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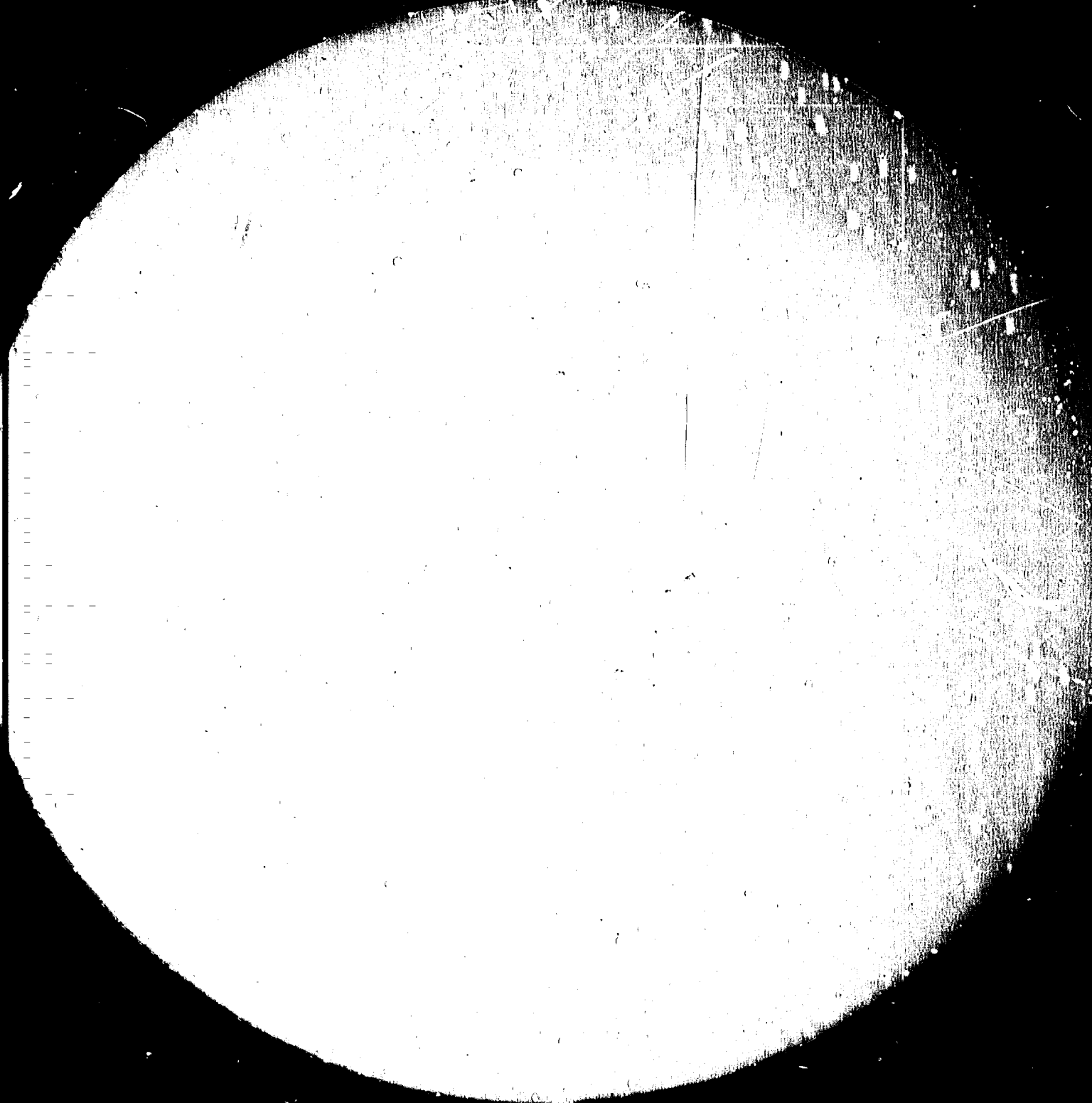
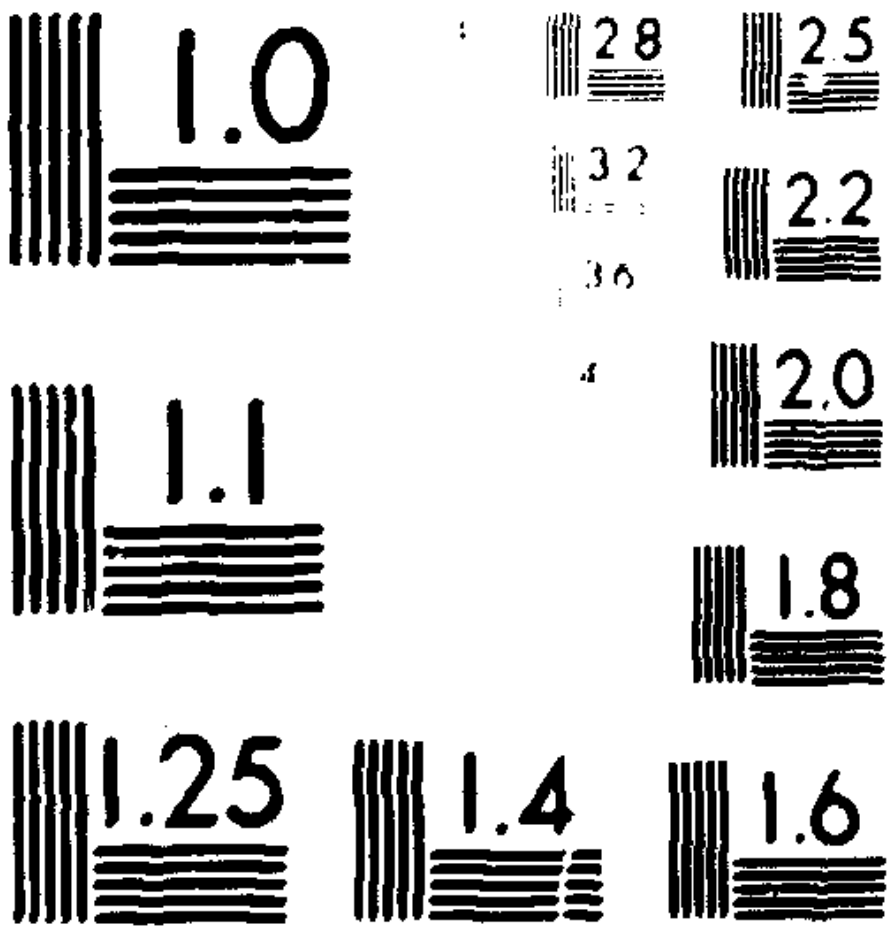
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org





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Distr.
LIMITED

UNIDO/IS.295
11 March 1982

ENGLISH

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

Libya.

COUNTRY INDUSTRIAL DEVELOPMENT PROFILE

THE SOCIALIST PEOPLE'S LIBYAN ARAB JAMAHIRIYA*

Prepared by the

Division for Industrial Studies

Regional and Country Studies Branch

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PREFACE

The Division for Industrial Studies, Regional and Country Studies Branch, has undertaken under its work programme the preparation of a series of Country Industrial Development Briefs. These Briefs are desk studies, providing statistical and economic analyses of the industry sector, its growth, present status and future prospects. It is hoped that this Brief will provide information of use to programming technical assistance, industrial redeployment and investment co-operation activities.

The Brief on the Socialist People's Libyan Arab Jamahiriya is based on documents, reports and studies available at UNIDO Headquarters. No field survey was undertaken and some of the data on industry are either incomplete or not up-to-date.

The views and comments contained in this document do not reflect those of the Government of the Socialist People's Libyan Arab Jamahiriya, nor do they officially commit the United Nations Industrial Development Organization to any particular course of action.

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EXPLANATORY NOTES

Basic Data

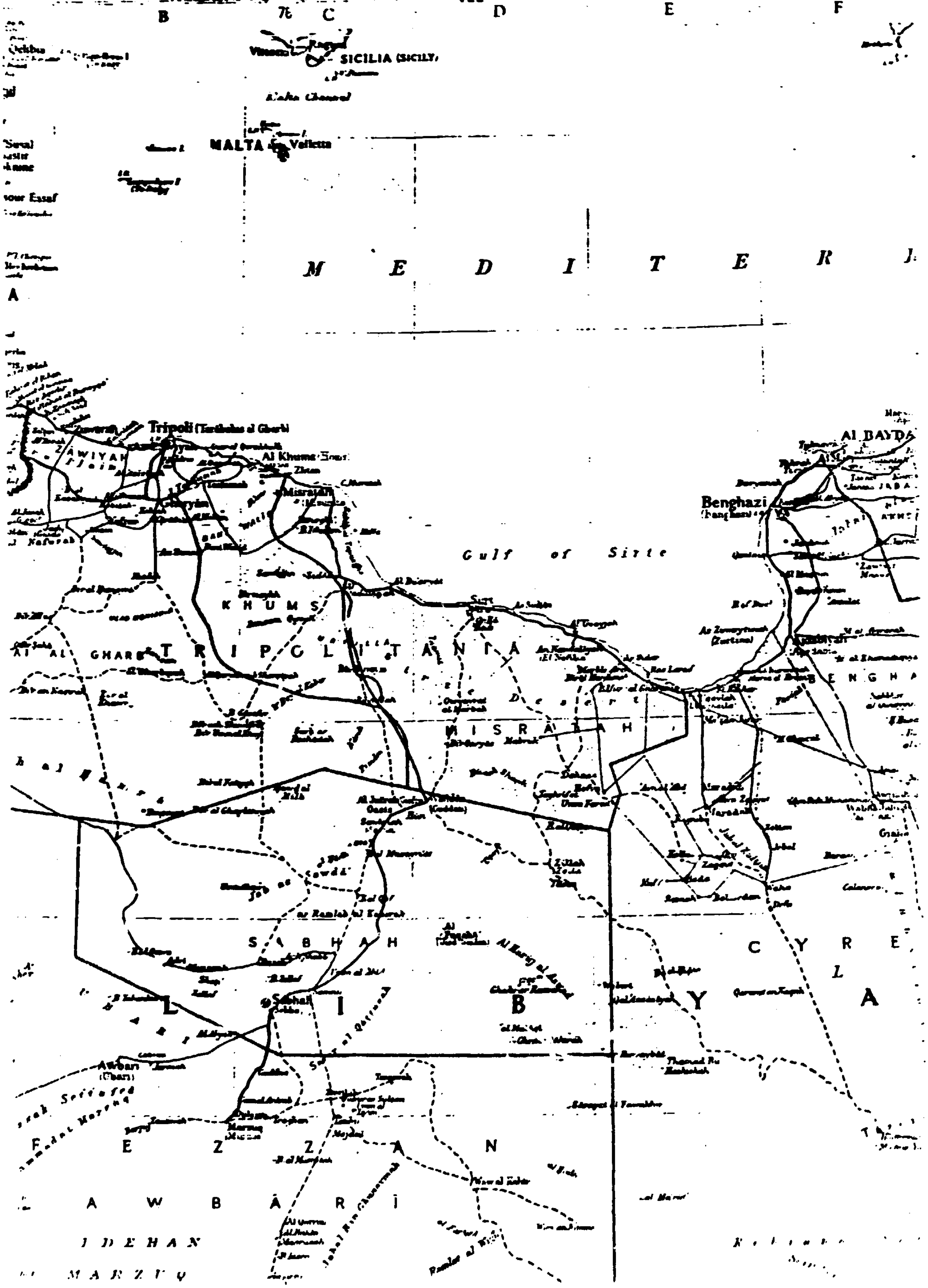
Land Area: 1,759,540 sq. km. of which 5 per cent is agricultural land and 0.3 per cent forest.

