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GOVERNMENT OF MALAYSIA

NATIONAL WATER RESOURCES STUDY, MALAYSIA

REGIONAL WATER RESOURCES STUDY OF SOUTH JOHOR

VOL. 2

ANNEX

A. SOCIO-ECONOMY

DECEMBER 1985

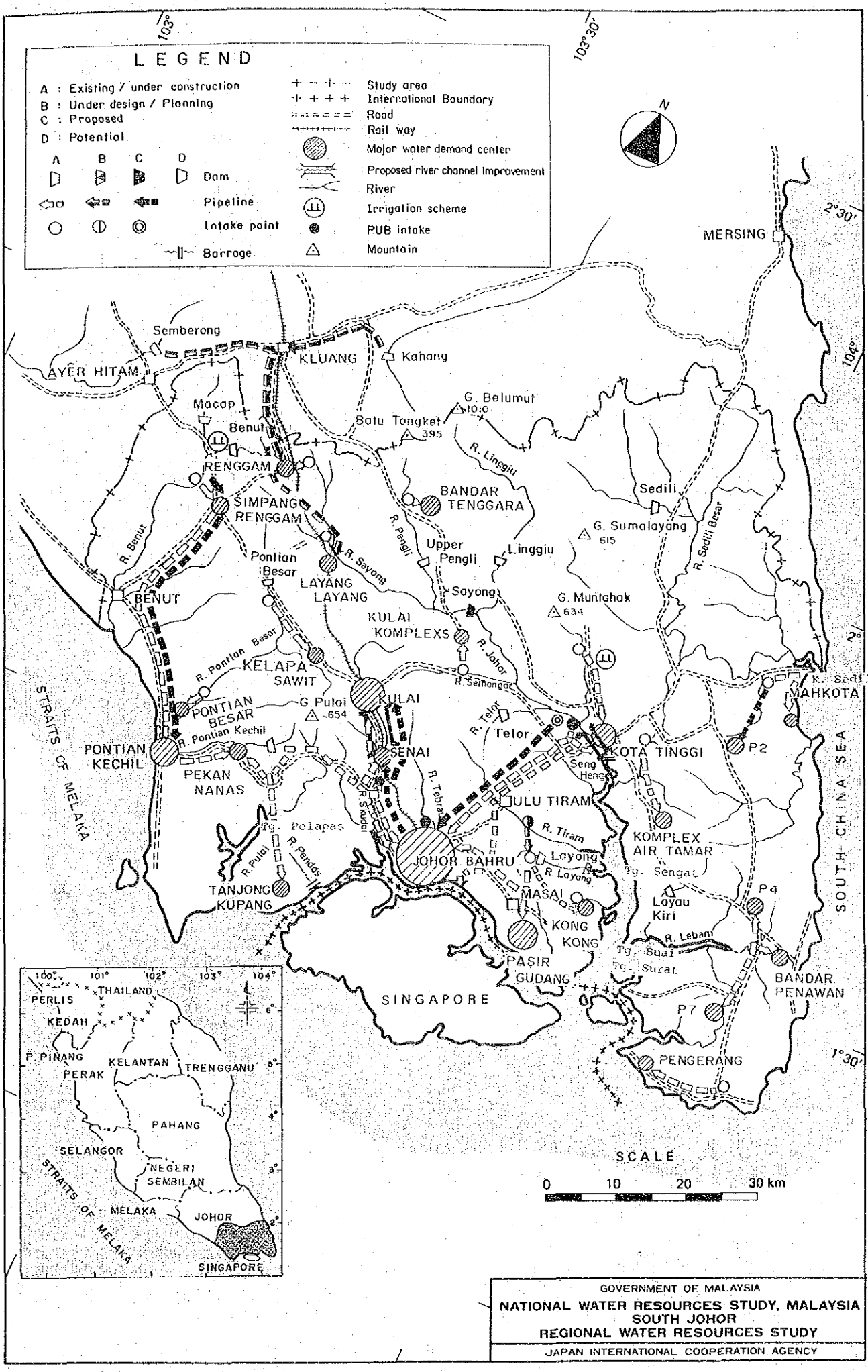
JAPAN INTERNATIONAL COOPERATION AGENCY

NATIONAL WATER RESOURCES STUDY, MALAYSIA

REGIONAL WATER RESOURCES STUDY OF SOUTH JOHOR

LIST OF VOLUMES

Vol. 1	MAIN REPORT	
Vol. 2	ANNEX A	SOCIO-ECONOMY
Vol. 3	ANNEX B	DOMESTIC AND INDUSTRIAL WATER SUPPLY
	ANNEX C	AGRICULTURE AND IRRIGATION DEVELOPMENT
Vol. 4	ANNEX D	METEOROLOGY AND HYDROLOGY
	ANNEX E	GROUNDWATER RESOURCES
	ANNEX F	WATER QUALITY
Vol. 5	ANNEX G	FLOOD MITIGATION PLAN
Vol. 6	ANNEX H	ENGINEERING GEOLOGY
	ANNEX I	CONSTRUCTION MATERIAL
Vol. 7	ANNEX J	REGIONAL WATER DEMAND AND SUPPLY SYSTEM
	ANNEX K	DESIGN AND COST ESTIMATE OF PROPOSED DEVELOPMENT PLAN
	ANNEX L	ECONOMIC EVALUATION OF PROPOSED DEVELOPMENT PLAN
Vol. 8	ANNEX M	LAND USE IN THE PROPOSED RESERVOIR AREA
	ANNEX N	ENVIRONMENTAL IMPACT OF PROPOSED PLAN
	ANNEX O	LEGAL AND INSTITUTIONAL ARRANGEMENT


LEGEND
A : Existing / under construction
B : Under design / Planning
C : Proposed
D : Potential
A B C D
Dam
Pipeline
Intake point
Barrage
Study area
International Boundary
Road
Rail way
Major water demand center
Proposed river channel improvement
River
Irrigation scheme
PUB intake
Mountain
N
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103°30'
2°30'
104°
2°
1°30'
MERSING
Semberong
AYER HITAM
KLUANG
Kahang
G. Belumut 1010
Batu Tongket 395
Macap
Benut
RENGGAM
SIMPANG RENGGAM
BANDAR TENGGARA
Sedili
G. Sumalayang 615
R. Linggiu
R. Sedili Besar
R. Benut
R. Pengli
Upper Pengli
Linggiu
Pontian Besar
LAYANG LAYANG
R. Sayong
Sayong
G. Muntahak 634
BENUT
KULAI KOMPLEXS
R. Johor
R. Pontian Besar
KELAPA SAWIT
R. Semangar
K. Sedili
MAHKOTA
STRAITS OF MELAKA
PONTIAN BESAR
G. Pulai 654
KULAI
R. Telor
Telor
PONTIAN KECHIL
R. Pontian Kechil
PEKAN NANAS
SENAI
KOTA TINGGI
Seng Heng
P2
R. Tebrau
ULU TIRAM
R. Skudai
Tg. Pelapas
R. Tiram
KOMPLEX AIR TAMAR
R. Pulai
R. Pendas
JOHOR BAHRU
Layang Layang
Tg. Sengat
TANJONG KUPANG
MASAI
P4
Layau Kiri
KONG KONG
R. Lebam
Tg. Buai
Tg. Surat
PASIR GUDANG
BANDAR PENAWAN
SINGAPORE
P7
PENGERANG
SOUTH CHINA SEA
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PERLIS
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SELANGOR
NEGERI SEMBILAN
MELAKA
JOHOR
SINGAPORE
STRAITS OF MELAKA
GOVERNMENT OF MALAYSIA
NATIONAL WATER RESOURCES STUDY, MALAYSIA
SOUTH JOHOR
REGIONAL WATER RESOURCES STUDY
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ABBREVIATIONS

