REPORT ON
TECHNO-ECONOMIC SURVEY
OF
SMALL TEA GARDENS IN
KOTTAYAM AND IDUKKI

ISSUED BY THE TEA BOARD OF INDIA

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FOREWORD

This report of the Techno-Economic Survey of small tea gardens in Kottayam and Idukki districts in Kerala is the third in the series of such surveys recently undertaken by the Tea Board. The present survey covers small tea growers' holdings upto 10 hectares.

2. A survey of the small growers is relatively more difficult than that of the organised large estates. It is difficult to adopt any systematic sampling procedure, owing to non-availability of data about the total number of small tea gardens, their location and area covered. Further, inaccessibility of the areas in question also poses a problem to the survey team to collect the relevant data. As such, data collected for such a survey have always had their own limitations. Sample data were, however, collected from 452 small tea gardens of which 176 gardens were located in Kottayam and 276, in Idukki.

3. The main findings of the survey are that nearly 50% of the total small gardens surveyed in Kottayam and almost 100% in Idukki were found not to have been registered with the Tea Board. Most of the tea bushes are less than 30 years of age. Nearly 41.5% of the area under possession of the small growers in Idukki was found mainly fallow which is suitable for tea cultivation as compared to only 6.8% in Kottayam. In Kottayam, inter-plantation is practised by about 80% of the gardens. The yield rate of the small growers in this region on the basis of effective area is lower at 580 kgs. per hectare as compared to 609 kgs. in Idukki where interplantation is negligible. This is nearly half of the overall

yield rate for both organised and unorganised tea sectors in Kerala. The vacancy ratio is 47% in Kottayam and 21% in Idukki. It has been found from the survey that in Poonjar, where the Teekoy Co-operative factory is situated, 100% of the green leaf is sold to the factory. In contrast to this, 100% of the green leaf is sold to the middle-men in 3 out of 7 surveyed villages of Kottayam and all villages in Idukki. It was learnt that the selling through agents leads to underpayment for the green leaf on account of charging a discount by the agents to an extent of 10-12% in the gross weight of the crop on the plea of excess moisture content. The average price of green leaf paid by co-operative factories/bought leaf factories and agents in 1974 was around 50 paise in the case of Kottayam and 56 paise in the case of Idukki.

4. I hope the survey should be of use to those interested in growth of tea industry in the above-mentioned districts.

B. K. Goswami
Chairman
Tea Board

June, 1979
Calcutta.

INTRODUCTION

Tea Board had recently started a series of Techno-Economic Surveys of the Tea Industry in various regions of the country. Surveys have already been conducted in Darjeeling, Terai and Tripura. Kerala is third in the series and the small tea growers of this region holding upto 10 hectares have been covered in the survey.

Unlike most of the other plantation crops in India, tea is essentially a large growers' crop and the small growers' sector contributes only about 4% of the total production. Yet, in terms of holdings there is a very large number of small holders requiring special attention. Such small growers are concentrated in Nilgiris district in Tamil Nadu, Kottayam and Idukki districts in Kerala and Himachal Pradesh in the North. No accurate data are, however, available about their actual number, area held by them, total production etc. because of non-registration by many such gardens with Tea Board. The records of small gardens registered with the Tea Board in the fifties are now out-of-date since some have shifted to other crops by now and many new comers have started growing tea. While about 4,000 small gardens are registered with the Tea Board, it is believed that a few thousands more are unregistered. The present survey of small growers in Kerala is based on data collected by the Board's team from a sample of 452 growers, covering both registered and unregistered gardens. The field work was undertaken in 1975-76. The information gathered by the team during its stay in Kerala and supplementary data available from other sources have also been made use of.

I shall be failing in my duty if I do not place on record my heart felt thanks to Shri N. Ramadurai, Controller of Licensing and Shri K. N. Namboodiri, Research Officer (Economics) and other members of the Statistics Division for rendering their sincere and valuable help in the preparation of this Report.

June, 1979
Calcutta.

R. N. Mandal
Statistician

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CHAPTER I

GENERAL BACKGROUND

1.1 The position of small growers in tea is different from that of other plantations like coffee, rubber, cardamom etc. While in the other plantations, the small growers account for a major portion of the production, their contribution in tea is only about 4% of the overall production. Yet their total number is very large. The number of small tea gardens in the country may very well go upto 20,000 as against a total of 1900 large estates, although only about 12,000 of the small gardens are registered with Tea Board.

1.2 The conditions of the small growers are entirely different from those of the large estates. In many cases the small grower is the owner as well as the worker. He is not aware of improved farm—cultural practices nor he can make investments for this purpose. He does not own a factory and has, therefore, to sell his leaf to some one else. He does not have a balance sheet nor does he maintain any regular accounts. It is obviously more difficult to undertake a survey of such a sector and the data collected will, therefore, have their own limitations.

1.3 No accurate data are available about the actual number of small tea growers or the total area under them partly due to the fact that a vast number of small growers is not still registered with the Tea Board and partly because the registration records are also out of date and there is no monitoring of the data of small holdings. It may, however, be

mentioned that the production figures of the small growers are correctly available. This is due to the fact that the green leaf of the small growers are manufactured by 'bought leaf' and co-operative factories from whom regular production figures are received. It is estimated that the total annual production of small growers would be around 18 m. kgs. of which the bulk of 16 m. kgs. is accounted for by Nilgiris district and less than 1 m. kgs. each by Kerala and Himachal Pradesh.

