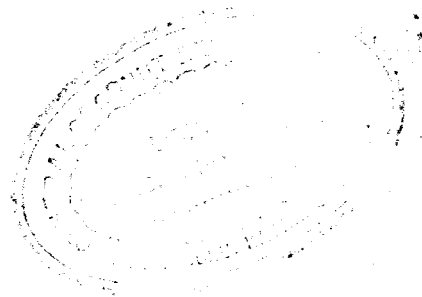


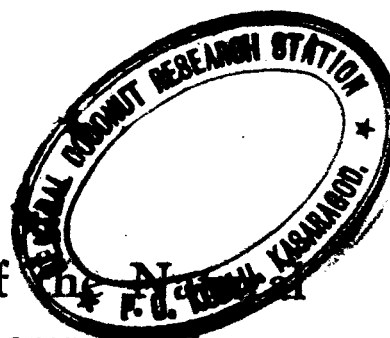
**A Review of the Progress of the Natural  
Rubber Industry in the various Rubber  
Producing Countries**

**R. Gangadharan Unni**



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# A Review of the Progress of the Rubber Industry in the various Rubber Producing Countries<sup>1</sup>

R. Gangadharan Unni<sup>2</sup>

## Malaysia

Malaysia is the world's largest producer of natural rubber. By sharing 33% of the world rubber area she contributes 41% of the world production. More than 60% of the total cultivated area in the country is planted with rubber. This crop accounts for about 40% of the country's export earnings and 30% of its national revenue. About 25% of the population is dependent on rubber alone.

## West Malaysia\*

### Area, production and yield per acre

In Malaysia, rubber was planted on an experimental scale in the late 1880's. Commercial planting was, however, started only in 1900. In the first decade, one million acres were brought under rubber. By 1925 it increased to 3.1 million acres and again to 3.6 million acres in 1950. The present area under rubber is reported to be about 4.3 million acres.

Table 11 gives the annual rate of increase in area under rubber since 1960, separately under estates and small holdings:—

Table 11

| Year         | Estates<br>(100 acres and<br>above in size) | Holdings<br>(below 100<br>acres in size) | Total |
|--------------|---|--|-------|
| ('000 acres) |   |  |       |
| 1960         | 1942  | 1906                                     | 3848  |
| 1961         | 1945  | 1986                                     | 3931  |
| 1962         | 1933  | 2061                                     | 3994  |
| 1963         | 1925  | 2145                                     | 4070  |
| 1964         | 1899  | 2210                                     | 4110  |
| 1965         | 1866  | 2370                                     | 4236  |

Evidently the acreage devoted to rubber in estates has declined from 19,42,000 acres in 1960 to 18,66,000 acres in 1965. It is mainly due to fragmentation and increased replanting with other crops. However, during the same period, the acreage with small holdings has increased from 19,06,000 acres to 23,70,000 acres. As a result the share of small holders in total area has increased from 50% to 56%. During the five year period, the total area under rubber in West Malaysia has increased only by about 10%.

In 1952, only about 34% of the planted area in the estates and 8% of the planted area in small holdings were under high yielding rubber. By 1960, due to replanting and new planting with high yielding

\* Includes Singapore also.

<sup>1</sup> Continued from vol. 9, No. 3, 1967.

<sup>2</sup> Statistician, Rubber Board, Kottayam 9, Kerala State

planting materials, the percentages increased to 58 and 25, respectively. The present proportion of area under high yielding material is estimated to be 81% for estate sector and 54% for the small holding sector or 66% for estates and small holdings together. The average annual rate of increase is estimated at 4% per annum.

Table 12 gives the progress in production in West Malaysia :—

Table 12

| Year | Estates       | Holdings | Total |
|------|---------------|----------|-------|
|      | ('000 tonnes) |          |       |
| 1940 | 339           | 217      | 556   |
| 1950 | 383           | 322      | 705   |
| 1956 | 357           | 279      | 636   |
| 1957 | 375           | 273      | 648   |
| 1958 | 396           | 277      | 673   |
| 1959 | 421           | 299      | 720   |
| 1960 | 421           | 299      | 720   |
| 1961 | 437           | 312      | 749   |
| 1962 | 446           | 318      | 764   |
| 1963 | 467           | 334      | 801   |
| 1964 | 486           | 353      | 839   |
| 1965 | 500           | 386      | 886   |
| 1966 | 510           | 433      | 943   |

The rubber output in West Malaysia has increased by about 31% during the last 6 years. During the same period, the area has increased only about 12%. Hence, the high rate of increase in production is mainly due to the increased productivity. In 1960 the estimated average yield in West Malaysia was 550 lb per acre (676 lb per acre for estate sector and 450 lb per acre for smallholding sector). By 1965, the yield per acre increased to 675 lb (850 lb for estate sector and 550 lb for small holdings). The increase in productivity has been about 23%.