(1) Oreganization/Plan

4MP (5MP)	:	Fourth (Fifth) Malaysia Plan
DID (JPT)	:	Drainage and Irrigation Department
DOA	:	Department of Agriculture
DOE	:	Department of Environment
EPU	:	Economic Planning Unit
FELCRA	:	Federal Land Consolidation and Rehabilitation Authority
FELDA	:	Federal Land Development Authority
GSD	:	Geological Survey Department
JICA	:	Japan International Cooperation Agency
KEJORA	:	Lembaga Kemajuan Johor Tenggara
MOA	:	Ministry of Agriculture
MOH	:	Ministry of Health
MTR	:	Mid-Term Review of 4MP
NEB	:	National Electricity Board
NWRS	:	National Water Resources Study
PUB	:	Public Utility Board (Singapore)
PWD (JKR)	:	Public Works Department
RESP	:	Rural Environmental Sanitation Program
RISDA	:	Rubber Industry Smallholders Development Authority
WHO	:	World Health Organization

(2) Others

B	:	Benefit
BOD	:	Biochemical Oxygen Demand
C	:	Cost
COD	:	Chemical Oxygen Demand
D & I	:	Domestic and Industrial
dia.	:	Diameter
DRC	:	Dry Rubber Content
EIRR	:	Economic Internal Rate of Return
EL.	:	Elevation Above Mean Sea Level
Eq.	:	Equation
FFB	:	Fresh Fruit Bunch
Fig.	:	Figure
GDP	:	Gross Domestic Project
GNP	:	Gross National Product
GRP	:	Gross Regional Project
HWL	:	Normal High Water Level
O & M	:	Operation and Maintenance
Q	:	Discharge
Ref.	:	Reference
SS	:	Suspended Solid
VA	:	Value Added

ANNEX A
SOCIO-ECONOMY

TABLE OF CONTENTS

		Page
1.	INTRODUCTION	A-1
2.	PRESENT CONDITION OF SOCIO-ECONOMY IN MALAYSIA AND THE REGION	A-3
	2.1 Malaysia	A-3
	2.1.1 Geographical features and administrative division	A-3
	2.1.2 Population and GDP	A-3
	2.2 The Region	A-4
3.	NATIONAL ECONOMIC DEVELOPMENT PLAN	A-7
	3.1 *New Economic Policy*	A-7
	3.2 Outline Perspective Plan	A-7
	3.3 Fourth Malaysia Plan	A-7
	3.4 Mid-Term Review of 4MP	A-9
4.	POPULATION PROJECTION	A-11
	4.1 Basic Data and Assumption	A-11
	4.2 *Projection Procedure and Methodology*	A-11
	4.2.1 Projected population of whole Malaysia	A-11
	4.2.2 Projection of population by state	A-12
	4.2.3 Projection of urban and rural population	A-12
	4.2.4 Projection of district population	A-14
	4.3 Projected Population	A-14
5.	GDP AND GRP PROJECTION	A-17
	5.1 Basic Data and Assumption	A-17
	5.2 Methodology for GDP and GRP Projections	A-17
	5.2.1 Projection of GDP of Malaysia	A-17
	5.2.2 Projection of GRP of the State of Johor	A-17
	5.3 Projected GDP and GRP	A-18
	5.3.1 GDP of Malaysia	A-18
	5.3.2 Per capita GDP of Malaysia and per capita GRP of the State of Johor	A-18

Page

5.3.3 GRP of the State of Johor A-19

6. PROJECTION OF GROSS VALUE OUTPUT IN MANUFACTURING OUTPUT A-21

6.1 Basic Data and Assumption A-21

6.2 Projection Methodology A-21

6.2.1 Projection of value added of manufacturing sector in Malaysia and by State A-21

6.2.2 Projection of share of VA by commodity groups in Peninsular Malaysia A-22

6.2.3 Projection of VA of manufacturing sector by state by commodity groups in Peninsular Malaysia A-23

6.2.4 Projection of gross value of manufacturing output A-24

6.3 Projected Gross Value of Manufacturing Output of the State of Johor A-24

REFERENCES A-25

LIST OF TABLES

		Page
1.	POPULATION AND ITS GROWTH FROM 1970 TO 1983	A-27
2.	POPULATION DISTRIBUTION BETWEEN URBAN AND RURAL BY ETHNIC GROUP IN PENINSULAR MALAYSIA	A-27
3.	GDP AND GRP OF THE STATE OF JOHOR BY INDUSTRY OF ORIGIN IN 1983	A-28
4.	GDP, GRP, PER CAPITA GDP AND PER CAPITA GRP IN 1983	A-28
5.	*LIST OF EXISTING INDUSTRIAL ESTATES IN THE REGION* (as of June,1984)	A-29
6.	POPULATION PROJECTION OF MALAYSIA	A-30
7.	PROJECTED URBAN AND RURAL POPULATION IN MALAYSIA	A-31
8.	PROJECTED POPULATION IN THE REGION	A-32
9.	PROJECTED POPULATION IN THE REGION BY TOWN AND DISTRICT RURAL (1/2)	A-33
10.	PROJECTED POPULATION IN THE REGION BY TOWN AND DISTRICT RURAL (2/2)	A-34
11.	PROJECTED GDP AND PER CAPITA GDP OF MALAYSIA AND GRP AND PER CAPITA GRP OF THE STATE OF JOHOR	A-35
12.	PROJECTED GDP AND STATE GRP OF MALAYSIA	A-36
13.	CLASSIFICATION OF COMMODITY GROUPS IN MANUFACTURING SECTOR	A-37
14.	ESTIMATED SHARE OF 11 COMMODITY GROUPS IN MANUFACTURING SECTOR IN PENINSULAR MALAYSIA IN 1980 AND 1985	A-38
15.	VALUE ADDED RATIO TO GROSS VALUE OF MANUFACTURING OUTPUT COMMODITY GROUP IN PENINSULAR MALAYSIA IN 1974	A-39
16.	VALUE ADDED RATIO TO GROSS VALUE OF MANUFACTURING OUTPUT IN PENINSULAR MALAYSIA	A-40
17.	VALUE ADDED RATIO OF MANUFACTURING INDUSTRIES FOR USA IN 1976, FOR JAPAN IN 1979 AND FOR KOREA IN 1978	A-41
18.	PROJECTED GROSS VALUE ADDED OF MANUFACTURING SECTOR FOR THE STATE OF JOHOR	A-42
19.	PROJECTED GROSS VALUE OF MANUFACTURING OUTPUT IN THE STATE OF JOHOR	A-42

LIST OF FIGURE

1. Location of Towns and Industrial Estates in 2005

1. INTRODUCTION

The socio-economic study was carried out to give future perspective of socio-economic conditions of the Region, i.e., southern part of the state of Johor in 1985, 1990, 1995, 2000 and 2005, as a basic framework for the other sectoral studies including Domestic and Industrial Water Supply, Flood Mitigation Plan and Evaluation of the proposed projects. To serve for this purpose, projection was made for the following socio-economic variables:

(1) Population,
(2) Gross domestic product (GDP) of Malaysia and per capita GDP,
(3) Gross regional product (GRP) of the State of Johor and per capita GRP,
(4) Gross value added of manufacturing sector of the State of Johor, and
(5) Gross value of manufacturing output by commodity group of the State of Johor.

