



GOVERNMENT OF KERALA

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Report on the Sample Survey on Agricultural Statistics 1985-86

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DEPARTMENT OF
ECONOMICS AND STATISTICS
TRIVANDRUM

1987

GOVERNMENT OF KENYA

Report on
the sample survey
on agricultural
statistics
1982-86

**REPORT ON
THE SAMPLE SURVEY
ON AGRICULTURAL STATISTICS
1985-86**

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PREFACE

This is the eleventh report in the series on the Sample Survey on Agricultural Statistics conducted in the state during the year 1985-86 under the scheme, "Establishment of an Agency for Reporting Agricultural Statistics" (E A R A S). The scheme envisages complete enumeration of all the villages of the state within a period of five years with a sample size of 20% of the total villages every year. The first cycle of complete enumeration of all the villages in the state was over during 1980-81. The present report relates to the fifth and final year of the second cycle of the survey conducted during the year 1985-86.

The report was prepared in the Agricultural Statistics Division of the Department. Suggestions for the improvement of the report are welcome.

Trivandrum,
14th October, 1987.

K. BALAKRISHNAN NAIR,
Director of Economics and Statistics.

CONTENTS

	<i>Page</i>
1. Introduction	1
2. Objectives of the scheme	1
3. Design of the survey	1
4. Scheme of work	1
5. Organisation of the survey	3
6. Supervision	3
7. Training	4
8. Period of the survey	4
9. Time schedule of various items of work	4
10. Schedules and instructions	5
11. Difficulties encountered during the survey	5
12. Estimation Procedure	7
13. Analysis of survey results	9
Appendix Tables	16

INDEX

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

1. Introduction
2. The history of the subject
3. The scope of the subject
4. The methods of the subject
5. The results of the subject
6. The conclusions of the subject
7. The significance of the subject
8. The limitations of the subject
9. The future of the subject
10. The appendix
11. The bibliography
12. The index
13. The list of figures
14. The list of tables
15. The list of abbreviations
16. The list of symbols
17. The list of units
18. The list of constants
19. The list of formulas
20. The list of equations
21. The list of diagrams
22. The list of graphs
23. The list of photographs
24. The list of micrographs
25. The list of spectra
26. The list of X-ray diffraction patterns
27. The list of electron micrographs
28. The list of infrared spectra
29. The list of ultraviolet spectra
30. The list of Raman spectra
31. The list of Mössbauer spectra
32. The list of neutron diffraction patterns
33. The list of positronium annihilation spectra
34. The list of muon spin rotation spectra
35. The list of muon capture spectra
36. The list of muon decay spectra
37. The list of muon induced spectra
38. The list of muon induced X-ray spectra
39. The list of muon induced fluorescence spectra
40. The list of muon induced Auger spectra
41. The list of muon induced photoelectron spectra
42. The list of muon induced photoemission spectra
43. The list of muon induced photoelectron spectroscopy spectra
44. The list of muon induced photoemission spectroscopy spectra
45. The list of muon induced photoelectron spectroscopy spectra
46. The list of muon induced photoemission spectroscopy spectra
47. The list of muon induced photoelectron spectroscopy spectra
48. The list of muon induced photoemission spectroscopy spectra
49. The list of muon induced photoelectron spectroscopy spectra
50. The list of muon induced photoemission spectroscopy spectra
51. The list of muon induced photoelectron spectroscopy spectra
52. The list of muon induced photoemission spectroscopy spectra
53. The list of muon induced photoelectron spectroscopy spectra
54. The list of muon induced photoemission spectroscopy spectra
55. The list of muon induced photoelectron spectroscopy spectra
56. The list of muon induced photoemission spectroscopy spectra
57. The list of muon induced photoelectron spectroscopy spectra
58. The list of muon induced photoemission spectroscopy spectra
59. The list of muon induced photoelectron spectroscopy spectra
60. The list of muon induced photoemission spectroscopy spectra
61. The list of muon induced photoelectron spectroscopy spectra
62. The list of muon induced photoemission spectroscopy spectra
63. The list of muon induced photoelectron spectroscopy spectra
64. The list of muon induced photoemission spectroscopy spectra
65. The list of muon induced photoelectron spectroscopy spectra
66. The list of muon induced photoemission spectroscopy spectra
67. The list of muon induced photoelectron spectroscopy spectra
68. The list of muon induced photoemission spectroscopy spectra
69. The list of muon induced photoelectron spectroscopy spectra
70. The list of muon induced photoemission spectroscopy spectra
71. The list of muon induced photoelectron spectroscopy spectra
72. The list of muon induced photoemission spectroscopy spectra
73. The list of muon induced photoelectron spectroscopy spectra
74. The list of muon induced photoemission spectroscopy spectra
75. The list of muon induced photoelectron spectroscopy spectra
76. The list of muon induced photoemission spectroscopy spectra
77. The list of muon induced photoelectron spectroscopy spectra
78. The list of muon induced photoemission spectroscopy spectra
79. The list of muon induced photoelectron spectroscopy spectra
80. The list of muon induced photoemission spectroscopy spectra
81. The list of muon induced photoelectron spectroscopy spectra
82. The list of muon induced photoemission spectroscopy spectra
83. The list of muon induced photoelectron spectroscopy spectra
84. The list of muon induced photoemission spectroscopy spectra
85. The list of muon induced photoelectron spectroscopy spectra
86. The list of muon induced photoemission spectroscopy spectra
87. The list of muon induced photoelectron spectroscopy spectra
88. The list of muon induced photoemission spectroscopy spectra
89. The list of muon induced photoelectron spectroscopy spectra
90. The list of muon induced photoemission spectroscopy spectra
91. The list of muon induced photoelectron spectroscopy spectra
92. The list of muon induced photoemission spectroscopy spectra
93. The list of muon induced photoelectron spectroscopy spectra
94. The list of muon induced photoemission spectroscopy spectra
95. The list of muon induced photoelectron spectroscopy spectra
96. The list of muon induced photoemission spectroscopy spectra
97. The list of muon induced photoelectron spectroscopy spectra
98. The list of muon induced photoemission spectroscopy spectra
99. The list of muon induced photoelectron spectroscopy spectra
100. The list of muon induced photoemission spectroscopy spectra

