

CHAPTER FIVE  
MAIN CAUSES OF THE DECLINE IN PRODUCTION

There are indications that the coconut industry is on the decline or at least stagnant. This chapter attempts to bring out the main causes of the decline in coconut and copra production.

Reduction in Mature Palm Density

For maximum production, the Department of Agriculture recommends a palm density of 40 palms per acre for estates and 70 palms per acre for smallholdings. Actual average palm density on estates corresponds more or less to recommended palm density of 48 palms per acre. The calculated average palm density for smallholdings is 22 palms per acre. In West Johore, the average palm density for estates and smallholdings is 35 palms per acre<sup>1</sup>. Palm density on estates is conducive to optimum output but not on smallholdings. Palm density on smallholdings is only 1/3 of recommended palm density or only 1/3 of production capacity is utilised. Therefore, the main factor which accounts for decline in production is the low palm-density on smallholdings.

Copra production for smallholdings in 1960 was 2,367,070 piculs<sup>2</sup>. Most smallholdings produces low quality copra in Bagan Datoh<sup>3</sup>. In 1955, the wholesale price of high quality copra was about 428.00 per picul<sup>4</sup>. It was found that the price of

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1. Wilson, op. cit., p.16

2. United Planting Association of Malaya, 1960 Annual Report, p.38.

3. Syed Mansur Syed Dalim, Final Report on the Economic Survey amongst Coconut Smallholders of Bagan Datoh (Unpublished).

4. Federation of Malaya, 1961 Official Year Book, Table 33, p.473.

presently, average 11.50, 2.50<sup>5</sup> lower than high-quality copra. Therefore, the total income for smallholdings was about 40 million. If the palm density for smallholdings was 70 palms per acre, total income would be 500 million. Since palm density in smallholdings is about 1/3 of the commercial palm density, it suffers an annual loss of 100 million, just for not utilizing farms to full capacity.

The reduction in palm density is due primarily to the "deteriorating agronomic and economic conditions as well as accidents such as lightning strikes which is a normal feature in Malayan coconut holdings".<sup>6</sup> Inadequate drainage and invasion of sea water also cause palm deaths. All these factors are at work to bring about an average palm density of 35 palms per acre for estates and smallholdings.

#### Taper-top Palm Density

The actual palm density per acre tells much about the coconut industry but the actual healthy palm density per acre tells much more. The vital thing is not the number of palms per acre but the number of economic palms per acre.

Taper-top palms are a common sight in West Johore. Due to adverse growing conditions, palms tend to develop bottlenecks or constriction in the stems. Adverse growing conditions check palm growth when favourable conditions of growth returned, palm growth continues, but not without a bottleneck or constriction in the stems. These are called taper-top palms.

In cases where adverse growing conditions is prolonged, pronounced taper-tops may kill palms. In some cases of severe taper-tops, the stem, just below the oldest leaves is less than

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5. Syed Mansur Syed Salim, op. cit.,

6. Wilson, op. cit., p.16

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$\frac{1}{4}$  of the thickness of the stem over its main length. A reduction in stem thickness reduces the available nutrients for plant growth and productivity.

Taper-top palms are 'undesirables' in the palm population because they produce, either no nuts or some small poor quality nuts. Sometimes, the nuts are so poor and small that it does not even justify the costs of harvesting the crops. Such a feature is usually found in abandoned coconut farms in the Muar - coconut growing area. Left to themselves these abandoned farms would be converted into jungle land soon, as some are.

The average taper-top palms per acre in West Johore is 15 palms according to Table 16. This reflects conditions on smallholdings than on estates, where palms do not usually suffer from taper-tops. As the result, healthy palm density per acre for smallholdings is 7 palms and for estates it about 48 palms per acre. With only 7 healthy palms per acre for smallholdings productive, it is no wonder that coconut and copra production declines over the years.

TABLE 16  
TAPER-TOP PALMS

Density of Taper-Top Palms per acre	Area		Palms		Holdings	
	Acres	%	Number	%	Number	%
Nil	28,000	22	-	-	8,300	24
1 - 9	26,600	20	144,400	8	7,119	20
10 - 19	31,500	24	449,500	23	9,559	27
20 - 29	20,400	18	513,700	27	5,212	15
30 - 39	10,500	8	343,000	18	2,519	7
40 - 49	6,300	5	272,400	14	1,563	4
50 - 59	3,500	3	186,200	10	919	3
Total	128,800	100	1,914,000	100	35,191	100

Average density of taper-top palms (ungrouped data) =  $14.8 \pm 1.01$   
palms per acre.

Source: Wilson, op. cit., Table 19, p. 21.

### Ageing Palms

Malaya has been described as an, "area where the ageing of trees is already recognized as a vital problem"<sup>7</sup>. Many of the palms were planted in the first and second decade of the 20th century<sup>8</sup>, so that they must be approximately 50 to 60 years old. In India, coconut lives up to over 80 years and in Ceylon, palms of over 100 years old on estates are still productive when they are well taken care off<sup>9</sup>. The trouble with Malayan palms are that unfavourable growing conditions caused rapid ageing. Not only are the palms ageing, many are also unproductive.

