,000	-	-
b) export:	-	-	-	-
7. Existing capacity:	nil	-	1,000,000(a)	15,000,000
8. Existing Production:			500,000(b)	15,000,000
9. Gap		-	1,000,000(a)	15,000,000
			500,000(b)	15,000,000
(a) sq. metres of sheets	1,160,000	17,400,000	800,000(a)	12,000,000
(b) metres of pipes				

Capital Expenditure + Exploitation data	Year of full capacity	
	Quantity	Value So.Sh.
10. Input	-	12,751,450
a) imported:		648,200
b) local:		12,103,250
11. Fixed capital (on completion of the Project)		9,250,000
a) Foreign currency:		6,700,000
b) Local currency:		2,550,000
12. Working capital:		2,410,000
a) Foreign currency:		324,000
b) Local currency:		2,086,000
13. Annual turn-over - Total:		30,000,000
(A) Main production: Asbestos sheets	1,000,000 sq.m.	15,000,000
(B) Other: Pipes at So.Sh. 30 per metre	500,000 m.	15,000,000
(C) By-products: nil	nil	nil
- Ex-factory sales price unit of (A):	1 sq. metre	15 So.Sh.
CIF import price per unit of (A):	-	-
14. Added value		17,897,000
15. Cost of production		16,013,050
- cost per unit of production (A)	1 sq. metre	8.01
(B)	1 metre	16.50

	Quantity	Value So.Sh.
16. Total employment:	146	708,500
a) Managerial and administrative:	4	130,000
b) Technical and Engineering:	21	220,000
c) Skilled operators:	20	88,000
d) Semi skilled operators:	20	76,000
e) Unskilled operators:	81	194,000
17. Foreign Exchange component in Employment: (included in column 16)	-	200,000
18. Depreciation at 8.7%		782,000
19. Miscellaneous expenses:		1,000,000
20. Interest on Borrowed Capital. Total:		771,900
- on investment at 6%		555,000
- on working capital at 9%		216,900
21. Net profit before tax:		13,986,150
22. Ratios:		
21/11 = 151%		
21/13 = 46.6%		

23. Justification of projects and evaluation:

1) Import substitution of roofing materials and pipes.
2) Higher durability compared with galvanised iron sheets.
3) Better insulation in housing and better living conditions.
4) Use of local cement likely to become available.
5) Reduction in building costs.
6) High added value.
7) Labour intensive.
8) High profitability.
9) Induces quarry of asbestos and export possibility of asbestos.

24. Special conditions for implementation of the project:

1) Geological investigation of the asbestos deposit.
2) Availability of cement and asbestos from Somalia.
3) Proximity of major consumption centres in Mogadishu.
4) Township and housing facilities to workers.
5) Technical collaboration.

25. Remarks: + With extraction plant in Berbera.
The investment costs are based on present day price for the machinery and equipments. Operating costs are based on data obtained from running plants. Raw material prices are based on CIF prices of imported material. The survey costs are excluded.

NOTE: All prices are indicated in constant Somali Shillings.
Increase of costs being balanced by increase of prices.

SMALL INDUSTRY PROJECTS - SALIENT DATA

	Capacity (Annual single shift)	Investment (So.Sh.) Fixed	Working	Total	Machinery and Equipment	No. of persons employed	Raw materials
[illegible] Soap	300 tons	80.000	120.000	200.000	Saponification pans, cooling frames, cutting, bar making + soap splitting machines, stamping press	Supervisory 1 Skilled 5 Others 2 8	Vegetable oils Tallow, Silicite soda, colour dyes, perfumes
[illegible] Soap	800 tons	1.200.000	800.000	2.000.000	Steam boiler Rotary oil pumps, saponification kettles, storage tank, condensers, extrusion + refining equipment splitting machines, stamping press	Supervisory 3 Skilled 15 Others 2 20	Fats - tallow Caustic soda solution of sodium chloride, perfumes, colour dyes
[illegible] pens [illegible] fountpieces)	1000 gross	50.000	50.000	100.000	Leg pedal lathes, Brass slitting machine, moulding machine, Drilling machine	Supervisory Skilled 3 Others 2 5	Ebonite rods Brass sheets Cardboard packing
[illegible]	60.000 gross	200.000	80.000	280.000	Circular saw machine, wood planing machine, pencil slab gluing machine, dipping machine pressing machine, painting machine, name embossing machine single + double forming machines	Supervisory 1 Skilled 2 Others 8 11	Wood slabs, graphite lead, colour lead, pencil lacquers, glue/resin, paint, cardboard packing
[illegible] Pens	1000 gross (12,000 dozen)	60.000	1.000.000	1.600.000	Killing machine, drilling machine buffing machine, moulding machine, dyes	Supervisory 3 Skilled 10 Others 7 20	Cellulose nitrate brass sheets, brass rivets