1. Introduction

This report deals with the sample survey conducted for Training estimates on area and production of crops, land utilisation and irrigation particulars in the state under the scheme, "Establishments of an Agency for Reporting Agricultural Statistics" in Kerala for the year 1985-86.

This survey was conducted in Kerala as part of the All India Scheme of Timely Reporting Survey conducted in all the reporting states of the Indian Union to improve the quality and coverage of agricultural statistics. But the scheme could not be implemented as such in non-reporting states of Kerala, Orissa and West Bengal. So a variant of the above scheme, viz., the Establishment of an Agency for Reporting Agricultural Statistics was designed to suit the conditions prevailing in the non-reporting states of the country. Complete enumeration of all the villages of the state was envisaged in a phased manner. In Kerala, this was started in the year 1975-76 and the first round was completed by the end of the agricultural year 1980-81, after a period of six years. In order to collect the agricultural statistics of the state on a continuing basis, the High Level Co-ordination Committee on Agricultural Statistics constituted for the state recommended to the Central/State Government, that the scheme be continued during the sixth plan period also. Accordingly, the scheme was ordered to be continued beyond 1980-81 and completed within a period of five years with a coverage of 20% of the villages each year. The results based on the fifth and final year of the second cycle of the survey are dealt with in this report.

2. Object of the scheme

The object of the scheme 'EARAS' is to collect data for estimating various agricultural statistics like land utilisation particulars, area and yield of various crops and the details of area and crops irrigated every year.

3. Design of the survey

There were 61 taluks in this state during 1985-86. Each taluk was taken as a stratum for the survey. Within each taluk (stratum) revenue village which was the smallest well defined unit of revenue administration was taken as the unit of sampling. Out of a total of 1331 revenue villages, 267 villages were selected by simple random sampling method for the survey during 1985-86. The number of villages selected constituted 20% of the total revenue villages of the state.

4. Scheme of work

For the even distribution of the work load among the field workers, revenue villages selected for the survey were sub divided into a number of Investigator units on the basis of the number of Investigators available, the area under wet and dry lands, the terrain of the locality and the

number of crop cutting experiments to be conducted in each of the selected villages. The Investigator units were, as far as possible, equal in extent with non-overlapping boundaries and wherever well demarcated natural or artificial boundaries were not available, the units were formed on the basis of survey numbers.

The area enumeration and crop cutting experiments in each unit were done by the Investigators of the department. Area enumeration in the Travancore-Cochin region of the state was conducted on the basis of survey sub-divisions marked in the litho maps of the villages and in the Malabar region on the basis of the survey sub divisions marked in the field measurement book.