#### Replanting

West Malaysia has done remarkably well in replanting over 1.5 million acres under

unselected seedlings with high-yielding planting materials within 15 years. The Rubber Industry (Replanting) Fund Ordinance of 1952 was the first official move to encourage replanting on a planned basis. Under the Ordinance, the Rubber Industry Replanting Board was constituted. The replanting scheme is operated separately for estates and holdings:

#### (a) Holdings

The replanting scheme for small holders was started in 1952. It envisaged replanting of 4,80,000 acres by the end of 1959, with specified target for each year from 1953. Originally, the subsidy rate was fixed at 400 dollars (Rs. 980/- post devaluation rate) per acre. This was raised to 500 dollars (Rs. 1225/- post devaluation rate) with retrospective effect from 1953. From 1956 onwards, the subsidy rate was further increased to 600 dollars (Rs. 1,470/- post devaluation rate) per acre.

Results of the total acreage replanted year by year from 1953 to 1959 showed that the target set was not achieved. Out of a target of 4,80,300 acres, only 3,17,820 acres (66%) were replanted.

In 1962, the subsidy rate for small growers was further enhanced to 800 dollars (Rs. 1960/- post devaluation rate) for small holdings of below 5 acres and to 750 dollars (Rs. 1837/- post devaluation rate) for small holdings of 5 to 100 acres.

During the period 1960 to 1965, about 4,56,400 acres were replanted under the subsidy scheme. Thus, till the end of 1965 since the introduction of the scheme, about 47% of the total area of small holders' rubber was replanted. The annual rate of replanting works out to 3.35%. (The annual rate of replanting is given in Table 13).

#### (b) Estates

At present, the rate of subsidy for replanting the estates is fixed at 450 dollars (Rs. 1102/- post devaluation rate) per acre.

During the period 1952 to 1965, about 8,45,000 acres of uneconomic rubber lands were replanted in the estate sector. This area represents 63% of the total area under unselected seedlings planted prior to 1952. The annual rate of replanting works out to 4½%. Table 13 gives the rate of replanting in estates and holdings:

Table 13

| Year         | Area replanted (acres) |                 |
|--------------|------------------------|-----------------|
|              | Estates                | Holdings        |
| 1952         | 51,600                 | 4,200           |
| 1953         | 29,800                 | 29,500          |
| 1954         | 39,100                 | 22,600          |
| 1955         | 57,600                 | 25,300          |
| 1956         | 78,400                 | 46,500          |
| 1957         | 76,300                 | 49,800          |
| 1958         | 64,800                 | 59,700          |
| 1959         | 68,200                 | 69,100          |
| 1960         | 75,200                 | 69,500          |
| 1961         | 70,500                 | 57,300          |
| 1962         | 63,100                 | 69,100          |
| 1963         | 58,700                 | 83,400          |
| 1964         | 58,950                 | 79,700          |
| 1965         | 53,200                 | 97,400          |
| <b>Total</b> | <b>8,45,450</b>        | <b>7,63,100</b> |

#### Newplanting

The estates are not undertaking any large scale newplanting. Their acreage has remained more or less static during the last two decades. Evidently, newplantings of estates, if any, were only sufficient to replace areas abandoned or replanted with other crops.

The State is actively assisting the settlement of small holders. There are two block planting schemes for small holders. One is administered by the Federal Land Development Authority and the other by the State Development Board.

The major development scheme is now the responsibility of the Federal Land Deve-

lopment Authority. It finances and manages large block schemes ranging in size from 4,000 to 7,000 acres taking 300 to 600 families. Each scheme has a central village, main crop and subsidiary crop areas. A typical holding consists of 8 acres of rubber, two acres for subsidiary crops and a space for a house. Under this scheme since 1957, so far 1,21,000 acres were planted with rubber. Block Development Schemes of this type can have the advantage of large scale planting, without concentration of wealth in a few hands.

#### Taxes

##### (i) Export duty and cess

In Malaysia, export duty is levied on a sliding scale of prices. The rates when the price varies from 40 cents to 75 cents per lb are given in Table 14.

