TRENDS AND PROSPECTS FOR CEYLON TEA

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An attempt is made in this paper to forecast for the period ending 1970 the production, domestic consumption and the exportable surplus of Ceylon tea in relation to the level of foreign demand. Stated differently, this study will deal largely with the supply and demand prospects for Ceylon tea in the world market. No attempt is made here to forecast the prices for Ceylon tea mainly for the reason that the price of tea in international markets is governed by a complexity of factors, a full consideration of which would form a separate study by itself.

Over the last two decades or so the tea industry in Ceylon has shown an appreciable increase in both total production and exportable surplus. While the acreage under tea has remained practically unchanged during the past twenty to thirty years, production has nearly doubled. Thus the total production of tea in 1961 was 455 million pounds compared with an average of 229 million pounds during 1934-38; the corresponding figures of acreage being 587 thousand acres and 557 thousand acres, respectively. That is to say, a 5 per cent increase in acreage was matched by an increase of 99 per cent in total production.

The rapid increase in yield per acre over the last three decades which is evident from the data on acreage and production is attributable to the more intensive use of fertiliser, the adoption of improved cultural techniques and to more efficient estate management. However, there is now a growing fear that this rate of increase cannot be maintained for very long. This apprehension is based on the fact that, though the tea plant has a productive life of hundred years or more, a tendency for an abrupt decline in yields after the age of sixty, necessitates replanting if production is to be maintained on an economic basis[2]. Since approximately one-third of the existing acreage under tea in Ceylon was planted before 1890 and about two-thirds before 1901,[3] the conclusion drawn is that the average yield will gradually decline in the near future.

This reasoning, however, does not stand up to close investigation. Firstly, the estimated figure of sixty years as the economic life of a tea bush represents a world average over a wide range of conditions. It is based on general biological

1. The writer is a Research Officer in the Department of National Planning. The views expressed in this paper are those of the writer in his personal capacity and do not reflect the views of the Department.
2. FAO "Tea Trends and Prospects". *Commodity Bulletin Series No.* 30 Rome., 1960.
3. Ceylon, Department of Census and Statistics. *Census of Agriculture, Part* I 1952., Colombo 1956.

data and is likely to vary with differences in climate, soil and standards of maintenance practices. In fact, the economic life span of a tea bush in the higher and medium elevations with their ideal weather conditions is longer than in low country areas[4]. A classification of the tea areas of Ceylon according to altitude shows the greater part of these areas lie in regions over 2,000 feet where medium and high grade teas are grown[5]. These considerations firmly suggest that since the greater part of the tea acreage in Ceylon is located in higher altitudes, the economic life span of a tea bush will be longer than the world average of 60 years.

Secondly, there has been a steady increase in yields per acre despite the fact that two-thirds of the bushes are over sixty years of age. As already indicated, this increase in yield has been brought about by more intensive fertiliser application, rehabilitation of existing acreage through the filling of vacancies which have increased the stand per acre, and by the adoption of improved soil conservation measures. There is therefore no reason to doubt that the continued application of these methods will not sustain the present trend for increased yields.

Thirdly, during the past few decades, the practice of planting new bushes on vacant spaces in most of the tea estates was adopted. This was with a view to increasing the stand per acre and thus increasing the returns. It is therefore possible that a certain percentage of the tea bushes are not the original bushes planted over sixty years ago. For this reason too the trend of increasing yields can be expected to continue in the period under review.

The average annual increase in production due to rehabilitation measures and the use of fertilisers during the last thirty years has been estimated to be 2.9 per cent on the basis of a moving average. The average annual increase over the last 9 years was even higher, being 3.6 per cent and the corresponding figure for the last 5 years is 3.9 per cent. As indicated earlier in this paper, at some future date the stage will of course be reached when yields will start declining owing to the age of the bushes. The fact that up-to-date there have been increasing yields without a perceivable tendency for the yields to decline or else to become stabilised, confirms the correctness of the assumption made in this study, that even if a gradual decline in yield occurs at any time before 1970, the average annual increase in yield would not fall below 2.9 per cent. Hence we shall maintain this assumption of a 2.9 per cent annual increase in yield in estimating prospective trends during the period under review.

