Chapter XV

Mining

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Mining

I. INTRODUCTION

The mining sector, which includes the production of petroleum, tin , copper, bauxite, iron ore, and other minerals, though not expected to contribute substantially towards the growth of the economy during the Fifth Malaysia Plan period due to the weak demand for these minerals will, nevertheless, continue to play its role in the development of the country. During the Fourth Malaysia Plan period, the growth of the sector was largely contributed by the petroleum industry while the tin mining industry experienced a severe decline and copper, marginal growth.

During the Fifth Plan period, the thrust for the development of the sector will be directed towards encouraging more intensive prospecting. The exploitation of base metals as well as other minerals discovered during the Fourth Plan period in the Central Belt of Peninsular Malaysia, and the Bau region of Sarawak, will be initiated during the period 1986-90, in line with the objective of diversifying the sector. Encouragement will be given to the private sector, both foreign and local, to step up its exploration activities to augment the depleting petroleum resources of the country.The growth of the sector during the period 1986-90 will still be largely attributable to the production of petroleum. The contribution of the sector to foreign exchange earnings of the country is expected to remain substantial during the Plan period while its contribution to employment generation will be very minimal.

II. PROGRESS, 1981-85

The sector recorded a growth rate of 6.0 per cent per annum in real terms during the Fourth Plan period, 1.0 percentage point below the targetted rate for the sector. Its share in Gross Domestic Product (GDP) increased marginally from 10.0 per cent in 1980 to 10.1 per cent in 1985. The sector was largely dominated by crude oil which accounted for 79.7 per cent of the value added of the sector. This was followed by tin, accounting for 15.4 per cent, and quarrying, 3.7 per cent.

Production

Crude oil. Production of crude oil, as shown in Table 15-1, increased significantly during the period, from 275,800 barrels per day (bpd) in 1980 peaking at 446,800 bpd in 1984. In 1985, production was reduced slightly to 446,100 bpd in view of the glut in the international crude oil market. The overall increase in production was made possible by the coming onstream of 13 new fields during the period, bringing the total number of producing fields to 27 compared to 14 in 1980. About 51 per cent of crude oil produced in 1985 was from the fields located offshore Terenggnu, 18.0 per cent offshore Sabah, and 31.5 per cent offshore Sarawak. In 1980, about 13 per cent of the crude oil was refined locally, while the remaining was exported. In 1985, the share that was refined locally increased to about 23 per cent due to the coming onstream of the refinery at Kerteh in 1983 and the move by the other local refineries at Port Dickson to refine more local crude.

Gas. Production of gas, both associated and non-associated, grew at a rate of 38.7 per cent per annum from 258 million standard cubic feet per day (mmscfd) in 1980 to 1,324 mmscfd in 1985. A portion of the output was utilized by gas-based projects and in petroleum operations, while the balance was either flared or reinjected into the ground. Production of non-associated gas, however, began only in 1982 from the E11 field to cater for the liquefied natural gas (LNG) project at Bintulu, Sarawak and by 1985, its share to total gas production increased to 64.2 per cent.

In addition to the LNG project, gas was sold to the power station at Paka, a steel billet producing plant at Telok Kalong, and a housing area at Kerteh, in Terengganu. Other projects included the gas-based industries at the Federal Territory of Labuan, and the ASEAN ammonia-urea plant at Bintulu. The delivery of gas onshore to the first three projects represented the successful completion of Phase I of the Peninsular Gas Utilization (PGU) project. The largest consumer of gas was the LNG project which utilized 683 mmscfd or 74 per cent of total sales in 1985, followed by PGU Phase I, 16 per cent, and the gas-based industries at the Federal Territory of Labuan, 6 per cent. The volume flared remained constant at about 166 mmscfd. The share of gas flared, however, as a percentage of total gas production, declined from 69 per cent in 1980 to only 13 per cent in 1985. The remaining output of gas was either utilized in petroleum operations or reinjected into the ground.

