Expected Palm Oil Production in Malaysia, 1994 with a View to Production Cycle and the Effect of Oil Extraction Rate on Production

Chow Chee Sing *

RINGKASAN

Anggaran peningkatan yang sederhana pengeluaran minyak sawit mentah (CPO) Malaysia kepada 7.5 juta tan dalam tahun 1994 ternyata munasabah memandangkan jangkaan pengeluaran akan mencapai sekurang-kurang 7.2 juta tan di penghujung tahun 1993. Peningkatan ketara dalam tahun 1993 adalah berpunca dari operasi kitaran hasil untuk jangkamasa empat tahun.

Kadar Perahan Minyak (OER) di Semenanjung Malaysia telah menurun sejak Mei 1992. Perubahan besar OER telah dikesan pada tujuh bulan pertama dalam tahun 1993. Walaupun terdapat penurunan sensasi OER, Malaysia juga mengalami peningkatan ketara pengeluaran CPO dalam tahun 1993. Keadaan sebegini mengesahkan bahawa OER tidak semestinya menentukan hasil minyak sawit. Pengeluaran CPO nampaknya tidak terjejas oleh OER yang rendah.

INTRODUCTION

PORIM continues to carry out the annual (short-term) forecast for the crude palm oil (CPO) production in Malaysia on the basis of factors considered for trend, season, rainfall and cycle (Chow, 1990, 1991). Results of such forecast with related topic of interest have been published each year in the present Bulletin since 1990.

The year 1993 seems to witness a good harvest in the oil palm industry, four years after the previous unprecedented high production in 1989. Therefore it may be interesting to look at the pattern of CPO production in the recent years with respect to the effects of yield cycle.

On the other hand the oil extraction rate (OER) had drawn much attention in the industry in 1992 following an OER drop by 0.5-2.0% in most of the oil mills from middle of 1992 (PORIM, 1992). Recently the OER has become the focus of attention again as the same phenomenon seemed to have repeated.

This paper is intended, as in the past, first to report on the short-term prediction for the Malaysian CPO production for 1994 and secondly, to highlight some observations regarding production cycle and effects of the OER on the Malaysian palm oil production.

METHOD AND DATA

CPO Production 1993 and 1994

Malaysian CPO production in 1993 was predicted to be 7.24 million tonnes (Chow, 1992). This estimate was once thought to be too high and unrealistic by some people concerned. On the other hand forecasts around 6.8 million tonnes from other sources were considered more acceptable. However, at this

**PORIM*
No. 6, Persiaran Institusi
43650 Bandar Baru Bangi, Selangor, Malaysia

juncture the actual Malaysian CPO production for the first three quarters of 1993 has already reached nearly 5.4 million tonnes which is about 0.16 million tonnes more than expected. This would mean that CPO production of the full year will probably even exceed the expected 7.2 million tonnes ! The substantial increase of at least 0.9 million tonnes (or 14% or more) over the production of 6.37 million tonnes in 1992 is attributable to the peak of the cycle in 1993, as increase in mature oil palm area is only about 4%.

On the basis of the same methodology (Chow, 1990), with the latest available data and assuming relatively stable climatic conditions, total Malaysian CPO production for 1994 is preliminarily estimated to be 7.5million tonnes. The rather moderate increase may not be too unexpected in view of the cycle effects, a brief account of which is given in the following.

Production Cycles

It is interesting to note (*Table 1*) that the last "bumper crop" occurred in 1989 when total CPO production increased by 1.02 million tonnes or 20.3% over 1988 (with mature area increased 9%). However, production was stagnant over 1990–1992. Annual increase was less than 1% for 1990 and 1991 (mature area increased 3%–5%) and 3.8% for 1992 (mature area increased 8%). Although the exact factors causing the exceptional high yield in 1989 are said to be unknown, the author is inclined to attribute the causes to the cycle effects as the alternating high and low growth rates are quite clearly indicated in *Table 1*.