Project	Capacity (Annual single shift)	Investment So.Sh. Fixed	Working	Total	Machinery + Equipment	No. of persons employed		Raw materials
Agricultural implements + Hand tools	36,000 Nos. (Value 250,000)	100,000	100,000	200,000	Press 200 ton pressure Lathe, Drilling machine, diesel engine generator welding set, compressor, Pneumatic grinder	Supervisory Skilled Others	1 4 1	High carbon steel sheets + flats, steel rods and sections
Beverage	200,000 bottles	250,000	500,000	750,000	Bottle washing machine, filling machine, capping machine, carbonating machine, crown corking machine	Supervisory Skilled Others	1 6 10 17	Sugar, concentrates, CO2 gas crown corks, essence, labels, wooden crates
Oil mill-cum rice huller	200 tons oil 100 tons husked rice	200,000	300,000	500,000	Boiler + pumps, oil expeller, filter press, Rice huller	Supervisory Skilled Others	2 4 8 14	Vegetable oil seeds, (sesame) unhusked rice (Paddy), plastic cans.
Asbestos cement sheets	18.000 sheets	150.000	50.000	200.000	Asbestos cement sheet making machine with motor + water pumps	Supervisory Skilled Others	1 5 2 8	Asbestos fibre Cement resins
Aluminium utensils	35 tons	200.000	300.000	500.000	Circle cutting machine, Deep drawing presses, drilling machine, spinning and scraping lathes, turning lathes, grinding + buffing machines	Supervisory Skilled Others	2 10 8 20	Aluminium sheets Caustic soda Polishing materials

NOTE: Figures are rough estimates.

COMPONENTS OF FISHING FLEET:

[illegible]	[illegible]	Means of fishing	Capacity/particulars	Estimated cost So.Sh. (000)	Investment cost/ton So.Sh.	Cost per kg. So.Sh.
[illegible]	[illegible]	Motor Boat	40 tons per annum 250 Nos. of boats	15,000	1,500	1.5
[illegible]	[illegible]					
[illegible]	4,000	Trawlers 13 Nos.	16 metre trawlers capacity catch of 350 tons. Length 16 metres Beam 5 metres depth 2.36 metres. Draft AFI 1.75 metres. Displacement 35 ton Nos. Engine Power 200-250 HP	9,000	2,000	2.00
[illegible]	7,200	Medium size trawlers capacity 1500 tons 2 Nos.	GRT 500 tons. Length 57.5 metres. Width 9.20 metres. Height 4.45 metres. Draught (max) 380 metres. Deep freezing capacity 15 tons per day. Engine power 1200 HP			
		Small size trawlers 500 tons tuna or 700 tons other fish 10 Nos.	GRT 170 to 200 tons. Length 25-30 metres. Width 7 to 8 metres. Discharge 60 tons of deep frozen fish. Engine power 500 to 600 HP. Annual catch possibility 1200 tons	36,000	5,000	5,00
	Total -			66,000		

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Canned Fruits and Vegetables (4500 MT.) dressed and Canned Meat 872 MT)
Castor Oil 2,500 MT
Castor Cake 3,500 MT
Charcoal 30,000 MT
Cigarettes 12 mn. Pkts, of 20 each (240 mn. cigarettes)
Cotton Lint 13,500 MT
Cotton Seed 27,290 MT.
Dairy Product 41,500 MT.
Leather 10037 Th. Sq. Mtr.
Rice Processed 19,300 MT.
Sesame Oil 3,900 MT.
Ground-nut oil 1,600 MT.
Sesame Cake 1900 MT.
[illegible] cloth bags [illegible] MT.
Sugar [illegible] MT.
[illegible] MT.
Cotton Seed [illegible] MT.

Sl. No.	Name of the Reference:
	Cotton Seed Meal 3266 MT.
	Leather Products 11,613 Sq. Metres
	Mayonnaise 13,600 Kgs.
	Surgical Cotton
	Bagasse cartons and Coarse paper 9501 MT.
	Bagasse Pital blanded - Exterior Wall Paper 2 mn. sq. metres.
	Distilled 1 mn.
	Fuel and Ind. Alol Laundry and Toilet Soap } 900 MT.
	Bagasse 100 Mn. Paper bags.
	Bricks 36 mn.
	Clay roofing 2 mn.
	Tiles, clay, floor 10.5.5. mn.
	Cement 60,000
	Concrete Blocks 500,000.
	Glass jars and Bottles 3,00.
	Farm tools 200,000 Units.
	Hand plough and Cultivator 12,000 Units.
	Glue 375 MT.
	Bone Meal 1500 MT.
	Job Machine Shop SS 4.45 Mn.
	Metal containers 5 Mn. Pcs.
	Paints 25,00 glass.
	Power Drawer Agr. Implement 6000 Units.
14.	Tyre Recapping: Investment opportunities: In tyre recapping (1961) Ministry of Industry and Commerce, Dept. of Industrial Development (Somali Republic).
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91.	Feasibility study on the Establishment of a Nails and Screw Factory in Somalia by CITACO, S.p.A., Roma.
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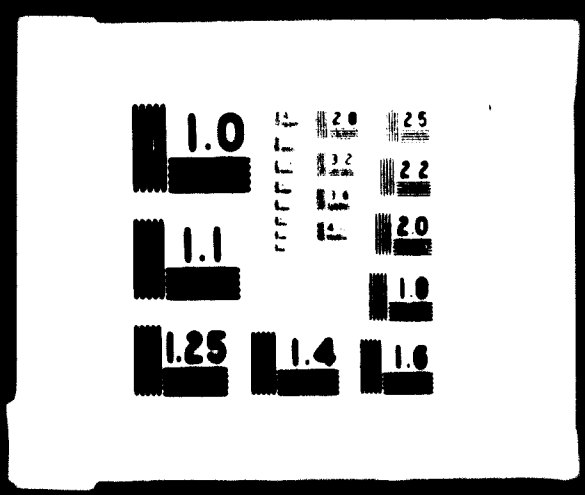