Tin. Output of tin continued to decline during the Fourth Plan period. It registered a rate of decline of 10.9 per cent per annum from 61,400 tonnes in 1980 to 36,300 tonnes in 1985. The reduction during the period was mainly due to the surplus prevailing in the international market and the consequent quarterly export control imposed by the International Tin Council (ITC). The level of cutback was initially fixed at 15 per cent of total exports in the second quarter of 1982, rising to 39.6 per cent in the second half of 1983. The quota since then, remained at this level. Trading in the metal at the London Metal Exchange (LME) was

TABLE 15-1

MALAYSIA: PRODUCTION AND EXPORT OF MAJOR MINERALS, 1980-85
('000)

Mineral	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*Average annual growth rate (%)* *1981-85*
Crude oil (bpd)							
Production	275.8	258.3	303.3	383.2	446.8	446.1	*10.1*
Exports	234.3	211.2	249.3	296.2	343.5	354.5	*8.7*
Liquefied natural gas (tonnes)							
Production	-	-	-	1,830	3,700	4,500	-
Exports	-	-	-	1,830	3,700	4,500	-
Other natural gas[1] (mmscfd)							
Production	6.2	8.0	7.9	10.6	33.76	237.5	*107.3*
Exports	-	-	-	-	-	-	-
Tin-in-concentrates (tonnes)							
Production	61.4	59.9	52.3	41.4	41.3	36.3	*-10.0*
Exports	69.5	66.4	48.6	57.1	39.6	54.5	*-4.7*
Copper concentrates (tonnes)							
Production	114.0	120.3	128.8	123.4	122.8	125.0	*1.9*
Exports	107.4	129.3	121.1	121.9	135.5	126.2	*3.3*

Sources : Department of Statistics, Malaysia: *Preliminary Figures of External Trade, 1981, 1982 and 1983,* and various Government agencies.

Note:

[1] Gas utilized by the gas-based industries in the Federal Territory of Labuan, the ASEAN ammonia-urea project at Bintulu, Sarawak, the PGU Phase I Project, and other consumers in Sarawak. The figures exclude gas that was flared or reinjected into the ground and gas that was utilized in petroleum operations.

suspended on 24th October, 1985 as a result of the depletion of the financial resources of the ITC to enable it to operate in the Exchange in order to defend its floor price of $29.15 per kilogramme. The metal was subsequently traded in secondary markets at prices much lower than the floor price, thus resulting in a substantial reduction in output. Arising from these developments, coupled with the increased output from non-ITC countries, the share of Malaysia in world output declined from 30.8 per cent in 1980 to 20.8 per cent in 1985. Of the total output in 1985, gravel pump mines accounted for 50.8 per cent, dredges 30.1 per cent, and others 19.1 per cent. The number of operating mines declined from 852 in 1980 to 235 in 1985.

Domestic tin consumption continued to remain at a low level, with very few new tin-based projects implemented during the period. In 1980, only 434 tonnes were utilized domestically, mainly for the production of pewter ware and soldering purposes undertaken largely by small-scale industries. In 1985, local industries used about 1,600 tonnes or 4.4 per cent of total production. The main local users were a newly established soldering plant at Ipoh, the tin-plating plant at Pasir Gudang and pewter ware manufacturers.

Other minerals. Other minerals produced during the period accounted for a very small share of the output of the mining sector. The more important ones include copper, bauxite, iron ore, and industrial minerals. Copper output from the mine at Mamut, Sabah increased gradually from 114,000 tonnes in 1980 to 128,800 tonnes in 1982, but declined to 125,000 tonnes in 1985. Bauxite production from the sole mine in Johor declined from 920,000 tonnes in 1980 to about 540,000 tonnes in 1985. Output of iron ore mined in the States of Johor, Kedah, Pahang, and Perak recorded a decrease from 371,200 tonnes in 1980 to 230,000 tonnes in 1985. The more important industrial minerals mined were kaolin, clays, limestone, granite, marble, calcium, calcium carbonate powder, silica, sand, constructional sand, and barite.