1.4 The small tea growers of Kerala are concentrated in Kottayam and Idukki districts. Idukki is a new district formed in 1972 consisting mostly of the high ranges of the then Kottayam district.

Area, population and climate

1.5 Kottayam district has a total area of 2196 sq. km. and a population of 16 lakhs; Idukki, has an area of 5087 sq. km., but a population of only 8 lakhs. Idukki lies in the slopes of the western ghats, which rise to an average height of 915 metres with a number of peaks well over 1830 metres in height. Kottayam, though below 305 metres in altitude, is made up of undulating hills and valleys, particularly on the eastern side. Average rainfall in both Kottayam and Idukki districts is 289 cms.

1.6 The soil in Kottayam and, more particularly, in Idukki, is rich in plant nutrients and has the desired acidity which is well suited for tea cultivation. Agro climatic conditions are more congenial for tea in Idukki than in Kottayam.

1.7 Poonjar, Mundakayam and Thidanad in Kottayam and Vaghaman, Pasupara, Mathiapara, Peermadu and Vandanmedu in Idukki are the important villages having concentration of small tea growers. Information gathered from 14 bought leaf factories

and the only co-operative factory, who manufactures the green leaf of small growers, indicates that their total production would be about 6.5 lakh kgs. which works out to 1.5% of the total tea production in Kerala viz. 43.22 m. kgs. in 1975.

Brief history of the growth and development of small growers in Kerala

1.8 A majority of small tea gardens in Kottayam district came into existence around 1950, when tea prices enjoyed buoyancy and the export quota system was in operation. The buoyant tea prices and the export quota system had prompted the small tea growers to register themselves with the Tea Board. The registration has slackened after the quota system was suspended in 1961.

1.9 During 1970 and 1971, the price fetched by small growers for their green leaf declined considerably and many of the small tea gardens in Kottayam district, particularly in the villages of Ramapuram, Lalam, Bharananganam, Melukavu and Kanjirapally were reportedly facing a crisis. In contrast to tea, the price of rubber was steadily increasing during these years. This led many small growers of tea in Kottayam to switch over to rubber. Another important reason attributed by the growers for the switch over was reportedly the assistance given by the Rubber Board through their development programmes to the small growers sector, which contributes 70% to the total area under rubber in the country. To quote an instance, in Akalakunnam village itself, as per the records of the Board, there were 263 tea gardens comprising 64.68 hectares of tea area but on actual verification during the course of the survey it was found that none of the small tea gardens was in existence now. Another development that took place in this context was the interplanting of rubber, coconut, tapioca, arecanut etc. in the tea gardens with a view to maximising the returns from the land. Thus, interplantation became a very common phenomenon in Kottayam

district, which helped the small growers to compensate the low profitability from tea in the short run. Thus, though there are about 4000 small tea gardens in Kottayam district as per registration records of Tea Board, their actual number is considerably lower than this figure.

1.10 The position in Idukki, on the other hand, is entirely different. The small tea gardens in Idukki are relatively of recent origin and a majority of these came into existence by 1960. Most of the small gardens in Idukki are still unregistered. Thus, though there are only 67 small tea gardens in Idukki district which are registered with the Board, this is nowhere near the actual number. Small growers in Idukki could not switch over to Rubber as done by their counter parts in Kottayam, since Rubber could not grow at those altitudes. Many did not venture into Cardamom which was affected by a virus disease. Coffee, in the opinion of the small growers, was also not profitable. This led many to go in for tea.

Sample gardens chosen for the survey:

1.11 The survey of small growers is beset with many difficulties. The main difficulty is that no data are available about the total number of small tea gardens, their location and the area covered. This makes it impossible to follow any systematic sampling procedure while selecting the estates for the survey. Secondly, unlike large estates whose total number is small, the sample to be drawn from the small growers has to be comparatively large in size with a view to being truly representative. It was also not possible for the team to visit all the sample gardens for collecting the data taking into account the time and cost involved and also the inaccessibility of the areas in question. The data, in the form of a questionnaire had to be collected at assemblies of a number of small growers at a pre-

determined place and date. Another difficulty was that most of the small growers did not maintain any accounts and much of the data had to be collected by putting supplementary questions to the growers. The data collected in a survey of this type has, therefore, their own limitations. Best possible care has, however, been taken in recording the data and their analysis. The following procedure was adopted for collecting the data from the small growers.