Population: 3,405 thousand (1981).

Currency: Libyan Dinar (LD) = 1,000 dirham

Exchange rate US $1 = 0.2960

Main Towns: Tripoli, Benghazi, Misurata, Sebha, Zawiyah, Beida.


B
C
D
E
F
SICILIA (SICILY)
MALTA
Valletta
M E D I T E R
Gulf of Sirte
Tripoli (Tarabulus al Gharb)
Al Khums (Homs)
Misratah
Benghazi
AL BAYDA
Sirt
ZAWIYAH
KHUMS
TRIPOLITANIA
MISRATAH
SABHAH
Sabhah
Awbari
Marzuq
L I B Y A
C Y R E
FEZZAN
AWBARI
IDEHAN
MARZUQ

Chapter I

Introduction

Almost two decades ago Ragnar Nurkse developed his "balanced growth" theory on the assumption of an "unlimited supply of capital".[1/] His advice for cases which fit his assumptions - "a frontal attack ..... a wave of capital investments in a number of different industries".[2/] But his advice has proven to be cold comfort for countries like Libya and other OPEC countries who command large supplies of capital but whose domestic markets are too small for capital-intensive technologies to be profitably used over a large number of industrial activities and where shortages of human skills place formidable bottlenecks on growth.

In the case of Libya, her small market size and manpower shortages are multiplied by what was inherited from a distressingly poor past. According to the World Bank, Libya was the poorest country in the world in 1954 with a *per capita* income well below US $50 per year and where there were no sources of power and no mineral resources, where agricultural expansion was severely limited by climatic conditions, where capital formation was zero or less, and where there were no skilled labour and no indigenous entrepreneurship.[3/] Thus, when Libya became independent under United Nations auspices at the end of 1951, her economy had very little with which to work. At that time over 80 per cent of the 1,200,000 population were engaged in agriculture and animal husbandry, and over 95 per cent were concentrated in the Tripolitanian coastal plain and in the Cyrenaican and Tripolitanian Jebel. The rest lived mainly in the strings of oases in the Fezzan.

Since 1961, when the commercial production of oil began, Libya grew rich rapidly. Libya became again a prototype country, no longer one of poverty, but rather one of unbalanced growth.[4/] The per capita income in Libya in 1979 was almost US $8,500. Using this simple measure, Libya has already achieved a level comparable to that of developed countries. As in other OPEC countries, however, such averages can be misleading. In terms of the bulk of the population, or in terms of health and education, or in terms of industrial production, Libya is still clearly a developing economy. Libya, like other oil-rich economies, now faces the challenge of accumulating enough productive capital (human and physical) outside the crude oil sector and sufficiently raising productivity in the non-oil sectors, to offset the drawing down of oil reserves. Levels of living have of course risen so far, but essentially and primarily through a form of capital consumption - the depletion of her oil.[5/]

Oil revenues were not used productively in the 1960s and the contribution of wealth was not equitable. The oil sector was almost totally alienated from the rest of the economy and employed few Libyan nationals. Corruption flourished, and foreign domination was evident in the military bases maintained by the United Kingdom and the United States.

On 1 September 1969, the King was deposed by a Coup D'etat carried out by a group of young army officers under Colonel Muamar Qadhafi who proclaimed a "Libyan Arab Republic". The military dominated the ruling Revolutionary Command Council (RCC) which was headed by Colonel Qadhafi and ruled until 1977. In February 1977, a General People's Congress ratified the People's Authority Declaration of the Socialist People's Libyan Arab Jamahiriya formally

abolishing the RCC and the cabinet. Colonel Qadhafi became secretary-general of the Congress and the government was reformed as a General People's Committee.

Domestic policy is described as "Islamic Socialism" which is proclaimed to define a third "universal theory" which purports to correct the errors of both capitalism and communism. Its tenets as expounded in the Green Book include a number of ideas, some of which are novel in the Arab world. Some of these are outlined below:

(a) The purpose of a socialist society is the happiness of human beings which can only be realized through material and spiritual freedom. Attainment of this freedom is dependent on the extent of man's ownership of the means needed to satisfy his needs;

(b) The purpose of the new socialist society is to liberate human needs from outside domination and control;

(c) No individual has the right to carry out economic activity in order to acquire more wealth than is necessary to satisfy his basic needs. Ultimately, all that is beyond the satisfaction of needs should remain the property of all members of society;

(d) Wage-earners engage in a type of slavery however high their wages may be. The ultimate aim of the new society is to abolish the wage system. There are to be no wage-earners in the socialist Libyan society, only partners;

(e) Land is the sole property of society and no individual has the right to own it. Society, however, bestows the privilege on individuals to benefit from using it; and finally

(f) True democracy is direct democracy where participation and not representation is the key operating principle.

The new orientation of government has had a pervasive influence on the course of events in Libya which are reflected in the economic trends discussed below.

Table 1. LIBYA: TOTAL SUPPLY OF AND DEMAND FOR RESOURCES, 1968-1978

(Million Libyan Dinars)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
					(at Current Prices)						
Gross Domestic Product (at Purchasers' Values)	1,110.7	1,267.2	1,329.3	1,626.8	1,796.5	2,246.2	3,973.0	3,896.6	5,037.0	5,732.0	5,638.5
Imports of Goods and Services	332.6	419.2	403.2	436.0	552.4	826.5	1,519.4	1,697.0	1,720.0	1,825.0	2,139.5
TOTAL SUPPLY	1,443.3	1,686.4	1,732.5	2,062.8	2,350.9	3,072.7	5,492.4	5,593.6	6,757.0	7,557.0	7,778.0
Private Consumption Expenditure	319.8	376.4	395.5	468.6	543.4	702.8	1,140.3	1,373.0	1,497.0	1,602.0	1,616.3
Government Consumption Expenditure	148.4	198.6	220.7	318.4	359.1	465.4	864.8	1,044.2	1,125.0	1,225.0	1,691.8
Gross Fixed Capital Formation	289.7	315.2	242.7	287.9	436.6	636.2	979.4	1,083.1	1,250.0	1,450.0	1,566.8
Increase in Stocks	5.7	8.5	3.6	12.8	14.0	28.0	18.0	41.4	5.0	40.0	-75.0
Exports of Goods and Services	679.7	787.7	870.0	975.1	997.8	1,240.3	2,489.9	2,051.9	2,880.0	3,240.0	2,978.1
TOTAL EXPENDITURE	1,443.3	1,686.4	1,732.5	2,062.8	2,350.9	3,072.7	5,492.4	5,593.6	6,757.0	7,557.0	7,778.0
Trade Balance	347.1	368.5	466.8	539.1	445.4	413.8	970.5	354.9	1,160.0	1,415.0	838.6
					(at Constant 1970 Prices)						
Gross Domestic Product (at Purchasers' Values)	1,117.4	1,268.2	1,329.3	1,316.8	1,460.3	1,653.0	1,674.2	1,512.4	1,843.2	2,013.6	
Imports of Goods and Services	262.5	297.6	403.2	352.9	440.5	622.9	500.4	520.6	509.7	521.4	
TOTAL SUPPLY	1,379.9	1,565.8	1,732.5	1,699.7	1,900.8	2,275.9	2,174.6	2,033.0	2,352.9	2,535.0	
Private Consumption Expenditure	339.3	375.8	395.5	379.3	441.2	489.8	428.4	469.9	504.8	527.7	
Government Consumption Expenditure	155.4	196.5	220.7	257.3	291.6	350.8	306.0	357.4	379.9	409.0	
Gross Fixed Capital Formation	341.3	338.6	242.7	313.4	346.4	479.4	376.2	388.9	420.0	454.1	
Increase in Stocks	9.1	12.9	3.6	10.4	11.4	21.1	0.3	0.6	0.1	0.7	
Exports of Goods and Services	534.8	642.0	870.0	709.3	810.2	934.8	1,063.7	816.2	1,048.1	1,143.7	
TOTAL EXPENDITURE	1,379.9	1,565.7	1,732.5	1,669.7	1,900.8	2,275.9	2,174.6	2,033.0	2,352.9	2,535.0	
Trade Balance	272.3	344.4	466.8	356.7	369.7	311.9	563.3	295.6	538.4	622.1	

Sources: (1) United Nations, Yearbook of National Accounts Statistics, various issues.

