

CHAPTER VIII.

FUTURE PROSPECTS FOR THE MALAYAN NATURAL RUBBER INDUSTRY

INTRODUCTION.

The sharp expansion in synthetic rubber production since the early fifties resulted in part from rapid technological improvements and stable prices at relatively low levels; it was also associated with the failure of natural rubber production to keep pace with the rapidly expanding market.

Most of the raw rubber produced is used in the manufacture of vehicle tyres. In the fifties, this usage increased fairly rapidly in Continental Western Europe with the growth in automobile production, but in the United States — the largest consumer — there was only a small rise in per caput consumption. Though, over the next ten years, rubber consumption is likely to increase less rapidly than during the fifties world consumption might almost double from 1957 - 59 to 1970²⁵, the greater part of the increase being in the developed countries. It is anticipated that the rate of growth in natural rubber production would be substantially larger in the sixties than in the fifties, but prices of natural rubber may decline. Synthetic output could expand much more rapidly than natural output and the assumption is made here that it will expand to fill the gap between potential demand for all rubber and the projected output for natural[†]. On this basis, synthetic production by 1970 (excluding that of the Sino-Soviet area) would at least double the 1957 - 59 average, and would substantially exceed the output of natural while the price of natural would presumably decline to somewhere near the synthetic price, which in 1957 - 59 was about 30 percent below that of natural rubber.²⁶

AN ECONOMIC APPROACH.

Merely doubling the production of present grades and types of synthetic rubber will not maintain a maximum

²⁵ FAO Commodity Review 1962. "Agricultural Commodities Projections for 1970" pg. 81-89.

²⁶ FAO Commodity Review 1962. Op.cit., pg 81-89

[†] Refer to Chapter VII for a more detailed account.

rate of expansion in the future use of chemical rubbers. There are already too many synthetic rubbers and many more will be created and tested before radical employment will force some out of the industry - to eliminate all those with limited usefulness that they can no longer be produced economically and efficiently even for very specialised usage if rubber with greater adaptability can be substituted.

It must be emphasized here that ever since the development of the synthetic rubber industry during World War II it has been increasingly accepted that there is a group competition between synthetic rubbers and natural rubber. It is increasingly apparent that each of the synthetic rubbers is in competition, not only with natural rubber but with all of the other synthetic rubbers, for the available elastomer market, and that the competition between the synthetic rubbers may become much more intense than that between natural and synthetic as a whole. In as much, it can be further ascertained that rubbers, synthetic and natural alike, are in competition not only among themselves but in a wider field with plastics, ceramics, metals, woods, glass and other composition materials, for borderline uses for which high extensibility is not essential.

It is worthwhile to note that general purpose rubbers will compete primarily on the basis of cost; consisting of relative production costs, compounding costs and replacement costs.

The future of rubber production both natural and synthetic depends to a very great extent on the scientific effort put into fundamental research on what rubber is, and on the chemical and physical factors that constitute elasticity. There must be production research of an increasingly high quality and scope, geared both to advancing fundamental research and industrial technology. Knowledge is needed, among other things, on the bio-synthesis of natural rubber, on its structure on the relationship of the structure to physical properties, and on how the structure can be improved either before or after tapping. The relationship between natural and synthetic polymers and their chemical structures therefore need to be determined. The changes brought about by vulcanization are only imperfectly known as are the basic factors in compounding. The precise comparison of natural and synthetic rubbers will only become possible as knowledge is gained, not only of structural changes in the molecule (rubber) during vulcanization and aging, but also of the basic relationship of the rubber and non-rubber constituents of the mix.

However, if natural rubber producers should contend themselves with only synthetic their appreciation of the competitive field is extremely limited and narrow. It must be borne

in mind that the competitive forces include not only that from synthetic, but also from stockpile releases, state and government participation in enterprise, tariff barriers, governmental controls, competition from reclaim, and other marketable substitutes.

Natural rubber is of paramount importance to Malaya and she cannot therefore afford to sit back and expect buyers to come to her. Manufacturers of synthetics have launched very successful sales promotions campaigns and Malaya, on her side, must meet this challenge and see to it that she is not being pushed out of the market. It is therefore essential for her to ascertain the exact needs of her consumers and to adjust accordingly, and if necessary so, she should also adjust herself to exactly when the consumers want, and in whatever forms, and qualities they want and supply them accordingly.

THE BASIS OF FUTURE COMPETITION

The basis of competition whether with synthetic or other substitutes will be mainly on technical qualities and costs.

COST CONSIDERATIONS.