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135.	Meat Processing Factory, Chisimaio, -do-
136.	Fish Processing Cannery, Las-Khoreh, -do-
137.	Somaltex, Balad, -do-
138.	[illegible], Mogadiscio, -do-
139.	[illegible], Jowhar -do-

APPENDIX XIII

List of persons met by the Survey Team

Sr. No.	Name of Person
1.	Jaalle Ibrahim Megag Samater, Ex-Secretary of State for Industry.
2.	Jaalle Dr. Abdiqassim Salad Hassan, Secretary of State for Industry.
3.	Jaalle Dr. Mohamoud Issa Salwe, Director-General, Ministry of Industry.
4.	Jaalle Aden Amin Awil, Atg. Director of Industry, " " "
5.	Jaalle Ahmed Yusuf Said, Mechanical Engineer, " " "
6.	" Sherif Awes Nur, Economist, " " "
7.	" Ismail Mohamed Aden, Economist, " " "
8.	" Ibrahim Sheikh Jama, Electrical Engineer, " " "
9.	Mr. S. Stefanov, UNIDO Advisor.
10.	Jaalle Ibrahim Ali Liban, General Manager, Milk Factory, Mogadiscio.
11.	" Mohamed Ahmed Elmi, General Manager, SOPRAL, Mogadiscio.
12.	Sig. Cesare Del Rone, Director, Ferro-Somala, Mogadiscio.
13.	Jaalle Hirey Qassim, General Manager, Industria Chimica Somala, Mogadiscio.
14.	Jaalle Abdullahi Salah, General Manager, SIDA Leather Institute, Mog.
15.	Jaalle Abdullahi Haji Hashi, General Manager, ONAT Organisation, Mogadiscio.
16.	Jaalle Hassan Hasci Fighi, Director-General, SNAI, Giohar.
17.	Jaalle Engineer Sido Omar, Engineer of SNAI, Giohar.
18.	Sig. Conti, Technical Adviser, SNAI, Giohar.
19.	Jaalle Jama Mohamed, Director of Agriculture, SNAI, Giohar.
20.	Jaalle Col. Abdi Suguleh, Governor, North West Region, Hargeisa.
21.	" Mohamed Abukar Haji, Director of Agriculture, North West, Hargeisa.
22.	" Ahmed Ali Bihi, Director of Date Scheme, North West, Hargeisa.
23.	" Mohamoud Abdi Arrale Farah, Director of Co-operative, Hargiesa.
24.	" Haji Ali Botan, Industrialist, Hargeisa.
25.	" Engineer Mohmed Hussein Yusuf, Somali Industrial Engineering Co. Hargeisa.
26.	" Mohamed Abdi Walanwal, Director of Co-operative, Hargeisa.
27.	" Haji Ibrahim Noor Jama, National Shipping Co. Hargeisa.
28.	" Mohamed Jama, Director of Incense Manufacturing Co., Hargeisa.
29.	" Capt. M.H. Jama, District Development Officer, Gabileh.
30.	" Major Ismail Madar Farah, District Development Officer, Berbera.
31.	" Abdulla Ali, Industrialist, ice plant, Berbera.
32.	" Omar Ali Keseh, Fishing Co-operative, Berbera.
33.	" Mohamed Omar Ali, Kaiser, Shipping Co., Berbera.
34.	" Col. Bille Rafle, Governor of Burao, North-East Region.
35.	" Ahmed Mohamed Rageh, Secretary of Commerce Chamber, Burao.
36.	" Ahmed Jama Sahal, Officer of LDA, Burao.
37.	" Ali Haji Issa, Director of Agriculture Service, Burao.
38.	" Ali Ahmed, Manager of Pickling Plant, Burao.
39.	" Mohamed Jama, Engineer of Power House, Burao.
40.	" Omar Abdi, Director of Planning and Co-ordination, Mogadiscio.