This Study should be understood in this context and should not be considered as a proposal for future socio-economic planning.

2. PRESENT CONDITION OF SOCIO-ECONOMY IN MALAYSIA AND THE REGION

2.1 Malaysia

2.1.1 Geographical features and administrative division

Malaysia covers an area of 330,080 km^2, comprising Peninsular Malaysia, Sabah, and Sarawak. The States of Sabah and Sarawak occupy the north-western part of Borneo Island. Peninsular Malaysia, bordered on Thailand to the north, covers 131,930 km^2, while Sabah covers 73,700 km^2 and Sarawak 124,450 km^2.

Malaysia consists of 13 states including the State of Johor, which covers the Region of this Study. Each state is subdivided into districts in Peninsular Malaysia and divisions in Sabah and Sarawak.

2.1.2 Population and GDP

Population of Malaysia was 14,811 x 10^3 in 1983. The population size had grown at 2.5% per annum from the figure in 1970 which was recorded to be 10,777 x 10^3. In 1983, almost 83% of the Malaysian population or 12,284 x 10^3 lived in Peninsular Malaysia while Sabah had the population of 1,121 x 10^3 and Sarawak had 1,406 x 10^3 (Table 1).

Population density in the whole Malaysia in 1983 was 44.9 persons/km^2 while these in Peninsular Malaysia, Sabah and Sarawak were 93.1 persons/km^2, 15.2 persons/km^2 and 11.3 persons/km^2, respectively.

Urbanization in Peninsular Malaysia is remarkable. The urban population ratio of 29% in 1970 increased upto 38% by 1980 (Table 2).

GDP of Malaysia was M$38,810 million in 1983 in factor cost at 1970 price. The contribution of agricultural sector including forestries to GDP was estimated at 23%, while manufacturing sector shared 18% (Table 3). Per capita GDP was M$2,080 in 1983 in factor cost at 1970 price and Malaysia was ranked in one of the upper middle-income country in the world. The annual growth rate of GDP and per

capita GDP during the period from 1971 to 1983 was 7.7% and 5.2%, respectively (Table 4).

In Peninsular Malaysia in 1983, GRP was M$26,661 million. From 1971 to 1983, average annual growth rate was 7.7%. Per capita GRP of Peninsular Malaysia in 1983 was M$2,170 with the growth rate of 5.4% per annum.

2.2 The Region

The State of Johor of 19,140 km^2 is located in the Southernmost part of Peninsular Malaysia. Population of the state was 1,756,000 in 1983.

GRP of the State was M$3,523 x 106 and per capita GRP was M$2,007 which was slightly lower than the national average of M$2,080 in 1983 in factor cost at 1970 price. The annual growth rate of GRP and per capita GRP during the period from 1971 to 1983 was 7.7% and 5.5%, respectively (Table 4). Agriculture sector shared 32% and manufacturing sector shares 22% in GRP in 1983 (Table 3).

The South Johor Region (the Region) of 7,350 km^2 is a southern part of the State of Johor, facing the Singapore across the Strait of Johor. Administratively, the Region covers whole part of Johor Bahru, Kota Tinggi and Pontian districts and a part of Kluang and Mersing districts.

The population of the Region was 798,000 and the population density was 108.6/km^2 in 1983. The region is characterized by the industrial area culminated by Johor Bahru, which is 5th largest town in Malaysia with 300,000 population in 1983. There are 6 towns including Johor Bahru, which have more than 10,000 population each in 1983 in the Region. In addition to towns, industrial estates are centers of manufacturing activities. There are 4 major industrial estates in the Region represented by Pasir Gudang Industrial Estate situated about 24 km east of Johor Bahru city (Table 5). Location of towns and Industrial Estates is given in Fig. 1.

Major agricultural products in the Region are rubber and oil palm. Paddy cultivation is limited unlike in other areas.

Federal government established a special organization, KEJORA, to develop the northern area of Kota Tinggi district and southern area of Kluang district. KEJORA plays an important role to the economic development of the Region particularly in agricultural and agro-based industries as well as FELDA, RISDA and private firms.

Johor Bahru city is connected with Singapore by a causeway. A road, railroad and water pipeline are mounted on the causeway. Therefore, the State has physical special relationship with Singapore with population of 2.5 million in 1983 and per capita GNP of $5,910 in 1982.

3. NATIONAL ECONOMIC DEVELOPMENT PLAN

3.1 New Economic Policy

New Economic Policy (NEP) was enunciated in the Mid-Term Review of the Second Malaysia Plan, 1971 to 1975, in order to promote national unity through eradicating poverty irrespective for race and restructuring society to eliminate the identification of race with economic functions.

3.2 Outline Perspective Plan

Outline Perspective Plan (OPP) was initiated in 1971 to achieve the goals of NEP by 1990. The targets set for the 1971-1980 period or the first decade of OPP period was almost achieved and Fourth Malaysia Plan (4MP) was formulated for further attainment of the goals of NEP.

3.3 Fourth Malaysia Plan

The economy of Malaysia was expected to undergo further expansion and diversification during 4MP period, 1981 to 1985.

Characteristics and strategies for sectoral development contemplated in 4MP are summarized as follows (Ref. 1).

(1) Agriculture, forestry and fishing sector

(a) slower growth of the major commodities such as rubber and palm oil,

(b) declining of the sawlog output according to the National Forest Policy in Peninsular Malaysia and the conservation policy of Sabah and Sarawak,

(c) continuation of the encouragement of the dominant tree crops at present,

(d) production promotion of cocoa, pepper, tabacco, vegetables

and fruits,

(e) expansion of rubber output by the Government's Dynamic Production Policy through replanting and opening new planted areas,

(f) development of new land and replanting program for oil palm, and,

(g) continuation of self-sufficiency policy in paddy production.

(2) Mining sector

(a) increase of crude petroleum exploitation from the present output of 280 x 10^3 barrels/d in 1985,

(b) bright prospects of LNG including 6 x 10^6 tonnes by Bintulu LNG project, and

(c) decrease of tin production and copper output because of the limited availability of existing resources.

(3) Manufacturing sector

(a) stimulating the expansion of the manufacturing sector from both external and domestic demand,

(b) strengthening of the export-oriented industries such as timber products, electronics, textiles and rubber products,

(c) promotion of the agro-based industries including processing of cocoa and palm oil, production of specific rubber products and high value timber-based products,

(d) import-substitution policy including the production of processed food, intermediate goods such as oils and fats, industrial chemicals, chemical products and cement, and

(e) encouragement of capital-intensive industries such as aluminium, cement and steel by the Heavy Industries Corporation Malaysia Berhad.

3.4 Mid-Term Review of 4MP

The worldwide economic recession had continued during the first half of the 4MP period, 1981 to 1985, and it had adversely affected on Malaysia's economy. Accordingly, the original targets of 4MP were revised downward in the Mid-Term Review (MTR) of 4MP, i.e., annual growth rate of GDP during the 4MP period was revised from 7.6% in 4MP to 6.7% in MTR (Ref. 2). In MTR, following policies were strongly recommended.

(1) Developing the export-oriented industries, especially heavy manufacturing sector.
(2) Minimizing the Governmental expenditure and developing private activities.
(3) 70 million population policy. (To achieve the population growth upto 70 million by 2100)
(4) Look east policy.

4. POPULATION PROJECTION

4.1 Basic Data and Assumption

Basic data for the population projection are as follows:

(1) 4MP, MTR and data provided by EPU, and
(2) Population and Housing Census of Malaysia 1970 and 1980 (Refs. 3, 4, 5, 6).