(2) International Monetary Fund, "Socialist People's Libyan Arab Jamahiriya Recent Economic Developments." (1976 and 1978).

(3) Ente Nazionale Idrocarburi, The Interdependence Model, Vol. II, Appendices 1981

(4) General People's Committee for Planning, Statistical Abstract, 1980.

Table 2. LIBYA: TOTAL SUPPLY OF AND DEMAND FOR RESOURCES, 1968-1978
(Per cent)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
					(at Current Prices)						
Gross Domestic Product (at Purchasers' Values)	77.0	75.1	76.7	78.9	76.5	73.1	72.3	69.7	74.5	75.9	72.5
Imports of Goods and Services	23.0	24.9	23.3	21.1	23.5	26.9	27.7	30.3	25.5	24.1	27.5
TOTAL SUPPLY	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Private Consumption Expenditure	22.1	22.3	22.8	22.?	23.1	22.9	20.8	24.5	22.2	21.2	20.8
Government Consumption Expenditure	10.3	11.8	12.8	15.4	15.3	15.1	15.8	18.7	16.6	16.2	21.7
Gross Fixed Capital Formation	20.1	18.7	14.0	14.0	18.6	20.7	17.8	19.4	18.5	19.2	20.1
Increase in Stocks	0.4	0.5	0.2	0.6	0.6	0.9	0.3	0.7	0.1	0.5	-0.9
Exports of Goods and Services	47.1	46.7	50.2	47.3	42.4	40.4	45.3	36.7	42.6	42.9	38.3
TOTAL EXPENDITURE	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					(at Constant 1970 Prices)						
Gross Domestic Product (at Purchasers' Values)	81.0	81.0	76.7	78.9	76.8	76.6	77.0	74.4	78.3	79.4	
Imports of Goods and Services	19.0	19.0	23.3	21.1	23.2	23.4	23.0	25.6	21.7	20.6	
TOTAL SUPPLY	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Private Consumption Expenditure	24.6	24.0	22.8	22.7	23.2	21.5	19.7	23.1	21.5	20.8	
Governemnt Consumption Expenditure	11.3	12.6	12.8	15.4	15.4	15.4	14.1	17.7	16.1	16.2	
Gross Fixed Capital Formation	24.7	21.6	14.0	18.8	18.2	21.1	17.3	19.1	17.9	17.9	
Increase in Stocks	0.6	0.8	0.2	0.6	0.6	0.9	..	..	..	..	
Exports of Goods and Services	38.8	41.0	50.2	42.5	42.6	41.1	48.9	40.1	44.6	45.1	
TOTAL EXPENDITURE	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Source: See Table 1

Table 3. LIBYA: TOTAL SUPPLY OF AND DEMAND FOR RESOURCES, 1968-1977

(Average Annual Growth Rate)

	1968-1971	1971-1974	1974-1977
(at Current Prices)			
Gross Domestic Product (at Purchasers' Values)	13.6	34.7	13.0
Imports of Goods and Services	9.5	51.6	6.3
TOTAL SUPPLY	12.6	38.6	11.2
Private Consumption Expenditure	13.6	34.5	12.0
Government Consumption Expenditure	29.0	39.5	12.3
Gross Fixed Capital Formation	-0.2	50.4	14.0
Increase in Stocks	31.0	12.0	30.5
Exports of Goods and Services	12.8	36.7	9.2
TOTAL EXPENDITURE	12.6	38.6	11.2
(at Constant 1970 Prices)			
Gross Domestic Product (at Purchasers' Values)	5.6	8.3	6.3
Imports of Goods and Services	10.4	12.3	1.4
TOTAL SUPPLY	6.6	9.2	5.2
Private Consumption Expenditure	3.8	4.1	7.2
Government Consumption Expenditure	18.3	5.9	10.2
Gross Fixed Capital Formation Increase in Stocks	-2.6	5.2	6.5
Exports of Goods and Services	9.9	14.5	2.4
TOTAL EXPENDITURE	6.6	9.2	5.2

Source: See Table 1

Chapter II

The macroeconomic retrospective, 1968-1980

A - GDP and the level of economic activity

Economic activity in the Jamahiriya is dominated by oil, which constitutes not only the major sector and contributor to GDP but, through government expenditures of oil revenues, is also by far the single most important determinant of economic activity in other sectors as well.

In 1964, the share of crude oil in GDP at factor cost was almost 51 per cent. This share increased to 53 per cent in 1975 but fell to 44 per cent by 1980 and is expected to continue to fall in the 1980s.[6/] In value terms the increase is almost 12 fold, rising from LD 196 million in 1964 to LD 1,062 million in 1973, to LD 1,961 million in 1975 and is believed to have reached LD 2,236 million in 1980.[7/] Despite the most recent decline in the percentage contribution of oil to GDP, oil revenues still constitute over 99 per cent of export proceeds and 98 per cent of government revenue.

The growth rate of nominal GDP has varied over the various sub-periods as is evident from the information in Table 3. Nominal GDP grew at the average annual rate of 13.6 per cent between 1968 and 1971, whereas it jumped to 34.7 per cent between 1971-1974, but declined subsequently to 13 per cent during the period 1974 through 1977.

The growth rate of nominal GDP is an important indicator of growth in an oil dominated economy such as Libya. Deflating the various components by their respective price indices would reveal the physical change in GDP but would not accurately reveal the change in purchasing power that came

Table 4. GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN 1968-1978: AT FACTOR COST

(Million Libyan Dinars)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
					(at Constant Prices)						
Agriculture	33.4	37.4	33.1	33.0	43.6	60.0	64.7	114.3	140.0	142.0	114.1
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	650.1	756.2	814.3	929.8	925.4	1,136.8	2,389.3	1,960.0	2,791.5	3,157.5	2,812.3
Manufacturing	20.0	20.8	22.5	25.1	36.6	50.8	74.5	91.6	113.0	144.0	148.7
Electricity, Gas and Water	3.9	5.6	6.2	7.3	9.4	10.8	12.4	17.7	23.0	30.0	31.0
Construction	89.2	87.1	87.8	116.8	182.8	261.2	368.8	439.3	535.0	643.5	682.8
Wholesale and Retail Trade	45.5	48.5	47.0	75.6	95.8	124.8	184.2	246.2	274.2	306.5	338.9
Transport, Storage and Communication	39.3	40.8	43.2	87.2	100.5	129.3	192.9	253.9	283.0	315.0	241.5
Finance, etc.	66.0	78.1	67.9	98.4	113.2	135.9	191.9	217.8	246.0	278.0	348.2
Government Services	125.2	148.5	166.3	213.3	245.7	272.7	396.8	444.3	516.5	586.0	729.0
GROSS DOMESTIC PRODUCT (at Factor Cost)	1,072.6	1,223.0	1,288.3	1,586.5	1,753.0	2,182.3	3,875.5	3,785.1	4,922.2	5,602.5	5,446.5
Non-Oil GDP	422.5	466.8	474.0	656.7	827.6	1,045.5	1,485.2	1,825.1	2,130.7	2,445.2	2,667.5
					(at Constant 1970 Prices)						
Agriculture	42.3	43.3	33.1	30.4	35.4	45.2	45.3	60.3	68.8	65.4	
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	632.2	760.3	814.3	732.9	751.1	817.9	935.4	719.7	938.4	1,029.8	
Manufacturing	20.7	21.2	22.5	22.3	29.7	38.3	40.5	35.6	46.7	57.1	
Electricity, Gas and Water	3.8	5.0	6.2	6.9	7.6	8.1	8.6	8.4	10.7	14.0	
Construction	104.7	95.4	87.8	97.3	148.4	196.9	158.1	164.5	189.1	212.7	
Wholesale and Retail Trade	48.4	48.5	47.0	55.1	77.9	91.7	111.0	121.7	129.5	135.5	
Transport, Storage and Communication	39.3	41.3	43.2	62.5	81.6	97.4	100.5	104.6	110.8	117.8	
Finance, etc. / Government Services	191.5	214.0	234.2	268.8	291.3			246.9	272.8	310.4	
GROSS DOMESTIC PRODUCT (at Factor Cost)	1,082.9	1,229.0	1,288.3	1,276.2	1,423.0	1,604.3	1,646.8	1,465.7	1,766.8	1,942.7	
Non-Oil GDP	450.7	468.7	474.0	543.3	671.9	786.9	711.4	746.0	828.4	912.9	

Source: (1) United Nations, Yearbook of National Accounts Statistics, various issues.

(2) General People's Committee For Planning, Statistical Abctract, 1980.

Table 5. GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN 1968-1978: AT FACTOR COST

(Per Cent)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
					(at Current Prices)						
Agriculture	3.1	3.1	2.6	2.1	2.5	2.8	1.7	3.0	2.8	2.5	2.1
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	60.6	61.8	63.2	58.6	52.8	52.1	61.6	51.8	56.7	56.3	51.6
Manufacturing	1.9	1.7	1.7	1.6	2.1	2.3	1.9	2.4	2.3	2.6	2.7
Electricity, Gas and Water	0.4	0.5	0.5	0.4	0.5	0.5	0.3	0.5	0.5	0.5	0.6
Construction	8.3	7.1	6.8	7.4	10.4	12.0	9.5	11.6	10.9	11.5	12.5
Wholesale and Retail Trade	4.2	4.0	3.6	4.8	5.5	5.7	4.8	6.5	5.6	5.5	6.2
Transport, Storage and Communication	3.7	3.3	3.4	5.5	5.7	5.9	5.0	6.7	5.7	5.6	4.4
Finance, etc.	6.1	6.4	5.3	6.2	6.5	6.2	5.0	5.8	5.0	5.0	6.4
Government Services	11.7	12.1	12.9	13.4	14.0	12.5	10.2	11.7	10.5	10.5	13.4
GROSS DOMESTIC PRODUCT (at Factor Cost)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					(at Constant 1970 Prices)						
Agriculture	3.9	3.5	2.6	2.4	2.5	2.8	2.8	4.2	3.9	3.4	
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	58.3	61.9	63.2	57.4	52.8	51.0	56.8	49.1	53.1	53.0	
Manufacturing	1.9	1.7	1.7	1.8	2.1	2.4	2.5	2.7	2.7	2.9	
Electricity, Gas and Water	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	
Construction	9.7	7.8	6.8	7.6	10.4	12.3	9.6	11.2	10.7	10.9	
Wholesale and Retail Trade	4.5	3.9	3.6	4.3	5.5	5.7	6.7	8.3	7.3	7.0	
Transport, Storage and Communication	3.6	3.4	3.4	4.9	5.7	6.0	6.1	7.1	6.3	6.1	
Finance, etc. / Government Services	17.7	17.4	18.2	21.1	20.5	19.3	15.0	16.8	15.4	16.0	
GROSS DOMESTIC PRODUCT (at Factor Cost)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Source: See Table 4.