After the high yield in 1982 by introducing the weevils for efficient pollination, the palm oil industry appears to have experienced three yield cycles. The first cycle was marked by the trough at 1983 and peak at 1985. The year 1984 with higher annual growth of 23.1% is not considered as peak because it was simply inflated by the very low yield in 1983, due to the weevil effects in 1982. In fact an unprecedented 510,000 tonnes of CPO production in October, 1985 in Peninsular Malaysia was recorded and this was exceeded only in 1989. The second cycle was having trough at 1987 and peak at 1989 and the third has been marked by the trough at 1991 and peak at 1993. These three cycles may be summarized as follows:

	Trough	Peak
Induction	-	1982
Cycle 1	1983	1985
Cycle 2	1987	1989
Cycle 3	1991	1993

TABLE 1. ANNUAL GROWTH OF MALAYSIAN CPO PRODUCTION

CPO Year	Production (Million tonne)	Annual Growth (in %)
1980	2.576	17.7
1981	2.824	9.6
1982	3.514	24.4
1983	3.018	-14.1
1984	3.715	23.1
1985	4.133	11.2
1986	4.536	4.7
1987	4.533	-0.1
1988	5.033	11.0
1989	6.055	20.3
1990	6.092	0.6
1991	6.139	0.8
1992	6.373	3.8
1993	7.249 P1	13.7
1994	7.500 P2	3.5

note: P1, P2 for projection made in 1992 and 1993 respectively.

Apart from the well-known yearly seasonality (Chow, 1992a), palm oil production cycles of four-year (48-month) periodicity seems to be indicated in the simple analysis above. Other periodicities of 16 and 21 months were observed by Chow (1992a).

Oil Extraction Rate

Based on published industrial data and further information following the investigation on extraction rate (PORIM, 1992), Chow (1992b) pointed out that the low OER appearing in 1992 was attributable to three independent sources of variabilities or factors. The immediate and a temperary factor was likely the reduction in sunshine hours due to the haze which occurred in the second half of 1991. The second factor was apparently the inherent periodic movement of the OER which fluctuated rather frequently by about 1% or more around the average. The third factor was the unknown declining trend in the OER observed over 1988-1991.

Complete 1992 data for monthly CPO production and OER compared over 1991 (*Table 2*) show that in Peninsular Malaysia the OER in 1992 had dropped from 19.39% in April to 18.32% in July and recovered to 19.16% in October but dropped again to 18.45% in December. The OER from May to December, 1992 had been throughout lower than the corresponding months in 1991. It may be interesting to note that despite the lower OER, CPO production in November and December, 1992 had significantly increased by 21% and 25% over the same month in 1991 respectively.

The OER in Peninsular Malaysia (*Table 3*) improved slightly in the first two months of 1993 to 19.05 but dropped again to 18.40 in March and since then improved again to 19.29 in June, the highest since May 1992. However, an average of 17.88, being lowest in the recent years, was given in just the following month July. It is similarly observed that while the OER in the first half of 1993 was consistently lower than that of the same months in 1992 except June, CPO production in 1993 up to August has marked significant increases of 11-26% over the same months in 1992 (except only 4% for March) (*Table 3*). The same thing is noted in relative decrease in OER in East Malaysia for April - July, 1993 over 1992 but significant increase in CPO production by 12-26%. In fact East Malaysia has also suffered from a consistently lower OER in the first half of 1993 over 1992 together with a significant decrease in CPO production by 14-15% during the first quarter of 1993 because of the drought in early 1992.

An immediate reason for the decrease in OER may be seen from the relative increase in production of fresh fruit bunch (FFB) (*Table 4*) in relation to relative increase in production of CPO (*Table 3*). *Table 4* shows that in Peninsular Malaysia, FFB production in January-June, 1993 has increased over the same months of 1992 by 15%, 24%, 10%, 31%, 21% and 30% respectively whereas the corresponding increase in CPO is only 11%, 21%, 4%, 26%, 19% and 26% respectively which is consistently 2%-6% less than the increase in FFB.

It was commented (Chow, 1992) that the lower CPO production than that expected for 1992 could be related to the substantial drop in OER in the year. While this may be true in view of the reduced sunshine in 1991, the recurred, and in fact more pronounced decrease in OER in 1993 (at least for the first five months) does not seem to account for any decrease in CPO production. But on the contrary, there has been significant increase in CPO production since November 1992 to at least August 1993.