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4. Lamb, J. "The Tea Industry". *The Tea Quarterly*, Vol. 23 part iv. December 1952. Tea Research Institute, Talawakele, 1953.

5. Ceylon, Tea Control Department. *Administration Report for* 1961, Government Press, Colombo, 1962.

For purpose of our projections, the year 1960 has been selected as base year in preference to 1961, as production in 1961 was abnormally high because of favourable weather conditions. It is also estimated that an additional 1,000 acres will come into bearing annually due to the activities of the Ceylon State Plantations Corporation and additional incentives provided by the Government Subsidy Scheme for opening up new land under tea on estates. The yield per acre on these new plantations is estimated at 1,250 pounds.

It is also assumed that as a result of additional incentives provided under the Tea Replanting Subsidy Scheme through an increase in Government subsidy payments, 2,000 acres will be replanted annually from 1963 onwards. In estimating future production increases due to replanting with high yielding strains, only the difference between the present yields and yields from replanted areas is taken account of. The yield per acre on replanted areas is estimated to be the same as on acreages now brought under cultivation.

Due allowance has been given to decreased production due to uprooting of old tea for replanting. It is assumed that the average yield at the time of uprooting is 600 pounds an acre. Finally on the basis of past trends, it is assumed that approximately 1,000 acres will be uprooted and diverted to other crops or abandoned annually. The yield per acre at the time of uprooting is estimated to be 600 pounds.

On the basis of the above assumptions, an attempt is made in Table I to forecast the total production of tea in Ceylon from 1962 to 1970. It will be seen from the table that the estimated total production of 459 million pounds in 1962 will gradually increase to 579 million pounds by 1970, representing an average annual increase of about 15 million pounds during the period under review.

Having estimated the production of tea from 1962 to 1970, the next task will be to find out the annual local consumption over the same period. Hitherto attempts to forecast domestic consumption of tea have suffered, from a want of comprehensive surveys of local consumption of tea, and from an inadequacy of information on stocks of tea at the beginning and end of each year. Hence the earlier figures which appeared in the Administration Reports of the Tea Controller and in publications of International Agencies were pure guess work. It is now possible, however, to estimate the per capita consumption of tea in Ceylon on the basis of data collected through a Cost of Living Survey conducted by the Department of Census and Statistics in 1958.

This Survey revealed that for both middle and working class groups, the consumption of tea leaves and tea dust was 2.52 pounds per person per annum. In addition, each person on the average consumed 90 additional cups of tea per annum in tea boutiques and restaurants. On the basis of an additional .56 pounds of tea consumed annually by each person, this would make a total of 3.08 pounds. There is no reliable information pertaining to per capita consumption of tea for the past years. It is however, very unlikely that there has been a significant change in trend of per capita consumption of tea in Ceylon. It has therefore been assumed, for purposes of this study, that the per capita consumption of tea of 3.08 pounds a year will remain constant up to 1970.

In attempting to forecast domestic consumption of tea, it is necessary to take into consideration the recent import restrictions of coffee, since there is a close degree of substitution between tea and coffee. The substitution effect is still more relevant as tea is a much cheaper beverage than coffee in Ceylon. On the average, approximately 2.4 million pounds of coffee was imported annually into Ceylon during the last three years. The import restrictions and the consequent unsatisfied demand for coffee will no doubt lead to an opening of additional acreages under coffee. However, due to the time lag between planting and bearing, it is unlikely that there will be a significant increase in local production of coffee during the period under review. Since the unsatisfied demand for coffee will continue for sometime, it is very likely that a large number of coffee drinkers will turn to tea.

A pound of tea gives four times as many cups as a pound of coffee. On the assumption that two-thirds of the consumers of foreign coffee will switch on to tea, it is estimated that the consumption of tea will increase by an additional .4 million pounds annually. For purposes of this study it has further been assumed that the present restriction on imports of coffee will continue till 1970.

The projected total consumption of tea from 1962 to 1970 is given in Table II[6].

Having estimated the production and domestic consumption of tea in Ceylon from 1962 to 1970, the surplus available for export can readily be derived as in Table III.

Having estimated the total production, domestic consumption and annual exportable surplus from 1962 to 1970, it is now necessary to compare Ceylon's future production with total world production and discuss briefly the future demand for Ceylon tea in the world market during the period under review. The additional quantity available for export is about 11 million pounds in 1962 and this will gradually increase to about 17 million pounds by 1970.