Population of each state were projected based on the national and state population available in 4MP for 1970, MTR for 1980, 1983 and 1985. And the projected national population for 1990, 1995, 2000 and 2005 was obtained from EPU. Population of each district and each town, which were available in the Censuses in 1970 and 1980 were so adjusted as total population of them is consistant to the figures in 4MP and MTR.

The existing regional development plans in the Region such as Johor Bahru Metropolitan, Johor Timur (East), Johor Barat (West) and KEJORA, were also referred in this projection (Refs. 23 to 27).

In this Study, urban population is defined that in the towns which have larger population than 10,000 each year.

4.2 Projection Procedure and Methodology

4.2.1 Projected population of whole Malaysia

The national population estimated for the years of 1980, 1983 and 1985 were obtained from MTR and the projected population for the years of 1990, 1995, 2000 and 2005 were also obtained from EPU. EPU made a historical trend projection upto 2005 as shown in Table 6. EPU also started working of target population growth based on "70 million population policy", however, the figures estimated by Macro section of EPU was very preliminary ones. Therefore, in this Study, projected

population based on "70 million population policy" was shown only as reference in Table 6.

4.2.2 Projection of population by state

The state population estimated in 4MP for the year of 1970 and estimated and projected in MTR for the years of 1980 and 1985 were adopted. In order to project the state population thereafter up to 2005, it is assumed that the population of each state has hiperbolic relationship against national population and a hiperbolic function shown below was assumed.

$$Y = aX^2 + bX + c$$

where, Y: Population in each state
X: Population in whole Malaysia

The population figures in 1970, 1980 and 1985 estimated as above were applied to the equation and the values of coefficients a, b, and c were determined for each state. Thereafter, projected population from 1990 to 2005 for each state were adjusted so that the total of them equal to the national population each year.

4.2.3 Projection of urban and rural population

Population in urban and rural areas for Malaysia were estimated applying urbanization ratio, the ratio of sum of the population in the towns which have larger population than 10,000 to the total population for each year. The ratio was estimated applying following functional relationship between the ratio and the per capita GDP, which was projected in advance (Cf. section 5.2).

The function applied here is shown below.

$$Y = 100 - a \times b^X$$

where, X = per capita GDP (M$)
Y = Urbanization ratio (%)

The value of coefficients a and b were determined applying X obtained from 4MP and MTR for 1970 and 1980 and Y calculated based on the data from the population census for 1970 and 1980. The projected urban and rural population is shown in Table 7.

On the other hand, first approximation of population in each town and district rural, rural population in district except towns, were made as follows.

The ratios of the population in each town/district rural to the population in the relevant state to which the town/district rural belong are herein called the population shares of the town/district rural. The towns/district rural were classified into the following three groups and different mathematical equations were assumed to express the relationship between the population shares and the population of a state as follows;.

Group 1: Town/district rural in which population share increased between 1970 and 1980.

$$Y = 1 - 1/(aX+b)$$

where, Y: Population share of town/district rural
X: Population in the whole state

Group 2: Town district rural in which population share decreased between 1970 and 1980.

$$Y = 1/(aX+b)$$

Group 3: Town/district rural in which population share was constant between 1970 and 1980.

Future population share of the town/district rural was estimated to be equal to that in 1980.

The value of coefficients a and b for each town or district rural were estimated applying the values of X and Y in 1970 and 1980 to each equation mentioned above.

Finally, the population of each town derived as the first approximation was so adjusted that total of them coincide with the urban population projected through urbanization ratio for whole Malaysia.

State rural population was obtained by deducting population of towns in the state from state population projected in 4.2.2. Each district rural population was so adjusted that total of them coincide with the state rural population.

4.2.4 Projection of district population

District population was derived by summing the district urban population and district rural population projected in section 4.2.3.

4.3 Projected Population

The projected population in the State of Johor and that in the Region are summarized in Tables 8 to 10. The projected population of the State of Johor are also marked in Table 8. Population within the Region in 1985 is estimated to be 860,000 or 47% of state population of 1,834,000. Out of this, urban population in the Johor Bahru district is 389,000, being 85% of urban population in the Region of 459,000. Average annual growth rate of regional population will be 3.2% between 1985 and 2005 which is higher than 2.0% both for the national population and the population of the State of Johor. This higher growth rate of the population in the Region was projected mainly from concentration of State population in Johor Bahru. Population in the Region in 2005 will be 1,600,000, or 59% of state population of 2,729,000, consisting of urban population of 1,315,000 and rural population of 285,000. Urban population in Johor Bahru district will be 1,030,000 in 2005.

The projected population of the State of Johor in 2000 is 2,490,000, which is about 300,000 less than total of the projected population of the 4 regional development plan as mentioned in section 4.1.

According to the State EPU, the population of the State will be around 2,400,000 in 2000 and the 4 regional development plans are not well coordinated. While, Draft Structure Plan for Johor Bahru Metropolitan Area (Refs. 26 and 27) estimated that the total population of the Johor Bahru district in 2000 would be 1,000,000. Both of these figures are almost close to the projected population of this Study of 2,490,000 and 925,000, respectively.

5. GDP AND GRP PROJECTION

5.1 Basic Data and Assumption

Basic data for the GDP and GRP in 1980, 1983 and 1985 are from MTR, in 1971 from 4MP and the growth rates of GDP up to 2005 were assumed as follows: Once respective annual GDP growth rates for consecutive five years period from 1980 to 2005 were assumed to be 6.7, 7.5, 7.0, 6.5 and 6.0% after the discussion with EPU Macro Section. The government of Malaysia, then requested to use a figure between 5 to 7% for the period of from 1985 to 1990. Finally the GDP annual growth rates well assumed as follows:

GDP Annual Growth Rates

Unit : %

1980-85	1985-90	1990-95	1995-2000	2000-2005
6.7	7.0	7.0	6.5	6.0

The assumed growth rate of 6.7% for 1980-85 period was given in MTR.

In this study, GDP and GRP are expressed at factor cost at 1970 constant price.

5.2 Methodology for GDP and GRP Projections

5.2.1 Projection of GDP of Malaysia

GDP of Malaysia was estimated by means of the assumed growth rates for each 5 year period.

5.2.2 Projection of GRP of the State of Johor

Per capita GRP for each state was projected assuming a functional relationship between per capita GRP and per capita GDP.

The relationship applied here is as shown below:

$$Y = X + a/X + b/X^2 + c/X^3$$

where, Y: Per capita GRP of the objective state
X: Per capita GDP of Malaysia

The values of coefficients a, b and c were determined for each state based on the values of X and Y for the year of 1971 given in 4MP and those of 1980 and 1985 given in MTR.

The GRP estimates thus obtained were adjusted with the control total of GDP.

5.3 Projected GDP and GRP

5.3.1 GDP of Malaysia

GDP of Malaysia in 1985 is estimated to be M$35,254 in MTR. Thereafter, GDP will grow to M$127,160 by 2005 at factor cost at 1970 constant price.

The projected GDP of Malaysia is shown in Table 11.

5.3.2 Per capita GDP of Malaysia and per capita GRP of the State of Johor

Per capita GDP of Malaysia was obtained by dividing the GDP by total population of Malaysia. Per capita GDP in 1985, M$2,267, will increase at the average annual rate of 4.5%, reaching M$5,470 in 2005 in terms of factor cost in 1970 constant price.