1.12 From the Board's registration records a list of villages growing tea in Kottayam and Idukki were drawn up. Before taking up the survey, the team visited important villages and met the village officers to find out the present position of tea growing. Though these village officers did not have any upto date data about small tea growers, they could give general information like existence of tea gardens in the villages, the location of the gardens etc. The team also met the representatives of the Kerala Small Tea Growers' Association at Erattupetta (Kottayam) as well as at Vandanmedu (Idukki). In consultation with the Association, a list of villages presently growing tea was drawn up. Besides, the co-operative factory at Teekoy and a number of Bought leaf Factories were also contacted so as to have an idea of the location of the small tea gardens. The survey covered those important tea growing villages which had atleast 30 small tea gardens. Data from 452 small tea gardens in these villages were collected during the survey. Of this 176 gardens were spread over 8 villages in Kottayam district and 276 gardens were spread over 4 villages of Idukki district. The names of the selected villages together with the number of gardens surveyed are shown below :—

Table I

Number of gardens surveyed

Sl. No.	Name of Village	No. of Gardens
	Kottayam District	
	Meenachil Taluka	
1.	Thidanad	44
2.	Poonjar Vadekkekara	40
3.	Poonjar Nadubhagam	
4.	Poonjar South	31
5.	Melukavu	11
6.	Bharananganam	4
	Kanjirapally Taluka	
7.	Mundakayam	36
8.	Kanjirapally	10
	Total	176

Idukki District

	Peermadu Taluka	
9.	Pasupara	10
10.	Peermadu	55
	Udumbanchola Taluka	
11.	Vandanmedu	97
12.	Pampadumpara	14
	Total	276
	Grand Total	452

1.13 The questionnaires were distributed in advance to as many growers as possible in different selected villages through the village officers, Small growers' Association, Co-operative factory, Bought-Leaf factories etc. Again, with the help of these sources, a meeting of the small growers was convened in each village at a pre-determined date and time when the Board's team was also present. The team assisted the growers in filling up the questionnaires on the spot, wherever necessary.

CHAPTER II

FIELD PRACTICES AND ASPECTS OF SALES, LABOUR, COST & FINANCE :

Registration of Estates

2.1 Out of 176 gardens surveyed in Kottayam, 88 were found to have been registered with the Tea Board. In respect of Idukki, only one garden had been registered out of the total of 276 gardens surveyed. Asked about the reasons for non-registration, half the gardens stated that they were not aware about registration by the Tea Board while some of the growers did not have 'pattas' (ownership title). Some others stated that they could ill-afford to incur expenditure involved in the process of registration, like that of preparing the survey plan. A few gardens wanted "incentives" from Tea Board, if they are to register.

It is obvious that registration of all the tea gardens in the country including that of small growers is essential for identification of units and for compiling the relevant data. Registration of small growers is also necessary for planning any programmes for the benefit of the growers. It is suggested that the procedure for registration in respect of small growers may further be simplified. An awareness has also to be created among the small growers about the desirability of registering their gardens; the Board's extension services may have to be strengthened for this purpose.

We would also suggest that to start with, all the co-operative and bought-leaf factories in

the country should be registered with the Tea Board so as to provide a supplementary data base for the small growers' sector.

Membership in Association

2.2 The Kerala Small Tea Growers' Association has got branches at Erattupetta in Kottayam and Vandanmedu in Idukki. Out of the 452 gardens surveyed only 88 gardens had taken membership in the Association. It is needless to emphasise the advantages of having a well organised Association.

Size of the gardens

2.3 The average size of the gardens in terms of total area was found to be 1.32 hectares in Kottayam and 1.07 hectares in Idukki. In terms of area planted with tea interplanted with other crops, the average size in Kottayam was 1.13 hectares and in Idukki 0.63 hectares. The Table below shows the details :—

Table 2

Size of the gardens

District	No. of gardens	Total area of the garden		Area Planted with Tea. (Inter planted with other crops.)	
		Area (in hect.)	Average size (in hect.)	Area (in hect.)	Average size (in hect.)
Kottayam	176	229.12	1.32	199.74	1.13
Idukki	276	296.79	1.07	173.53	0.63

Age composition of the bushes

2.4 The entire area under tea in the surveyed gardens contained bushes below 50 years both in Kottayam and Idukki. In Kottayam 93% of the area contained bushes below 30 years while in Idukki the entire area of the gardens, which is of more recent origin, contained bushes below 30 years. The following table shows the details :—

Table 3

Age group of bushes in Kottayam and Idukki

Age Group	Kottayam		Idukki	
	Area covered (in hect.)	% to total area	Area covered (in hect.)	% to total area
Below 5 years	7.25	3.63	10.35	5.96
5 to 10 years	32.57	16.31	81.72	47.09
10 to 30 years	146.91	73.55	81.46	46.95
30 to 50 years	13.01	6.51	Nil	Nil
Over 50 years	Nil	—	Nil	Nil
TOTAL	199.74	100.00	173.53	100.00

2.5 Since most of the tea bushes in Kottayam and Idukki are less than 30 years of age, sufficient growth potential exists among them which could be fully exploited, provided improved cultural practices are adopted and necessary inputs are applied.

Utilisation of Total area

2.6 Estimation of the total area covered by small gardens is difficult because tea is inter

planted with rubber, coconut, arecanut etc. especially in Kottayam district. For arriving at the extent of utilisation of the total area, the area planted with tea has been reckoned by taking both areas under tea with and without interplantation.

2.7 The following table indicates the position of utilisation of the total area by the surveyed gardens :—

Table 4

Utilisation of Total Area

Category	Kottayam		Idukki	
	Area (in hect.)	% to total area	Area (in hect.)	% to total area
Planted with Tea**	199.74	87.18	173.53	58.47
Area exclusively under other Crops*	13.80	6.02	Nil	Nil
Other areas	15.58	6.80	123.26	41.53
TOTAL	229.12	100.00	296.79	100.00

**Includes Interplanted area.

*Does not take into account interplanted area.