During the period, 1949 to 1957, Ceylon's contribution to world production was around 26 per cent. According to an FAO study,[7] the estimated total world production in 1970, excluding mainland China and U.S.S.R., will be 2,464 million pounds. It will therefore be seen that on the basis of this figure, Ceylon's contribution to world production in 1970 will be 22 per cent. If the estimated production

6. Selvaratnam, S. *Population Projections for Ceylon* 1956-1981. Planning Secretariat, Colombo, 1959.

7. FAO. *Agricultural Commodities—Projections for* 1970. *Rome,* 1960.

of Mainland China and the U.S.S.R. (according to the FAO study[8]) is included Ceylon's share will amount to only 18 per cent. The conclusion that could be drawn is that, during the period under review, the total world production of tea will be greatly increased by the efforts of the other producer countries to step up their production, and, by the entry of new producers into the world tea market. This would mean that Ceylon's production increase will not be commensurate with the increase by other producers if she is to maintain her present percentage contribution of world production. In other words, Ceylon's position during the next eight years will be similar to what India has been experiencing during the last decade. In 1949, India contributed to 51 per cent of world production whereas in 1957 her contribution was only 43 per cent[9].

A closer examination of the export markets for our tea reveals that in the past decade Ceylon has had eight regular customers and that these eight have together consumed approximately 80 to 85 per cent of our total export surplus. These eight countries consume over 90 per cent of the tea entering the world market. Ceylon has supplied more or less the same percentage share of her total quantum of exports to each of these countries over the past decade. This is evident from Table IV.

With the exception of Iraq, these countries have high per capita incomes and have, or have had, recently some connection with the tea producing countries either directly or indirectly through British influence. On the other hand, other countries with high per capita incomes (such as the Continental countries) having no political or economic ties with tea producing countries are not heavy consumers of tea. Tea consumption, therefore, clearly depends mainly on historical factors rather than on purely economic factors such as income and price.

In the case of our traditional buyers, the consumption of tea is already high and any further increase in per capita incomes will not significantly increase consumption. What is more likely to happen is that the already existing preference for high quality teas may become even stronger over the next eight years. Ceylon, therefore, producing mainly high quality tea, could reasonably expect to continue to market her teas in these eight countries.

On the basis of these assumptions, the total consumption of tea in these eight countries over the next eight years has been estimated in Table V. For purposes of this projection, the population in respect of the eight countries for the various years has been estimated on the basis of the population projections available in a U.N. Study[10]. The per capita consumption of tea in these eight countries in 1960 is adjusted on the basis of trends in consumption in these

8. *ibid.*

9. International Tea Committee. *Annual Bulletin of Statistics* 1961, London, June, 1962.

10. U.N. *The Future Growth of World Population* : ST/SOA Series A/28, New York, 1958.

countries over the last two or three decades[11]. The adjusted per capita consumption figure as appearing in Table VI has been assumed to remain constant till the end of the period under review.

It is important to note that the future additonal consumption of tea in these eight countries, estimated on the basis of past trends, is only in the region of 8 million pounds a year. It is now clear that even if the above total estimated additional requirements of these eight countries are met from Ceylon's exports of tea, we would yet be left with an export surplus for which a market will have to be found.

Besides these eight traditional buyers who together consume 80 to 85 per cent of our tea, there are four other countries, namely Ireland, Egypt, Iran and Sudan, which in the recent past have imported fairly large quantities of Ceylon tea. Of these countries, Ireland belongs strictly to the group with high per capita incomes. She also has a very high per capita consumption of tea, viz. 7.9 pounds, which is about the second highest in the world. Ireland has, however, been consuming a small percentage of her total requirements of tea from Ceylon. Although it is clear that the total consumption of tea in Ireland will not significantly increase in the period under review because of her stagnant population it is seen that since 1957, the proportion of Ceylon tea that has been imported into Ireland has tended to increase. In other words, Ceylon has been successful in making inroads into her rivals' market in Ireland and it seems very likely that this trend will continue during the next few years.

