The solid mineral industry in Malaysia and the role of state enterprises

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Malaysia's solid mineral industry has played a vital role in the nation's social and economic development. By 1883, Malaysia had become the world's largest tin producer; by the end of the 19th century, it was supplying about 55% of the world's tin. Today, Malaysia continues to lead the world in tin production, but to a lesser degree — supplying about 23% of the world's tin in 1985 and 20% in 1986. Other minerals have been produced over the years in Malaysia, but tin mining has always dominated the nation's solid mineral industry. However, as tin's world market share has declined in recent years, so has its importance to the national economy.

Government agencies began to participate in the solid mineral industry in the mid-1960s, after its historical dominance by the private sector. This dominance continues, despite a growing government role, except in tin dredging operations.

After the October 1985 tin crisis and the subsequent collapse of the the world tin market, much of Malaysia's mining activity was suspended. The operations that have been able to continue, both in the public and private sector, have been streamlined to become more cost-effective. Dredge operators, because of their relatively lower production costs, have been least affected.

Table 1
Production and export of tin-in-concentrates

Production Year	Export (t)	Earnings (MYR)
1970	73 796	714
1971	75 445	712
1972	76 830	712
1973	72 260	694
1974	68 122	1 129
1975	64 364	977
1976	63 401	1 158
1977	58 703	1 222
1978	62 650	1 478
1979	62 995	1 556
1980	61 404	2 308
1981	59 938	1 948
1982	52 342	1 445
1983	41 367	918
1984	41 307	938
1985	36 884	1 008
1986	29 134	540

The solid mineral industry in Malaysia

Diversification in Malaysia's economy has reduced tin's dominant role, although it remains the main product of the nation's solid mineral industry. Table 1 summarizes Malaysian production of tin-in-concentrates and the value of export earnings since 1970.

Table 2 summarizes the Malaysian tin industry in the period 1980 through 1986. The following should be considered in analysis of this summary:

(a) Tin export control under the International Tin Agreement was in force from April 27, 1982 through March 31, 1986. During much of that time, Malaysia's permissible export amount was 9 128 tons of tin metal per calendar quarter.

(b) The tin crisis of October 24, 1985 led to the collapse of the tin market. In the Kuala Lumpur Tin Market, the average tin price plummeted from 29.67 MYR per kg in 1985 to 15.39 MMR per kg in 1986.

Table 3 details proportional tin production among various types of producers.

Until the collapse of the tin market, gravel pump mines held the largest production share, followed by the dredges. In 1986, dredge production overtook that from gravel pump mines. This is a result of a the dredges' generally lower cost of production.

Malaysian production of other solid minerals is shown in Table 4.

The role of government agencies

Participation of governmental agencies in the solid mineral industry began in the mid-1960s. These agencies were formed or sponsored by the Federal and various state government with the following aims:

(a) To enable Malaysians to have a stake in the biggest solid mineral producers in the country, which formerly were foreign companies.

(b) To enable state governments to derive more direct benefits from the solid mineral industry. Although state governments have the authority to lease out land for mining, they receive little direct revenue from the industry. Most tax revenues accrue to the federal government, with the states receiving only land fees and 10% of export duty fees from tin production.

(c) To enable the indigenous Bumiputra population to receive a greater share of the national wealth through larger participation in the industry. Historically, solid mineral production was concentrated among foreigners and Malaysian Chinese.

Governmental agencies have increased their participation in the industries through the following means:

(a) By buying into existing operations to achieve equity participation. The *Malaysia Mining Corporation* (MMC) came about through this strategy.

(b) Acquiring land leases through State governments as a springboard. This is a common practice among the states to establish industrial participation by their various state corporations.