It will be seen that in Kottayam out of the total area, 87.18% was planted with tea and 6.02% was under other crops. 'Other areas' which mainly include fallow land constituted only 6.80%. In contrast, in respect of Idukki, the gardens generally grow only tea; the area planted with tea accounted for, however only 58.47% of the total area. 'Other areas'

constituted as much as 41.53%, which is quite suitable for cultivation of tea. There is, therefore, more scope for extension of tea in Idukki than in Kottayam.

Interplantation

2.8 The practice of interplanting other crops with tea in the small tea gardens is widely prevalent in Kottayam. Interplantation was practised by about 80% of the surveyed gardens in Kottayam, but only 10% in Idukki. The crops largely used for interplanting are rubber, coconut and arecanut in Kottayam; and tapioca, jack and arecanut in Idukki. There are no shade trees in the gardens except the interplanted trees. The following table shows the position of interplantation :—

Table 5

Interplantation in Kottayam and Idukki

(within the surveyed area)

Name of Plants	(No. of bushes/trees etc.) Kottayam	Idukki
1. Tea	6,32,407	8,99,650
2. Rubber	9,345	—
3. Coconut	2,731	—
4. Arecanut	2,317	419
5. Jack	10	478
6. Tapioca	15	1,150
7. Coffee	—	100
8. Others	82	375

2.9 Interplantation presents certain difficulties while making a study of such gardens. The extent of area under tea gives a misleading picture. The yield rate of tea per hectare also gives a completely vitiated picture. Interplanting reduces the area available for planting tea and, therefore, the number of tea bushes per hectare will be lower in the interplanted gardens as also production and productivity. The presence of other crops in the same field complicates the assessment of vacancies for infilling tea. While Idukki, where only 10% of the gardens were interplanted, did not pose much problems, some special exercise had to be done in respect of Kottayam, where as much as 80% of the gardens practised interplantation.

2.10(a) Average yield rate of both the districts has been arrived at first by taking into account the area planted with tea which includes interplanted area and then by arriving at the effective area under tea which excludes the notional area under interplantation.

Table 6

Average yield rate—1974

(Based on area planted with tea including interplantation)

District	Production of green leaf (in kgs.)	Area Planted with tea (in hect.)	Yield rate (Green leaf) (kgs./hect.)	Yield rate* (Made tea) (kgs./hect.)
Kottayam	2,92,005	199.74	1,462	325
Idukki	4,43,450	173.53	2,555	568

(*At the ratio of 4.5:1 between green leaf and made tea).

It will be seen from the above table that in terms of the total area planted with tea, the yield rate in Kottayam is lower at 325 kgs. per hectare as compared to 568 kgs. in Idukki, because of large scale interplantation in Kottayam.

(b) Based on 'effective area' under tea.

For arriving at the effective yield rate, the effective tea area has been arrived at by deducting the notional area for interplantation. The following table brings out the position :—

Table 7

Effective tea area

District (1)	Total planted area (in hect.) (2)	Inter-planted tea area (in hect.) (3)	Notional area under inter-planted crops (in hect.) (4)	Effective tea area (in hect.) (cols. 3-4) (5)	Tea area without inter-planta-tion (in hect.) (cols. 2-3) (6)	Total effective tea area (in hect.) (cols. 5-6) (7)
Kottayam	199.74	157.08	87.95	69.13	42.66	111.79
Idukki	173.53	13.13	11.78	1.35	160.40	161.75

2.11 It will be seen from the above that if the notional area under interplantation is excluded, the effective area under tea in Kottayam is only 56% of the total area under tea plantation while in the case of Idukki the effective area is as much as 93% of the total planted area; using the concept of effective area, the average yield rate works out to 580 kgs. per hectare in Kottayam and 609 kgs. in Idukki as indicated in the following table. The wide difference in yield rate in both the districts when worked out on the basis of total

tea area has thus, been substantially narrowed down in the second-method. The table below gives the yield rates :—

Table 8

Average yield—1974

Based on effective planted area

District	Effective planted area (in hect.)	Total green leaf plucked (in kgs.)	Average yield per hect. of planted area (in Kgs of green leaf)	Average yield per hect. of planted area (in kgs. of made tea)
Kottayam	111.79	2,92,005	2,612	580.4
Idukki	161.75	4,43,450	2,741	609.1

It is clear that, even taking into account only the effective tea area, the yield rate of about 600 kgs. /hect. is only half the overall average yield rate in Kerala at 1129 kgs. (1974).

2.12 To study the matter further, average yield per bush has also been worked out. It was found that on an average one tea bush yielded 0.46 kg. of green leaf in Kottayam while in Idukki this was marginally higher at 0.49 kg.

Bush population and vacancy :

2.13 As in the case of yield rate, interplantation stood in the way of assessing the vacancy ratio existing in the plantations, particularly in Kottayam.

2.14 The most common spacing adopted in both the districts was found to be 4' ×4' and the maximum number of bushes per hectare with this spacing would come to about 6,727.