Sr. No.	Name of Person
41.	Jaalle Abdi Awil Jama, Director of Workshop, Carpentry, Burao.
42.	Mr. K. C. Cheriyan, UN Advisor, Ministry of Planning, Mogadiscio.
43.	Jaalle Col. Mohamed Noor, Mohamed, Chairman of Somaltex, Mogadiscio.
44.	Sig. Albert Francois, General Manager, Somaltex, Mogadiscio.
45.	Jaalle Muridi Ali Salah, Director of Fisheries, Mogadiscio.
46.	Jaalle Major Dahir Mohamed, Governor of Bosaso, Bosaso Region.
47.	Jaalle Mohamed Eno Hassan, Dy Governor of Bosaso, Bosaso Region.
48.	Sig. Geroge Gargule, Director of SAFCO, Alula, Bolmog.
49.	Sig. Dino Risavegli, Dy. Director of SAFCO, Alula, Bolmog.
50.	Jaalle Ahmed, Superintendent of Police, Alula.
51.	Sig. Pigo Ricardo, Director of Fishing Co., S.p.A., Habo.
52.	Sig. Giusuppe Novella, Director of Fishing Co. S.p.A., Kandala.
53.	Jaalle Col. Ibrahim Warfa, General-Manager, Fish Factory, Las-Khoreh.
54.	Mr. Yura, Chief of Technology, Fish Factory, Las-Khoreh.
55.	Sig. Giorgi, Chief for Boiler Technology, Las-Khoreh.
56.	Jaalle Mohamed Gani, General Manager, LDA, Mogadiscio.
57.	Jaalleh Rageh, General Manager of ENP, Mogadiscio.
58.	Sig. Saibeno, CITACO, Mogadiscio.
59.	Jaalle Osman Yusuf Farah, Director Somali Development Bank, Mogadiscio.
60.	Jaalle Abdul Khalif Ahmed, General Manager, Cattle Feed Plant, Mogadiscio.
61.	Mr. Gusov Peter, Adviser of Somali Fishing Expedition, Mogadiscio.
62.	Jaalle Bashir A.A. Gardaad, Director-General, Ministry of Fisheries.
63.	Mr. Korev, Adviser of Somali/Soviet Expedition, Mogadiscio.
64.	Mr. K. Kawakuchi, Adviser for Fishing, FAO, Mogadiscio.
65.	Jaalle Abdi Smad Sheikh Osman, Director of Geology, Mogadiscio.
66.	Jaalle Ali Issa Farah, Ministry of Mining, Mogadiscio.
67.	Jaalle Abdul Azis Ali Mohamed, Director of Water Development Agency, Mog.
68.	Jaalle Col. Mohamed, Governor of Kismayo, Kisimayo Region.
69.	Jaalle Capt. Abdul Hamid, Mayor of Kisimayo, Kisimayo Region.
70.	Jaalle Asan, Director of Banana Agency, Kisimayo.
71.	Jaalle Abdulla, Dy. Governor of Kisimayo, Kisimayo Region.
72.	Jaalle Lieut. Osman, Chief of Police, Kisimayo.
73.	Jaalle Moalim, General-Manager, Kisimayo Meat Factory, Kisimayo.
74.	Jaalle Capt. Abdulkadir, Director of Meat Factory, Kisimayo.
75.	Mr. K.K. George, Veterinary Doctor, LDA Holding Ground and Port, Kisimayo.
76.	Mr. Yura, Chief of Technology, Kisimayo Meat Factory, Kisimayo.
77.	Jaalle Yusuf, Banana Agency Field Officer, Kisimayo.
78.	Mr. Pardi, Director of Plantation Fratelli Co. Giamama.
79.	Sig. Giuseppe Ricci, General-Manager of Factory, Giamama.
80.	Jaalle Engineer Ismail Jama, Panolo Project, Panolo.

Sr. No.	Name of Person
81.	Jaalle Haji Ismail, Fruit Juice Canning, Kismayo.
82.	Jaalle Hassan, General-Manager, Banana Board, Mogadiscio.
83.	Jaallo Abubaker Haji Omar, Industrialist, Mineral Water, Brava.
84.	Jaalle Abdi Haibeh, Dy. Governor, Local Gov't Secretariat, Merca.
85.	Jaalle Capt. Mohamed Jama, Local Government, Merca.
86.	Jaalle Mohamed Hawadleh, General Manager, Public Works Department, Mogadiscio.
87.	Jaalle Amina Abdirahman, Director of Production, Afgoi Fruit Factory (ITOP)
88.	Sig. Perreti, Cattle Feed Plant, Mogadiscio.