Table 6. GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN 1968-1978: AT FACTOR COST

(Average Annual Growth Rate)

	1968-71	1971-74	1974-77
	(at Current Prices)		
Agriculture	-0.4	25.1	30.0
Mining and Quarrying (Non Oil)	12.7	37.0	9.7
Mining and Quarrying (Oil)			
Manufacturing	7.9	43.7	24.6
Electricity, Gas and Water	23.2	19.3	34.2
Construction	9.4	46.7	20.4
Wholesale and Retail Trade	18.4	34.6	18.5
Transport, Storage and Communication	30.4	30.3	17.8
Finance, etc.	14.2	24.9	13.2
Government Services	19.4	23.0	13.9
GROSS DOMESTIC PRODUCT (at Factor Cost)	13.9	34.7	14.1
	(at Constant 1970 Prices)		
Agriculture	-10.4	14.2	13.0
Mining and Quarrying (Non Oil)	5.1	8.5	3.3
Mining and Quarrying (Oil)			
Manufacturing	2.5	22.0	12.1
Electricity, Gas and Water	22.0	7.6	17.6
Construction	-2.4	17.6	10.4
Wholesale and Retail Trade	4.4	26.3	6.9
Transport, Storage and Communication	16.7	17.2	5.4
Finance, etc.	12.0	-2.7	7.9
Government Services			
GROSS DOMESTIC PRODUCT (at Factor Cost)	5.6	8.9	5.7

Source: See Table 4

in the wake of the significant increases in the price of oil (see Table 1). This is because a large portion of Libyan petroleum products is exported. A rise in their prices, other things being equal, increases the purchasing power of exports in terms of imports.

Notwithstanding the need for a terms of trade adjustment of output (income figures), the real rate of growth of Libyan GDP is respectable indeed. Between 1968-1971, GDP in 1970 prices grew at an annual rate of 5.6 per cent, whereas, between 1971-1974 the average annual real rate of growth topped 8.3 per cent. It declined to 6.3 per cent between 1974-1977 and 6.6 per cent during the period 1975-1980.[8/] (See Table 3).

The dominance of oil tends to mask important developments in other sectors of the economy. Thus, the non-oil sectors show a GDP value higher in 1974 than the entire GDP in 1970, and their total in 1975 is more than three times their corresponding value in 1970 (see Table 4).

The composition of non-oil GDP since 1968 reflects two general characteristics of the Jamahiriya:

First, the massive increases in social services and in the role of the public sector.

Second, the construction boom associated with laying down the infra-structure of the economy, which until the Revolution was limited and inadequate at best.

As the data in Table 5 reveal, government services represent the largest share of non-oil GDP throughout the period 1968-1975. Only in 1977 did their share fall below the contribution of construction. The two sectors together - construction and government services - account for over 50 per cent of total non-oil GDP for most of the years between 1968 and 1977.

Agriculture and manufacturing sectors represent but small fractions of total GDP. In 1968 the two sectors accounted for less than five per cent of GDP and this share remained almost constant until 1977. This phenomenon is in part a direct outcome of the dominance of oil. However, it is also a reflection of limited developments in these two fields. This is so, because when oil is netted out, the percentage share of agriculture and manufacturing in nominal non-oil GDP between 1968 and 1977 remained constant at about 12 per cent.

The increase in government services and the concentration of Government on infrastructural development, enlarged the growth of construction, transport, and distribution sectors which are generally called "throughput" sectors and which contribute primarily in a supportive sense to the growth of GDP. Thus, the growth of GDP as whole did not stem mainly from productive enterprises in agriculture and manufacturing, but from "throughput" sectors which by their very nature could offer no long term potential alternatives to crude oil.

B - Employment

Countries with a strong export sector - one that constitutes a significant proportion of GDP and which often grows at higher rates than that of income - are believed to face no serious economic problems.[9/] The excess capital generated by exports should allow the country to develop, as Nurkse puts it, on many domestic industrial fronts simultaneously. Libya's experience, however, tends to contradict Nurkse's generalization. Shortages of skilled labour have almost halted economic development. And as far as Hirshman's model of "unbalanced growth" is concerned, the Jamahiriya's experience exemplifies the case

Table 7. LIBYA: POPULATION, LABOUR SUPPLY AND LABOUR DEMAND: SELECTED YEARS

	Thousands			Average Annual Growth Rate		
	1964	1974	1978	1964-74	1974-78	1964-78
POPULATION	1,565	2,332	2,748	4.1	4.2	4.1
Libyan	1,516	2,124	2,480	3.4	3.9	3.6
Non Libyan	49	208	268	15.6	6.5	12.9
LABOUR SUPPLY	405	564	692	3.4	5.2	3.9
Libyan	388	441	517	1.3	4.1	2.1
Non Libyan	17	123	175	21.9	9.2	18.1
LABOUR DEMAND	405	611	835	4.2	8.1	5.3
Employees	371	596	825	4.9	8.5	5.9
Libyan	354	426	507	1.9	4.4	2.6
Non-Libyan	17	170	318	25.9	16.9	23.3
Underemployed	34	15	10	-7.9	-9.6	-8.4
DEFICIT	—	47	143	..	32.7	..

Source: Ente Nationale Idrocarburi, The Interdependence Model, Vol. II, Appendices, 1981.

Table 8. LIBYA: EMPLOYMENT BY TYPE OF ECONOMIC ACTIVITY

(Per Cent)

Economic Activity	1964	1973	1976
Agriculture	39.1	23.4	19.8
Mining and Quarrying	3.8	2.3	2.6
Manufacturing	7.8	4.2	5.1
Construction	8.4	17.0	21.7
Electricity, Gas and Water	1.3	1.9	2.1
Wholesale and Retail Trade	5.9	8.4	8.6
Transport and Communication	5.1	8.2	8.2
Private Services	28.6	34.6	10.9
Government Services			21.0
TOTAL	100.0	100.0	100.0

Source: Ente National Idrocarburi, The Interdependence Model, Vol. II, Appendices, 1981

where growth, once started, does not trickle down, and can remain unbalanced for a frighteningly long time.[10/] This long time seems to be closely related to the gestation period of developing human skills through education and training.

Preliminary estimates of the population indicate that in 1978, Libya had about 2.8 million people, including 268 thousand expatriates residing in the country. The population growth rate since 1964 has been as high as 4.1 per cent. The indigenous population, however, is growing at an average annual rate of 3.6 per cent per year. Alternatively, the expatriate population has grown at the average annual rate of 12.9 per cent during the same period (see Table 7).

The labour supply is estimated at 692 thousand in 1978 of which 517 thousand are Libyans and the rest expatriates. The rate of increase of the labour supply between 1964-1978 is put at 3.9 per cent, which is close to the population growth rate. However, this rate of increase fell short of the rate of increase of labour demand, which grew at an annual rate of 5.3 per cent. The consequence of such a differential rate of growth between the demand for and supply of labour was a large employment deficit (excess demand for labour), which was estimated to exceed 143 thousand people in 1978 and to have grown at an exceptionally high annual rate of 32.7 per cent during the period 1974-1978.

In 1971, it was estimated that 78 per cent of the Libyan population, and 96 per cent of the women, were illiterate.[11/] However, this rate has sharply declined now that over 20 per cent of the Libyans are in school. The latest estimates show that illiteracy rates among males fell to 27 per cent in 1975 and to as low as 20 per cent in 1980. The corresponding figures for females are still high, at 64 per cent in 1975 and 49 per cent in 1980.[12/] Although the decline in the illiteracy

Table 9. LIBYA: GROSS FIXED CAPITAL FORMATION BY TYPE OF ECONOMIC ACTIVITY, 1963-1977

(Million Libyan Dinars)

	1963	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
					(at Current Prices)						
Agriculture	2.3	10.1	11.4	11.6	33.6	39.7	79.4	129.1	157.1	175.0	205.0
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	42.6	126.6	154.8	93.6	29.7	32.7	34.2	24.4	28.4	38.0	43.0
Manufacturing	2.4	8.2	9.7	9.4	30.5	58.0	75.2	127.3	123.5	190.0	210.0
Electricity, Gas and Water	3.9	25.7	26.1	36.6	41.3	60.2	87.6	118.2	135.1	168.0	190.0
Construction	2.0	5.9	6.0	2.2	11.4	15.2	22.4	31.1	39.1	35.0	40.0
Wholesale and Retail Trade and Finance	8.3	30.9	36.1	39.6	48.5	100.8	144.0	258.9	262.1	234.0	268.0
Transport, Storage and Communication	10.0	37.3	36.1	20.1	38.2	68.1	87.1	145.8	145.7	187.0	227.0
Dwellings / Government Services	2.8	45.0	35.0	29.6	54.6	61.9	106.4	144.6	192.1	223.0	267.0
TOTAL	74.3	289.7	315.2	242.7	287.9	436.6	636.2	979.4	1,083.1	1,250.0	1,450.0

Source: (i) United Nations, Yearbook of National Accounts Statistics, various issues.