2.15 Since interplantation complicates the assessment of exact vacancy ratio, those gardens without interplantation have been chosen for purposes of assessing the vacancies. In gardens without interplantation the average number of bushes per hectare worked out to 3,581 in the case of Kottayam and 5,330 in the case of Idukki. Taking into account the optimum number of bushes as 6,727, the vacancy ratio has been found to be 47% in Kottayam and 21% in Idukki. The details are shown in the table below :—

Table 9

Assessment of Vacancy

District	Gardens without interplantation			
	Area (in hect.)	Total no. of bushes	Average no. of bushes/per hect.	Extent of Vacancy
Kottayam	42.66	1,52,757	3,581	47%
Idukki	160.42	8,54,825	5,330	21%

In respect of gardens with interplanted crops, it is not feasible to assess the vacancy ratio. It is, however, our impression that, within the existing framework of spacing adopted, the vacancy ratio will be very small. However, there is still the possibility of increasing the bush population by planting between the rows.

It is, therefore, apparent that yield rate in both the districts could be improved if necessary programmes for infilling and planting between the rows are undertaken in the gardens. Since the age of a majority of bushes both in Kottayam and Idukki is less than 30 years, the programmes of rejuvenation or replantation are not necessitated in the immediate future. Instead, small growers may initiate programmes for infilling and interplantation of bushes in between the rows wherever possible, so as to reduce the vacancy as well as increase the number of bushes per unit area. Since sufficient funds are not available with the small growers for investment, Tea Board may evolve a suitable scheme so as to provide necessary incentive to the small growers in undertaking infilling and interplanting of bushes in between the rows. We also learnt that another difficulty in undertaking new planting is the non-availability of suitable planting materials in adequate quantity and at reasonable price.

Application of fertilisers

2.16 The practice of application of chemical fertilisers was found to be practically absent among the small growers of both Kottayam and Idukki. Sporadic use of natural manures such as cowdung, green leaves etc. by some of the gardens was reported. Application of nitrogenous fertilisers is essential for healthy plant growth and also to maintain the fertility of the soil. There is, therefore, need for advising the small growers about the importance of application of fertilisers, without which, with the passage of time, the yield rate, at present obtaining, may register a fall. The UPASI's advisory services are no doubt available to the small growers, but the services to small growers will have to be strengthened.

2.17 Non-availability of fertilisers and lack of necessary finance for the purchase of fertilisers were also reported. It is, therefore, suggested that small growers may form multipurpose co-operative societies through which the necessary inputs required for improvement of the gardens could be procured.

Application of pesticides and weedicides

2.18 Blister blight was reported to be a widely prevalent plant disease in both the districts. The damage to crop as a consequence of this disease was reported to be 20 to 25% in Kottayam and 10 to 15% in Idukki. None of the gardens was found applying any fungicide to control this disease. Ignorance about scientific method of controlling plant disease was reported to be the reason for non-application of fungicides. Moreover, small growers are not in a position to go in for the necessary spraying equipments. The multipurpose co-operative societies, when formed as suggested above, could also provide the necessary chemicals required for plant protection measures.

2.19 Small gardens were found to have been affected by weeds. The most common weeds were Eupatorium Oderatum (Communist Pacha) Mimosa Pudica (sensitive plant) and Biophylum sensitivum (Mukuti). For controlling the weeds, the popular practice was found to be regular sickling and hoeing twice in an year. Lack of knowledge about chemical weedicides has been reported to be the reason for non-application of chemical weedicides. Small growers in both the districts require the necessary advice and guidance in regard to application of pesticides and weedicides.

Pruning & Plucking

2.20 In order to rejuvenate the bushes so as to make them high yielding, systematic pruning is essential. Adoption of systematic pruning cycle was, however, absent among the small growers. A few gardens were reported to be adopting a pruning cycle of 5 years. Regarding plucking round, usually once a fortnight was found to be in vogue.

2.21 Small growers of both the districts were found to be ignorant about the importance

of proper methods of plucking the leaves. Adherence to coarse plucking was a common practice among the small growers. Proper training in this vital operation is essential for them which could be organised under the aegis of UPASI.

MARKETING OF THE CROP

Transportation of green leaf to factory

2.22 (**a**) Since small gardens do not have any factory of their own, their green leaf is manufactured either in the co-operative or bought-leaf factories. In any case, the green leaf is to be transported from the gardens to the nearest co-operative or bought leaf factory. Green leaf is tightly packed in gunny bags and dumped in Jeep or Bus and transported to the factory. Tight packing and rough handling would damage the green leaf thereby leading to a deterioration in the quality of processed tea. Co-operative and bought leaf factories may suitably advise the small growers about the importance of handling green leaf delicately so as to ensure the retention of the quality. They can also think of providing some incentive if the green leaf is brought to the factory garden fresh.

Mode of Sale

(**b**) As stated earlier, the green leaf of the small gardens is sold to the co-operative /bought leaf factories or to the agents of bought leaf factories. There is only one co-operative factory in Kerala viz. the Teekoy Co-operative Factory situated at Poonjar. There were 9 bought leaf factories in operation in 1974 in Kottayam and 5 in Idukki.