Diagram 1

Integrated Sugar Complex

Sugar Factory
Distillery
Case Manufacturing
Paper Mill
Cattle Feed Plant
Co2 Ice Plant

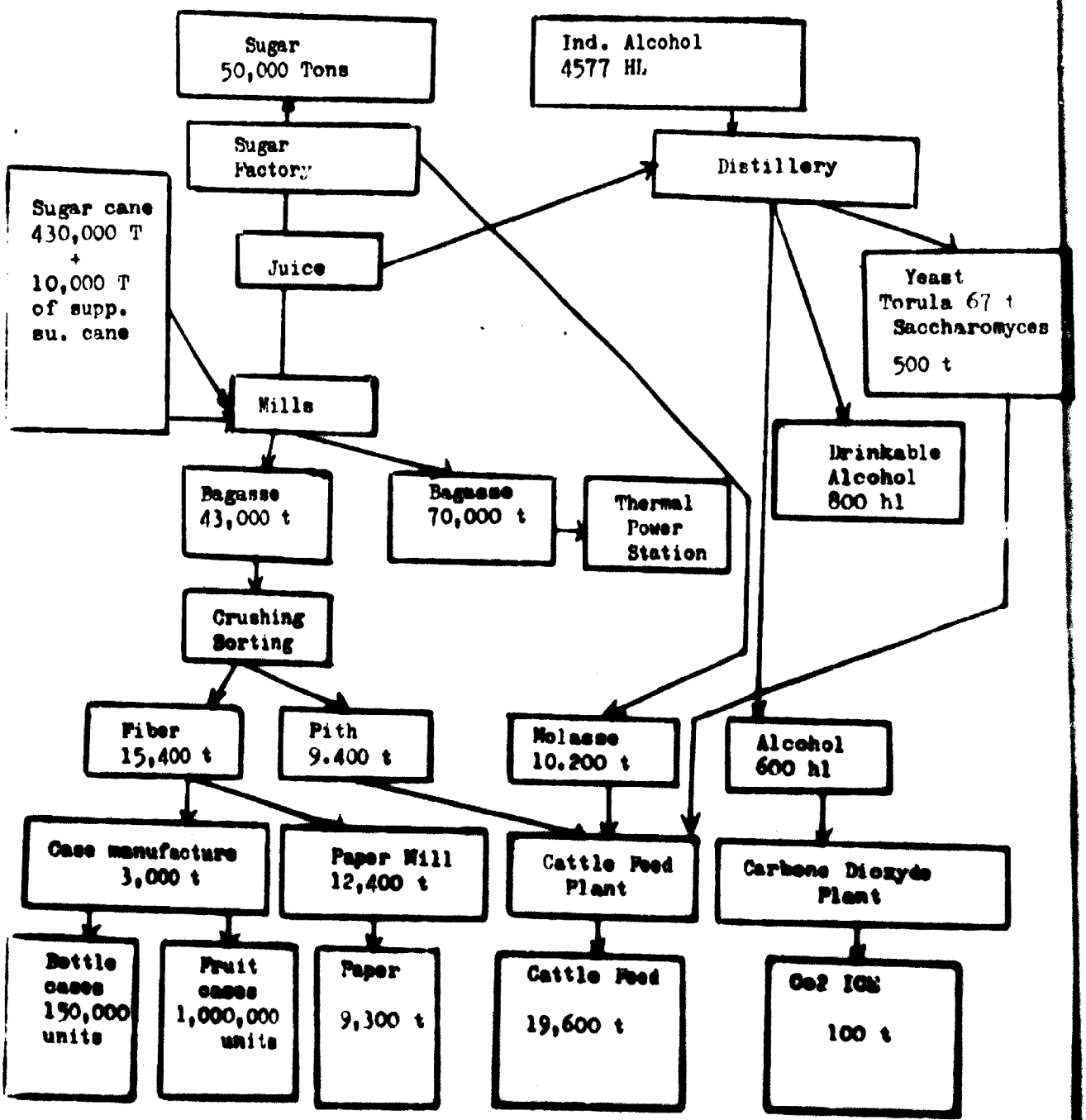
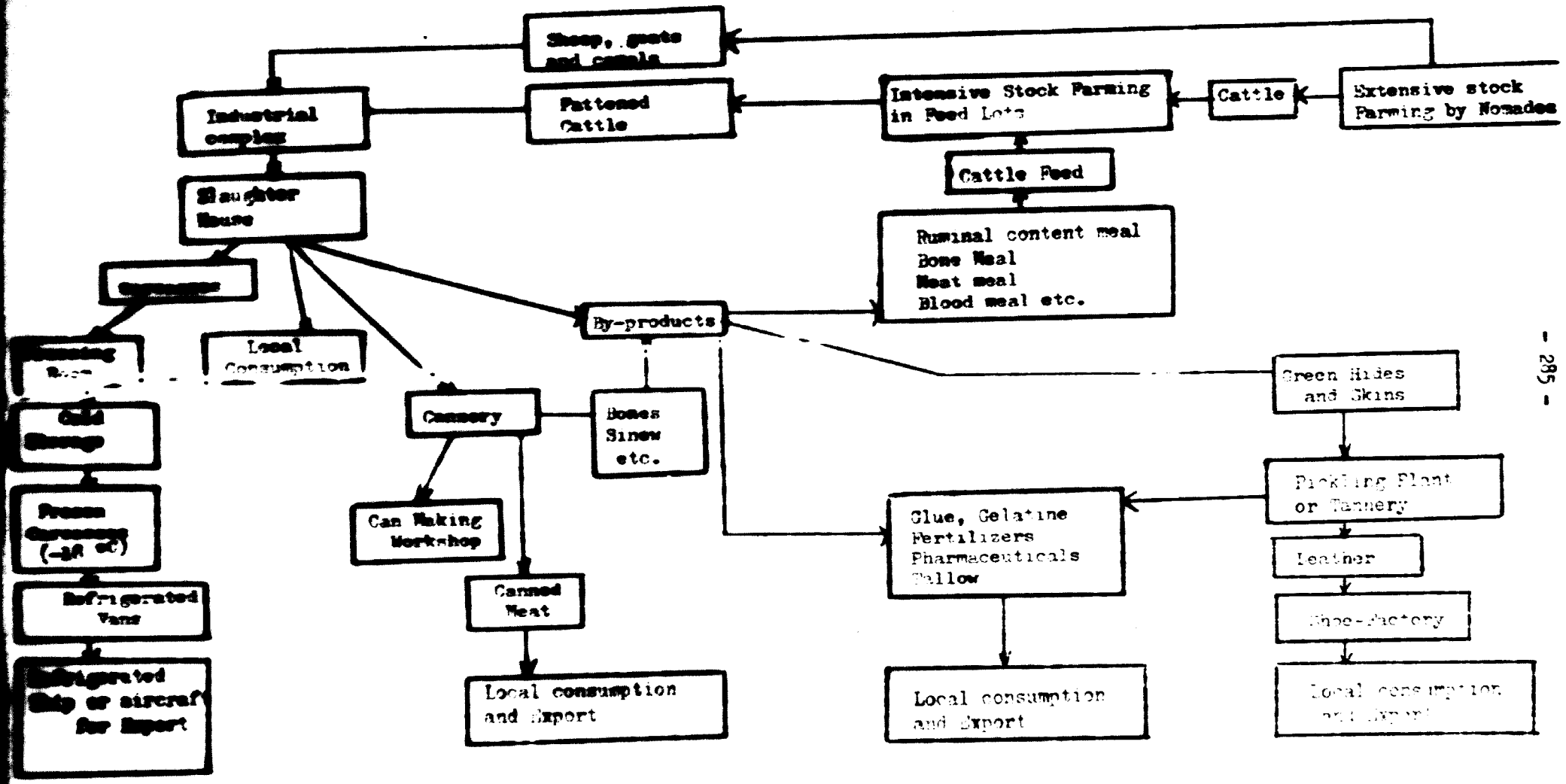


