

CHAPTER II

PRODUCTION AND EXPORT

Method of Mining

Iron-ore in Malaya is mined by the open-casting method. The ore is obtained by shovelling in most cases. The reason is because iron-ore found in Malaya is generally already decomposed due to the hot and humid climate. However, where little decomposition has taken place, explosives are used.

Primary ore, i.e. ore with over a certain percentage of iron, is normally exported straight away without any further processing but most ore contain so much impurities that a washing plant is needed.

The washing plant of each individual mine is basically alike with only slight variations. The ore plus the impurities (mostly earth), are first dumped on to a grizzly which is actually a sieve and a jet of water is then directed at the mixture. The very large size ore are then normally diverted to a crusher while those ore that pass through the grizzly are sent through a trommel, a cylindrical revolving screen. The undersize ore are separated from the larger ones here. Those that pass through the trommel without being sieved out are usually deposited on to a conveyor belt which passes through a file of hand pickers whose job is to remove the unwanted lumps of earth from the ore. The ore are then stocked or sent to the exporting centre. The fines which pass through the screen of the trommel are either pumped away or again processed by using hydrocyclones depending on whether the recovery is worthwhile or not.

Local¹ and European Production

Production figures² from 1949 onwards, showed large increases in almost every year (Table 1.1). In that year, the Eastern Mining and Metals Co., Ltd., started with a production of about 8,000 tons but by 1952 its output was more than 1,000,000 tons. Iron-ore production remained wholly the monopoly of Europeans from the time the

¹ 'Local' in this context, includes all Malayan mines and those that are part Japanese or part European.

² Production here excludes the amount produced for Jig Ragging which has been marked 'JR' in Table 1.1, for two reasons. First, the amount is quite insignificant, second it is not possible to determine who the producers are.

TABLE 1.1

PRODUCTION FIGURES OF IRON ORE BY YEAR, STATE AND OWNERSHIP FROM 1947 - 1963

| Year | States | | | | | | | | | | Total |
|------|---------------------|-----------|-----------|-----------|---------|------------------|---------|----------|-----------|----------|-----------|
| | European Production | | | | | Local Production | | | | | |
| | Perak | Trengganu | Pahang | Perak | Kedah | Johore | Pahang | Kelantan | Trengganu | Selangor | |
| 1947 | 888 J.R. | - | - | - | - | - | - | - | - | - | 888 |
| 1948 | 641 J.R. | - | - | - | - | - | - | - | - | - | 641 |
| 1949 | 424 J.R. | 7,966 | - | - | - | - | - | - | - | - | 8,390 |
| 1950 | 373 J.R. | 488,630 | - | - | - | - | - | - | - | - | 488,903 |
| 1951 | 394 J.R. | 846,400 | - | - | - | - | - | - | - | - | 846,803 |
| 1952 | 1,474 J.R. | 1,054,032 | - | - | - | - | - | - | - | - | 1,055,506 |
| 1953 | 545 J.R. | 1,052,420 | - | 9,713 | - | - | - | - | - | - | 1,062,678 |
| 1954 | - | 1,124,936 | - | 77,765 | - | 10,079 | - | - | - | - | 1,212,780 |
| 1955 | - | 1,314,966 | - | 6,753 | 5,290 | 132,154 | - | - | 7,021 | - | 1,405,184 |
| 1956 | 7,724 | 1,960,326 | - | 179,119 | 33,901 | 203,500 | - | - | - | - | 2,444,570 |
| 1957 | 124,662 | 2,255,164 | - | 192,212 | 66,367 | 332,174 | - | - | - | - | 2,802,539 |
| 1958 | 70,405 | 1,708,366 | - | 215,323 | 51,060 | 446,300 | - | 293,717 | - | - | 2,795,261 |
| 1959 | 199,225 | 2,118,200 | - | 415,013 | 168,090 | 438,415 | - | 402,751 | - | - | 3,760,684 |
| 1960 | 397,567 | 2,630,600 | - | 939,125 | 225,893 | 834,194 | - | 593,219 | 19,600 | - | 5,640,256 |
| 1961 | 701,211 | 2,730,292 | - | 1,245,463 | 563,725 | 615,524 | 160,738 | 617,739 | 98,028 | - | 6,713,520 |
| 1962 | 509,984 | 2,674,953 | 662,131 | 795,917 | 416,643 | 683,033 | 158,247 | 497,823 | 53,767 | 54,864 | 6,507,302 |
| 1963 | 36,082 | 2,998,139 | 1,879,265 | 646,091 | 262,752 | 683,881 | 145,991 | 404,503 | 45,781 | 122,008 | 7,264,543 |