The village-wise position of pattern of sale by the sample gardens surveyed are given in Table below :—

Table 10

Sale of green leaf

(in % age)

District/Villages	Co-operative factory	Bought leaf factory	Agents	Total
Kottayam District				
Bharananganam	11.2	88.8	—	100.0
Melukavu	71.4	28.6	—	100.0
Poonjar South	22.9	77.1	—	100.0
Poonjar Nadubhagam & Vadekkekara	100.0	—	—	100.0
Thidanad	—	—	100.0	100.0
Kanjirapally	—	—	100.0	100.0
Mundakayam	—	—	100.0	100.0
TOTAL	41.4	17.6	41.0	100.0
Idukki District				
Vandanmedu	—	—	100.0	100.0
Pampadumpara	—	—	100.0	100.0
Pasupara	—	—	100.0	100.0
Peermade	—	—	100.0	100.0
TOTAL	—	—	100.0	100.0

It will be seen from the above table that in Poonjar, where the Teekoy Co-operative Factory is situated, 100% of the green leaf is sold to the Co-operative Factory. It may, however, be seen that 100% of the green leaf is sold to the middlemen in 3 of the villages in Kottayam, In respect of Idukki, it should be noted that in all the villages, 100% of the green leaf is sold to the middlemen and not to the bought leaf factories. This is because there is no co-operative factory in Idukki.

The pattern of sale by small growers in the different villages as shown in the above table indicates that the geographical nearness of the co-operative and bought leaf factories to the small gardens is an important factor in determining the mode of sale.

Prices realised : Presence of large number of agents

(**c**) The presence of a large number of agents who purchase the entire green leaf in Idukki and as much as 41% in Kottayam leads very often to underpayment of the produce of small growers. The small growers complained that these agents charged a discount of 10 to 12% in the gross weight of the green leaf purchased by them on the plea of excess moisture content. Whereas in the Nilgiris, another area with concentration of small growers, no such practice is prevalent and, if at all there be any, it is only during the days of heavy rainfall. The deduction in the weight of green leaf made by the agents fetch them undue margin of profits. This apart, it also appeared doubtful if these agents weighed the green leaf accurately as a comparison of the prices paid by co-operative/bought leaf factory and agents showed that they paid slightly better prices than the former. The better prices paid by the agents might be construed only as a bait to coax the small growers as obviously, the agents, who themselves sell the green leaf to the bought leaf factories, cannot pay

higher than the bought leaf factories for the same variety of leaf and if at all higher prices were paid it would have been at the cost of weight. This is brought out in the table below :

Table 11

Value realised per kg. of green leaf—1974

(Paise per kg.)

District	Co-operative Factory	Bought Leaf Factories	Agents	Total
Kottayam	49	41	50	48
Idukki	—	—	56	56

2.23 The unfair practices followed by some of the agents of bought leaf factories are also due to the fact that they largely operate in areas where either the co-operative factory or the bought leaf factories do not have any direct access to the small growers. There were 3 such villages in Kottayam while all the 4 villages in Idukki were in the same plight. Table below gives the price per kg. of green leaf realised by the small gardens villagewise and sourcewise :

Table 12

Value realised per kg. of green leaf

(Paise per kg.)

District/Villages	Co-operative factory	Bought leaf factories	Agents	Overall
Kottayam District				
Bharananganam	27	40	—	39
Melukavu	50	40	—	47
Poonjar South	56	42	—	45
Poonjar Nadubhagam & Vadekkekara	47	—	—	47
Thidanad	—	—	45	45
Kanjirapally	—	—	46	46
Mundakayam	—	—	56	56
OVERALL	49	41	50	48
Idukki District				
Vandanmedu	—	—	65	65
Pampadumpara	—	—	65	65
Pasupara	—	—	42	42
Peermade	—	—	59	59
OVERALL	—	—	56	56

It will be seen that while the average price of green leaf was 48 paise per kg. in Kottayam, it was 56 paise in Idukki. The price variation in Kottayam was from 27 to 56 paise in the case of co-operative; from 40 to 42 paise for bought leaf factories ; and 45 to 56 paise in the case of agents. In Idukki, where the quality of tea is better than in Kottayam due to higher elevation, the price paid by agents varied from 59 to 65 paise for 3 of the villages. For Pasupara village however, the price realisation was only 42 paise. On an enquiry it was gathered that the Malanad Co-operative Society formed by the small growers of Pasupara is the sole buyer of green leaf of this village and this society transports the green leaf to the co-operative tea factory at Poonjar, 40 kms. away. Apparently the price differential of Pasupara teas is due to the transportation charges deducted by the Malanad Co-operative Society. This obviously throws light on the need of small growers of not only Pasupara but other villages in Idukki to evolve a method of directly selling their green leaf to the nearest co-operative tea factory by avoiding middle men. At present there is only one Co-operative tea factory in Kerala, located at Teekoy in Poonjar (Kottayam), Commissioned in 1966, with an authorised capital of Rs. 6 lakhs and paid up capital of Rs. 2.96 lakhs and having 360 members, this co-operative factory has been mainly responsible for maintaining reasonable price of green leaf of Poonjar and neighbouring villages. In this background, it is suggested that the feasibility of opening another co-operative factory in Kottayam and a new co-operative factory in Idukki may be examined so as to enable the growers of this region to fetch reasonable prices for their produce. The bought leaf factories may be asked to keep a register containing the names and addresses of the agents from whom they purchase the green leaf and make them their "authorised agents".