(ii) International Monetary Fund, "Socialist People's Libyan Arab Jamahiriya Recent Economic Development." 1976 and 1978.

(iii) Ente Nationale Idrocarburi, The Interdependence Model, Volume II, Appendices, 1981.

Table 10. LIBYA: GROSS FIXED CAPITAL FORMATION BY TYPE OF ECONOMIC ACTIVITY, 1963-1977
(Per Cent)

	1963	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
					(at Current Prices)						
Agriculture	3.1	3.5	3.6	4.8	11.7	9.1	12.5	13.2	14.5	14.0	14.3
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	57.3	43.7	49.1	38.5	10.3	7.5	5.4	2.5	2.6	3.0	3.0
Manufacturing	3.2	2.8	3.1	3.9	10.6	13.3	11.8	13.0	11.4	15.2	14.5
Electricity, Gas and Water	5.2	8.9	8.3	15.1	14.3	13.8	13.8	12.0	12.5	13.5	13.1
Construction	2.7	2.0	1.9	0.9	4.0	3.5	3.5	3.2	3.6	2.8	2.7
Wholesale and Retail Trade and Finance	11.2	10.7	11.4	16.3	16.8	23.1	22.6	26.4	24.2	18.7	18.5
Transport, Storage and Communication	13.5	12.9	11.5	8.3	13.3	15.6	13.7	14.9	13.5	15.0	15.7
Dwellings / Government Services	3.8	15.5	11.1	12.2	19.0	14.1	16.7	14.8	17.7	17.8	18.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: See Table 9.

Table 11. LIBYA: GROSS FIXED CAPITAL FORMATION BY TYPE OF ECONOMIC ACTIVITY, 1968 - 1977

(Average Annual Growth Rate)

	1968-71	1971-74	1974-77
	(at Current Prices)		
Agriculture	49.3	56.6	16.7
Mining and Quarrying (Non Oil) / Mining and Quarrying (Oil)	-38.3	-6.3	20.8
Manufacturing	54.9	61.0	18.2
Electricity, Gas and Water	17.1	42.0	17.1
Construction	24.6	39.7	8.8
Wholesale and Retail Trade and Finance	16.2	74.8	1.2
Transport, Storage and Communication	0.8	56.3	15.9
Dwellings / Government Services	6.7	38.4	22.7
TOTAL	-0.2	50.4	14.0

Source: See Table 9.

ratio is steep indeed, particularly in such a short period of time, the fact remains that Libya is expected to face a continued shortfall in the availability of skilled manpower.

Employment in Libya has, not surprisingly, undergone a number of structural changes over the period 1964-1976. Some of the major features are outlined below: (see Table 8)

First, employment in agriculture, which accounted for 39.1 per cent of total employment in 1964, declined to 19.8 per cent by 1976;

Second, the employment share of construction rose from 8.4 per cent to 21.7 per cent during the same period;

Third, the share of employment in services, particularly government services, continuously increased throughout the period.

What is perhaps unexpected is the decline in the share of manufacturing in total employment. In 1964, employment in manufacturing constituted 7.8 per cent of total employment. By 1976 this share had declined to 5.1 per cent. This reflects in part the change in the structure of production within manufacturing, where down-stream oil production has now become the major component of manufacturing output. Since this type of output is capital-intensive it resulted in a lower employment share for manufacturing. At the same time, the rapid increases in employment in construction and government services outstripped the growth rates of employment in manufacturing and have as such contributed to this phenomenon.

C - Gross fixed capital formation

The saving - investment gap in Libya runs opposite to that of most developing areas, i.e., savings by far exceed investment. Actually the investment coefficient (investment as a percentage of GDP) in Libya was

about 19 per cent in 1970 whereas the saving - GDP ratio in the same year was as high as 53.6 per cent.[13/] To be sure, as the absorptive capacity of the economy grew these ratios were modified. Thus, whereas the saving - GDP ratio remained high at 51 per cent in 1977, the investment - GDP ratio had climbed to 26 per cent.

Given that savings exceed investment (which implies an excess supply of resources), Libya is still unconstrained in its present consumption behaviour. It could further increase its productive capacities if and when other complementary inputs become available (particularly here, human skills).

The composition of Gross Fixed Capital Formation (GFCF) is indicative of where the emphasis of the Libyan authorities is being made, given that the major part of GFCF in Libya is made by the Government.[14/] In the early 1960s, oil and the development of mining activity dominated the structure of GFCF. In 1963, for instance, nominal GFCF in mining and quarrying accounted for 57.3 per cent of total GFCF. By 1977 this ratio was as low as 3.0 per cent, having declined to 10.3 per cent by 1970. Alternatively, the shares of agriculture, manufacturing, and electricity, gas and water rose in tandem with the decline of GFCF in oil (see tables 9, 10, 11). Furthermore, given that the value of GFCF has increased by about six-fold during the period 1970-1977, the change in composition and value indicate that a major change in the structure of investment had taken place during this period. Of equal importance here is the fact that the structural changes in GFCF have not yet been fully reflected in the composition of output. This is symptomatic of the long lead time of the massive capital investments being made as well as of the problems of limited capacity utilization of already established enterprises.

D - Foreign trade and the balance of payments

Oil is by far the major export item, accounting for 99 per cent of total exports throughout the period 1968-1977. Other exports include skins and hides, almonds, groundnuts and metal scrap.

The rise in the price of oil throughout the 1970s increased the export proceeds of Libya despite major decreases in the production of oil from 1972 until 1975, as is displayed in Table 12 below:

Table 12. LIBYA: PRODUCTION OF CRUDE OIL AND GAS, 1972-1978

	1972	1973	1974	1975	1976	1977	1978[a/]
Crude oil[b/]	2.20	2.18	1.52	1.51	1.93	2.08	1.98
Gas[c/]	14.05	16.28	12.05	13.85	17.95	20.02	-

a/ From General People's Committee for Planning, Statistical Abrtract, 1980.

b/ millions of barrels per day

c/ million cubic meters

Source: The Economist Intelligence Unit, Quarterly Economic Review of Libya, Tunisia and Malta, Annual Supplement, 1978, p. 8

Export proceeds which were as low as LD 666.9 million in 1968 reached LD 3,200.0 million in 1977. This represents a five-fold increase in less than ten years.

Imports of goods, on the other hand, fell far below the export proceeds, resulting in a very favourable balance of trade. Nevertheless, the rate of increase of imports exceeded the rate of increase of exports; but since imports started from a low level, the absolute value of imports remained low. By 1977, the balance of trade had a surplus of LD 2,080.3 million (see Table 14).

Table 13. LIBYA: PRODUCTION, IMPORTS, EXPORTS, DOMESTIC CONSUMPTION OF OIL, 1968 - 1977

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
	(Million Metric Tons)									
Production	127.5	152.0	163.7	135.0	109.9	107.8	77.2	74.8	97.2	105.0
Imports	-	-	-	-	-	-	-	-	-	-
Exports	127.0	151.5	163.2	133.9	107.3	107.3	73.6	70.6	87.9	91.6
Domestic Consumption	0.5	0.5	0.5	1.1	2.6	0.5	3.6	4.2	9.3	13.4

	1968-71	1971-74	1974-77
	(Average Annual Growth Rate)		
Production	1.9	-17.0	10.8
Imports	-	-	-
Exports	1.8	-18.1	7.6
Domestic Consumption	17.1	48.4	55.0

Source: Ente Nationale Idrocarburi, The Interdependence Model, Volume II, Appendices, 1981

Table 14. LIBYA: BALANCE OF PAYMENTS - CURRENT TRANSACTIONS
(Million Libyan Dinars)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Exports of Goods	666.9	773.9	844.9	962.5	968.1	1,199.6	2,447.2	2,006.2	2,831.7	3,200.0
Imports of Goods	320.2	241.3	198.0	250.4	343.2	539.9	817.8	1,052.1	950.8	1,119.7
BALANCE OF GOODS TRANSACTIONS	436.7	532.6	646.9	712.1	624.9	659.7	1,629.4	954.1	1,880.9	2,080.3
BALANCE OF SERVICES TRANSACTIONS	-301.1	-324.6	-294.3	-335.1	-315.4	-363.1	-602.6	-546.6	-647.5	-628.1
Transfers	-35.3	-46.3	-42.7	-35.6	-40.7	-105.2	-21.8	-50.3	-45.0	-39.0
BALANCE OF CURRENT TRANSACTIONS	100.3	161.7	309.9	341.4	268.8	191.4	1,005.0	357.2	1,188.4	1,413.2

Source: United Nations, Yearbook of International Trade Statistics, various issues.

Table 15. LIBYA: IMPORTS BY COMMODITIES, 1968-1978

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
					(Million Libyan Dinars)						
Food and Agricultural	32.9	35.2	45.8	57.1	58.9	98.1	144.0	182.9	144.4	195.9	211.1
Raw Materials	1.9	1.7	1.0	1.1	1.9	2.6	6.0	7.9	4.4	48.9	52.8
Intermediate Inputs	48.6	43.6	30.3	39.4	56.4	107.3	170.3	212.2	188.8	284.5	339.0
Fixed Assets	85.4	100.6	62.9	78.7	124.8	192.4	286.5	378.2	351.4	418.7	567.5
Other Manufactured Products	61.4	60.2	58.0	74.1	101.2	139.5	211.0	270.9	261.8	169.1	191.9
TOTAL	230.2	241.3	198.0	250.4	343.2	539.9	817.8	1,052.1	950.8	1,117.1	1,362.3
					(Per Cent)						
Food and Agricultural	14.3	14.6	23.1	22.8	17.2	18.2	17.6	17.4	15.2	17.5	15.5
Raw Materials	0.8	0.7	0.5	0.4	0.5	0.5	0.8	0.8	0.5	4.4	3.9
Intermediate Inputs	21.1	18.1	15.3	15.8	16.4	19.9	20.8	20.2	19.9	25.5	24.9
Fixed Assets	37.1	41.7	31.8	31.4	36.4	35.6	35.0	35.9	36.9	37.5	41.7
Other Manufactured Products	26.7	24.9	29.3	29.6	29.5	25.8	25.8	25.7	27.5	15.1	14.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: (i) United Nations, Yearbook of International Trade Statistics, various issues.