Diagram II

Meat Industrial Complex



Agro-Pastoral industrial Complex

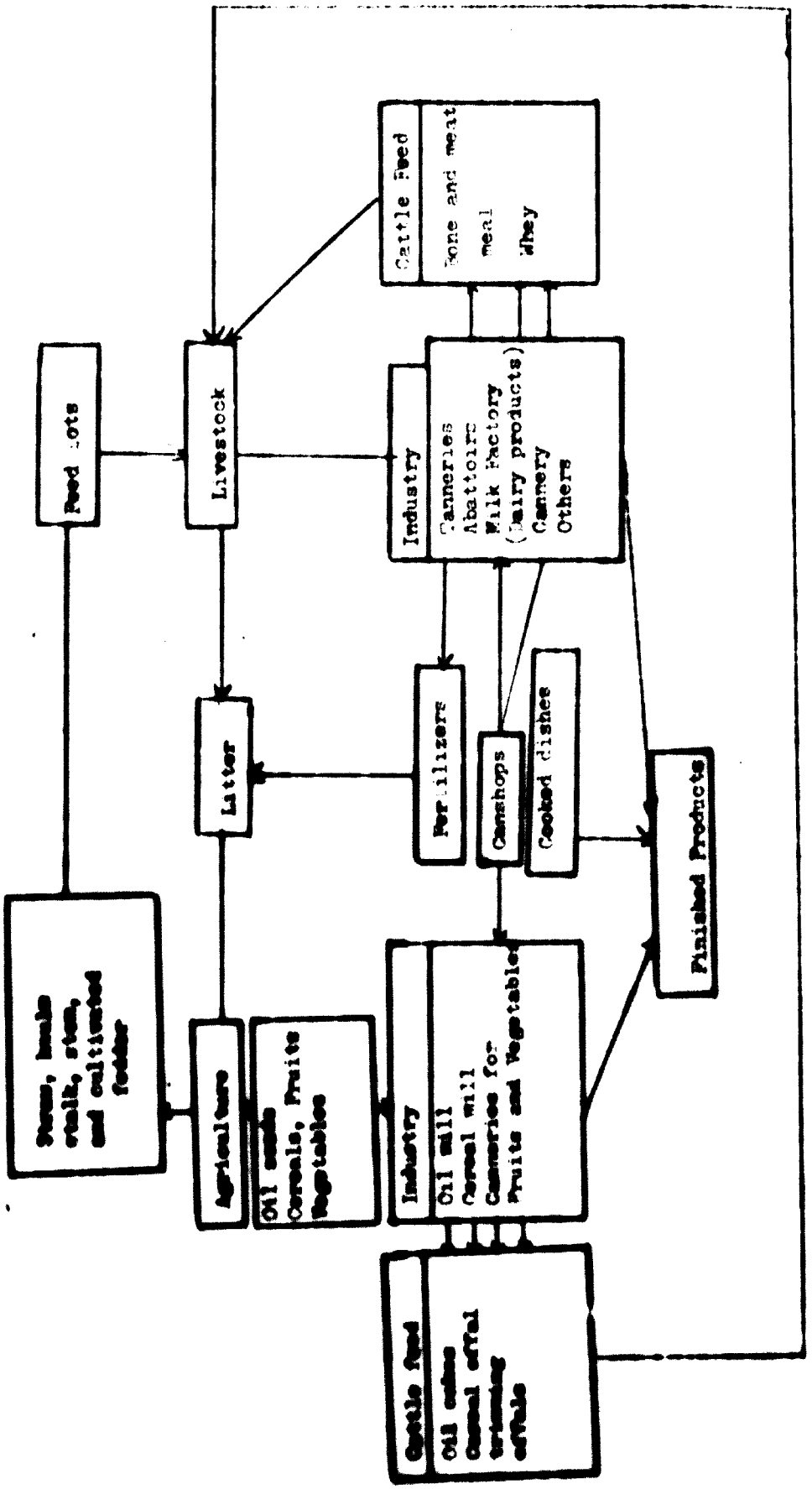
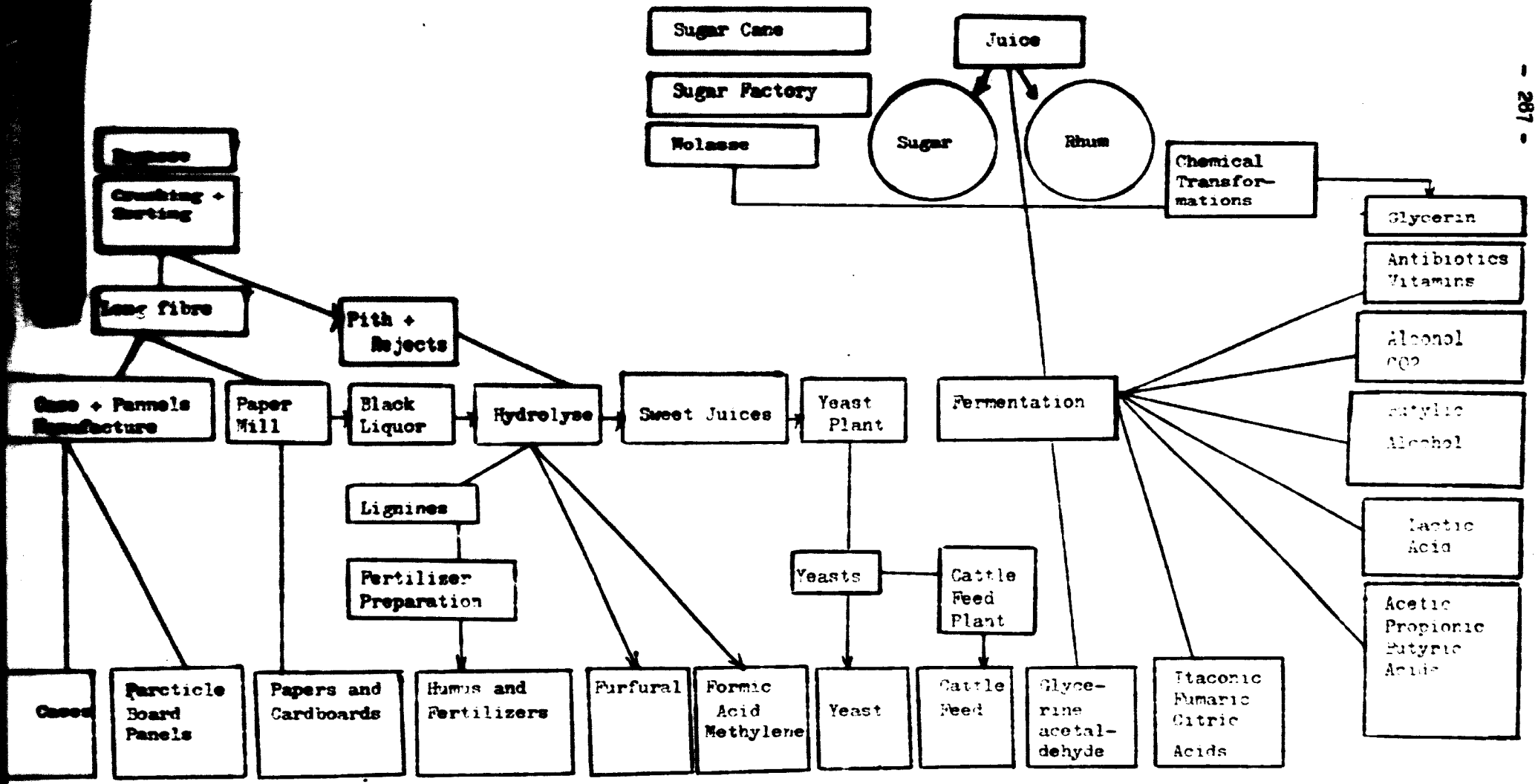