Labour, cost of production and Profitability

2.24 Cost of production of the small growers in Kottayam and Idukki may be broken up into

two components viz : (a) expenditure incurred on cultivation and (b) payment made for plucking of leaf. The cost of collection of leaf and sending it to factories was found to be borne either by the factories or by the middlemen. Expenditure on cultivation mostly consists of payment to labourers for field operations. The cost of input is fairly insignificant. Figures collected on expenditure indicate that the labour charge for plucking was uniform at 20 paise per kg. in both Kottayam and Idukki. Labour charges for other field operations varied between Rs. 8 to Rs. 10 for each man day. The cost of production of green leaf amounted to 49 paise per kg. in Kottayam and 46 paise in Idukki. The slightly lower cost in Idukki is due to higher yield per hectare in this region. The position is brought out in the following table :—

Table 13

Cost of production of green leaf (1974)

(Paise per kg.)

Districts	Plucking	Cultivation	Total
Kottayam	20	29	49
Idukki	20	26	46

2.25 During the course of the survey attempts were made to collect information from the small growers as to the likely cost of planting/replanting. Figures thus collected, indicate that the cost of replantation may be around Rs. 22,000 per hectare in Kottayam and Rs. 25,000 in Idukki.

Profitability

2.26 As has already been stated, while small growers in Kottayam incur an expenditure of 49 paise per kg. of green leaf, those in Idukki incur 46 paise. Against these, actual prices realised per kg. of green leaf in Kottayam was 48 paise and in Idukki it was 56 paise. It is, therefore, seen that small growers in Kottayam incurred a marginal loss of 1 paise per kg. while those in Idukki made a profit of 10 paise per kg. (1974). Taking into account the yield based on effective area under tea in Kottayam the loss incurred per hectare on account of tea cultivation works out to Rs. 26. Obviously the main sources of income of the small growers in this District are the other crops interplanted with tea and the income from these crops might well be sufficient to compensate the loss incurred on account of tea. The following table shows the total income derived from tea and the other crops by small gardens in Kottayam and Idukki.

Table 14

Income from tea and other crops

(in Rs.)

No.	Villages	Income from Tea	Income from other crops						Net Income
			Rubber	Coconut	Arecanut	Jack	Others	Total	
1.	Bharananganam	(—) 60	215	155	—	130	—	500	440
2.	Melukavu	(+) 655	9400	655	500	—	—	10555	11210
3.	Poonjar South	(—) 2592	8450	4595	2300	—	—	15345	12753
4.	Poonjar Nadumbhagam & Vadekkekara	(—) 1630	12200	3055	1210	—	—	16465	14835
5.	Thidanad	(—) 2197	30430	11300	4070	—	—	45800	43603
6.	Kanjirapally	(+) 68	3068	—	—	—	—	3068	3136
7.	Mundakayam	(+) 2533	11800	1980	180	—	—	13960	16493
	Total Kottayam	(—) 3223	75563	21740	8260	130	—	105693	102470
8.	Vandanmedu	(+) 17578	—	—	—	—	—	—	17578
9.	Pampadumpara	(+) 2742	—	—	—	—	500	500	3242
10.	Pasupara	(+) 360	—	—	615	600	400	1615	1975
11.	Peermade	(+) 18133	—	—	300	150	1100	1550	19683
	Total Idukki	(+) 38813	—	—	915	750	2000	3665	42478

Since as much as 80% of the small gardens in Kottayam practise interplantation and their main source of income is derived from crops other than tea the scope for undertaking developmental activities in the small gardens in Kottayam seems to be somewhat limited.

2.27 The following table gives the overall profit and loss position of the gardens surveyed in both Kottayam and Idukki :—

Table 15

Profit and Loss in 1974

District	Gardens which made some profit	Gardens which incurred loss	Total
Kottayam	79	97	176
Idukki	263	13	276

CHAPTER III

MAJOR FINDINGS AND RECOMMENDATIONS

1. As much as 50% of the small gardens surveyed in Kottayam and almost the entire gardens in Idukki were found not to have been registered with the Tea Board. Registration of tea gardens in the country is essential for identification of the units and for compiling the relevant data. It is also necessary for planning any programme for the benefit of the gardens. It is suggested that the procedure for registration in respect of small growers may be further simplified. An awareness has also to be created among the small growers about the desirability of registering their gardens ; the Board's extension services have to be strengthened for this purpose. It is also suggested that all the bought leaf and co-operative factories should be registered with the Tea Board so as to provide a supplementary data base for the small growers' sector. (2.1)

2. Out of the 452 gardens surveyed only 88 gardens had taken membership in the Growers' Association. It is needless to emphasise the advantages of having a well organised association. (2.2)

3. Most of the tea bushes in Kottayam and Idukki are less than 30 years of age, Adoption of improved cultural practices and application of necessary inputs can improve the condition of the bushes. (2.5)

4. In Kottayam 6.8% and in Idukki 41.5% of the area under possession of the small growers was found to be mainly fallow which is suitable for tea cultivation. There is, therefore, more scope for extension of tea area in Idukki than in Kottayam. (2.7)

5. It has also been found that in Kottayam, where interplantation is practised in about 80% of the gardens, the yield rate is lower at 325 kgs. per hect. (made tea) as compared to 568 kgs in Idukki where interplantation is rather negligible. (2.10a)

6. Since interplantation complicates the assessment of actual yield rate, a notional area has been allocated for interplanted crops and the 'effective area' under tea has been arrived at. Using the concept of effective area, the average yield rate in Kottayam was found to be 580 kgs. of made tea per hectare as against 609 kgs. for Idukki. (2.11)