Per capita GRP of the State of Johor in 1983 is estimated at M$2,007, which is slightly lower than the per capita GDP, M$2,080. As the result, per capita GRP of the State of Johor is projected to increase at the same growth rate with the per capita GDP from M$2,171 in 1985 in MTR to M$5,190 in 2005.

The projected per capita GDP and per capita GRP of the state of Johor are shown in Table 11.

5.3.3 GRP of the State of Johor

GRP of the State of Johor will grow from M$3,983 in 1985 to M$14,170 in 2005 in terms of factor cost in 1970 constant price (Table 11).

The projected GRP of each 13 state in Malaysia are also shown in Table 12.

6. PROJECTION OF GROSS VALUE OF MANUFACTURING OUTPUT

6.1 Basic Data and Assumption

Basic data for the projection of gross value of output in manufacturing sector were obtained from the followings:

(1) 4MP and MTR,
(2) Survey of Manufacturing Industries by DOS, 1974, 1978 and 1982 (Refs. 8, 9 and 11),
(3) Directory of Approved Companies in Production, 1982, MIDA (Ref. 14),
(4) Economic Report 1983/84, MOF (Ref. 13).

In this Study, manufacturing sector was classified into 11 commodity groups for the projection of industrial water demand. The correspondence of the classification with the one adopted by DOS is shown in Table 13.

6.2 Projection Methodology

6.2.1 Projection of value added of manufacturing sector in Malaysia by State

Projection methodology of value added (VA) of manufacturing sector in Malaysia and by state is shown below:

(1) Target share of manufacturing sector in GDP in 2000 and 2005 was assumed to be 30% and 33%, respectively, taking into account the figures in advanced countries and those in Malaysia in 1970s.

(2) Following equation was assumed and values of a and b were determined based on the values of X and Y in 1985 obtained from MTR and X in 2005 projected in Section 5.3.2 with 33% mentioned above for Y value in 2005.

$$Y = aX + b$$

where, Y: Share of manufacturing section in GDP
X: Per capita GDP of Malaysia

(3) The share of manufacturing sector in GRP of each state was projected using the same equation as above-mentioned and the same "a" value determined for Malaysia. Then, using the X and Y values in 1985, "b" value was determined for each state.

This methodology assumed that the share of manufacturing sector in GRP for each state will increase with the same elasticity as for Malaysia with regard to per capita figure.

6.2.2 Projection of share of VA by commodity groups in Peninsular Malaysia

The share of VA by 11 commodity groups in the VA of manufacturing sector in Peninsular Malaysia was projected according to the following steps:

(1) VA of manufacturing sector in Peninsular Malaysia was obtained by deducting VA of manufacturing sector in Sabah and Sarawak from that in whole Malaysia.

(2) The share of VA by 11 commodity groups in the VA of manufacturing sector in Peninsular Malaysia in 1980 was obtainedfrom the data of 1974 and 1978 industrial census by using ratio method.

(3) Based on thus estimated share by commodity group in 1980, the share in 1985 was obtained by applying the growth rate of each commodity group for 1981-85 available in MTR.

The estimated share of 11 commodity groups in 1980 and 1985 is presented in Table 14.

(4) The share of 11 commodity groups after 1985 was projected by applying the following relationship:

If the share of a commodity group in 1985 is less than that in 1980:

$$Y = 1 - 1/(aX+b)$$

If the share of a commodity group in 1985 is less than that in 1980:

$$Y = 1/(aX+b)$$

where, Y: Share of VA of a commodity group to total VA of manufacturing sector
X: Total VA of manufacturing sector

If the share of VA of a commodity group in 1985 is equal to that in 1980, the share of the commodity group after 1985 as assumed to be equal to those in 1980 and 1985.

The value of coefficients a and b for each commodity group were estimated applying the values of X and Y in 1970 and 1980 to each equation mentioned above. The share of VA of each commodity group was so adjusted that total of it is to be 100%.

6.2.3 Projection of VA of manufacturing sector by state by commodity groups in Peninsular Malaysia

VA of manufacturing sector by State and by commodity groups were estimated by "Frater Method" using the data of VA by state estimated in Section 6.2.1 and share of VA by commodity groups estimated in Section 6.2.2.

6.2.4 Projection of gross value of manufacturing output

The gross value of output in manufacturing sector was projected by VA in manufacturing sector projected in Section 6.2.3 divided by VA ratio which is defined as the ratio of VA to gross value of manufacturing output.

VA ratio was assumed to be 30% in manufacturing section in whole Malaysia taking into consideration the experience of Peninsular Malaysia as well as USA, Japan and Korea (Tables 15 and 17).

VA ratio by commodity group in 1974 as shown in Table 15 was adopted for all the years after adjusting by the control total of 30% in total manufacturing sector as mentioned above.

6.3 Projected Gross Value of Manufacturing Output of the State of Johor

Share of manufacturing sector in GRP and VA of manufacturing sector for the State of Johor were estimated as shown in Table 18.

Projected gross value of manufacturing output of the State of Johor is shown in Table 19.

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TABLES

Table 1 POPULATION AND ITS GROWTH FROM 1970 TO 1983

Unit: 10³

Region	1970/1	1980/2	1983/2	Average Annual Growth Rate (%)
Peninsular Malaysia	9,147.0	11,426.6	12,284.3	2.3
Sabah	653.6	1,011.0	1,120.5	4.2
Sarawak	976.3	1,307.6	1,406.4	2.8
Whole Malaysia	10,776.9	13,745.2	14,811.2	2.5

Sources: /1: Ref. 1
/2: Ref. 2

Table 2 POPULATION DISTRIBUTION BETWEEN URBAN AND RURAL BY ETHNIC GROUP IN PENINSULAR MALAYSIA

Unit: 10³

Ethnic Group	1970/1		1980/2		Average Annual Growth Rate of Urban Population (%)
	Urban	Rural	Urban	Rural	
Malay	713	4,109	1,606	4,710	8.5
Chinese	1,557	1,717	2,166	1,699	3.4
Indian	338	640	485	686	3.7
Othrs	30	43	32	42	0.6
Total	2,638	6,509	4,289	7,137	5.0
	(28.8%)	(71.2%)	(37.5%)	(62.5%)	

Rources: /1: Ref. 1
/2: Ref. 2

Table 3 GDP AND GRP OF THE STATE OF JOHOR BY INDUSTRY OF ORIGIN IN 1983

Unit: M$106 at 1970 price

	Agri-culture	Mining	Manu-facture	Con-struction	Others	Total
Malaysia	7,030	1,371	5,628	1,751	15,030	30,810
(share)	(23%)	(4%)	(18%)	(6%)	(49%)	(100%)
State of Johor	1,140	25	780	224	1,354	3,523
(Share)	(32%)	(1%)	(22%)	(6%)	(39%)	(100%)

Source: Ref. 2

Table 4 GDP, GRP, PER CAPITA GDP AND PER CAPITA GRP IN 1983

Region	GDP or GRP			Per Capita GDP or Per Capita GRP		
	Amount (M$106)		Annual Growth/1 Rate (%)	Amount/1 (M$106)		Annual Growth Rate (%)
	1971/2	1983/3		1971/2	1983/3	
Johor State	1,436	3,523	7.7	1,054	2,007	5.5
Peninsular Malaysia	10,888	26,661	7.7	1,158	2,170	5.4
Whole Malaysia	12,618	30,810	7.7	1,136	2,080	5.2

Remarks: /1: During 1971-1983 period.