Because of the coincidence of the high yield with low OER in 1993 it may now be confirmed that the OER does not necessarily

TABLE 2. MONTHLY CPO PRODUCTION & OER, 1992 COMPARED OVER 1991

	Penin. M'sia	% incr. over 1991	1992 OER	1991 OER	East M'sia	% incr. over 1991	1992 OER	1991 OER
Jan	331,719	20	19.09	19.39	64,058	16	20.88	20.39
Feb	322,950	14	19.51	19.49	59,910	22	20.61	19.92
Mar	366,963	-2	19.37	19.39	75,496	27	20.58	20.39
Apr	405,374	2	19.39	19.39	87,765	26	21.04	20.39
May	416,826	-10	18.86	18.97	90,665	10	20.39	20.12
Jun	409,703	-4	18.50	19.20	92,420	25	20.28	20.47
July	494,630	-5	18.32	19.25	101,730	25	20.76	20.97
Aug	534,959	-5	19.15	19.50	94,731	2	21.30	21.16
Sept	591,794	0	19.02	19.56	105,674	5	21.53	21.66
Oct	543,118	-3	19.16	19.79	98,537	-6	20.99	21.66
Nov	510,746	21	18.71	19.44	83,602	1	20.67	21.11
Dec	420,713	25	18.45	18.54	69,378	-7	20.08	20.34

TABLE 3. MONTHLY CPO PRODUCTION & OER, 1993 COMPARED OVER 1992

	Peninsular Malaysia	% incr. over 1992	1993 OER	1992 OER	East Malaysia	% incr. over 1992	1993 OER	1992 OER
Jan	369,377	11	18.54	19.09	55,224	-14	19.84	20.88
Feb	390,863	21	19.05	19.51	50,778	-15	19.59	20.61
Mar	379,822	4	18.40	19.37	64,230	-15	19.75	20.58
Apr	512,098	26	18.60	19.39	100,618	15	20.05	21.04
May	496,956	19	18.63	18.86	113,803	26	20.21	20.39
Jun	516,808	26	19.29	18.50	112,620	22	19.61	20.28
July	563,207	14	17.88	18.32	114,207	12	19.71	20.76
Aug	615,498	15		19.15	122,006	29		21.30

TABLE 4. FFB PRODUCTION, 1993 COMPARED OVER 1992

	Peninsular Malaysia	% incr. over 1992	East Malaysia	% incr. over 1992
Jan	2,013,180	15	279,069	-9
Feb	2,046,692	24	257,161	-12
Mar	2,071,554	10	324,790	-11
Apr	2,764,303	31	501,523	19
May	2,661,860	21	565,298	27
Jun	2,916,995	30	576,451	26

determine the quantum of oil yield of the palm. Volume of national CPO production therefore, does not seem to be affected by the low OER.

CONCLUSIONS

Total Malaysian CPO production in 1993 is very likely to reach the forecast 7.2 million tonnes. The significant increase over 1992 is attributed to the operation of the cycle effects. Palm oil production appears to fluctuate, apart from yearly seasonality, also in cycles with periodicity of four years.

On the same basis of estimation, Malaysia is expected to produce 7.5 million tonnes of CPO in 1994. The moderate rate of increase over 1993 may be expected in view of the higher increase in 1993, a phenomenon also accounted by the cycle effects.

The OER in Peninsular Malaysia has been declining since May 1992. Considerable fluctuation with lowest OER in recent years is indicated in the first seven months of 1993. Despite the sharp drop in OER, Malaysia is also experiencing a significant increase in CPO production in 1993. Because of such coincidence of high crop with low OER it may be confirmed that the OER does not necessarily determine the palm yield in terms of oil. CPO production in Malaysia does not seem to be affected by the low OER.

REFERENCES

CHOW, C S (1990). Some notes on Malaysian palm oil production forecast. *PORIM Bulletin No. 21,* 1990.

CHOW, C S (1991). Some results of recent forecasts on palm oil production. *PORIM Bulletin No. 23,* 1991.

CHOW, C S (1992a). The effects of season, rainfall and cycle on oil palm yield in Malaysia. *Elaeis Vol. 4 No. 1.*

CHOW, C S (1992b). Recent palm oil production in Malaysia, with special reference to the oil extraction rate. *PORIM Bulletin No. 25,* 1992.

PORIM (1992). Report of the ad hoc Investigation Team on Extraction Rate of Crude Palm Oil. PORIM Report PO(216)92.

The views expressed in this article are solely that of the author.