In Egypt, Iran and Sudan we have potential markets capable of absorbing large quantities of our tea. These countries have low per capita incomes and as such price plays an important role in the tea trade with these countries. Furthermore, low quality teas are more in demand in these markets. Ceylon exported much larger quantities of tea to these countries in the recent past than it does at present. Unfortunately, import restrictions by these countries have considerably reduced our exports of tea to these regions. In Egypt, imports of tea have been regulated by a Government to Government barter scheme incorporated in bilateral trade agreements. In this type of trading, India, because of the size of her domestic import market, inevitably has the ascendancy and in recent times has succeeded in displacing Ceylon from the Egyptian market. Iran, a country which consumes over 25 million pounds of tea annually, and one time importer of 10 million pounds of Ceylon tea per year, has virtually eliminated Ceylon tea from her market pending the negotiation of a trade agreement between the two countries. In the case of Sudan, owing to the negligible amount of trade with Ceylon, she did not grant licences for importing Ceylon tea into that country[12]. By negotiating successful trade agreements

11. FAO. "Tea Trends and Prospects". *Commodity Bulletin Series* No. 30 Rome, 1960.
12. Ceylon Tea Propaganda Board. *Annual Report for* 1961. Colombo, 1962.

with Egypt, Iran and Sudan, it would be possible to find a market for a sizeable quantity of our export surplus. Measures have been taken in this direction with the conclusion of trade agreement with Egypt a few months ago. The details of this agreement are not yet known in order to estimate the additional quantity of our tea which will go into this market.

In addition there is scope for exporting fairly large quantities of low quality teas to Arabia, Tunisia and Syria, of which the last named is consuming increasingly large quantities of Ceylon tea annually.

It is now necessary to analyse the overall picture of supply and demand prospects in the light of the foregoing conclusions. It is seen that the average annual increase in production is 13 million pounds in 1962 and gradually increases to 19 million pounds in 1970. Domestic consumption would also increase from 34 million pounds in 1962 to 43 million pounds in 1970. The exportable surplus in 1962 is estimated to be 427 million pounds and will gradually increase to 542 million pounds by 1970.

An analysis of demand shows that we have eight traditional buyers who together have consumed approximately 80-85 per cent of our total exports of tea annually. A study of population and trends in per capita consumption of tea in these eight countries reveals that these countries on the average will not consume more than 8 million additional pounds annually, whereas our net addition to export is on the average 15 million pounds annually. Furthermore, in the case of Egypt, Iran and Sudan successful trade agreements will have to be negotiated if we are to export more tea to these countries. Arabia, Tunisia and Syria may buy a small quantity of our increased exportable surplus. It is therefore clear that on past trends Ceylon cannot hope to find a market for all her export surplus during the period under review.

In recent years however Ceylon has perfected the technique of manufacture of "instant tea" and factories are already being set up to produce for the export market. "Instant tea" exclusively possesses the qualities of convenience and ease of preparation. As instant tea has more or less the same qualities as soluble coffee, it is widely believed that it will have a ready market in high income countries in the same way as soluble coffee in the British and American markets[14].

It is therefore clear that " instant tea" may either wholly or partially solve the problem of finding additional markets for our exportable surplus. It is nevertheless too premature to say anything on the impact of "Instant tea" on the demand prospects for Ceylon tea.

The vital question facing Ceylon today is "To what extent can 'Instant tea' solve the problem of finding markets for our future exportable surplus of tea?".

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14. "Instant Tea". In *Ceylon Today*. February 1962. Government Information Department, Colombo. 1962.
15. FAO *The World Coffee Economy*. Commodity Bulletin Series No. 33. Rome. 1961.

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TABLE I **Estimated Production of Tea in Ceylon, 1962—1970** (Million Pounds)

	1962	1963	1964	1965	1966	1967	1968	1969	1970
Increase due to fertiliser application and rehabilitation measures 2·9% ..	461·0	474	488	502	517	532	547	563	579
Increase from new planting coming into bearing ..					1·2	2·5	3·7	5·0	6·2
Increase due to replanting with high yielding strains ..					1·1	2·6	5·1	7·6	10·1
Less loss of production due to replanting—2,000									6·2
acres at 600 lbs. per acre	1·2	2·4	3·6	4·8	6·0	7·2	8·4	9·6	10·8
Loss in production due to abandoning or diverting to other crops—1,000 acres at 600 lbs. per acre ..	·6	1·2	1·8	2·4	3·0	3·6	4·2	4·8	5·4
Total production	459·2	470·4	482·6	494·8	510·3	526·4	543·2	561·3	579·1
Annual increase		11·2	12·2	12·2	15·5	16·1	16·8	18·1	17·8