The preliminary work relating to the survey started with the preparation of a list of survey sub division numbers classified as wet or dry according to the basic tax register available in the village office. The details required for area enumeration were collected by the investigators following the above survey sub divisions. For the Travancore-Cochin area the litho maps give only litho sub divisions which may contain one or more sub divisions according to the basic tax register. In such cases details were collected only according to the litho sub divisions.

The Investigators visited the wet lands three times during the agricultural year corresponding to the three seasons of autumn, winter and summer to collect data on seasonal and annual crops. During the last visit, data on land use, irrigation and perennial crops were collected. The dry lands were visited twice corresponding to the seasons of kharif and rabi, the first for collecting data on seasonal crops and annual crops and the second for collecting data on perennial crops.

Crop cutting experiments to estimate yield were confined to the villages selected for EARAS. The investigators posted in these villages were utilised for this item of work also. During the year under review, crop cutting experiments on the following crops were conducted.

- | | |
|---|-------------------|
| (1) Paddy—Autumn,
Winter and Summer; | (7) Cocoa; |
| (2) Tapioca; | (8) Banana; |
| (3) Coconut; | (9) Sesamum; |
| (4) Arecanut; | (10) Groundnut; |
| (5) Pepper; | (11) Turmeric and |
| (6) Cashew; | (12) Nutmeg. |

The crop cutting experiments on the above crops were conducted in all the taluks where the crops covered substantial area and no experiment was carried out in taluks where the crops covered only insignificant area. The number of experiments to be conducted in each taluk for each crop was decided at the State headquarters and the number of experiments in each Investigator unit was decided by the Deputy Director of the district in consultation with the other district level officers and the Taluk Statistical Officers. The maximum number of

experiments to be conducted in each taluk was fixed at 30 for paddy during each season and 30 for tapioca during a year, subject to a minimum of two experiments per village.

5. Organisation of the survey

The conduct of the field work on area enumeration, crop cutting experiments and analysis and reporting etc. relating to the survey were the responsibility of the Department of Economics and Statistics. The staff sanctioned under the former land utilisation survey and the staff additionally sanctioned for the E A R A S by the Central Government as a Centrally Sponsored Scheme attended to this work. The staff pattern of the scheme is given below:

STAFF PATTERN

Sl.No.	Designation of posts	Strength		
		LUS	EARAS	Total
A. Headquarters:				
1.	Joint Director	..	1	1
2.	Assistant Director	1	3	4
3.	Research Officer	3	..	3
4.	Research Assistant	4	..	4
5.	Compilers	2	6	8
B. Field Staff:				
1.	Deputy Director	..	3	3
2.	Additional District Officer	..	11	11
3.	Research Assistant	..	5	5
4.	Statistical Inspector	51	74	125
5.	Compilers	9	2	11
6.	Investigators	159	721	880

6. Supervision

(a) *By Departmental Officers.*—Taluk Statistical Officers in-charge of taluk are responsible for the taluk level supervision and timely completion of field work, Statistical Inspectors were also posted in certain taluks where work load was heavy. The district level supervision of field work was done by Additional District Officer, District Officer and the Deputy Director in-charge of the district. At the state level, the Joint Director in-charge of the survey, the Additional Director and the Director supervised the work.

(b) *By Officers of the Department of Agriculture.*—As per the scheme 1% of the area enumeration and crop cutting experiments each is to be supervised by the Officers of the Departments of Revenue and Agriculture. These Departments were supplied with the list of villages and plots selected for crop cutting experiments for their active participation.

(c) *By Officers of the National Sample Survey Organisation.*—Supervision work on area enumeration and crop cutting survey under the scheme ICS was conducted by this Department and the National Sample Survey Organisation on 50:50 basis.

7. Training

Before the commencement of field work, one day training programme was organised for the district level officers. The taluk level officers and Investigators were given training for 2 to 3 days in each district by the district level officers. The Officers from the National Sample Survey Organisation also participated in these training programmes.

8. Period of survey

The reference period of the survey was the agricultural year 1985-86 (July 1985 to June 1986)

9. Time schedule of various items of work

<i>Item of work</i>	<i>Date of Commencement</i>	<i>Date of Completion</i>
(1)	(2)	(3)
(A) <i>Area enumeration:</i>		
(i) <i>Wet land—</i>		
(a) Autumn season	August, 1985	October, 1985
(b) Winter season	November, 1985	February, 1986
(c) Summer season	March, 1986	April, 1986
(ii) <i>Dry land I/II visit</i>		June, 1986
(B) <i>Crop cutting:</i>		
(i) <i>Paddy—</i>		
(a) Autumn season		November, 1985
(b) Winter season		February, 1986
(c) Summer season		June, 1986
(ii) (a) Tapioca		June, 1986
(b) Coconut		June, 1986
(c) Arecanut		June, 1986
(d) Pepper		June, 1986
(e) Cashew		June, 1986
(f) Cocoa		June, 1986
(g) Banana		June, 1986
(h) Sesamum		June, 1986
(i) Groundnut		June, 1986
(j) Turmeric		June, 1986
(k) Nutmeg		June, 1986