J.R. stands for Jig Ragging. Jig Ragging is done in tin dredges where tin ore is stored with the help of iron ore.

Sources: Federation of Malaya, Department of Mines. Annual Statistical Records for Individual Mines. Unpublished Statistics.

Eastern Mining and Metals Co., Ltd. started production until 1952. In 1953, the Malaya Mining Co., Ltd. broke into this exclusively European industry with a relative small production of about 10,000 tons, which amounted to only 0.5% of total output for that year. In 1954, local capital made more headway when production in Johore began. Two more local owned mining companies started production in Kedah and Trengganu in 1955 and Kelantan followed with local capital in 1958. In 1961 and 1962, Pahang and Selangor started production respectively with local capital.

In December 1963, there were only two European mines operating (the Eastern Mining and Metals Co. Ltd., and its subsidiary the Rompin Mining Co. Ltd.) in Trengganu and Pahang while there were 22 locally operated mines spread throughout seven states (Table 1.2).

Although local operators started production in 1953 with a share of only 0.5% it quickly rose (Table 1.3). By 1961 local producers controlled 49% of output. It must be noticed that the decline in European share was not due to any reduction in output in the part of European mines but was rather due to the rapid increase in local output. Thus in the space of eight years local producers had nearly taken over the major part of iron-ore production. In 1961 therefore, European share of total output dropped to its lowest when The Eastern Mining and Metals Co., Ltd. and two other European owned mines contributed only 51% of total output. In 1962, owing to the opening of European owned mine at Rompin, European share increased to 59% and again jumped to 68% in 1963.

Causes of Changes in Output

1) Reasons for Output Reduction. The main reason for the reduction of iron-ore is the exhaustion of reserves. For example, the Tambun Mining Co., Ltd., a subsidiary of the Eastern Mining and Metals Co., Ltd., closed down for this reason. Similarly in the past many mines closed down because of the complete exhaustion of ore or that depletion of the high grade ore has reached to the extent that mining no longer was profitable.³

In fact, many of the local mines operating at the present moment have only reserves left for two years or less if present rates of mining are carried out.

Another reason for a drop in output can be found in the inability to find sufficient

³See Chapter V.

TABLE 1.2

IRON ORE MINES IN PRODUCTION BY STATE AT END OF 1963

| Year | States | | | | | | | Total |
|------|--------|-------|--------|--------|-----------|----------|----------|-------|
| | Kedah | Perak | Johore | Pahang | Trengganu | Kelantan | Selangor | |
| 1956 | 1 | 3 | 1 | - | 1 | - | - | 6 |
| 1957 | 1 | 3 | 3 | - | 1 | 1 | - | 9 |
| 1958 | 3 | 3 | 2 | - | 1 | 1 | - | 10 |
| 1959 | 3 | 7 | 2 | - | 3 | 1 | - | 14 |
| 1960 | 4 | 13 | 3 | - | 2 | 1 | - | 24 |
| 1961 | 6 | 10 | 4 | 2 | 2 | 1 | - | 25 |
| 1962 | 4 | 12 | 5 | 3 | 2 | 1 | 1 | 28 |
| 1963 | 3 | 9 | 6 | 3 | 1 | 1 | 1 | 24 |

Note: These figures relate to mines working at end of the year only. At any time within the year there may be more mines or less mines working.

Source: Federation of Malaya, Department of Mines. Bulletin of Statistics relating to the Mining Industry of Malaya, 1963.