TABLE II **Projected Consumption of Tea in Ceylon, 1962-1970** (Million Pounds)

	1962	1963	1964	1965	1966	1967	1968	1969	1970
Domestic consumption*	34·0	34·9	36·0	37·1	38·2	39·4	40·5	41·7	42·9
Substitute for coffee	·4	·4	·4	·4	·4	·4	·4	·4	·4
Total domestic requirements	34·4	35·3	36·4	37·5	38·6	39·8	40·9	41·2	43·3

*Based on the Medium Projection of Population according to Selvaratnam. Vide Selvaratnam's "Population Projections for Ceylon, 1956-1981", The Planning Secretariat, Colombo, 1959.

TABLE III **Estimated Total Exportable Surplus of Tea in Ceylon 1962-1970** (Million Pounds)

	1962	1963	1964	1965	1966	1967	1968	1969	1970
Total Production	461·7	474·1	487·6	501·0	516·6	532·6	549·5	567·5	585·4
Less Domestic consumption	34·4	35·3	36·4	37·5	38·6	39·8	40·9	42·1	43·3
Exportable surplus	427·3	438·8	451·2	463·5	478·0	492·8	508·6	525·4	542·1
Annual Increase		11·5	12·4	12·3	14·5	14·8	15·8	16·8	16·7

TABLE IV **Percentage Exports of Tea From Ceylon Showing Countries of Destination**

	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	*Range in* %1952–60	*Average Percentage*
U. K.	36	35	38	33	39	36	40	36	37	37	7	37
Australia	13	16	14	11	9	9	10	10	11	10	7	11
U. S. A.	11	10	8	10	10	11	9	10	10	10	3	10
Iraq	5	6	6	8	7	8	6	8	8	8	3	7
South Africa ..	7	7	7	6	7	7	6	6	6	7	1	7
Canada	6	5	5	5	6	5	4	4	4	6	2	5
New Zealand ..	3	4	4	3	5	4	4	4	4	4	2	4
Chile	1	—	—	—	—	—	1	2	2	3	3	2
	82	83	82	76	83	80	80	80	82	85	9	83
Others	16	15	16	22	15	18	18	18	16	13	9	17
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source : Table c 4 — Annual Bulletin of Statistics June 62 —

TABLE V

Total Estimated Consumption of Tea in 8 Major Consuming Countries 1962—1970

(Million Pounds)

	1962	1963	1964	1965	1966	1967	1968	1969	1970
United Kingdom	521·1	523·1	524·1	526·1	529·1	531·1	534·1	536·1	539·1
Australia	62·5	63·7	64·9	66·1	67·3	68·4	69·6	70·8	72·0
United States	117·6	119·1	120·6	122·2	123·8	125·5	127·2	128·8	130·6
Iraq	41·9	42·9	44·0	45·0	46·1	47·2	48·4	49·5	50·7
South Africa	31·1	31·8	32·6	33·3	34·1	34·9	35·8	36·6	37·6
Canada	43·7	44·6	45·4	46·3	47·0	47·8	48·5	49·2	49·9
New Zealand	16·4	16·6	16·9	17·2	17·5	17·8	18·1	18·3	18·6
Chile	15·9	16·1	16·4	16·6	16·9	17·1	17·4	17·7	17·9
Total consumption ..	850·2	875·9	864·9	872·8	881·8	889·8	889·1	907·0	916·4
Total annual increase in consumption for 8 countries		7·7	8·0	7·9	8·0	8·0	9·3	7·9	9·4

TABLE VI

	Per Capita Consumption 1961 (*lbs*)	*Trend in Per Capita Consumption*	*Adjusted for Per Capita Consumption lbs.*
U. K.	10·04	*	10·04
Australia	5·93	—·47	5·90
United States	·64	—·47	·64
Iraq	6·16	+·18	6·17
South Africa	1·95	+·65	1·96
Canada	2·41	—·53	2·40
New Zealand	6·70	*	6·70
Chile	1·88	+16·50	2·19

* Insignificant