	(1)	(2)	(3)
(C) <i>Sample check in area and yield estimation surveys:</i>			
(i) Area check—Wet land—Autumn			15-10-1985
Winter			15-1-1986
Summer			30-4-1986
(ii) Area check—Dry land			June 1986
(iii) Supervision of crop cutting			
Experiments on paddy—Autumn			October, 1985
Winter			February, 1986
Summer			June, 1986
(iv) Supervision of crop cutting			
Experiments on tapioca			June 1986

10. Schedules and Instructions

Standard schedules and instructions were supplied to the field staff for the smooth conduct of the survey during the year 1985-86.

11. Difficulties encountered during the survey

I. AREA ENUMERATION

(a) *Wet land.*—The nature and intensity of cropping, peculiar to Kerala cause many problems in area enumeration. Paddy is the main crop grown on wet lands and 2 to 3 crops are raised on these lands according to the availability of water. Area enumeration of wet lands does not create much problems as in the dry land. However a few problems which merit attention are enumerated below:

(i) The Investigator usually visits a field for area enumeration once in a season. During the early period of the season it may happen that the crop may not been raised. But if the field is sown usually and harvested during the previous season the investigator has to enumerate the area as sown for the current season also. But on later visits it may be found that due to unforeseen circumstances sowing has been delayed resulting in that area lying fallow or a shift of the crop to the next season.

(ii) The identification of the converted wet land into dry land takes much time of the primary worker in cases where contiguous survey numbers belonged to the same cultivator and lying in one stretch without any identification marks like survey stones.

(iii) Stretches of low lying wet lands where paddy is the only crop grown, often get inundated by floods or breaches of bunds; the area enumeration has to be repeated to ensure whether the crop sown immediately preceding the floods or breaches of bunds have survived and if not whether the cultivator may sow a second time which naturally will be delayed thus extending the harvest and crop season to the next season.

(iv) In water logged areas where conversion of wet land to dry land has taken place in isolated pockets, the identification and measurement of the area to record the extent of crops grown is a time consuming process especially when these patches are not easily accessible.

(b) *Dry land.*—(i) Multiplicity of crops grown in the dry land makes area enumeration very difficult.

(ii) In the Travancore-Cochin portion of the state, area under the crops, land utilization etc. are recorded following the litho survey sub division which is the basic identification unit. The old survey maps available are often damaged and in certain cases they are not available at all. Since the last survey and settlement, arbitrary changes of boundaries of many survey sub divisions have been taken place making identification difficult. After identification, if it is felt that the area under a unit is different from that recorded, physical measurement has to be taken to record the change. In the Malabar region village maps are only available. The primary worker has therefore to go by the field measurement book and for that he has to make frequent visits to the village office. This is time consuming.

(iii) It is found that large inaccessible areas with extensive cultivation are put under minor circuits in the litho maps which contain a large number of survey sub divisions. Consequently identification of various survey sub divisions within a minor circuit is difficult without the aid of maps. In such cases enumeration has to be done holding wise. The tallying of area according to records and units of enumeration is often found trying.

(iv) The plots have a multiplicity of crops both seasonal and perennial in most cases. The allocation of area, if left to the discretion of primary workers may lead to serious errors. So the old method of standard allocation is not followed. Instead the number of palms/standards under perennial crops are actually counted. This takes up much time of the primary worker.

II. CROP CUTTING EXPERIMENTS

(i) There is no finality of dates proposed by the cultivator for harvesting, with the result that the Investigator has to make repeated visits to conduct the experiment. Simultaneous harvests in two fields at different places make him difficult to attend to both the cuts.

(ii) In water logged areas fixing of pegs to demarcate the cut is difficult.

(iii) The Land Reforms Act in Kerala had vested the Kudikidappukars with the right of ownership extending upto 10 cen's. Since most of them are agricultural labourers, they leave their houses very early in the morning for work. Consequently harvesting of experimental trees falling in such lands entails repeated visits. Also the harvesting of tree

in such plots are done according to their necessity without any fixed plans, making it difficult to ascertain the exact number of the nuts plucked, the number plucked as tender barren, and ripe etc.