Source: /2: Ref. 1
/3: Ref. 2

Table 5 LIST OF EXISTING INDUSTRIAL ESTATES IN THE REGION
(as of June, 1984)

Unit: ha

Name of Industrial Estate	Total Planned Area Excluding Housing	Industrial Land		
		Total Developed	Total Saleable	Allocated
Larkin and Tampoi	167.14	167.14	159.04	159.04
Pasir Gudang	928.37	688.00	628.96	510.00
Senai	40.47	40.47	31.84	31.84
Kota Tinggi	12.14	12.14	10.14	4.85
Total	1,148.12	907.75	829.98	705.73

Source: Refs. 29 and 30

Table 6 POPULATION PROJECTION OF MALAYSIA

Unit: 10^3

Year	Historical Trend	70 million Policy Base
1980	13,745/1	
1983	14,811/1	
1985	15,548/1	
1990	17,409/2	N.A.
1995	19,274/2	N.A.
2000	21,259/2	22,340/3
2005	23,242/2	24,590/3
Annual Growth Rate (%) (1985-2005)	2.0	2.3

Sources; /1 Ref. 2
/2 EPU Macro Section (Unpublished)
/3 EPU Macro Section Preliminary Estimation (Unpublished)

Table 7 PROJECTED URBAN AND RURAL POPULATION IN MALAYSIA

Unit: 10³

Year	Projected Population			Urbanization Ratio (%)
	Urban	Rural	Total	
1980	4,838	8,907	13,745	35.2
1985	6,048	9,500	15,548	38.9
1990	7,677	9,732	17,409	44.1
1995	9,617	9,657	19,274	49.9
2000	11,863	9,396	21,259	55.8
2005	14,317	8,925	23,242	61.6

Table 8 PROJECTED POPULATION IN THE REGION

Unit: 103

District /Mukim	Town/ Rural	Historical 1970	Historical 1980	Projected 1983	Projected 1985	Projected 1990	Projected 1995	Projected 2000	Projected 2005
1. Johor Bahru	Urban	154	295	348	389	530	683	850	1,030
	Rural	129	132	135	136	113	92	75	57
	Total	283	427	483	525	643	775	925	1,087
2. Kota Tinggi	Urban	0	14	16	28	36	61	104	136
	Rural	64	99	109	112	133	134	123	117
	Total	64	113	125	140	169	195	227	253
3. Pontian	Urban	0	32	38	42	55	71	88	110
	Rural	123	92	90	87	80	72	64	54
	Total	123	124	128	129	135	143	152	164
4. Kluang (a part within the Region)									
4.1 Layang-Layang	Urban	-	-	-	-	-	-	-	13
	Rural	10	13	15	16	18	20	21	9
4.2 Ulu Benut and Macap	Rural	11	14	16	17	19	21	23	26
4.3 Renggam	Urban	-	-	-	-	-	-	-	26
	Rural	22	25	28	30	34	38	41	21
	Total	43	52	59	63	71	79	85	95
5. Mersing									
Mersing (a part within the Region)	Rural	7	3	3	3	3	3	2	1
Region Total									
	Urban	154	341	402	459	621	815	1,042	1,315
	Rural	366	378	396	401	400	380	349	285
	Total	520	719	798	860	1,021	1,195	1,391	1,600
State of Johor		1,326	1,638	1,756	1,834	2,042	2,256	2,490	2,729

Table 9 PROJECTED POPULATION IN THE REGION
BY TOWN AND DISTRICT RURAL (1/2)

Unit: 10^3

District	Town/Rural	Historical			Projected				
		1970	1980	1983	1985	1990	1995	2000	2005
1. Johor Bahru	Johor Bahru	142	256	300	335	432	540	663	797
	Kulai	12	25	31	35	51	70	96	123
	Ulu Tiram	4	7	8	9	13	17	23	30
	Senai	5	7	8	8	11	14	17	20
	Kelapa Sawit	5	6	7	7	8	12	14	15
	Masai & Pasir Gudang	5	14	17	19	23	30	37	45
	urban total	154	295	348	389	530	683	850	1,030
	district rural	129	132	135	136	113	92	75	57
	Total	283	427	483	525	643	775	925	1,087
2. Kota Tinggi	Kota Tinggi	9	14	16	18	24	31	41	49
	Bandar Penawan	-	-	-	1	2	4	6	13
	P2	-	-	-	7	8	9	12	14
	P4	-	-	-	8	8	9	12	14
	P7	-	-	-	8	9	12	14	15
	Bandar Tenggara	-	-	-	10	12	18	25	31
	urban total	0	14	16	28	36	61	104	136
	district rural	64	99	109	112	133	134	123	117
	Total	64	113	125	140	169	195	227	253

Table 10 PROJECTED POPULATION IN THE REGION BY TOWN AND DISTRICT RURAL (2/2)

Unit: 103

District	Town/Rural	Historical 1970	1980	1983	Projected 1985	1990	1995	2000	2005
3. Pontian	Pontian Kechil	9	22	28	32	44	59	76	97
	Pontian Nanas	9	10	10	10	11	12	12	13
	urban total	0	32	38	42	55	71	88	110
	district rural	123	92	90	87	80	72	64	54
	Total	123	124	128	129	135	143	152	164
4. Kluang	Simpang Renggam	4	5	6	6	7	8	9	13
	Layang-Layang	3	4	5	5	6	7	9	13
	Renggam	3	4	5	5	6	7	8	13
	urban total	0	0	0	0	0	0	0	39
	district rural (a part within the Region)	43	52	59	63	71	79	85	56
	Total (a part within the Region)	43	52	59	63	71	79	85	95
5. Mersing	district rural (a part within the Region)	7	3	3	3	3	3	2	1
Region Total									
	Urban	154	341	402	459	621	815	1,042	1,315
	Rural	366	378	396	401	400	380	349	285
	Total	520	719	798	860	1,021	1,195	1,391	1,600

Table 11 PROJECTED GDP AND PER CAPITA GDP OF MALAYSIA AND GRP AND PER CAPITA GRP OF THE STATE OF JOHOR

Year	Malaysia		Johor	
	GDP (M10^6)	Per Capita GDP (M$)	GRP (M10^6)	Per Capita GRP (M$)
1971 /1	12,618	1,136	1,436	1,054
1980 /2	25,410	1,849	2,971	1,813
1983 /2	30,810	2,080	3,523	2,007
1985 /2	35,254	2,267	3,983	2,171
1990	49,450	2,840	5,500	2,690
1995	69,360	3,600	7,740	3,430
2000	95,020	4,470	10,580	4,250
2005	127,160	5,470	14,170	5,190

Remarks: /1: Ref. 1
/2: Ref. 2

Table 12 PROJECTED GDP AND STATE GRP OF MALAYSIA

Unit: M$10^6

State	1980/1	1983/1	1985/1	Projected 1990	1995	2000	2005
Johor	2,971	3,523	3,983	5,500	7,740	10,580	14,170
Kedah/Perlis	1,441	1,665	1,805	2,567	3,831	5,509	7,586
Kelantan	809	958	1,082	1,728	2,892	4,593	6,875
Melaka	691	838	969	1,368	1,899	2,544	3,329
Negeri Sembilam	1,080	1,289	1,455	1,966	2,641	3,470	4,473
Pahang	1,562	1,954	2,299	3,424	5,121	7,522	10,763
Perak	2,852	3,477	3,905	5,436	7,482	9,975	12,998
Pulau Pinang	2,073	2,561	2,936	3,959	5,133	6,427	7,887
Selangor	7,787	9,332	10,724	14,454	19,509	26,277	35,059
Trengganu	850	1,064	1,254	1,844	2,663	3,734	5,084
Peninsular	22,116	26,661	30,412	42,246	58,911	80,631	108,224
Sabah	1,705	2,177	2,563	3,791	5,426	7,412	9,734
Sawarak	1,589	1,972	2,279	3,413	5,023	6,977	9,202
Malaysia	25,410	30,810	35,254	49,450	69,360	95,020	127,160