(ii) General People's Committee for Planning, Statistical Abstract, 1980.

Table 16. LIBYA: EXPORTS BY COMMODITIES, 1968-1978

	1968	1969	1970	1971	1972	1973	1974	1975	1976
				(Million Libyan Dinars)					
Food and Agricultural	-	-	-	-	-	-	-	-	-
Raw Materials	666.9	773.9	844.9	961.5	965.7	1,184.5	2,414.4	1,975.7	2,831.4
Intermediate Inputs	-	-	-	1.0	2.4	15.1	32.8	30.5	0.3
Fixed Assets	-	-	-	-	-	-	-	-	-
Other Manufactured Products	-	-	-	-	-	-	-	-	-
TOTAL	666.9	773.9	844.9	962.5	968.1	1,199.6	2,447.2	2,006.2	2,831.7
				(Per Cent)					
Food and Agricultural	-	-	-	-	-	-	-	-	-
Raw Materials	100.00	100.00	100.00	99.99	99.75	98.74	98.66	98.48	99.99
Intermediate Inputs	-	-	-	0.01	0.25	1.26	1.34	1.52	0.01
Fixed Assets	-	-	-	-	-	-	-	-	-
Other Manufactured Products	-	-	-	-	-	-	-	-	-
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: United Nations, Yearbook of International Trade Statistics, various issues.

Despite a significant deficit on the services account, the current account of Libya was always positive throughout the period 1968-1977, with a concomitant accumulation of foreign reserves and assets (see Table 14). This again suggests that current and even future Libyan development could not be expected to be constrained by a lack of foreign exchange to buy the necessary imports.

Libyan imports are skewed towards capital goods. From 1972 until 1978, fixed assets accounted for a 35 per cent share of total imports and, together with other manufactured products, they explain about 60 per cent of total imports during this period, except for the last two years (see Table 15).

Libya does not import much raw materials, a fact which signifies limited industrial activity. The imports of food and agricultural products constitute a large percentage of total imports, but one that is showing a measure of decline.

The public sector monopolises most of the imports and its share of total imports has been rapidly increasing. The Government, for example, reserves to the relevant state corporation the importation of many foodstuffs, carbonated drinks, soap, tobacco, motorcars, furniture and electronic and radio equipment amongst other consumer goods.[15/]

E - Development plans

Libya has so far had five development plans. The first was prepared for 1963/1964 - 1967/1968 but was ratified in 1965 and then extended for an additional year to allow time for completion of started projects. Public works and communications assumed priority and accounted for over 45.4 per cent of total development expenditures appropriated for the

Table 17. LIBYA: EXPENDITURE UNDER THE DEVELOPMENT PLANS
(Million Libyan Dinars)

	1963-68	1969-74	1972-75	1976-80	1981-85
Manufacturing	17	91	174	1,205	2,578
Agriculture	32	150	162	1,476	1,875
Public Works	82	177	125	1,131	2,298
Communications	71	163	164	930	2,082
Health	12	53	47	276	547
Education	31	116	108	522	1,140
Other Sectors	92	399	382	3,710	4,586
Total	337	1,149	1,165	9,250	15,104

Source: Middle East Economic Survey, various issues and Libyan Plan Documents.

Table 18. LIBYA: ESTIMATED IMPLEMENTATION RATIOS OF THE KEY TARGETS OF THE TRANSFORMATION PLAN, 1976-1980

(Million Libyan Dinars at 1975 Constant Prices)

	Planned	Anticipated Achievement	Implementation Ratio (Per cent)
Total GDP (1980)	6,692.2	5,058.0	76
GDP in Non-oil Sectors (1980)	3,385.2	2,822.0	83
GDP in Agriculture (1980)	174.4	99.0	57
GDP in Manufacturing (1980)	323.4	171.0	53
Electricity Generation (GWh)	4,000.0	4,800.0	120
Total Gross Fixed Capital Formation (1976-1980)	7,869.0	6,356.5	81
Public Consumption (1980)	1,537.7	1,949.0	127
Private Consumption (1980)	1,788.7	1,598.0	89
Exports of Goods and Services (1980)	3,032.5	2,340.0	77
Export of Crude Oil and Gas (1980)	2,646.7	2,156.9	81
Other Commodities Exports (1980)	398.5	133.1	33
Number of Completed Housing Units (1980)	150,000.0	77,800.0	52
Total Number of Students	909,400.0	1,025,193.0	113
Number of Physicians (1980)	3,450.0	4,300.0	125
Number of Hospital Beds (1980)	21,024.0	14,472.0	69

Source: The Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning, First Draft of the Second Five-Year Transformation Plan, 1981-1985, July, 1980.

plan. Industry received less than 5.1 per cent of these expenditures and agriculture, which fared slightly better, was appropriated less than 10 per cent. The concentration on infra-structure in the first plan was understandable given the shortages in roads, water and electricity, particularly in the interior.

In the second five-year plan (1969/1970 - 1973/1974) expenditures were fixed at LD 1,149.5 million, almost four times that of the first plan and priority assigned to public works and agriculture. Industry's share of total expenditures was increased over that of the first plan, but remained at less than 8 per cent.

The second plan was superseded by a four year plan, 1972-1975, with an investment total of LD 1,165 million, of which industry was alloted the largest share, about 15 per cent.

An ambitious "Transformation Plan" (TP) was launched for (1976-1981) with an investment target of LD 9,250 million. The TP aimed at reducing the excessive dependence of the economy on crude oil exports, promoting large-scale industries, improving productivity in agriculture, and increasing the efficiency and utilization of domestic manpower. The share of non-oil sectors in GDP was targeted to increase from 46.6 to 50.6 per cent during the plan period, whereas non-oil exports were programmed to rise from 2.7 to 12.7 per cent during the same period. The manufacturing sector was to increase its share in GDP from 1.8 to 4.8 per cent and that of agriculture from 2.3 to 2.6 per cent over the period 1976-1980.

These sectoral targets called for massive investments. Manufacturing was to receive LD 1,205 million or over 13 per cent of total planned investment, agriculture LD 1,476 million - the highest single share - 16 per cent and public works about LD 1,131 million (see Table 17).

Implementation of this plan fell short of its targets, as is usually the case with developmental plans in most developing economies (see Table 18). These shortfalls in Libya are, in part, uniquely related to the ambitious targets set in the plan. Moreover, unfavourable weather conditions and manpower shortages proved to be insurmountable for the realization of the plan at critical stages of its implementation.

A second Transformation Plan, a continuation of the first one, is now envisaged for 1981-1985. The two salient features of the new plan are its attempt to raise the investment - GDP ratio from 21 per cent in 1980 to 33.5 per cent by 1985, and the planned rapid growth of non-oil activities. These are scheduled to grow at an average annual rate of 9.4 per cent. Diversification of the economy remains of paramount importance and this objecive is to be pursued most vigorously in the manufacturing and agricultural sectors. Thus the plan sets a target annual growth rate for agricultural output of 7.5 per cent, whereas the target growth rate in manufacturing is set at the exceptionally high rate of 22 per cent. Investment in both of these sectors exceed 30 per cent of the total allocations.

The current glut on the international oil market and the drastic declines in Libyan oil production (estimates place daily production at 600,000 barrels per day in 1981), may force the Jamahiriya to revise downward the planned investment targets. However, no change has yet been made in either the total allotments or their composition.

Table 19. LIBYA: VALUE ADDED BY BRANCH OF MANUFACTURING ACTIVITY, 1970 and 1975
(Per Cent)

Branch	1970	1975
Food, Beverages and Tobacco	52.9	26.1
Textile, Clothing and Footwear	4.4	2.5
Wood, Wood Products and Furniture	6.7	5.1
Paper, Paper Products, Printing and Publishing	3.1	2.5
Chemical and Chemical Products	8.4	5.0
Petroleum Products	0.9	23.7
Liquified Gas	1.3	20.7
Non-metallic Products	10.2	8.9
Metallic Products	5.3	3.1
Domestic and Cottage Industry Products	5.8	1.3
Other Manufacturing Products	1.0	1.1
Total	100.0	100.0

Source: Ministry of Industry, Industrial Achievements, October 1977.

Table 20. LIBYA: VALUE OF GROSS INDUSTRIAL OUTPUT, IN LARGE MANUFACTURING ESTABLISHMENTS, 1964-1976

Year	Value in thousand Libyan dinars
1964	12,186
1965	15,507
1966	20,129
1967	22,495
1968	27,181
1969	28,949
1970	31,052
1971	34,943
1972	42,138
1973	53,733
1974	77,391
1975	96,913
1976	109,300

Source: The Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning, Census and Statistics Department, Report of the Annual Survey of Large Manufacturing Establishments, 1976, November, 1978, p. 7.

Chapter III

The manufacturing sector

Manufacturing activity in Libya is concentrated mainly in the processing of local products such as tobacco, fruits, olives, lime, cement, soap, textiles and oil-related products. Manufacturing is also of recent vintage and is, therefore, continuously changing. In the 1960s, food, beverages and tobacco dominated the manufacturing sector contributing in 1970 over 52.9 per cent of total manufacturing value added (MVA). However, by 1975 oil related activities (chemical products, refined petroleum and liquified gas) replaced food, beverages and tobacco as the major manufacturing activity in the Jamahiriya with an MVA share of 49.5 per cent (see Table 19).

Large and small establishments exist side by side in the Libyan manufacturing sector.[16/] However, despite the rapid establishment of relatively large manufacturing centres by the General Public Organization For Industrialization, the share of large establishments in total gross output fell between 1971 and 1975 from 58.1 per cent to 44.6 per cent. This reflects the increased domestic demand for manufacturing products and the active response of local entrepreneurs to the newly created opportunities in the domestic economy.