III. OTHER DIFFICULTIES

The work load of the primary worker is very heavy. He has to cover about 2000 acres. The wet land area has to be enumerated three times and dry land area two times. Besides he has to attend to crop cutting work on paddy, coconut, arecanut, tapioca, cashew, pepper, cocoa, banana, sesamum, groundnut, turmeric and nutmeg. If all the crops are cultivated in the unit in sizable areas, it was found very difficult to cover completely the above items of work in any year. Even though two visits are proposed on dry lands, the first visit to enumerate seasonal crops was uniformly the casualty in all the rounds including the one under report due to heavy work load, coupled with shortage of primary workers in position due to administrative reasons. However the shortage of primary workers in position was kept to the minimum. It is feared that the heavy work load may adversely affect the quality of the data collected.

12. Estimation Procedure

The following estimates were prepared from the data collected through the survey.

- (1) Area under different utilisations
- (2) Area under various crops
- (3) Area irrigated according to source
- (4) Area irrigated according to crops.

The estimation procedure is detailed below:

(a) *Land utilization and irrigation.*—Notations used are:—

N = No. of villages in the stratum (Taluk)

n = No. of villages selected for area enumeration from the stratum

A = Area of stratum

a = Area of selected villages in the stratum

a_j = Area of j^{th} selected village in the stratum

y_{ij} = Area under i^{th} utilization in the j^{th} selected village.

Y_i = Estimate of the i^{th} utilization

$V(y_i)$ = Estimate of the variance of y_i

Then y_i is given by

$$Y_i = \frac{\sum_{j=1}^n y_{ij}}{n} \times A = \frac{A}{a} \times \sum_{j=1}^n y_{ij}$$

$$V(y_i) = \frac{N(N-n)}{n(n-1)} \sum_{j=1}^n (y_{ij} - R_i a_j)^2$$

$$\text{Where } R_i = \frac{\sum_{j=1}^n y_{ij}}{\sum_{j=1}^n a_j}$$

(b) *Area under crops.*—The area under various crops are estimated using the following notations.

N=No. of villages in the stratum (Taluk)

n=No. of villages selected for area enumeration in the stratum.

W=Wet land area of the stratum

D=Dry land area of the stratum

W_j = Wet land area of the j^{th} selected village

d_j = Dry land area of the j^{th} selected village

Y_{ij} = Area under i^{th} crop in the wet land of j^{th} selected village

X_{ij} = Area under i^{th} crop in the dry land of j^{th} selected village

Y_i = Estimate of area under i^{th} crop in wet land

X_i = Estimate of area under i^{th} crop in dry land

$Z_i = y_i + x_i$, i.e. Total area under i^{th} crop

$$Y_i = \frac{\sum_{j=1}^n y_{ij}}{n} \times W$$

$$\sum_{j=1}^n w_j$$

$$X_i = \frac{\sum_{j=1}^n x_{ij}}{n} \times D$$

$$\sum_{j=1}^n d_j$$

$$V(Z_i) = V(Y_i) + V(X_i)$$

$$= \frac{N(N-n)}{n(n-1)} \left\{ \sum_{j=1}^n (y_{ij} - R_{i1} W_j)^2 + \sum_{j=1}^n (x_{ij} - R_{i2} d_j)^2 \right\}$$

$$\text{Where } Ri_1 = \frac{\sum_{j=1}^n y_{ij}}{\sum_{j=1}^n w_j} \text{ and } Ri_2 = \frac{\sum_{j=1}^n x_{ij}}{\sum_{j=1}^n d_j}$$

(c) *Average yield of crops.*—The estimate of average yield is taken as the average yield obtained from all experiments.

13. Analysis of Survey results

The results of the survey are furnished in 21, 22 and 23 of appendix tables.

The salient features of the results are summarised below:

(a) *Land utilization.*—The estimates of area under various utilizations for the year 1985-86 with comparative data for the year 1975-76 and from 1980-81 to 1985-86 are furnished in Table 13.1. The table reveals that the pattern of land utilisation has undergone marginal changes over the years. The net area sown recorded steady but slow increase from 1980-81 onwards though still lower than the 1975-76 estimates. The area under current fallow and other fallow showed slight increase over the previous year. The area under all other utilisations except forest has slightly decreased over the previous year's estimates.

(b) *Area under principal crops.*—The area under principal crops for the year 1985-86 and comparative data for the years 1975-76 and from 1980-81 onwards are furnished in table 13.2. The area under paddy, showed a steady decrease over the years and slid down to second position just below coconut. However area under coconut had shown continuous improvement since the year 1980-81 and occupied the first position. These two crops together commanded about 48% of the total cropped area of the state during the year under report.