(c) Promoting joint-venture developments of new solid mineral projects between state corporations and other parties. An example is the deep-seated tin dredging project at Kuala Langat, Selangor, under the name of Kuala Langat Mining Sd/Bhd/, which is a joint venture between Kumpular Perangsang Selangor Bhd/, a Selangor state corpora-

Table 2
Summary of tin mining industry in Malaysia 1980-1986

Production of tin-in-concentrates (t)	1980	1981	1982	1983	1984	1985	1986
Dredges	18 223	17 353	16 629	13 879	12 728	11 301	12 090
Gravel pump mines	34 484	33 308	27 479	20 320	21 577	18 517	11 147
Open cast mines	2 705	2 589	2 618	3 043	2 555	2 737	2 062
Underground mines	1 085	933	741	642	878	666	574
Others	4 907	5 755	4 875	3 483	3 569	3 463	3 261
Total	**61 404**	**59 938**	**52 342**	**41 367**	**41 307**	**36 884**	**29 134**
Average number of tin mines							
Dredges	54	57	52	40	32	28	31
Gravel pump mines	774	652	561	449	902	336	138
Open cast mines	25	32	44	56	49	51	29
Underground mines	20	20	19	19	20	18	16
Other mines	5	3	2	-	-	-	-
Total	**878**	**764**	**678**	**564**	**503**	**433**	**214**
Average employment (Number)							
Dredges	8 945	9 263	9 036	7 691	6 735	6 407	5 624
Gravel pump mines	25 443	21 840	18 378	14 109	13 145	11 137	4 287
Opencast mines	1 526	1 793	2 042	2 376	1 827	1 832	1 140
Underground mines	1 755	1 689	1 725	1 519	1 487	1 425	1 053
Others	1 858	1 535	1 358	1 227	1 179	1 174	970
Total	**39 527**	**361 203**	**2 539**	**26 922**	**24 373**	**21 975**	**13 074**

tion, and Malaysia Mining Corporation Bhd. Another is the opencast copper mine at Mamut, Sabah, which is run by the Mamut Copper Mining Sdn/ Bhd/, a joint venture between the Sabah Economic Development Corporation and a Japanese consortium.

(d) Negotiating with existing operators for corporate restructuring that would allow participation by government agencies. This strategy is often employed by the States.

Generally, government operations are run like private enterprises, subject to the same laws but within the framework of national policy. Their scope of operation ranges from full control of corporate and operational management to merely receiving compensation for subleasing or contracting out land to be mined by other parties. Resulting revenue is often invested in public-benefit activities in the nation and the States, such as development of industries and low-cost housing. Training and assistance programs have been developed as a means of increasing Bumiputran participation in the solid mineral industry, and governmental agencies have aided Bumiputran entrepreneurs in their initial ventures.

In addition to State government corporations, the Federal government participates directly in the solid mineral industry through the *Malaysia Mining Corporation Bhd/ (MMC). MMC began in 1970 as part of the Federal government's New Economic Policy* (NEP), which was designed to reduce the economic balance between foreign and national holdings, and to promote equity among various racial groups. A national corporation, *Perbadanan Nasional Bhd/* (PERNAS) was formed to carry out the NEP's aims. In 1976, PERNAS joined with a British company, Charter Consolidated P/c, to acquire the mining interests of the London Tin Corporation, then Malaysia's largest and most important tin mining corporation. This led to the incorporation of MMC, with majority Malaysian holdings. Today, the MMC Group is the world's largest tin mining conglomerate. Within Malaysia, it has 42 tin mining dredges (about 75% of the total), and one opencast tin mine under 16 companies. It also involves engineering and management structures; downstream industries; trading; marketing and other services. The group has mining investments overseas as well — tin in Thailand and diamonds in Australia. As part of an expansion effort, it has formed a number of partnerships with State corporations. The MMC Group is committed to maintaining its predominance in the tin industry; how-

Table 3
Proportion of tin production according to type of producers (% of total production from gravel pump)

Year	Dredges	Mines	Others
1980	29.7	56.1	14.2
1981	28.9	55.6	15.5
1982	31.8	52.5	15.7
1983	33.6	49.1	17.3
1984	30.8	52.2	17.0
1985	30.6	50.2	19.2
1986	41.5	38.3	20.2

Table 4
Production of other solid minerals (t)