The changes presented above do not show up in the aggregate ratio of MVA to GDP, which varied very little - 1.9 to 2.7 per cent - between 1968 and 1978. On the other hand, gross manufacturing output in large establishments increased 5.5 times between 1966 and 1976 (see Table 20), and the MVA of all establishments increased 7 fc'd between 1968 and 1978 (see Table 4).

Table 21. LIBYA: COMPARATIVE FIGURES OF VALUE OF GROSS OUTPUT AND VALUE ADDED IN LARGE MANUFACTURING ESTABLISHMENTS DURING 1975 AND 1976 FOR SELECTED INDUSTRY GROUPS

Industry Group	Value of Gross Output in thousand Libyan dinars		Value Added[a] in thousand Libyan dinars	
	1975	1976	1975	1976
Manufacture of Dairy Products	1,021	2,629	157	549
Canning of Fruits and Vegetables	6,132	7,555	1,714	2,042
Canning of Fish, etc.	1,487	2,901	316	928
Olive Oil Manufacture	811	100	419	56
Manufacture of Grain Mill Products	7,373	9,199	1,593	2,599
Manufacture of Macaroni	2,766	2,863	795	767
Manufacture of Bakery Products	1,144	1,151	355	397
Manufacture of Sugar Confectionery	819	878	265	206
Manufacture of Animal Feed	4,131	4,653	1,097	1,483
Soft Drinks, Carbonated Waters, etc.	5,590	6,744	2,944	3,410
Spinning and Weaving of Textiles	3,543	5,328	1,009	1,722
Manufacture of Carpets and Rugs	79	131	12	20
Sawmills, etc.	1,684	1,965	507	645
Manufacture of Paper and Paper Products	2,273	2,307	511	688
Manufacture of Soap and Other Cleaning Preparations	4,771	5,572	1,252	1,571
Manufacture of Cement Tiles	4,505	4,149	1,449	1,454
Manufacture of Cement Blocks	418	342	129	108
Manufacture of Furniture and Fixtures of Metal	1,402	1,917	378	744
Manufacture of Structural Metal Products	743	869	289	443
Manufacture of Fabricated Metal Products	2,670	1,237	1,110	329

[a] At Market Prices

Source: The Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning, Census and Statistical Department, Report of the Annual Survey of Large Manufacturing Establishments, 1976, November, 1978, p. 39.

Industrial data in Libya on large establishments are plentiful - perhaps over and above normal needs given the monthly details of the Survey. However, data on both the total manufacturing sector and the total and large establishments are limited for the most recent years. We are, therefore, restricted in our discussion on the manufacturing activitiy in the Jamahiriya to large establishments and only for the two years 1975 and 1976.

The data in Table 21 reveal a number of interesting results regarding the structure of production within the large manufacturing establishments in the Jamahiriya. Below is a short list:

First, the food processing sector's output fluctuates widely in tandem with the agricultural cycle, witness the sharp decline in the output of olive oil;

Second, there were enormous gains in the manufacturing of dairy products. This sharp increase is reflective of the profitable opportunities in the domestic market to be reaped by local industry;

Third, value added is highest in the soft drinks and carbonated water sector. This suggests that the rest of the food producing branches have not grown to their appropriate domestic market size and that other industries are still small and/or inefficient;

Fourth, there is a marked difference in the ratio of value added to gross output among the various branches of manufacturing. A high ratio is usually indicative of either a high degree of local processing and/or monopoly profits. It is presently difficult, however, to disentangle these two factors in the Jamahiriya;

Fifth, there is a severe decline in the value of output of fabricated metals between 1975 and 1976. Such changes are often indicative of insufficient capacity utilization.

Actually, the First Draft of the Second Five-Year Transformation Plan, 1981-1985, expounds on the capacity utilization problem in the Jamahiriya.

"Most of the food processing and beverage industries are also running well below their capacity and only 61 per cent of the planned value was added in 1980. From among them, the most serious problem is with fruits and vegetables processing where, due to the shortage of raw materials, the rate of capacity utilization in 1978 was only 8 per cent, in 1979 17 per cent, and it is estimated to be 25 per cent in 1980. The capacity utilization in sardine canning was 23 per cent in 1979 and 35 per cent in 1980 .... In some instances such as animal feed, cement and textile production, there has been a downward trend between 1976-1980. Some metal and food processing industries have as much as 80 per cent idle capacity. The tomato factory at Sebha, some fruit processing at Tripoli, fish flour plant at Benghazi and glass factory at Azizia are in moribund condition." 17/ A brief account of the current manufacturing activity in Libya and its planned expansion is presented in Table 22.

The Jamahiriya appears to have ample mineral resources. Preliminary surveys for copper, tin, lead and zinc in the southeast of Kufra and Tebesti have been encouraging. The northern part of the country is rich in oil and gas, iron ore deposits, sebkah salts, and other types of minerals.

Iron ore deposits are believed to exist in Fezzan, which has several concentrations at Taroot and Ashakada with an average grade of 35-55 per cent of iron. Deposits are believed to exceed 100 million tons of magnetic reduced ore and about 375 million tons of non-magnetic reduced ore.

Table 22. LIBYA: MANUFACTURING CAPACITIES AND THEIR UTILIZATION IN 1980 and 1985

Industry group	Unit per year	1980 Productive capacity	1980 Production	1980 Per cent	1985 Productive capacity	1985 Production	1985 Per cent
Food Processing							
Dairy products	million litres	51.1	38.4	75	154.6	123.4	80
Fruit and vegetables	thousand tons	54.6	13.7	25	79.0	55.3	70
Fish products	" "	2.1	0.9	40	2.7	1.8	65
Olive oil	" "	18.0	9.0	50	28.5	22.8	80
Mill products	" "	381.0	285.8	75	767.5	614.0	80
Bakery products	" "	329.0	263.2	80	342.6	291.2	85
Macaroni, biscuits and kuskusy	" "	79.5	61.8	78	121.7	98.1	81
Sweets	" "	5.4	33.5	65	7.4	5.2	70
Animal food	" "	294.0	250.0	85	822.0	739.9	90
Beverages							
Soft drinks	million litres	288.0	144.0	50	388.0	232.8	60
Mineral water	" "	34.0	10.0	29	34.0	17.0	50
Tobacco	thousand tons	6.2	2.5	40	6.2	3.2	52
Textiles and Leather							
Textiles							
Cotton textiles	million metres	21.0	10.5	50	25.8	18.0	70
Medical cotton wool	million LD	-	-		4.2	2.9	70
Sweaters and blankets	thousand pieces	225.0	112.5	50	1,300.0	955.0	75
Carpets	thousand sq. m.	600.0	150.0	25	1,470.0	1,029.0	70
Wool washing and wearing	tons	550.0	355.0	65	1,100.0	825.0	75
Ready-made apparel	thousand pieces	1,700.0	870.0	51	1,770	960.0	54
Leather							
Tanning	million feet^3	3.2	2.9	90	9.0	7.6	84
Pressed leather	tons	480.0	290.0	60	460.0	360.0	75
Shoes	million pairs	3.6	3.0	84	10.9	8.5	78
Wood and Furniture							
Wood	million LD	-	15.0	-	-	18.0	-
Furniture	" "	..	5.1	-	-	10.9	-
Paper and Printing							
Wrapping paper	thousand tons	7.5	2.5	33	7.5	2.5	33
Stationery	thousand LD	-	1,600.0		-	1,600.0	
Cement bags	million bags	50.0	30.0	60	50.0	40.0	80
Cardboard boxes	thousand tons	-	-	-	15.0	11.2	75
Chemicals							
Compost processing	thousand tons	60.0	9.0	15	263.8	65.0	23
Paints	" "	38.6	30.9	80	38.6	30.9	80
Soap	" "	-	-	-	5.0	3.2	65
Detergents	" "	17.6	15.0	85	62.6	42.0	67
Industrial gases	million metres^3	1.3		90	1.3	1.1	90

(Table 22 continued)

Industry group	Unit per year	1980 Productive capacity	1980 Production	1980 Per cent	1985 Productive capacity	1985 Production	1985 Per cent
Chemical (cont.)							
Matches	million boxes	87.0	52.0	60	87.0	60.9	70
Plastics	thousand tons	0.7	0.5	70	11.0	5.8	52
Tyres	" "	-	-	-	10.0	7.0	70
PVC, sodium chloride, etc.	" "	-	-	-	170.9	136.7	80
Magnesia	" "	-	-	-	25.0	15.0	60
Vinyl sheets	" "	-	-	-	6.0	4.5	75
Petroleum products	" "	5.4	4.9	89	15.4	13.8	90
Petrochemicals							
Ammonia	" "	330.0	231.0	70	666.0	495.0	75
Methanol	" "	330.0	330.0	100	660.0	495	75
Urea	" "	-	-	-	907.0	668.0	74
Ethylene	" "	-	-	-	330.0	247.0	75
Asphalt	" "	-	-	-	200.0	150.0	75
Polyethylene low density	" "	-	-	-	50.0	37	75
Polyethylene high density	" "	-	-	-	50.0	37.0	75
Polypropylene	" "	-	-	-	50.0	37.0	75
Butadiene	" "	-	-	-	58.0	43.0	75
Ethylene glycol	" "	-	-	-	53.0	40.0	75
Building materials							
Cement	" "	4,100.0	2,050.0	50	6,600.0	4,600.0	70
Lime	" "	144.5	108.4	75	303.3	267.0	88
Gypsum	" "	9.0	3.3	37	9.0	4.5	50
Glassware	" "	12.0	3.0	25	30.0	18.0	60
Red bricks	" "	340.0	153.0	45	400.0	300.0	75
Sand and light bricks	thousand metres^3	-	-	-	280.0	210.0	75
Cement blocks	" "	300.0	225.0	75	450.0	382.0	85
Eternite products	thousand tons	51.0	33.0	65	86.0	68.8	80
Cement tiles	thousand metres^3	-	4,500.0	-	-	5,500.0	-
Ceramic and pottery ware	thousand tons	10.1	5.6	56	15.2	10.5	70
Chalk	" "	-	-	-	1.0	0.6	60
Metallurgy							
Scrap smelting	" "	16.8	6.0	36	16.8	10.9	65
Rolling products	" "	-	-	-	21.0	10.9	52
Foundry and forge	" "	-	-	-	26.5	13.2	50
Metal wroking and Electrical equipment							
Cables and wires	" "	4.0	4.0	100	4.0	4.0	100
Cans	million units	100.0	15.0	15	100.0	30.0	30
Longitudinal and spiral pipes	thousand tons	45.0	16.8	37	70.0	49.0	70
Irrigation pipes	" "	-	-	-	10.0	7.5	75
Tractors	thousand units	3.0	0.9	30	3.0	2.2	75
Trucks	" "	-	-	-	3.9	2.7	70
Trailers	" "	-	-	-	9.4	4.7	50
Buses	" "	-	-	-	0.3	0.2	70
Bicycles	" "	-	-	-	25.0	18.7	75
Metal structure	tons	-	-	-	20.0	10.0	50
Carpentry hardware	thousand LD	-	-	-	2.5	1.2	50