Exports

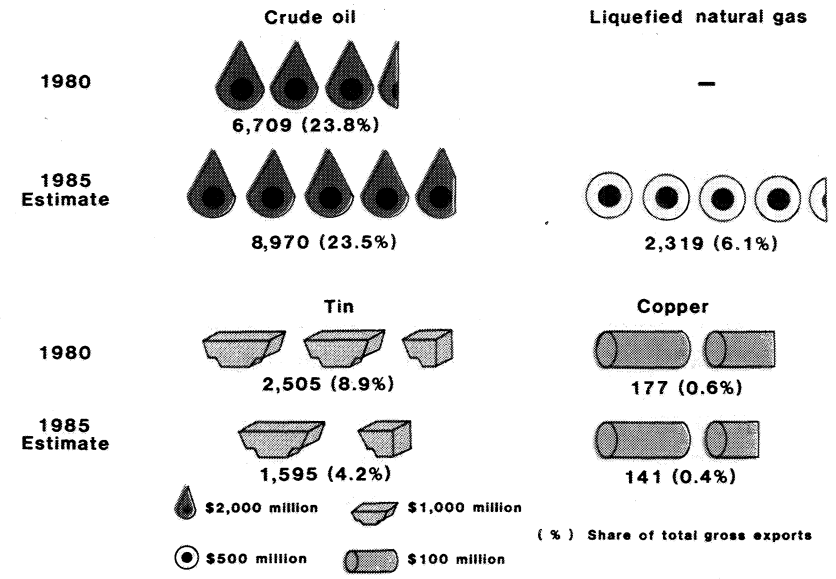
Exports of the more important minerals, such as crude oil, tin, gas, and copper, increased at a rate of 6.8 per cent per annum in current terms from $9,392 million in 1980 to $13,025 million in 1985, as shown in Chart 15-1. The share of these export proceeds in gross merchandise exports consequently increased from 33.5 per cent in 1980 to 34.2 per cent in 1985. This rising share was mainly attributed to the relatively high growth of crude oil exports and the commencement of LNG exports during the period.

Crude oil. The value of crude oil exports increased at a rate of 6.0 per cent per annum, despite the softening of its average price from $36.50 per barrel in 1980 to $28.00 per barrel in 1985. The major markets were Singapore, Japan, and South Korea which accounted for 35.7 per cent, 27.4 per cent, and 11.9 per cent,

CHART 15-1

MALAYSIA: EXPORT EARNINGS OF MAJOR MINERALS, 1980 AND 1985

($ million)



respectively, of total crude oil exports in 1984. Exports of petroleum products increased at a rate of 48.6 per cent per annum from $189.2 million in 1980 to $923.4 million in 1984, largely serving the Japanese market.

Gas. Gas was exported in the form of LNG beginning 1983 from Bintulu solely to Japan under a long-term contract. Export volume of LNG which constituted total output increased from 1,830,000 tonnes in 1983 to 4,500,000 tonnes in 1985. The price of LNG increased from $466.70 per tonne in 1983 to $515.30 per tonne in 1985.

Tin and copper. Tin exports experienced a decline of 4.7 per cent per annum in volume and 8.6 per cent in value. This was due to the export control imposed by the ITC as a result of the large surplus in the world market estimated to be in the region of 95,000 tonnes in 1985. Although copper exports registered a slight growth of 3.3 per cent per annum in terms of volume, it experienced a decline in total value due to falling price.