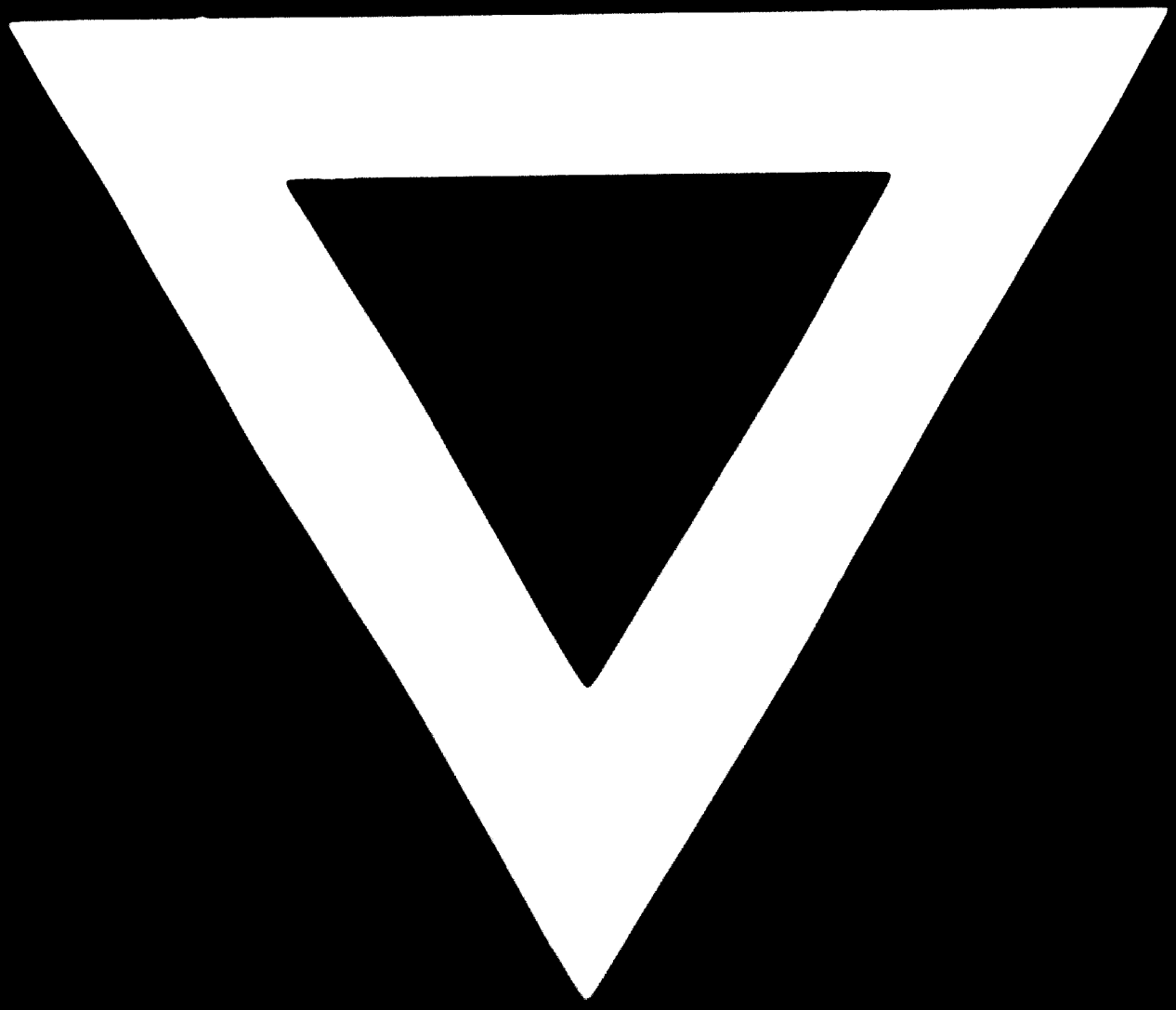


Diagram IV

Industrial Utilisation of Sugar Cane





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