Of prime importance is the subject of costs, as price may be the only determining factor for consumption of the elastomer. Natural rubber production costs must therefore be reduced in order to facilitate its usage. Normally when prices are low, costs are generally reduced by increasing productivity. This can be done by one or more of the following:-

- 1). change of tapping system - where the trees are given a resting period and tapping is less intense and also less frequent, such that tapping costs are reduced.
- 2). a wider use of yield stimulants, so that productivity per tree can be increased.
- 3). a change in the task size - by increasing the task size, the productivity per tapper is clearly increased tapping costs per lb. is reduced.
- 4). a selective tapping of tasks. This means that the profitability of each task will vary widely according to its yield per acre. At low prices some will cease to be profitable and may remain untapped or given extreme resting periods.
- 5). selective tapping of trees within tasks. Here only selected trees are tapped thus getting maximum yield for every tree that is tapped.
- 6). economies in upkeep and general charges. This can be utilized during the short period as any major reductions in current average expenditure on upkeep and supervision maybe of doubtful value on a long term basis. Economic efficiency does

not necessary mean a major reduction in expenditures.

When low prices are a long term feature then the measures given may not be very useful. A lowering of costs can be realised in the long run by:-

- 1). replanting with high yielding clones.
- 2). making trees produce earlier than the normal 7 years after planting.
- 3). increasing the efficiency of tapping, and
- 4). stimulation techniques to extract a higher yield of latex on those existing and new trees.

In the discussion of prices and production, it must also be realised that the responses of different planters may be varied. Exploitation methods are most common when short term prices are concerned. However exploitation may not be justified by the amount of profits.

Measures that increase the yield per acre and at the same time lower the cost per lb. are clearly most advantageous except for stimulation. However, changes in exploitation tend to influence yield per acre and cost per lb. in the same direction. Whether a proposed change is profitable will then depend on the question of whether the positive effect of increase in yield outweighs the negative effect of an increase in cost (therefore, decrease profits per lb.) or whether the positive effect of a decrease in cost outweighs the negative effect of a decrease in yield per acre.

The problem involved is three-fold.

- 1). to determine the effect of a proposed change in exploitation on the yield per acre.
- 2). to determine the effect of a proposed change on the profit per lb.
- 3). to add these two effects if the result is positive and the proposed change is profitable.

The effect on the profit per lb. depends on:-

- 1). the cost level, and
- 2). the price of rubber.

With a low profit margin the same relative change in cost per lb. will affect the profit much more than when the profit margin is high. In evaluating the effect over a longer period future cost and price values must therefore be estimated.

In considering the effect of a proposed change over a longer period, two more complications arise.

- 1). a certain "profit" today has a greater value than the same profit in the near future, because profit has earning power (it will accumulate interest.)
- 2). certain changes in exploitation will affect the

life of the trees. This will change the depreciation cost and also the proportion of immature rubber on the estate. Therefore it changes the relation between

profit per acre / profit per acre tapped.

Considerations such as these may condition the adoption of any measure which the rubber firm may think profitable.

Prices may be the deciding factor in rubber usage but technically specified rubbers at low prices may be of more importance in determining the future of the rubber industry. When manufacturers know what they acquire can be obtained at a low price and with a tailor-made uniformity, they can be assured of many advantages which are absent in the visual assessment of rubber grades, thus making their manufacture more stable and their consumption of natural rubber more definite.

In spite of improvements in production, natural rubber producers will depend in the near future at least as much on marketing improvements.

MARKETING CONSIDERATIONS.

At present synthetic rubber producers enjoy the advantage of making direct, long term contracts at unvarying prices, and can follow up their sales with free technical advice. The natural rubber industry, here, suffers from being highly fragmented, so that not only do producers have to sell through an auction market where prices naturally fluctuates but in isolation. They cannot therefore afford the close contact with the consumer through advertising, knowledge of consumer requirements and technical aid which their competitive position renders essential.

A good deal will have to be done therefore on the marketing side, and this will include presenting natural rubber in new forms other than sheets, specifying in terms of technical properties rather than by sight and enabling the customer to use rubber to a greater, technical and economic advantage, if sales are to keep pace with higher output.

After meeting the technical requirements of the manufacturer at a competitive price, the next most important selling point is the manner in which the goods are presented. Packing must therefore be to a degree of convenience both to storage and handling.

TECHNICAL IMPROVEMENTS IN THE PRODUCT - RUBBER.

The importance of processing has been underestimated in the past, partly because of its low cost in relation to the

whole operation of rubber production, and partly because planters have tended to be agriculturalists by inclination.

The importance of synthetic competition must therefore be an added "incentive" to make planters put more stress on correct processing as a means of engaging the consumers' interest. It must be realised that it will be of little use to produce cheap rubber from well-bred, well-fed and healthy trees if the final product is not precisely what the manufacturer requires. The grading of rubber by visual means alone must be regarded as out-of-date in face of the present demand for uniform rubber conforming with set technical standards — standards which vary greatly depending upon the purpose to which the rubber is put.

The present trend is for rubber to be made in different technical specifications. For instance, there are the "cup lump and scrap", "peptorub", "MG rubbers", "comminuted rubber", and so on.