TABLE 1.3

PERCENTAGE OUTPUT OF EUROPEAN AND LOCAL MINES, 1949 TO 1963*

| Year | European | | Local | |
|------|-----------|------------|-----------|------------|
| | Tons | Percentage | Tons | Percentage |
| 1949 | 7,966 | 100.0 | - | - |
| 1950 | 498,530 | 100.0 | - | - |
| 1951 | 846,409 | 100.0 | - | - |
| 1952 | 1,054,032 | 100.0 | - | - |
| 1953 | 1,052,420 | 99.5 | 9,713 | 0.5 |
| 1954 | 1,124,936 | 93.0 | 7,844 | 7.0 |
| 1955 | 1,314,966 | 90.0 | 151,218 | 10.0 |
| 1956 | 1,968,050 | 81.0 | 476,520 | 19.0 |
| 1957 | 2,379,826 | 80.0 | 592,713 | 20.0 |
| 1958 | 1,778,861 | 64.0 | 1,016,400 | 36.0 |
| 1959 | 2,215,425 | 59.0 | 1,545,259 | 41.0 |
| 1960 | 3,028,167 | 54.0 | 2,662,091 | 46.0 |
| 1961 | 3,431,503 | 51.0 | 3,302,017 | 49.0 |
| 1962 | 3,847,068 | 59.0 | 2,660,234 | 41.0 |
| 1963 | 4,913,478 | 68.0 | 2,351,065 | 32.0 |

*Production for jig-ragging excluded.

Source: Table 1.1, page 5.

markets. In 1962, for example, Japan restricted imports of iron-ore in the early months of the year due to the Japanese Government imposing a control over steel production because of the adverse Balance of Payments situation.⁴ Although this restriction was eventually lifted production fell by more than 200,000 tons in that year.

Compulsory reduction in output may also be due to climatic factors. In certain months of the year (end of October to beginning of April), the North East monsoon prohibits exports. Coupled with this is the fact that the maintenance of an excessive stockpile is not desirable so that there is a reduction in production. This accounts mainly for the characteristic reduction in output of the iron mines in the east coast towards the end and the beginning of every year (Table 1.4). Production always increases after these months. There are also other climatic factors involving the weather which affect the output of iron mines. In iron mining water is needed but not excessively. Water is needed for the washing of the ore so that insufficient water caused by a drought will mean that production will be hampered. On the other hand however, since open-casting is the method of mining iron-ore, heavy rainfall may mean the flooding of the mines and may render them unworkable for some time. Hence, extremely dry or wet weather, both of which are typical features of the Malayan climate, can reduce output.

Closure of mines and reduction in output have, in the past, been also due to a variety of minor reasons. The more important ones are the difficulties associated with the change of contractors working the iron mines. Iron mines, like tin mines are sometimes worked on contract where the responsibilities of production are taken over by the people who contract. Furthermore, some iron mines due to their isolated nature and the problems encountered in transportation in those parts, may at times run short of necessary supplies like fuel for their machinery. Records can also show that disruption in production has sometimes been due to disputes between employers and employees and also among the shareholders themselves.⁵

⁴ See Bank Negara Tanah Melayu, Annual Report and Statement of Accounts, 1962, page 22.

⁵ All these can be obtained from, Federation of Malaya, Department of Mines Monthly Reports, 1963.

TABLE 1.4

EXPORT OF IRON ORE 1947-1963

| Year | Tonnage | Value in Malayan Dollar | Average Value Per Ton |
|------|-----------|----------------------------|--------------------------|
| 1947 | - | - | - |
| 1948 | 69,539 | 596,700 | 8.58 |
| 1949 | 462,431 | 6,722,254 | 14.54 |
| 1950 | 520,899 | 9,333,565 | 17.93 |
| 1951 | 780,490 | 16,797,181 | 21.52 |
| 1952 | 1,007,489 | 23,240,051 | 23.09 |
| 1953 | 1,018,336 | 20,490,646 | 20.13 |
| 1954 | 1,060,382 | 21,810,599 | 20.58 |
| 1955 | 1,592,268 | 32,607,752 | 20.47 |
| 1956 | 2,389,298 | 51,204,949 | 21.43 |
| 1957 | 2,919,739 | 65,560,472 | 22.45 |
| 1958 | 2,591,374 | 62,540,093 | 24.14 |
| 1959 | 3,772,329 | 99,832,954 | 26.46 |
| 1960 | 5,500,173 | 140,208,432 | 25.49 |
| 1961 | 6,435,061 | 163,780,493 | 25.45 |
| 1962 | 6,441,112 | 166,081,785 | 25.78 |
| 1963 | 6,581,771 | 176,312,156 | 26.79 |