Investment

Investment in the mining sector during the period 1981-85 was dominated by the petroleum industry. The industry invested about $13,000 million in exploration and production activities of which the major portion was accounted for by

the private sector. In terms of exploration activities, a total of 73,300 kilometres of seismic line was shot, 137 exploration wells were drilled, and 16 new discoveries made. With the export control, hardly any substantial investment was made in the tin mining sector. About $30 million were invested by the Malaysia Mining Corporation (MMC) in prospecting for other minerals in Kelantan and Pahang. With regard to industrial minerals, sizeable investments were made, particularly in the extraction of limestone for the cement projects, in Kedah and Perak. In addition, the Government spent about $21 million in initial explorations in the States of Kedah, Kelantan, Pahang, Perak, Sabah, and Sarawak, partly assisted by international organizations and donor countries.

Employment

Mining employment declined from 80,100 in 1980 to 60,500 in 1985, primarily due to the closure of tin mines following the export control imposed by ITC, rising cost of production, and the suspension of tin trading at the LME. During the Fourth Plan period, a total of 617 tin mines were closed, thereby reducing direct employment from 39,000 in 1980 to 18,300 in 1985. In the upstream petroleum sector, the total number of new employment generated was not substantial. Employment generation in the other subsectors was also minimal.

Programmes and projects

Mining-related activities undertaken by the Government were confined to exploration and evaluation at the initial stage, and research and development. In addition, several public sector-owned corporations were also involved in the mining of minerals commercially. These were the National Oil Corporation (PETRONAS), several state economic development corporations (SEDCs), PERNAS Mining Sendirian Berhad, and MMC.

In the petroleum sector, PETRONAS *Carigali Sendirian Berhad* continued to be actively involved in exploration and development activities. It expended about $1,066 million during the period for the development of the Duyong Gas Project and exploration activities. The first phase of the Duyong Gas Project undertaken by the PETRONAS subsidiary together with the gas gathering facilities developed by the private sector was completed in 1984, supplying 145 mmscfd of gas in 1985 to the gas processing plant to be processed for onward supply to the power station at Paka, the steel billet plant, and a housing area in Terengganu. The exploration activities of PETRONAS *Carigali* resulted in the discovery of the Dulang field in 1982, the Malong field in 1983, and three other offshore locations in Terengganu and one in Sabah.

Being technologically sophisticated, the upstream petroleum industry requires professionals and highly technically trained personnel. In line with this requirement, PETRONAS and the production-sharing contractors carried out comprehensive training programmes at various technical levels to meet the manpower

demand in the upstream activities. Transfer of technology was reflected in the increasing number of Malaysians replacing foreigners in the expatriate posts. The share of expatriates in total employment in the upstream petroleum sector declined from 17 per cent in 1980 to 9 per cent in 1985.

The SEDCs of Perak and Selangor, MMC, and PERNAS Mining Sendirian Berhad continued their mining activities, especially for tin, during the period. These corporations were operating 30 mines at the beginning of the period. With the imposition of the tin export control, however, four mines had to be closed. Tin output from mines belonging to these corporations declined from 19,920 tonnes in 1980 to 8,790 tonnes in 1985.

During the period 1981-85, the Geological Survey Department expended about $21.5 million, of which 91.3 per cent was spent on exploration. Exploration of the Central Belt of Peninsular Malaysia, spanning an area of 31,000 square kilometres, was continued. About 13 per cent of the total sampled area, or 3,251 square kilometres, were found to be high potential mineral areas. The project had, thus far, delineated two areas, namely, Sok in Kelantan and Bukit Goh in Pahang, with encouraging mineral potential, and for which detailed exploration was initiated by the respective State Governments jointly with MMC.

Exploration works were also undertaken in Klian Intan and Gunung Jerai, Kedah. Exploration activities indicated that these areas had potential for tin and uranium. In addition, exploration of Gunung Ledang, Johore, for primary and placer gold was initiated in 1985. The Department also conducted mineral clearance surveys over 400 square kilometres of the south-eastern part of Terengganu to delineate areas with mineral potential for further exploration and to release the rest for other development. Some of the areas surveyed had potential for tin and uranium.