In the making of tyres for instance the "cup lump and scrap" is about the best so far. Since the modern tyre is subject to more severe service conditions than hitherto, the tyre compounder therefore needs greater resistance to dynamic fatigue in the rubber he uses. Previously tree lace, oxidised scrap and lump were used, but had been proved to be markedly inferior than clean cup lumps and quickly processed scrap, which are presently used for tyre manufacture.

"Peptorub" is a Socfin Co., process where a peptising agent is added to scrap and lump rubber which is then creped and comminuted. This rubber is sold to specification (including a maximum permitted dirt content) and has been received by customers in many parts of the world.

"MG rubbers", like SP and other types of rubbers, are made under license from the RRIM. It is still in its experimental stage at the RRIM Experimental Station. MG rubbers are methyl methacrylate natural rubber graft polymers, which have a wide variety of uses, among which the main ones, at present, are adhesives and hard mouldings.

Comminuted rubber is a dry form of rubber sold to technical specifications in a few uniform grades.

The production of such specific types of rubber offer the manufacturer many advantages. As the introduction would mean only a few uniform grades which are also technically specified, the buyer would no longer be faced with the complexities of the visual grading system or with the unknown factors inherent in such a subjective system of assessment. The manu-

-factorer would be able to buy precisely what he wanted for his requirements. A given grade would be of more uniform quality than most of the existing grades. Inasmuch, the rubber would be very neatly packed and easily handled, so that convenience can be ascertained. A major advantage besides all these is that the price would be, at least lower or possibly even lower than that of the equivalent visually graded rubber.

Sole crepe production is not yet an anachronism in the rubber producing industry. In 1963, sole crepe and brown sole crepe have been favoured and has proved to be one of high demand and good returns. It may well be worthwhile for Malayan producers to approach the world market for this product on a uniform basis, producing this commodity to order in a few large central factories while the product is actively promoted on a basis of recognised specifications.

The introduction of new forms of rubber may be reckoned as the industry's "life-saver". By introducing qualities such as these mentioned the new rubbers may make the future of natural rubber industry more bright. However, it must not end here, as innovation is the life of every economy, and our economy is of no particular exception. Progress in the introduction of new forms of rubber is likely to be slow, as any hasty steps could well have adverse effects upon the present marketing structure. The following stages may be seen in the new introduction;-

- 1). There will be a simplification of the existing grades.
- 2). There will be a definite introduction of new grades, and
- 3). A new form of presentation may have to supersede the present one.

The controlling factor to such an enterprise it must be realised, is still the manufacturer. Unless and until we can ascertain the manufacturers' requirements and cooperation any scheme to improve the presentation of rubber is likely to fail.

CONCLUSION

The future of the rubber industry is therefore dependant upon the improvements in these fields and the planters' ability to cope up with the synthetic competition.

In view of the Indonesian Confrontation and the deterioration of situation in South East Asia, the production of natural rubber here may be hindered, so that the productive capacity may not be realised.

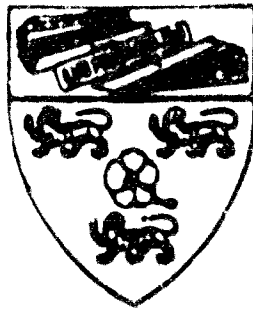
It is because of such uncertainties which may offset the situation in the country, programmes which are directed at the improvement of the rubber industry may not be fruitful.

Inasmuch, we must also consider the effects of land clearance schemes which may have an adverse effect towards the industry. The loss of foliage, it has been argued, from large areas of newly opened land may lead to an upsurge of strong convection currents of hot air which may dispell approaching rainclouds, thus, leading to a reduction in rainfall over those areas. Although the effect varies from one environment to another, it must be borne in mind that a good harvesting of plantation rubber depends on reasonably heavy rainfall at regular intervals. If such rain is not realised there may be an adverse effect on the yield per acre of rubber trees, therefore creating an uncertainty towards the plantation industry.

Of particular importance is the maintenance of sound internal relations so that production process can continue as efficiently. Labour problems may have very direct repercussions on the industry as a whole. In the calculation of future costs of production per lb. of rubber, we must allow a certain percent increase in the wage rate and other administrative costs so that a more accurate assessment can be given. An increase in the production costs may mean the collapse of the industry in view of the keen competition presented by synthetic. Unless the production costs of natural rubber drops sharply in the next few years, we would expect a very ill-effect to happen to our economy.

The future of the rubber industry is therefore very greatly dependant on the events which follow. Its ability to meet the synthetic threat is likewise dependant on whether the newly introduced forms of rubber are acceptable to the consumers.

Any optimistic predictions of the future situation cannot be justified unless we can safely say that natural rubber has a superior hold over its synthetic counterpart, and that the manufacturers are willing to accept any new introductions which may follow in the near future. As it is, the situation is still hanging on the balance and synthetic may have the final say if its usage unless natural rubber can maintain its competitive hold.



TAMAT



UNIVERSITY OF MALAYA LIBRARY . MICROFILM