Source: Federation of Malaya, Department of Mines. Bulletins of Statistics relating to the Mining Industry of Malaya (Malaysia).

ii) Reasons for Output Increase. Increases in output can be due to many factors. One of the main ones is the mining of richer grounds. This means that a higher percentage of the materials passed through the washing plant will be retained as iron-ore. Therefore, there will be an increase in the output if the company maintains the normal rate of working. Similarly, an increase in output can be also due to a more efficient method of mining. The utilization of more and better machinery in this industry, as generally recognized, will lead to greater production through greater efficiency.

The expansion of the scale of operation of any company will also lead to increases in output. Frequently this happens when existing companies open new minefields. Similarly, the addition of new mining companies will have the same result. This is clearly illustrated when production increased by more than 600,000 tons in 1962 when the Rompin Mining Co., Ltd. started mining operations in Pahang. This was actually more than 10% of total output for that year.

Lastly increases in the amount produced is largely due to the increases in foreign demand in terms of contract quotas. This is because there is no significant local consumption of iron-ore. However, in the future, there is every likelihood that a Joint Malayan-Japanese steel mill may be set up as has been announced in 1961.⁶

Export of Iron-Ore

i) Main Export Centres. The export of iron-ore is usually done at the port nearest to the mining area. In fact it is of great importance that the nearest suitable port should be chosen because of the nature of the commodity itself. Iron-ore is bulky and heavy so that transportation costs are high which means transporting it for long distances would entail sharp increases in costs. This accounts for the widespread positioning of the export centres throughout Malaya. They are as near to the places of production as possible.

⁶ See Bank Negara Tanah Melayu, Annual Report and Statement of Accounts, 1961, page 11.

For the North zone which covers Kedah and Perak, Prai in Province Wellesley, is the main exporting centre. For Selangor, all the ore mined in this state is sent through Port Swettenham while the mines in Johore export through Batu Pahat and Muar. In the east coast the ore is similarly sent out through the nearest ports, for example, Kemaman and Dungun in Trengganu, Tumpat in Kelantan and Kuala Pontian, Rompin and Kuantan in Pahang (Diagram I).