Table 14

| Price per lb |        | Export duty per lb |        |
|--------------|--------|--------------------|--------|
| Cents        | Paise* | Cents              | Paise* |
| 40           | 98     | 1 5/8              | 4      |
| 50           | 122    | 2                  | 5      |
| 60           | 147    | 2 3/8              | 6      |
| 65           | 154    | 3 3/8              | 8      |
| 70           | 171    | 4 1/4              | 10     |
| 75           | 184    | 5 1/4              | 13     |

(\* Post devaluation rate)

Collections under this head go to general revenues. Besides, there are three cesses. There is a cess of 1 cent (2.45 Paise) per lb for research. Another cess is for replanting at the rate of 4½ cents (11 paise) per lb. When the price of rubber goes above one dollar, an anti-inflationary cess is also levied.

##### (ii) Income tax

The rate for companies is 40%. The individual incomes are assessed on a sliding scale, the maximum of which is 45%. In calculating income for assessment, full replanting cost and a portion of newplanting cost are allowed.

**(iii) State taxes**

Besides a land tax of \$ 6 (Rs. 14.70) per acre, an education cess of 1 to 2 dollars (Rs. 2.45 to 4.90) is levied by the individual States. (The particulars regarding income tax and State taxes are collected from some publications relating to 1963. It is not known whether any revision has taken place since then).

**Sarawak:** In Sarawak rubber covers about 60% of the total planted area.

**Area, production and yield per acre**

In 1940, the total area planted with rubber in Sarawak was only 2,40,000 acres. By 1956, it increased to 2,66 000 acres. The total area at the end of 1965 is estimated to be in the region of 4,06,700 acres, 8,370 acres (2%) under estates and 3,98,400 acres (98%) under smallholdings. Only about 28% of the total area is planted with high yielding rubber. Compared to West Malaysia, standards of production in small holdings remain low. Much of the small holders' crop is poorly planted and maintained.

The rubber output of this region is decreasing in spite of the increase in area under rubber. Table 15 depicts this fact.

Table 15

| Year | Production (tonnes) |
|------|---------------------|
| 1940 | 35,560              |
| 1955 | 39,861              |
| 1956 | 41,378              |
| 1957 | 41,638              |
| 1958 | 39,540              |
| 1959 | 44,119              |
| 1960 | 50,453              |
| 1961 | 48,070              |
| 1962 | 44,143              |
| 1963 | 45,291              |
| 1964 | 45,406              |
| 1965 | 40,501              |
| 1966 | 36,601              |

The average yield per acre in Sarawak for 1965 is estimated at 390 lb.

**Replanting and newplanting**

A good proportion of the area under rubber in Sarawak is planted with old unselected seedling trees rapidly nearing the end of their economic life. To rejuvenate the rubber plantation industry, in 1956, a subsidised rubber planting scheme was introduced. Under the scheme subsidies are granted at the rate of \$ 400 (Rs. 980/- post devaluation rate) per acre for newplanting and \$ 600 (Rs. 1,470 post devaluation rate) per acre for replanting. The progress of the scheme is reported to be satisfactory. Under the scheme, by the end of 1965 about 1,04,400 acres of rubber had been planted, most of which was newplanting. The rate of newplanting and replanting since 1962 was as given in Table 16.

Table 16

| Year | Newplanting (acres) | Replanting (acres) |
|------|---------------------|--------------------|
| 1962 | 11,900              | 1,600              |
| 1963 | 12,000              | 400                |
| 1964 | 15,500              | 700                |
| 1965 | 11,100              | 1,800              |

**Sabah****Area, production and yield per acre**

In 1962, the planted area under rubber in Sabah was only 2,18,685 acres. During the last 3 years about 32,788 acres were added to this, raising the total area at the end of 1965 to 2,51,473 acres. Out of this, 83,455 acres (33%) were under estates and 1,68,018 acres (67%) under small holdings. In 1966 the total rubber output in this region of Malaysia was 24,081 tonnes as against 20,178 tonnes in 1956. The average yield per acre for 1965 is estimated at 330 lb. About 54% of the total area during the year was under high yielding rubber. The annual rate of increase in production was as given in Table 17.