(Table 22 continued)

Industry group	Unit per year	1980 Productive capacity	1980 Production	1980 Per cent	1985 Productive capacity	1985 Production	1985 Per cent
Metal working and Electrical equipment (cont.)							
Spare parts and services	thousand LD	-	-	-	2.6	1.6	60
Small-scale units	" "	6.5	5.8	90	6.5	5.0	90

Source: The Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning First Draft of the Second Five-year Transformation Plan 1981-1985, July, 1980.

There are numerous dry salt lakes (sebkahs) in the Jamahiriya, both in the coastal depressions and inlands. Sodium salt and brine solutions are in abundance at Abu Kammash; magnesium and potassium salts at Harada; sodium and potassium at Edri, and sodium at Al Hisheh.

Limestone is particularly plentiful in the Benghazi area, where reserves are estimated at 300 million tons. Clay is shown to be interbedded with limestone in the Benghazi and Khoms areas, and sand is very plentiful, particularly near Azizia and along the coast between Tripoli and Zuara.

Relatively plentiful mineral resources together with excess savings and abundant foreign exchange make a formidable base for industrialization. However, the Jamahiriya faces too some fundamental constraints that are bound to interfere with her industrial development. Some of these effective and severely binding constraints include:

First, a small market size which is also fragmented by long distances between major cities;

Second, paucity of skills, limited technological capacity and a growing deterioration in managerial abilities coupled with very high labour costs;

Third, limited rainfall and water supplies render it difficult to measurably extend the area under cultivation. The Jamahiriya has already substantially extended the area under cultivation from about 2,000 hectares in 1970 to over 182,000 hectares, but this was accomplished at very high cost. Also, agricultural productivity remains low and excessively cyclical.

Manufacturing commands special consideration from Libyan planners as may be witnessed by the large shares of public investment allocated to

this sector and the many detailed policies promulgated to protect and subsidize it. But investments and policies do not operate in a vacuum. It is all too clear now that export promotion policies and facilities are lacking in the Jamahiriya and a clear and realistic regional perspective to industrialization is not yet in place. The regional dimension can aid the Jamahiriya in two fundamental respects. On the one hand, it can provide the market extension Libya needs and requires to rationalize most of its activities. On the other hand, it can also accommodate the growing Libyan demand for human skills and other complementary inputs for smooth utilization of the existing and projected capital stock. There is also the question of an over-valued exchange rate which is determined by the large current account surpluses and which presents a strong bias against non-oil exports. This complicates further the already high and negative consequences of oil revenues on manufacturing activity, e.g., high inflation, cheap imports, etc.

Chapter IV

Concluding remarks

The Jamahiriya has before it a real opportunity to balance the capital consumption of oil (depletion) by increasing capital formation in physical assets and people. Excessive dependence on oil related activities may create a situation of unbalanced growth that may not trickle down into other activities and may, therefore, perpetuate the state of imbalance in the economy for a frighteningly long time. However, mounting an investment wave into many activities, in the manner of Nurkse's recipe, is bound to spread the limited pool of human resources in the Jamahiriya too thinly.

Excess supplies of savings and foreign exchange place the Jamahiriya in a very privileged position indeed among the developing countries and her access to the wider North African market and the Arab market at large provide a formidable opportunity to extend her production possibility frontier beyond the limited and choking bounds of her domestic market size and skilled manpower.

Two options present themselves naturally to Libya. The first involves a rapid and accelerated development of oil and mineral resources while paying special attention to labour-saving techniques and developing indigenous human resources. The second involves moving into a number of activities at once without special regard to static comparative advantage where the forward and backward linkages among sectors would dominate comparative static cost calculations. The ultimate aim is to maximize the total output obtainable from the existing and extendable pool of labour.

In the first strategy the accent is on comparative advantage, implying integration with the world structure of production and on capital-intensive development that will limit dependence on foreign labour. In this case the surplus for oil could be channelled into the general development of domestic human resources, but it is difficult to see how this could involve extensive industrial training.

In the second strategy the accent is on filling the empty technological cells of the economy and integrating the domestic network of production. Development of human skills is perceived as a complementary product to industrial production and is not separated from it and no constraint is put on the influx of foreign labour.

These two options are primarily for the long term and are not as divergent as may appear on the superficial level.

First, independent of which option is pursued, the economy needs to put in place an adequate infra-structure.

Second, a number of policy measures are needed to facilitate industrialization whichever form this industrialzation may take. This includes a more realistic exchange rate, realistic pricing of inputs, positive real rate of interest, disinflationary measures, adequate training facilities, etc.

Third, as long as the Jamahiriya is producing more oil than is consistent with her absorptive capacity, large financial surpluses are bound to accumulate. These need to be invested wisely. One alternative here could involve investing in other Third World countries in activities complementary to the intended Libyan industrial plans, i.e., tying investments abroad to raw material needs at home and/or to the absorption of domestic products abroad.

In the context of the limited size of the Jamahiriya, industrialization by necessity involves some outward orientation. The extent of this outward orientation, its direction, and its timing are bound to define the nature and success of Libyan industrialization.

Given the experience of other newly industrializing nations, a short-stage of import substitution is almost necessary for the accumulation of technical know-how which is required and needed for further industrialization. In the case of the Jamahiriya, this short-stage could be coupled with export-orientation development in the oil-related activities in which the Jamahiriya has a decisive comparative advantage. Moreover, whereas integration within the world structure of specialization is possible in oil-related activities, a narrower perspective is more realistic for other products. In either case, however, the Arab perspective is necessary to coordinate and eliminate harmful duplication and to expand intra-regional trade and facilitate inter-regional labour mobility.

A number of short-term policy measures are in order:

First, a two-tier exchange rate system is advisable in view of the oil related current exchange rate. The two exchange rates permit the depreciation of the Dinar to promote non-oil exports and to restrict those imports for which there already exists local production or it is intended to produce domestically.

Second, the evaluation and costing of projects should be carried in terms of their direct and indirect labour requirements. Those requiring large numbers of labour should be assumed to cost more than those requiring less labour independent of their monetary costs.

This procedure allows the maximization of output subject to the limited labour supplies and, therefore, extends the returns to this limited resource.

Third, new infrastructural investments should be tied to the development of the productive sectors; the two activities are now to be kept in tune. Failing to do so would aggravate inflationary pressures, raise the social unit costs of the flow of services of the infrastructur and divert future investable funds to costly repairs of the existing but under-utilized infrastructure.

Fourth, government expenditures on social services and government employment in general, may have to be restrained to limit their crowding-out effects and to release needed resources to the productive sectors. A balance must indeed be struck between socially necessary expenditures and the development of the productive capacity of the economy. The experience of most oil rich countries has revealed a strong tendency to raise social dependence on the Government and to divorce earnings from production. Although this has happened only to a limited extent in the Jamahiriya, vigilence must be kept to avert this negative tendency altogether.

F O O T N O T E S

1/ Ragnar Nurkse, Equilibrium and Growth in The World Economy, (Cambridge, Mass., 1961)

2/ Ragnar Nurkse, Ibid.

3/ Benjamin Higgins, Economic Development (revised edition, New York: W.W. Norton and Co., 1968), pp. 818-838.

4/ Benjamin Higgins, Ibid.

5/ Benjamin Higgins, Ibid.

6/ The 1980 figures are obtained from the Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning, First Draft of the Second Five-Year Transformation Plan 1981-1985, July 1980.

7/ The Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning, Ibid.

8/ The real GDP for the period 1975-1980 is calculated in terms of 1975 prices.

9/ Ragnar Nurkse, Ibid.

10/ Benjamin Higgins, Ibid.

11/ The Economist Intellegence Unit. Quarterly Economic Review of Libya, Tunisia and Malta: Annual Supplement, 1978, p. 5.

12/ The Socialist People's Libyan Arab Jamahiriya, Secretariat of Planning, Ibid.

13/ The marginal propensity to consume of private consumption in the Jamahiriya was estimated to be as low as 31 per cent. The equation used is presented as follows:

$$PC = \underset{(1.38)}{85.9422} + \underset{(15.08)}{0.3134\ DNI} \qquad R^2 = 0.96$$

where PC is private consumption, DNI is real disposable income and R^2 is the coefficient of multiple determination. The figures in paratheses are the t- values of the estimated coeficients. See Ente Nationale Idrocarburi. The Interdependence Model, Volume II, Appendices, p. 219.

14/ Only nominal values of GFCF are presented. We could not obtain the real values for lack of an appropriate price index for investment by branch of economic activity.

15/ The Economist Intellegence Unit, Ibid.

16/ Large establishments are defined as those employing 20 or more employees.

17/ The Socialist People's Libyan Jamahiriya, Secretariat of Planning, Ibid.