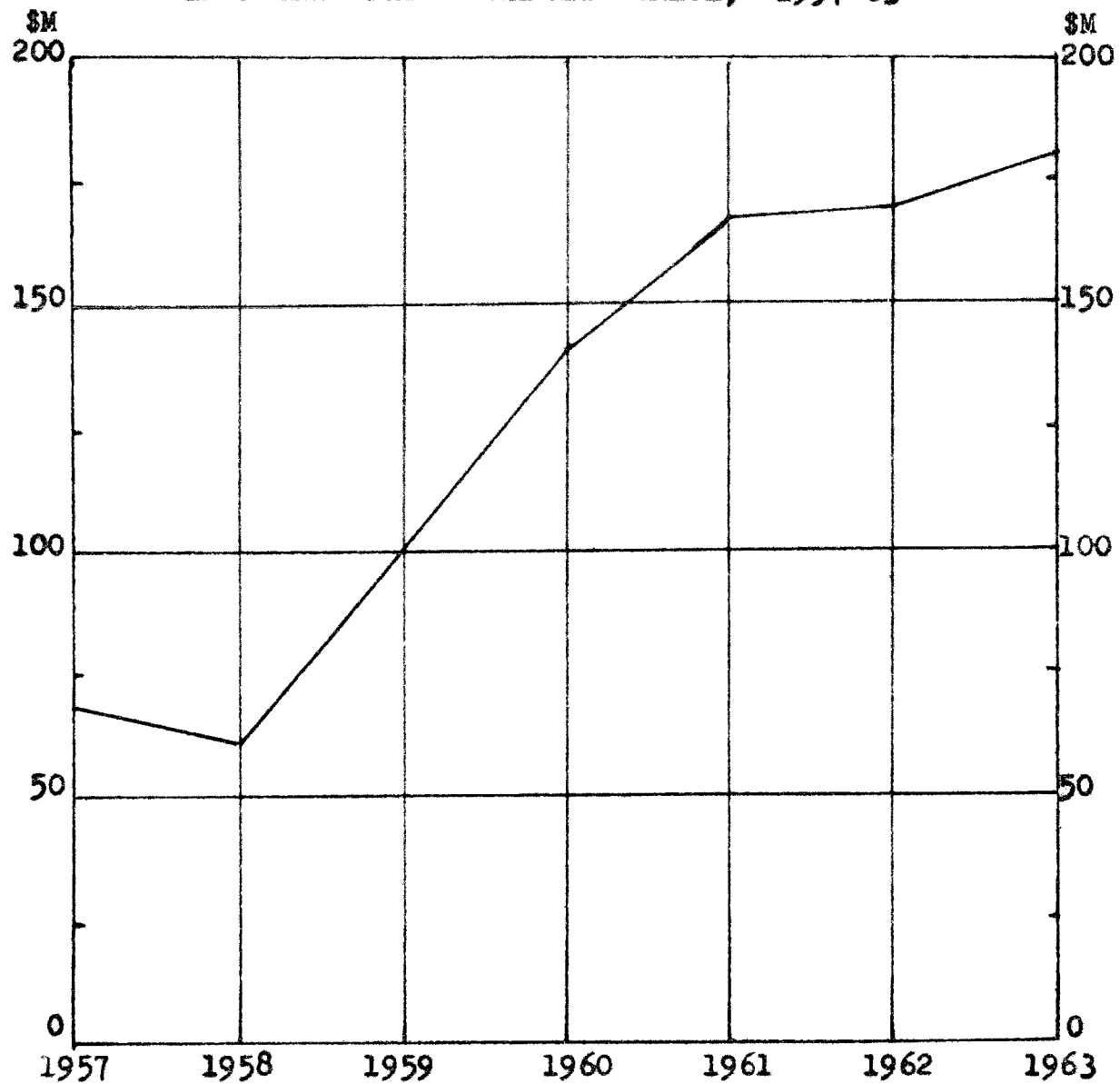
The export of iron-ore in the east coast is characteristically stopped by the end of October at the latest and does not begin until April at the earliest due to the monsoon. Therefore even if output is reduced, it means that in these months ore will have to be accumulated. This presents a double disadvantage, especially to the smaller producers. In the first place it means that the direct costs of having to hold reserves have to be borne by them. It will also mean that capital which could have been obtained and profitably made use of if the iron-ore could be shipped out is unnecessarily tied up. In addition, the presence of a large stock of ore coupled with the fact that sellers may need money may lead to exploitation by buyers. Thus producers may have to sell at prices which just cover costs. These disadvantages are specially relevant to small producers as their financial reserves are comparatively not large. Such people are local producers. It is however, fortunate that exporting can be done throughout the year in the west coast.

ii) Value of Exports. Iron-ore exports in terms of volume and value have made substantial increases in most years (Table 1.4 and Diagram 2). The first shipment of about 70,000 tons was sent out in 1948 but by 1952 exports had exceeded 1,000,000 tons. From 1952 to 1954 exports remained fairly constant around that amount. From 1955 onwards, there were large increases yearly in exports. In fact within a period of nine years after that 1955 to 1963, exports increased to around six times the 1954 amount to 6½ million tons.

Total value of exports varied directly with amount exported except in a few years when iron-ore prices suffered sharp declines, for example, in 1953 and 1954 (Table 1.4). The value exported in 1948 was about \$600,000 but

DIAGRAM II

IRON-ORE GROSS EXPORT VALUE, 1957-63



Source: Bank Negara Tanah Melayu: Annual Report and Statement of Accounts, 1963, page 18.

by 1956 it had exceeded \$50,000,000 and in 1963 the total earned by the export of this industry was more than \$175,000,000. The phenomenal rise was partly due to increased exports and partly due to the rise in iron-ore prices which rose from \$8.58 per ton in 1948 to \$26.79 per ton in 1963. (See Table 1.4). Thus iron-ore price in 1963 was on the average 3 times as high as that in 1948.