In Sabah, about 9,800 square kilometres of ground was investigated by the Department, resulting in the discovery of copper and gold deposits and several other important geochemical anomalies. The confirmation of extensive alluvial gold occurrences by the Department in Ulu Lembah Segama revived the interests of several mining companies in the mineral. In Sarawak, the Coal Resource Evaluation Project undertaken by the Department identified between 30 to 50 million tonnes of coal deposit in the Merit-Tebulan, part of the Merit-Pila basin in the Seventh Division. Through the Mineral Exploration Project in the Lundu-Semantan and Bau areas, potentials for porphyry copper type mineralization were discovered.

The Department of Mines, through the Mining Research Institute at Ipoh, spent $4.1 million for research and development during the period 1981-85. Among the major research activities undertaken included research into the mining

of minerals other than tin, new techniques of drilling for prospecting purposes, and use of geophysical methods and soil analysis for geotechnical studies related to ground stability and mining safety.

III. PROSPECTS, 1986-90

The growth of the mining sector is expected to decelerate further during the period 1986-90 to 3.1 per cent per annum compared with 6.0 per cent per annum during the Fourth Plan period, due to the slower growth of petroleum production and the declining output of tin and other minor minerals. Although the growth of the sector during the Plan period is expected to be largely attributable to crude oil and gas, the need to prolong the life of these resources will impose a constraint on accelerating growth. With this declining growth rate, the share of the sector in GDP will fall to 9.2 per cent in 1990 compared with 10.1 per cent in 1985.

Production

Crude oil and gas. Crude oil production is projected to increase moderately during the Plan period, while gas production is expected to increase significantly arising from the strategy of the Government to diversify and expand the usage of gas in the country, both as feed stock as well as fuel. The increase will be mainly attributable to the coming onstream of the PGU Phase II project and of the third process train of the LNG plant, increase in capacity utilization of the ASEAN ammonia-urea plant at Bintulu, and the steel billet plant in Terengganu and the implementation of several gas-based projects that are being planned for. The PGU Phase II project, which will supply gas from offshore Terengganu to the western and southern part of Peninsular Malaysia as well as Singapore, is expected to be completed by early 1989. The project will be assured of a demand of no less than 266 mmscfd of gas. The share of gas sales in total production is expected to rise to about 76 per cent, while the percentage of gas that will be flared will be reduced to 5 per cent by 1990, compared with 13 per cent in 1985.

Tin. With the failure of the ITC to support the floor price of tin at $29.15 per kilogramme on 24th October, 1985 and the expected sharp decline in price due to the large surplus in the international market, many domestic mines will be rendered uneconomic, thereby forcing production to be reduced substantially in 1986. Price, however, is expected to increase as the international surplus is gradually being depleted, thereby stimulating domestic production to increase gradually to 28,000 tonnes by 1990.

Other minerals. The annual output of the less important minerals is not expected to vary much from the 1985 level due to weak demand and depleting resources. The annual output of copper is expected to remain at 125,000 tonnes, iron-ore 200,000 tonnes, and bauxite 500,000 tonnes. Output of industrial minerals which will be affected by the slackening of the construction sector, is expected to register a slower growth during the 1986-90 period compared with the Fourth Plan period.

Exports

Exports of crude oil, gas, tin, and copper are expected to register a decline of 1.9 per cent per annum, falling to a level of $10,790 in 1990. Their share in total merchandise exports is expected to decline further to 25.5 per cent in 1990, attributable primarily to falling prices.

Crude oil and gas. The volume of crude oil that will be exported is projected to register a moderate growth in view of the international glut in the commodity which is expected to remain during the Fifth Plan period. Consistent with the long-term sales contract to Japan, export of LNG is expected to increase to its maximum of 6,890,000 tonnes in 1990 from a level of about 4,500,000 tonnes in 1985. With the decline in the average price of crude oil, the price of LNG is expected to decline at a rate of 8.7 per cent per annum. Gas will also be exported to Singapore beginning 1989 from the Phase II PGU project, solely for electricity generation.