Source: /1 Ref. 2

Table 13 CLASSIFICATION OF COMMODITY GROUPS IN MANUFACTURING SECTOR

	Commodity Group in this Study	Commodity Group Adopted by DOS
1.	Food Group	Food, beverage and tobacco
2.	Textiles Group	Textiles, wearing apparel, leather and footwear
3.	Wood Group	Wood, furniture, fixture and wood and cork products
4.	Paper Group	Paper and paper products
5.	Publishing Group	Printing publishing and allied industries
6.	Chemical Group	Chemicals, petroleum refineries, plastic products
7.	Rubber Group	Rubber products
8.	Non Metal Group	Pottery, china, earthenware, glass products, non-metallic mineral products
9.	Basic Metal Group	Iron, steel and non-ferrous metal basic products
10.	Machinery Group	Fabricated metal, machinery, electrical and transport equipment
11.	Others	Other manufacturing industries

Table 14 ESTIMATED SHARE OF 11 COMMODITY GROUPS IN MANUFACTURING SECTOR IN PENINSULAR MALAYSIA IN 1980 AND 1985

Unit: %

Commodity Group	Share				Average Annual Growth Rate
	1974/1	1978/2	1980/3	1985/4	1981-1985
Food	23.5	26.0	26.9	27.3	6.4
Textile	5.3	8.1	9.5	7.4	1.0
Wood	10.9	10.4	10.2	7.8	0.6
Paper	1.0	0.9	1.1	1.4	10.6
Publishing	5.2	3.9	3.2	3.7	10.2
Chemicals	10.4	10.8	11.0	11.7	7.5
Rubber	12.8	9.9	8.5	6.9	1.8
Nonmetal	5.2	5.1	5.0	4.8	4.9
Basic Metal	3.5	3.1	2.9	3.2	8.2
Machinery	21.8	21.2	20.9	25.2	10.2
Others	0.3	0.6	0.8	0.6	0.5
Total	100.0	100.0	100.0	100.0	5.7

Remarks: /1: Source: Ref. 8

/2: Source: Ref. 9

/3: Estimated based on the shares in Industrial Survey in 1974 and 1978.

/4: Estimated based on 1980 share and the growth rate of the shares for 1981-1985 given in Ref. 2.

Table 15 VALUE ADDED RATIO TO GROSS VALUE OF MANUFACTURING OUTPUT COMMODITY GROUP IN PENINSULAR MALAYSIA IN 1974

UNIT: M$10^6

Commodity Group	Value Added (A)	Value of Output (B)	V.A. Ratio (A/B) (%)
Food	669.5	3,338.7	0.2005
Textile	151.0	510.0	0.2961
Wood	380.1	1,071.4	0.3548
Paper	26.9	88.2	0.3050
Publishing	151.9	319.4	0.4756
Chemical	256.3	1,174.8	0.2182
Rubber	354.1	1,352.2	0.2619
Non Metal	142.8	316.2	0.4516
Basic Metal	97.1	299.9	0.3238
Machinery	612.1	1,806.8	0.3388
Others	79.9	727.3	0.1099
Total	2,921.7	11,004.8	0.2655

Source: Ref. 8

Table 16 VALUE ADDED RATIO TO GROSS VALUE OF MANUFACTURING OUTPUT IN PENINSULAR MALAYSIA

Unit: M$106

Year	Value Added (A)	Gross Value of Output (B)	V.A. Ratio (A/B) (%)
1963	420	1,689	0.249
1964	402	1,700	0.237
1965	501	1,955	0.256
1966	576	2,176	0.265
1967	644	2,302	0.280
1968	874	3,079	0.284
1969	992	3,280	0.302
1970	1,182	5,937	0.300
1971	1,206	4,164	0.304
1972	1,525	5,120	0.298
1973	2,327	7,678	0.303
1974	2,759	10,113	0.273

Source: Ref. 8

Table 17 VALUE ADDED RATIO OF MANUFACTURING INDUSTRIES FOR USA IN 1976, FOR JAPAN IN 1979 AND FOR KOREA IN 1978

Unit: US$10^6

Commodity Group	Value Added Ratio USA 1976/1	Japan 1979/2	Korea 1978/2
Food and Kindered Products	0.292	0.297	
Tobacco Products	0.470	-	Light I
Textile Mill Products	0.398	0.382	0.312
Apparel and Other Textile Products	0.485	0.460	
Lumber and Wood Products	0.431	0.324	Heavy I
Furniture and Fixtures	0.518	0.427	0.282
Paper and Allied Products	0.427	0.313	
Printing and Publishing	0.645	0.539	
Chemicals and Allied Products	0.494	0.386	
Petroleum and Coal Products	0.160	0.119	
Rubber and Miscellaneous Plastics Products	0.502	0.409	
- Tyres and inner tubes	0.458	-	
- Fabricated rubber products	0.535	-	
Leather and Leather Products	0.496	0.355	
Stone, Clay and Glass Products	0.548	0.454	
Primary Metal Industries	0.368	0.318	
Fabricated Metal Products	0.505	-	
Machinery	0.544	0.417	
Electric and Electronic Equipment	0.564	0.406	
Transportation Equipment	0.395	0.274	
Instruments and Related Products	0.655	0.403	
Miscellaneous	0.542	0.383	
Total	0.431	0.352	0.297

Remarks: /1: Value added ratio for US : Value added divided by value of shipment

/2: Value added ratio for Japan and Korea : Value added divided by gross value of manufacturing industries

Table 18 PROJECTED GROSS VALUE ADDED OF MANUFACTURING SECTOR FOR THE STATE OF JOHOR

Unit: M$10^6

Sector	1980	1983	1985	1990	1995	2000	2005
VA of Manufacturing Sector	640	780	910	1,390	2,240	3,660	5,420
GRP	2,971	3,523	3,983	5,500	7,740	10,580	14,170
Share of Manufacturing Sector in GRP (%)	21.5	22.1	22.8	25.2	29.0	34.6	38.3

Table 19 PROJECTED GROSS VALUE OF MANUFACTURING OUTPUT IN THE STATE OF JOHOR

Unit: M$106

Sector	1980	1983	1985	1990	1995	2000	2005
Food	848	1,095	1,305	2,007	3,029	4,366	5,481
Textile	319	345	372	464	592	726	787
Wood	203	200	209	209	200	190	163
Paper	23	35	43	93	200	420	761
Publishing	10	14	18	37	83	168	298
Chemical	177	252	315	567	1,047	1,901	3,003
Rubber	342	367	396	446	556	653	667
Non-metal	23	31	35	52	79	125	164
Basic-metal	3	6	6	14	26	43	69
Machinery	235	353	458	947	2,005	4,064	7,185
Others	8	8	8	10	10	15	15
Total	2,191	2,706	3,165	4,846	7,827	12,671	18,593