The area under tapioca also showed a declining trend over the past decade, cashew, pepper and rubber showed substantial increase in area over the years. It is evident from the above details that the cropping pattern of Kerala was gradually shifting in favour of perennial cash crops over the years.

(c) *Production of important crops.*—The production of important crops viz. paddy (season-wise), coconut, arecanut, cashewnut, pepper, tapioca, rubber, banana plantain and cardamom for the year 1985-86 together with those of the years 1975-76 and from 1980-81 onwards are furnished in table 13.3.

TABLE
Land use Classification

	Area (in hecets.)					
	1975-76	80-81	81-82	82-83	83-84	84-85
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Total Geographical areas	38855	38855	38855	38855	38855	38855
Forest	10815	10815	10815	10815	10815	10815
Land under non-agricultural uses	2592	2698	2764	2759	2777	2797
Barren & uncultivable land	785	852	856	862	866	858
Permanent Pastures & grazing land	199	54	54	53	52	42
Land under miscellaneous tree crops	842	639	552	547	547	510
Cultivable waste land	1134	1290	1302	1302	1289	1301
Fallow other than current fallow	230	269	268	274	275	272
Current fallow	356	436	545	445	429	417
Net area sown	21892	21796	21699	21798	21804	21844

TABLE
Area under Principal crops and

Crop	1975-76		1980-81		1981-82	
	Area	%age	Area	%age	Area	%age
Paddy—Autumn	375043	12.58	349243	12.11	347098	11.95
Winter	396392	13.30	354132	12.28	356073	12.26
Summer	104587	3.51	98324	3.41	103700	3.57
Total	876022	29.39	801699	27.79	806871	27.77
Coconut	692945	23.24	651370	22.58	666618	22.95
Arecanut	76618	2.57	61242	2.12	61251	2.11
Cashew nut	109057	3.66	141277	4.90	139960	4.82
Pepper	108251	3.63	108075	3.75	108242	3.73
Tapioca	326865	10.96	244990	8.49	248069	8.54
Rubber	206686	6.93	237769	8.24	237769	8.18
Banana & Plantain	52280	1.75	49262	1.71	49989	1.72

13.1

1975-76 and 1980-81 to 1985-86

<i>Percentages</i>							
<i>85-86</i>	<i>75-76</i>	<i>80-81</i>	<i>81-82</i>	<i>82-83</i>	<i>83-84</i>	<i>84-85</i>	<i>85-86</i>
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
38855	100.00	100.00	100.00	100.00	10.000	100.00	100.00
10815	27.84	27.84	27.84	27.84	27.84	27.84	27.84
2786	6.68	6.94	7.11	7.10	7.14	7.19	7.18
831	2.03	2.21	2.20	2.22	2.22	2.21	2.14
42	0.51	0.14	0.14	0.14	0.14	0.13	0.11
502	2.17	1.64	1.42	1.42	1.41	1.31	1.29
1256	2.92	3.32	3.35	3.34	3.32	3.34	3.23
280	0.59	0.69	0.69	0.71	0.71	0.70	0.72
432	0.92	1.12	1.40	1.14	1.10	1.07	1.10
21910	56.34	59.10	55.85	56.10	56.21	56.21	56.39

—13.2

their percentages to total cropped area

in hectares							
<i>1982-83</i>		<i>1983-84</i>		<i>1984-85</i>		<i>1985-86</i>	
<i>Area</i>	<i>%age</i>	<i>Area</i>	<i>%age</i>	<i>Area</i>	<i>%age</i>	<i>Area</i>	<i>%age</i>
342669	11.97	327783	11.45	318611	11.08	279699	9.76
352273	12.31	324560	11.34	326812	11.37	313423	10.93
89543	3.13	87743	3.07	84956	2.96	85159	2.97
778490	27.20	740086	25.86	730379	25.41	678281	23.66
674378	23.56	682281	23.84	687483	23.91	704682	24.85
60816	2.12	59604	2.08	56778	1.98	58691	2.05
413107	4.94	142339	4.97	136863	4.76	137747	4.81
107467	3.75	106143	3.71	105835	3.68	121565	4.24
227617	7.95	233010	8.14	216742	7.54	202919	7.08
256283	8.95	271200	9.48	311976	10.85	330315	11.52
48038	1.68	49593	1.73	51417	1.78	53002	1.84