Tin and copper. Tin exports are projected to decline sharply to 21,000 tonnes in 1986 due to the projected fall in price from $29,240 per tonne to $18,000 per tonne, following the suspension of support buying by the ITC at the LME. With the cut back in production by uneconomic mines all over the world arising from the drastic decline in price, supply is expected to emanate largely from existing stocks and countries with low cost of production. Price is expected to increase gradually to $25,000 in 1989 as a result of the reduction in new output and the depletion of stocks. Against this anticipated price scenario, tin exports of the country are expected to steadily increase to 30,500 tonnes by 1990. While the annual volume of copper exports is expected to remain stable at about 125,000 tonnes during the period, its value is projected to increase at a rate of 2.0 per cent per annum.

Investment

Investment in the petroleum sector by petroleum companies is expected to total $15,900 million during the period. A substantial proportion of this investment will be undertaken by private sector companies. About 50 exploration wells are expected to be drilled, with 20 in Peninsular Malaysia, 10 in Sabah, and 20 in Sarawak. Further exploration activities in other areas such as the Straits of Melaka will depend on the results of the seismic survey undertaken during the Fourth Plan period. In addition, about 400 development and production wells will be drilled, with 266 in Peninsular Malaysia, 69 in Sabah, and 65 in Sarawak. Ten new oil fields are expected to be brought onstream including two major fields, Dulang and Seligi in Terengganu by 1988. Two fields in Sarawak, Fairley Baram and Bakau are expected to cease production towards the later part of the 1990s.

The future international tin market is expected to continue to face structural imbalance between supply and demand, resulting in the closure of more uneconomic mines. In view of the decline of the tin industry, investments in

prospecting for new minerals will continue to be made by both the private sector and the Government in the Central Belt of Peninsular Malaysia; Lubuk and Segama Valleys, and the Kinabalu area in Sabah; and the Merit-Pila Silantek, Mukah Belingan, Bau, Lundu-Semantan, Marup, Bukit Buri, and Bukit Niwong areas in Sarawak.

Employment

Mining employment is expected to deteriorate further during the Fifth Plan period. Total mining employment is forecast to decline from 60,500 in 1985 to 40,500 in 1990. The decline is anticipated to originate mainly from the tin mining industry due to the closure of uneconomic mines. The labour released is expected to find employment in other productive sectors of the economy such as construction and agriculture. New job opportunities generated by the petroleum mining industry are not expected to be significant.

IV. POLICIES AND PROGRAMMES

Petroleum subsector

Measures will be undertaken to encourage more intensive exploration activities in view of the depleting known resources of crude oil. The original production-sharing contract terms were considered stringent, particularly for new contract areas. Together with the falling crude oil prices and the global economic recession, exploration activities in Malaysia slackened. Given the very capital intensive and technologically sophisticated nature of petroleum exploration and exploitation, coupled with the inadequate capacity of PETRONAS in undertaking a wide range of programmes, the terms and conditions of the production-sharing contract have been revised to further encourage the private sector, both local and foreign, to invest in these activities. Local expertise in petroleum-related activities, however, is still relatively undeveloped. Foreign participation will, therefore, be promoted concomitant with measures to ensure that the required technology is transferred locally.

In view of the vast gas resources the country is endowed with, policies and projects are being formulated to intensify its use as fuel, especially as a substitute for fuel oil, in electricity generation and in the transport sector. The contribution of gas to total electricity generation is expected to increase from 13.1 per cent in 1985 to 30.9 per cent in 1990. In addition, its use as feedstock in heavy industries and for domestic purposes will be further promoted.

PETRONAS Carigali will spend about $1,000 million during the Fifth Plan period in the development of the Dulang field, Duyong Phase II Project, and on exploration drilling. The Dulang oil field is expected to come onstream by 1988.