Main products	1985	1986
Copper concentrates	127 871	115 304
Iron ore	181 660	10 7963
Raw gold (grams)	316 154	486 143
Stibnite	44	—
Bauxite	491 904	566 170
Kaolin	82 576	85 052
Barite	3 394	22 506
By-products (of tin production unless otherwise specified)		
Raw gold (grams)	40 441	42 285
Gold in copper concentrates (grams)	2 451 521	2 220 656
Silver in copper concentrates (grams)	16 249 317	14 065 597
Ilmenite	315 736	414 941
Struverite	120	34
Monazite	5 808	5 959
Columbite	76	166
Wolframite	22	4
Zircon	11 652	12 633
Xenotite	1 124	145
Rutile	134	56

ever, recognizing that it cannot be entirely dependent on that one mineral, it has begun a diversification program.

Foreign investment

There is a recognized need for foreign participation to develop solid mineral deposits other that the traditional alluvial prospects that have been the principal mining fields. Joint ventures between foreign investors and governmental agencies (or other Malaysian interests) in the development of solid mineral prospects exist, with terms negotiated case by case.

For projects that involve extraction or mining and processing of mineral ore, majority foreign equity participation of up to 100% is permitted. The following criteria determine the permissable percentage:

(a) the level of investment, technology and risk involved
(b) the availability of Malaysian expertise in exploration, mining and processing of the minerals involved
(c) the degree of integration and level of value-added involved.

Current status of the tin industry

The Malaysian tin industry has been hard hit by the post-1985 depressed market. Annual production of tin-in-concentrates has fallen from the 60 kt- level in the years (1980 and 1981) preceding Tin Export Control to the 40 kt- level during the Control years (1982-1985) to a 1986 total of 29 kt. The impact was equally severe on governmental agencies and on the private sector. Mine closures have been widespread, although lower costs of production in the dredging sector resulted in a lessened impact there.

In general, the industry has adopted a wait-and-see attitude, with the assumption that the market will recover sufficiently for some of the operations to be resumed. Although there is no expectation that tin production will never attain its pre-1985 level, Malaysia expects to maintain a role in supplying world demand for tin. Recovery is expected within two years, as detailed below; meanwhile, many in the industry, with MMC in the lead, have turned their attention to exploration for other minerals, particularly gold.

Operations that have been able to continue through the recent market decline have been improved to be more cost-effective. Their workforce has been reduced, throughput volume has been increased, and more selective mining has been practiced. These measures, plus a reduction in energy costs, are reflected in reduced average costs of production, expressed in MYR per kg of tin in Table 5.

Among MMCs 42 tin dredges, only 22 are presently in operation. The deep-seated tin dredging project under Kuala Langat Mining Sdn/ Bhd/, a joint venture between the Selangor State's Kumpulan Perangsand Selangor Bhd/ as a major partner, and MMC, has yet to be implemented effectively. That project had been designed to operate four dredges on the 1 470-ha property. The first dredge recently has been commissioned, but construction of the other three has been deferred.

The latest development in the worldwide tin industry is the Tin Supply Rationalization Scheme launched by the *Association of Tin Producing Countries* (ATPC). ATPC members – Australia, Bolivia, Indonesia, Malaysia, Nigeria, Thailand and Zaire – have agreed to restrict their total tin exports to 96 kt from March 1, 1987 through February 2, 1988. The Malaysian share is fixed at 28 526 tons. Two other countries, Brazil and the People's Republic of China, have agreed to limit their tin exports to 21 and 7 kt respectively. This move will enable the 77 kt global surplus of tin estimated at the end of 1986 to be drawn down to a normal stock of 20 kt within two years time. This will enable restoration of normalcy to the international tin market.

Table 5
Average cost of tin production (MYR per kg)

Gravel open-period	Dredge	Pump	Cast
1985: Jan-June	19.396	23.743	21.634
July-Dec	18.089	23.707	20.587
1986: Jan-June	14.836	15.860	15.928
July-Dec	13.570	14.327	17.156

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