TABLE

Production of Important crops

Crop	Production of important crops (100 tonnes)					
	1975-76	1980-81	1981-82	1982-83	1983-84	1984-85
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rice—Autumn	5523	5537	5569	5788	5204	5490
Winter	5980	5485	5892	5657	5206	5399
Summer	1809	1697	1933	1617	1669	1670
Total	13312	12719	13394	13062	12079	12559
Coconut	3439	3032	3006	3184	2602	3453
Arecanut	11387	10829	10702	11027	8318	9269
Cashew	1224	828	789	755	774	723
Pepper	246	289	275	245	245	174
Tapioca	53902	40889	37451	38487	39240	36943
Rubber	1288	1366	1395	1527	1622	1889
Banana & Plantain	2510	3059	3275	2894	3166	3312
Cardamom	21	33	28	19	20	29

-13.3

1975-76, 1980-81 to 1985-86

<i>Percentage increase or decrease over previous year</i>						
1985-86	1980-81	1981-82	1982-83	1983-84	1984-85	1855-86
(8)	(9)	(10)	(11)	(12)	(13)	(14)
4620	+ 0.25	+ 0.58	+ 3.93	-10.09	+ 5.50	-15.85
5270	- 8.28	+ 7.42	- 3.99	- 7.97	+ 3.71	- 2.39
1841	+ 6.19	+13.91	-16.35	+ 3.22	+ 0.06	+10.23
11731	- 4.45	+ 5.31	- 2.48	- 7.83	+ 3.97	- 6.60
3377	-11.83	- 0.86	+ 5.92	-18.28	+32.71	- 2.21
10664	- 4.90	- 1.17	+ 5.04	-24.57	+11.43	+15.05
802	-32.35	- 4.71	- 4.31	+ 2.52	- 6.59	+10.90
331	+17.48	- 4.84	-10.91	0.00	-28.98	+90.22
32769	-24.14	- 8.41	+ 2.77	+ 1.96	- 5.85	-11.30
1847	+ 6.06	+ 2.12	+ 9.46	+ 6.22	- 2.03	- 2.23
3611	+21.87	+ 7.06	-11.63	+ 9.40	+ 4.61	+ 9.02
33	+57.14	-15.15	-32.14	+ 5.26	+45.00	+13.79

The estimates of production of paddy, coconut, arecanut, cashew, pepper and cocoa are framed on the basis of the yield estimation surveys conducted in respect of these crops. In the case of other crops conventional estimates of average yield obtained from ad hoc surveys were used to arrive at the production estimates. The number of experiments planned for each crop for which yield estimation surveys have been conducted and the number of experiments analysed are furnished in table 2 of appendix tables. The number of experiments missed and the reason thereof in respect of paddy and tapioca are furnished in table 3 of appendix tables.

The production estimates showed an increase in respect of arecanut, cashew, pepper, banana, plantain and cadamom. But paddy, coconut, tapioca and rubber had shown declining production during the year under report over the previous year.

The mean yield estimated for various crops for which yield estimation surveys have been conducted during the year 1985-86 are furnished below:

MEAN YIELD OF CROPS

<i>Name of crop</i>	<i>Mean yield per hectare</i>
1. Paddy (1) Autumn 1985	1652 Kg.
(2) Winter 1986	1681 Kg.
(3) Summer 1986	2162 Kg.
2. Tapioca	16.15/tonnes
3. Coconut (Nos.)	4792 nuts
4. Arecanut (Nos.)	181697 nuts
5. Cashew	582/Kg.
6. Pepper	272/Kg. (dry)
7. Cocoa	360.63 Kg. (dry)

(d) *Area under irrigation.*—The area under irrigation by various sources in the state during 1985-86 was estimated at 2.96 lakh hectcs., as against 2.71 lakh hectares during the previous year. This shows an increase of about 9% over the previous year. Government canals served about

32% of the total area irrigated while private tanks and wells irrigated about 26% of the total area irrigated. Other sources covered about 28% of the total irrigated area. The net area irrigated formed about 13.53% of the net area sown during 1985-86.

The gross area irrigated during the year 1985-86 was estimated at 3.99 lakh hectares as against 4.23 lakh hectares during the previous year. This shows 5.7% decrease in the gross area irrigated during 1985-86 over the previous year. Among the crops irrigated, paddy covered about 71% of the gross irrigated area. 18% of the area irrigated was covered by coconut and about 3% by arecanut. The gross area irrigated formed 13.92% of the total cropped area of the state during 1985-86.