Non-petroleum subsector

In respect of non-petroleum resources, the Government will continue to undertake initial exploration with the objective of identifying and locating mineral deposits within the country. Subsequent detailed explorations and mining operations will be left to the private sector. Apart from exploration, the Government will also continue to undertake various research activities, including mine safety and production.

The Geological Survey Department will continue its efforts in the exploration of minerals other than tin with the objective of diversifying the mining sector. During the Plan period, the areas that will be explored include the Central Belt of Peninsular Malaysia, Bakri in Johor, Sintok in Kedah, Kinabalu in Sabah, and Bau and Lundu-Semantan in Sarawak. Mineral clearance surveys will be conducted in the south-eastern and western part of Terengganu and in Sarawak.

Industrial minerals are identified as viable minerals. In order to regulate and ensure the orderly growth of the industry, and to minimize possible land use conflicts between resource exploitation and other physical development, the Geological Survey Department and the Mines Department will work together to formulate a national policy on the exploitation of these minerals. A survey will be carried out, covering ball clay in Kedah, Perak, Pahang, and Perlis, kaolin in Johor and Perak, and limestone in Kelantan, Perak, Pahang, and Sarawak.

An activity of major importance that will continue to be undertaken by the Department of Mines will be research into mine safety. Apart from providing geotechnical testing services for its Enforcement Division, the Department will set up a data bank on mine accidents, and study the stability of tailings and inundated mine pits, rock geomechanics as well as safety procedures in mines.

In view of future uncertainties in the international tin market, the industry will inevitably have to undergo structural changes by confining production to the most economic mines only. At the same time, research and development efforts will continue to be directed towards maximizing the use of tin and improving production efficiency. Towards this end, the International Tin Research Institute (ITRI) in the United Kingdom will continue to concentrate on consumption research to widen the scope of tin usage, while the South East Asian Tin Research and Development (SEATRAD) Centre will continue research on production to enable the tin industry to meet the challenges of the future. The Association of Tin Producing Countries (ATPC), established in 1983, has chosen ITRI as the vehicle for achieving the objective of increasing the consumption of tin. In this connection, the ATPC will provide ITRI with policy guidelines for its research and development programme.

Vast tracts of land that have been economically mined out exist, particularly in the mining States of Perak and Selangor, and in most cases are left idle. Several studies have been carried out on the utilization of ex-mining lands for economic

purposes. During the Fifth Plan, a geotechnical study will be carried out with the objective of bringing ex-mining lands into economic use, such as for buildings and agricultural activities.

V. ALLOCATION

The development allocation and estimated expenditure during the period 1981-85 and the allocation for the period 1986-90 for mining are as shown in Table 15-2.

VI. CONCLUSION

The mining sector of the country will face uncertainties in the future, particularly in respect of world demand and price. The setbacks faced by the tin industry call for structural adjustments and rationalization with the objective of maintaining its cost efficiency. In the petroleum subsector, attractive terms will continue to be provided to the private sector in order to encourage it to intensify its exploration activities. In order to tap the potential of the vast resources of gas, its use as fuel and feedstock will be further promoted. The mining sector has been, thus far, heavily dependent on a few minerals, thereby subjecting it to very high risks in times of low demand and price and depleting reserves. Efforts will be actively pursued by the Government to reduce these risks and diversify the sector away from traditional minerals.

TABLE 15-2

MALAYSIA: PUBLIC DEVELOPMENT EXPENDITURE FOR MINERAL RESOURCES PROGRAMMES, 1981-90
($ million)

Agency	*Fourth Plan allocation, 1981-85*	*Estimated expenditure, 1981-85*	*Fifth Plan allocation, 1986-90*[1]
PETRONAS	-	-	1,008.66
Geological Survey Department	21.51	20.63	37.89
Department of Mines	7.01	6.11	10.66
Total	28.52	26.74	1,057.21

Note:
[1] Under the Fifth Plan, the public sector has been redefined to include the non-financial public enterprises (NFPEs) which previously were treated as belonging to the private sector.