7. The average yield rate of Kerala for the organised and unorganised sector was found to be 1129 kgs. per hectare in 1974. Against this, the average yield rate of small growers in both the districts of Kottayam and Idukki was found to be around 600 kgs.—nearly half the overall yield rate of Kerala. (2.11)

8. Average yield per tea bush was found to be 0.46 kgs. of green leaf in Kottayam and 0.49 kgs. in Idukki. (2.12)

9. For assessing the vacancies gardens without interplantation have been chosen. On such an assessment it was found that the vacancy ratio was 47% in Kottayam and 21% in Idukki. The scope for improving the overall yield rate of small gardens, lies more in the non-interplanted gardens where programmes for suitable infilling may be initiated by the small growers. The Tea Board may evolve a suitable scheme so as to provide necessary

incentive to the small growers in undertaking infilling and interplantation of bushes in between the rows to reduce the vacancy as well as increase the number of bushes per unit of area. Availability of suitable planting materials in adequate quantity and at reasonable price may be arranged. (2.15)

10. Small gardens do not apply any chemical fertilisers. There is, therefore, need for popularising the use of fertilisers among the small growers. The UPASI's advisory services are, no doubt, available to the small growers, but the services to small growers will have to be strengthened. (2.16)

11. Non-availability of fertilisers and lack of necessary finance for the purchase of fertilisers were reported. It is, therefore, suggested that small growers may form multipurpose co-operative societies through which the necessary inputs required for improvement of the gardens could be procured. (2.17)

12. Blister blight was found to be the widely prevalent plant disease in both Kottayam and Idukki. The practice of applying any fungicide was absent among the small growers. The multipurpose co-operative societies, when formed, could also provide the necessary chemicals required for plant protection measures. (2.18)

13. Small gardens were found to have been affected by weeds. No chemical weedicides are applied to control weeds except sickling and hoeing. Small growers, therefore, require the necessary advice and guidance in regard to application of pesticides and weedicides. (2.19)

14. Systematic pruning cycle was absent among the small growers. (2.20)

15. Coarse plucking was a common practice among the small growers. Proper training in this vital operation is essential for them which could be organised under the aegis of U.P.A.S.I. (2.21)

16. In transporting the green leaf from the plucking point to the factory, it was found that tight packing and rough handling damage the green leaf thereby leading to a deterioration in the quality of processed tea. Co-operative/bought leaf factories may suitably advise the small growers about the importance of handling green leaf delicately so as to ensure the retention of quality. They can also think of providing some incentive if the green leaf is brought to the factory garden fresh. (2.22 a)

17. There is only one co-operative factory in Kerala. Besides 9 bought leaf factories in Kottayam and 5 in Idukki where found in operation in 1974. In Poonjar, where the Teekoy Co-operative Factory is situated, 100% of the green leaf is sold to the factory. In contrast, 100% of green leaf is sold to the middlemen in 3 of the villages of Kottayam and in all villages in Idukki. Geographical nearness of the co-operative and bought leaf factories, is an important factor in determining the mode of sale. (2.22 b)

18. The presence of a large number of agents who purchase the entire crop in Idukki and as much as 41% in Kottayam was found to be leading to underpayment for the crop by the agents who charged a discount of 10 to 12% in the gross weight of the crop on the plea of excess moisture content. The discrepancy in prices paid by agents and bought leaf/co-operative factories showed that the agents purchased the crop at a slightly higher price which could be at the cost of weight. (2.22 c)

19. The price variation in Kottayam was from 27 to 56 paise in the case of co-operative, from 40 to 42 paise per kg. for bought leaf factories ; and 45 to 56 paise in the case of

agents. In Idukki, where the quality of tea is better than in Kottayam the price paid by agents varied from 56 to 65 paise for 3 of the villages. For Pasupara village, however, the price realisation was only 42 paise. The price differential of Pasupara teas is due to the transportation charges deducted by the Malanad Co-operative Society—which transport the green leaf of the village to the co-operative factory at Poonjar, 40 kms. away. This co-operative factory has been mainly responsible for maintaining reasonable price of green leaf of Poonjar and neighbouring villages. There is, therefore, need for the small growers not only of Pasupara but other villages also to evolve a method of directly selling their green leaf to the nearest co-operative tea factory by avoiding middlemen. In this back-ground, it is suggested that the feasibility of opening another co-operative factory in Kottayam and a new co-operative factory in Idukki may be examined. The bought leaf factories may be asked to keep a register containing the names and addresses of the agents from whom they purchase the green leaf and make them their "authorised agents". (2.23)

20. The cost of production of one kg. of green leaf was found to be 49 paise in Kottayam and 46 paise in Idukki. (2.24)

21. The cost of replantation may be around Rs. 22,000 per hectare in Kottayam and Rs. 25,000 in Idukki. (2.25)

22. The small growers in Kottayam incurred a marginal loss of 1 paise per kg. of green leaf while those in Idukki made a profit of 10 paise per kg. in 1974. Based on the effective area under tea in Kottayam the loss incurred per hectare on account of tea cultivation worked out to Rs. 26. Since as much as 80% of the small gardens in Kottayam practise interplantation and their main source of income is derived from crops other than tea the scope for undertaking developmental activities in the small gardens in Kottayam seems to be somewhat limited. (2.26)