Table 17

| Year | Production (tonnes) |
|------|---------------------|
| 1956 | 20,178              |
| 1957 | 20,189              |
| 1958 | 20,559              |
| 1959 | 23,256              |
| 1960 | 22,387              |
| 1961 | 23,989              |
| 1962 | 22,709              |
| 1963 | 21,560              |
| 1964 | 23,169              |
| 1965 | 24,230              |
| 1966 | 24,081              |

**Replanting and newplanting**

In Sabah, newplanting and replanting of rubber with high yielding material are carried out under the impetus of a subsidised Government scheme. Grants are at the rate of \$ 120 (Rs. 270/- post devaluation rate) per acre for newplanting and \$ 500 (Rs. 1,225/- post devaluation rate) per acre for replanting. The progress of replanting and newplanting since 1961 is shown in Table 18.

Table 18

| Year | Newplanting (acres) | Replanting (acres) |
|------|---------------------|--------------------|
| 1961 | 15,000              | 3,100              |
| 1962 | 15,400              | 2,500              |
| 1963 | 12,500              | 2,000              |
| 1964 | 12,200              | 1,500              |
| 1965 | 8,100               | 1,700              |

**Indonesia**

Until 1956, Indonesia was the world's largest rubber producer. But since then her production has declined and now she is only second to Malaysia, though still holding the highest percentage in area. Even though she accounts for 34% of the world area, her share in production is only 29%.

**Area, production and yield per acre**

Table 19 given below illustrates the progress in rubber acreage in Indonesia during the last 25 years :—

Table 19

| Year | Area under estates (100 acres and above) | Area under small holdings (below 100 acres) | Total        |
|------|--|---|--------------|
|      | ('000 acres)                             |   |              |
| 1940 | 1,567 (46%)                              | 1,807 (54%)                                 | 3,374 (100%) |
| 1965 | 1,283 (25%)                              | 3,626 (75%)                                 | 4,909 (100%) |

Evidently, Indonesian area under rubber has increased by about 15,35,000 acres (31%) during the last 25 years. Small holders' acreage has nearly doubled. In 1940 only 54% of the total area was accounted by small holdings; by 1965 their share increased to 75%.

In spite of the increase in area, there is no appreciable improvement in total yield.

Table 20 gives the progress in area and the variations in yield since 1956.

Table 20

| Year | Total area ('000 acres) | Production ('000 tonnes) |
|------|-------------------------|--------------------------|
| 1956 | N. A.                   | 698                      |
| 1957 | N. A.                   | 695                      |
| 1958 | 4434                    | 669                      |
| 1959 | N. A.                   | 705                      |
| 1960 | 4450                    | 620                      |
| 1961 | 4469                    | 682                      |
| 1962 | N. A.                   | 682                      |
| 1963 | 4735                    | 582                      |
| 1964 | N. A.                   | 649                      |
| 1965 | 4910                    | 717                      |
| 1966 | ...                     | 711                      |

(N. A. = N ot Available)

Data regarding the acreage planted with high yielding and unselected planting materials are not available. However, it is reported that a majority of the estates and holdings are planted with old unselected rubber.

Compared to other rubber producing countries, the average yield per unit area in Indonesia is very poor. In 1965, the estimated average yield of estates and small holdings together was only around 340 lb per acre.

#### Replanting and newplanting

In Indonesia replantation of rubber was started soon after the end of World War II at the initiative of the respective entrepreneurs. This has produced satisfactory results, although it did not proceed as fast as expected. In 1961, the Government of Indonesia embarked on a scheme for boosting the rate of replanting and newplanting. The scheme stipulates the following :—

- (i) A premium is paid to the small holders and estates for their replanted and newplanted areas.
- (ii) The amount of grant is limited to a maximum of Rs. 16,000/- per hectare (Rs. 1,079/- per acre).

- (iii) The payment of grant for small holders applies only to units covering at least 50 hectares (124 acres) each.

The obligation imposed upon the small holders to carry rejuvenation collectively covering at least 50 hectares per unit as the condition for obtaining grant is reported to be to establish the basis for co-operative enterprise. The co-operatives will enable the small holders to derive a greater share of profit from this crop.

The funds needed by the Government to pay the grants are obtained from the cess imposed on rubber exported from the country.

Originally, the target for replanting and newplanting for a period of 8 years (1961 to 1968) was fixed, at 2,68,000 hectares (6,92,000 acres). But later, on the basis of the satisfactory progress of the scheme during 1961 and 1962 the target was enhanced to 3,45,500 hectares (8,53,700 acres). The year-wise break-up of the target was as given in Table 21.