Stockpiling of Iron-ore

Trading of iron-ore is characterized by the lack of an international market so that a prevailing market price for the product is non-existent. This point indirectly leads to the presence of stockpiles among producers. Selling and buying of iron-ore is done through contracts which have to be honoured by the seller within specified periods of time. In their eagerness not to default, as defaulting means penalties being imposed on them and the loss of future contracts, miners will usually produce in quantities which will enable them to satisfy their quota with time to spare. Thus once the contract has been honoured they will have surplus productive factors in their hands. The closing down of the mines is not resorted to as constant closing and opening will be uneconomical. The result is that they keep on producing but at a lower rate usually. This gives rise to stockpiles which however, may be cleared by careful adjustments of supply to quota in the following year.

The presence of permanent stockpiles may be due to individual companies trying to cash in on unexpected demand which may arise when some producers fail to honour their contracts or when economic conditions in the importing country, Japan, takes on a surge upwards. Under such circumstances actual demand will exceed the expected demand and producers who have reserves will be able to dispose of part of their reserves profitably.

The third type of stockpiling is forced stockpiling and is temporary in nature. This arises for two reasons. First the arrival of ships to convey the ore to the importing country is quite indefinite and second, in certain months of the year in the east coast exporting of iron-ore is impossible due to the monsoon. Therefore, ore produced in these periods will have to be stocked and often this is done at the point of export. These stockpiles are subsequently cleared when the ships arrive or when the monsoon clears. Taking the Rompin Mining Co., Ltd., as an example, we find that in March 1963, this mine had 539,762 tons stockpiled but by the end of September this amount had been reduced to 282,962 tons. This is a recurrent feature.

Table 1.5 shows the extent of postwar stockpiling from 1951 onwards. Previous to this date, i.e. from 1948, annual export of iron-ore had always been greater than production showing that before

TABLE 1.5

**POSTWAR STOCKPILING
DIFFERENCES BETWEEN PRODUCTION AND EXPORTS 1951-1963**
(Stockpile Accumulated Before The War Not Included)

| Year | Production | Exports | Stockpile |
|------|------------|-----------|-------------------|
| 1951 | 846,803 | 780,490 | + 66,313 |
| 1952 | 1,055,506 | 1,007,489 | + 48,017 |
| 1953 | 1,062,678 | 1,018,336 | + 44,342 |
| 1954 | 1,212,780 | 1,060,382 | + 212,398 |
| 1955 | 1,466,184 | 1,592,268 | - 126,084 |
| 1956 | 2,444,570 | 2,389,298 | + 55,272 |
| 1957 | 2,972,539 | 2,919,739 | + 55,522 |
| 1958 | 2,795,261 | 2,591,374 | + 203,887 |
| 1959 | 3,760,684 | 3,772,329 | - 11,645 |
| 1960 | 5,640,258 | 5,500,173 | + 140,085 |
| 1961 | 6,733,520 | 6,435,061 | + 298,459 |
| 1962 | 6,507,302 | 6,441,112 | + 66,190 |
| 1963 | 7,264,543 | 6,581,771 | + 682,772 |
| | | | <u>+1,735,528</u> |

Source: Federation of Malaya, Department of Mines. Bulletins of Statistics Relating to the Mining Industry of the Federation of Malaya (Malaysia).

the war there had already been considerable stockpiling of iron-ore. However, there are no reliable information with regards to the size of this reserve. After 1951, production always exceeded the amount exported except for two years (1955 and 1959). In fact in 1963, the amount added to the reserve was more than 1/10th of the amount exported in that year and the total amount added since 1951 is almost 2,000,000 tons. The main reasons for the existence of the stockpile have been given. An interesting point to note here is that a stockpile of this size is sure to affect the industry in some way. This we shall see later.