Under Malayan conditions, palms usually come into bearing between the fourth and sixth year from planting, and may continue to yield good crops for 60 or more years in well-managed farms<sup>10</sup>. As most of the farms are about half a century old, the palms must have been ageing and productivity decreasing. In the small-holdings where farm conditions are poor, ageing may have set in earlier. This may have explained the number of abandoned coconut farms with a few ageing coconut palms and some are in the process of becoming jungle areas in the Muar areas.

Many of the smallholdings in the Muar area should have been replanted. The farmers are unable to replant the farms because of poverty in the coconut-growing area. Since they are poor, they cannot afford to cut down the palms that yield them some income, however small the income be. Therefore, the drop in coconut and copra production is due to the ageing of palms.

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7. M.A.O., Some aspects of the Coconut Situation, 1956.
  8. Straits Settlement, Federated and Unfederated States, Report of a Commission to Investigate Coconut and Other Vegetable Oil Producing Industries in Malaya, 1934, p.12.
  9. Republic of India, Indian Central Coconut Committee Report, 1947, p.7.
  10. Department of Agriculture, The Coconut Palm, Kuala Lumpur, p.20.

### Poor drainage system

The key to successful coconut farming, and maximum yields is proper water control. Palm cannot tolerate stagnant water<sup>11</sup>. The ideal condition is a continuous flow of water through the soil as found in many coastal areas where water is continually seeping through from higher inland areas to the sea. In coconut farms where the ideal drainage is not naturally provided, drains must be dugged, to carry away stagnant water. Sea-water is particularly harmful to palms and therefore bunds and tide gates must be in good order to keep salt water out. The devastating effect of frequent salt-water and fresh-water flooding on coconut farms can be seen in many coastal districts in West Johore.<sup>12</sup>

The drainage system in West Johore suffers from wartime neglect<sup>13</sup> and as a result seasonally flooding is a common occurrence. The poor drainage system which has harmful effects on palms, leads to a drop in yields and then of income. Poverty would further lead to the neglect of internal drainage of the small coconut farms. All these would end up in farmers abandoning the farms and they are many in the Muar areas.

A scheme to improve the drainage system in some areas of West Johore was carried out and the palms in these areas showed a marked improvement in appearance and growth<sup>14</sup>. This points to the need to improve drainage system in coconut growing-area by the Government.

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11. Department of Agriculture, The Coconut Palm, Kuala Lumpur, p.2.

12. Ibid

13. Wilso, op. cit., pp. 16 - 17.

14. Mohamad Jamil, 1961 Annual Report, Department of Agriculture, Kuala Lumpur, p.14.

Diseases and Pests

As the result of the foregoing factors, income from small farms is low. Since the income of the small coconut farmers is low, they are forced by circumstances to turn to other supplementary sources of income, and neglect their coconut farms. This neglect would result in the deterioration of conditions on the farms. Insects and pests would invade and flourish on small coconut farms. Well-managed farms like estates have less trouble from them, unlike smallholdings where conditions are unhygienic.

Some of the most widespread insects and pests found in the Malayan farms are the Black Beetle, Red Strips Weevil, Coconut case Caterpillar and Nettle Caterpillar. These insects and pests cause death either by decay or destruct of the growing buds.<sup>15</sup> Therefore, pests and insects do part in reducing palm density thus causing decline in production.

Soil Conditions

Coconut palms on the west coast of Malaya and many inland areas are grown on heavy clay soil. On the east coast palms are planted on sandy soil. Particularly in the Muar areas, many coconut holdings have peaty soil. In some smallholdings where the layer of peat is thin and the drainage system is well-maintained, yields per acre is fairly high and can be maintained. In areas where the peat is thick, yields may be high in the first few years but it usually drops by half after the tenth year<sup>16</sup>. As yields on farms with peaty soils could not be maintained, there should be replaced by other more suitable and higher income yielding crops.

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15. Department of Agriculture, The coconut Palm, Kuala Lumpur, p.34.

16. <sup>Ibid</sup> Department of Agriculture, The Coconut Palm, Kuala Lumpur, pp. 1-2.

The prospects of increasing yields through the improvement of soil conditions by the use of fertiliser is limited as indicated by pre-war experiment on crust coast clay soil. This experiment was carried on for a period of ten years, during which records of yield of 479 coconut palms were made. This experiment confirmed the fact that the prospects of immediate improvement in yields of coconut palms by the application of fertiliser is limited. The experiment also confirmed the fact that low yielding and high yielding palms remained high-yielding over their productive life.<sup>17</sup>

#### SUMMARY

The foregoing pages have outlined the main factors which cause the decline in production in the coconut industry. The main factors are (a) reduction in palm density, (b) ageing of palms, (c) poor internal and external drainage, (d) pests and insects and (e) poor and unsuitable soil conditions. These problems are too big for the smallholders to overcome. In order to put the industry on its feet, the government must step into assist the industry.

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17. Jack, H.W. and Sands, W.M., Variation in Coconuts, Department of Agriculture, p. 11.