Table 21

| Year  | Small holdings |          | Estates  |          |
|-------|----------------|----------|----------|----------|
|       | Hectares       | Acres    | Hectares | Acres    |
| 1963  | 15,000         | 37,065   | 22,000   | 54,362   |
| 1964  | 17,500         | 43,242   | 24,000   | 59,304   |
| 1965  | 20,000         | 49,420   | 24,000   | 59,304   |
| 1966  | 24,000         | 59,304   | 24,000   | 59,304   |
| 1967  | 29,000         | 71,659   | 24,000   | 59,304   |
| 1968  | 34,000         | 84,014   | 24,000   | 59,304   |
| 1969  | 40,000         | 98,840   | 24,000   | 59,304   |
| Total | 1,79,500       | 4,43,544 | 1,66,000 | 4,10,186 |

The progress of the scheme since 1961 was as given in Table 22.

Table 22

| Year | Replanting (acres) | Newplanting (acres) |
|------|--------------------|---------------------|
| 1961 | 47,900             | 26,500              |
| 1962 | 43,700             | 32,200              |
| 1963 | 47,900             | 37,500              |
| 1964 | 52,900             | 43,800              |
| 1965 | 52,900             | 50,000              |

#### Co-operatives

In Indonesia, much importance is given to co-operatives. The Department of Transmigration, Co-operatives and Community Development takes the lead in establishing small holders' rubber co-operatives and guiding them until they become strong economic units.

It is also aimed at guaranteeing the continuity and efficiency of production, improving the qualities of rubber, channelising incentives and giving assistance in the implementation of replanting plans. At present, rubber co-operatives have been established throughout Indonesia from primary co-operatives to central federation of co-operatives and their centres. In 1963, 12,000 primary co-operatives were operating.

Also production and marketing units have been formed on co-operative basis, by the rubber producers themselves, with a view to eliminating the middleman in the marketing of small holders' rubber. Government is also—

- (i) issuing credits to small holders for erecting sheet factories and smoke houses.
- (ii) supplying materials for the processing of sheets.
- (iii) training rubber producers.

#### Thailand

Thailand occupies the third place among natural rubber producing countries. She shares 9% of the world production of natural rubber. Practically, all the rubber produced in the country is being exported.

#### Area, production and yield per acre

The area devoted to rubber in Thailand has increased from 4,19,000 acres in 1940 to 8,39,600 acres in 1954 and to 18,16,000 acres in 1965. The average rate of increase in area, during the last 11 years has been as high as about 11% which is perhaps the highest rate in the world. It is expected that the rubber acreage will continue to increase, since Thailand still has much unused suitable land. Practically, the entire area is owned by small holdings (below 100 acres in size). A majority of the rubber area is planted with unselected old seedlings. Only 27% of the total area is reported to be under high yielding rubber.

In 1950, the total production of rubber in the country was only 1,14,000 tonnes which increased to 2,22,000 tonnes in 1964. However, in 1965 and 1966, production has slightly declined. Table 23 gives the rate of increase in production since 1956.

Table 23

| Year | Production (tonnes) |
|------|---------------------|
| 1956 | 1,36,707            |
| 1957 | 1,36,107            |
| 1958 | 1,40,630            |
| 1959 | 1,73,996            |
| 1960 | 1,70,856            |
| 1961 | 1,86,103            |
| 1962 | 1,95,377            |
| 1963 | 1,89,830            |
| 1964 | 2,21,654            |
| 1965 | 2,16,474            |
| 1966 | 2,07,164            |

The increase in production is mainly due to the increase in area. The average yield per acre in 1965 is estimated at 360 lb.

**Replanting and newplanting**

In Thailand, the Rubber Replanting Subsidy Scheme was put into operation only in 1961. It provides a subsidy of Baht 1,500 per rai (Rs. 1 350/- per acre) to replanters. The progress of the scheme is reported to be satisfactory.

**Table 24**

| Year | Rate of    |             |
|------|------------|-------------|
|      | Replanting | Newplanting |
|      | (acres)    |             |
| 1961 | 9,800      | 5,800       |
| 1962 | 33,300     | 2,100       |
| 1963 | 12,700     | 1,600       |
| 1964 | 16,600     | 1,000       |
| 1965 | 13,700     | 1,200       |

The Government of Thailand is encouraging newplanting with high yielding planting materials.

Thailand is also giving technical and other forms of assistance to rubber growers through co-operatives.

*(To be continued)*