FIGURES

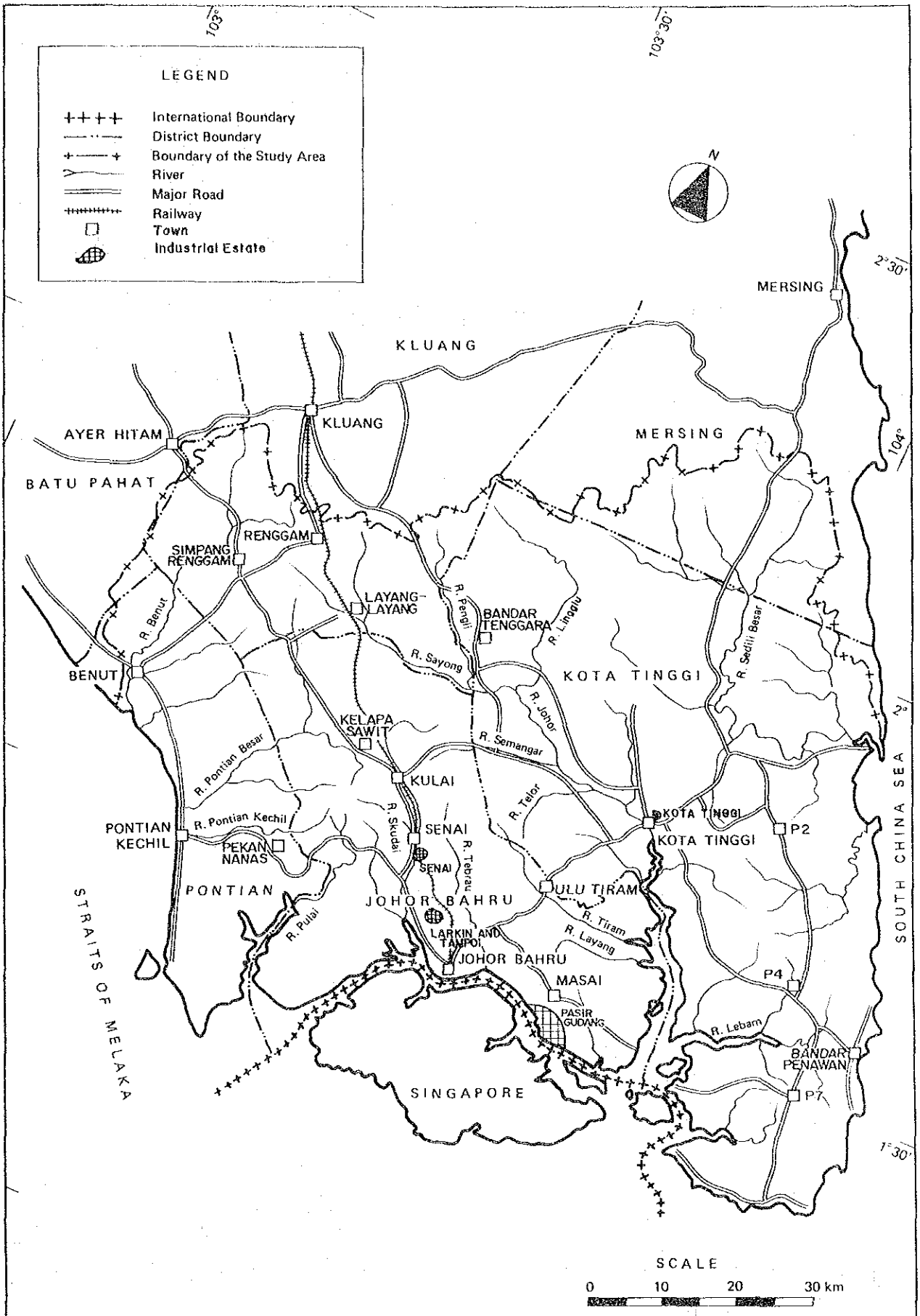
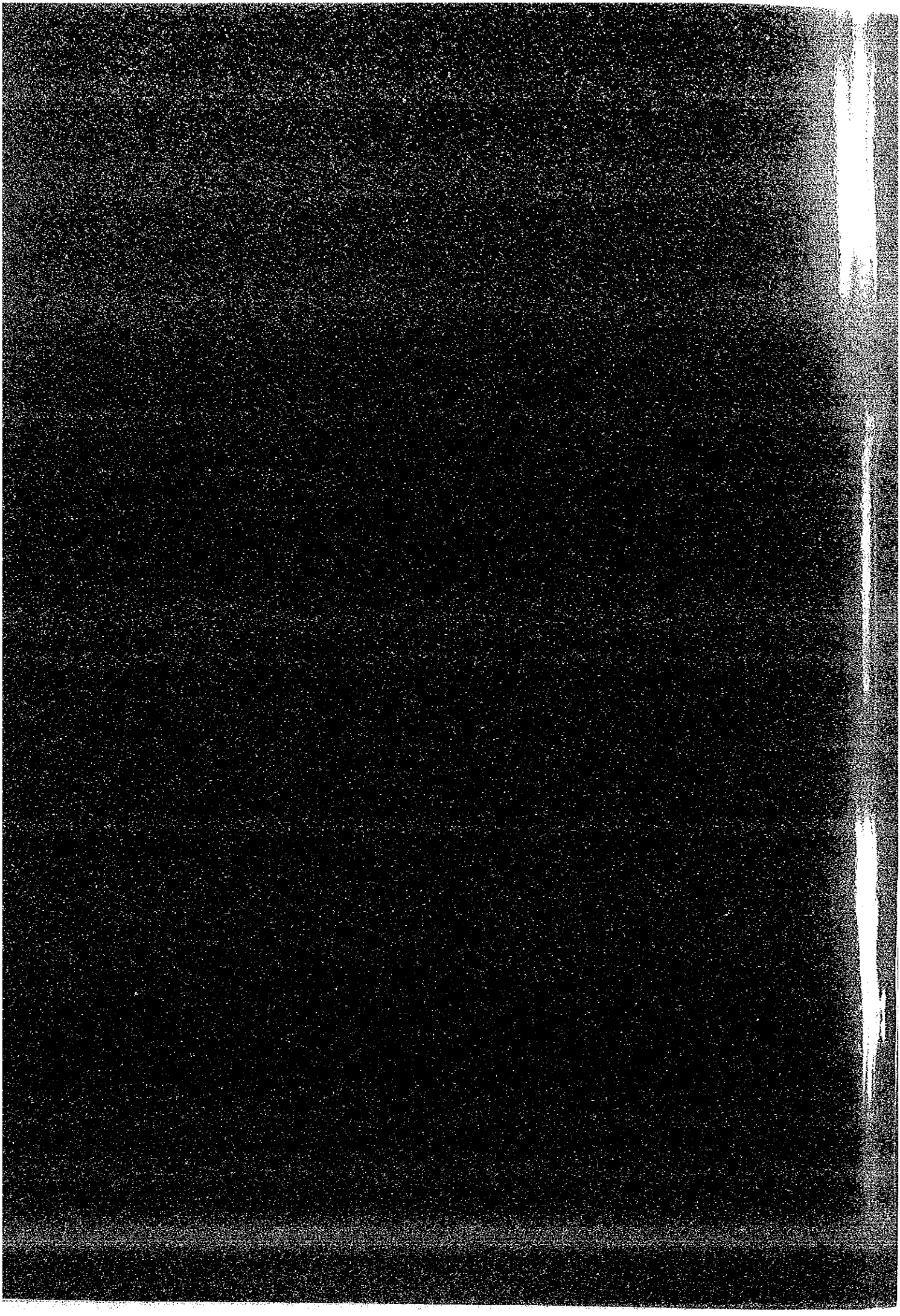


Fig. 1 Location of Towns and Industrial Estates in 2005

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