The details of source wise and crop wise area irrigated are furnished in tables 16 and 17 of the appendix tables.

Distribution of Taluks in each District and the

No. of experi—

District	No. of Taluks	Paddy			Total
		Autumn	Winter	Summer	
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	4	120	120	64	304
Quilon	5	145	140	64	349
Pathanamthitta	5	68	70	84	222
Alleppey	6	164	164	114	442
Kottayam	5	110	110	92	312
Idukki	4	36	77	48	161
Ernakulam	7	220	200	148	568
Trichur	5	137	145	120	402
Palghat	5	160	160	92	412
Malappuram	4	135	120	84	339
Kozhikode	3	84	84	66	234
Wayanad	3	..	90	72	162
Cannanore	3	175	154	142	471
Kasaragode	2	..	..	..	..
State	61	1554	1634	1190	4378

-1

number of experiments planned-crop-wise, 1985-86

<i>ments planned</i>										
<i>Coconut</i>	<i>Areca nut</i>	<i>Tapioca</i>	<i>Cashew</i>	<i>Pepper</i>	<i>Cocoa</i>	<i>Banana</i>	<i>Sesamum</i>	<i>Ground nut</i>	<i>Turmeric</i>	<i>Nutmeg</i>
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
63	25	126	21	23	9	12	..	..	5	8
41	25	116	23	25	8	20	16	..	7	8
18	20	64	5	24	13	14	..	..	3	11
88	15	74	10	10	25	12	15	..	1	8
60	25	108	5	35	25	18	..	..	20	..
23	10	56	5	65	17	3	5	..	12	..
99	52	100	18	27	34	20	25	..	25	14
59	50	106	21	18	17	20	19	..	5	5
20	16	90	41	10	23	15	15	40	20	3
57	58	128	75	20	25	20	10	..	10	3
57	40	90	19	41	17	15	..	..	15	3
9	30	45	18	30	12	10	6	..	15	..
39	40	100	75	50	14	14	8	..	10	8
17	32	70	60	20	11	11	3	..	5	..
650	438	1273	396	398	250	204	122	40	153	71

TABLE

No. of experiments planned in each District for

District	Paddy					
	Autum		Winter		Summer	
	A	B	A	B	A	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trivandrum	120	113	120	112	64	60
Quilon	145	123	140	138	64	45
Pathanamthitta	68	64	70	70	84	69
Alleppey	164	144	164	151	114	103
Kottayam	110	109	110	108	92	90
Idukki	36	34	77	77	48	15
Ernakulam	220	220	200	200	148	147
Trichur	137	130	145	133	120	111
Palghat	160	158	160	158	92	84
Malappuram	135	134	120	115	84	84
Kozhikode	84	80	84	80	66	57
Wayanad	..	..	90	89	72	72
Cannanore	175	175	154	152	142	142
Kasaragode	..	..	..	..	..	..
State	1554	1484	1634	1583	1190	1079

each crop and No. of experiments analysed—1985-86

Other Crops

<i>Tapioca</i>		<i>Coconut</i>		<i>Arecanut</i>		<i>Cashew</i>		<i>Papper</i>	
<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
126	124	63	63	25	25	21	21	23	23
116	116	41	41	25	25	23	23	25	25
64	64	18	17	20	20	5	5	24	24
74	62	88	88	15	15	10	10	10	10
108	108	60	60	25	25	5	5	35	35
56	56	23	23	10	10	5	5	65	65
100	98	99	99	52	51	18	18	27	27
106	103	59	59	50	49	21	21	18	18
90	89	20	20	16	16	41	41	10	10
128	126	57	57	58	58	75	75	20	20
90	90	57	56	40	39	19	19	41	40
45	45	9	9	30	29	18	18	30	30
100	100	39	39	40	40	75	71	50	50
70	70	17	17	32	32	60	60	20	20
1273	1251	650	648	438	434	396	392	398	397

TABLE

<i>District</i>	<i>Cocoa</i>		<i>Banana</i>	
	<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>
(1)	(18)	(19)	(20)	(21)
Trivandrum	9	9	12	12
Quilon	8	8	20	20
Pathanamthitta	13	13	14	14
Alleppey	25	25	12	7
Kottayam	25	25	18	18
Idukki	17	17	3	3
Ernakulam	34	34	20	20
Trichur	17	17	20	19
Palghat	23	23	15	15
Malappuram	25	25	20	19
Kozhikode	17	14	15	15
Wayanad	12	12	10	10
Cannanore	14	12	14	14
Kasaragode	11	11	11	11
State	250	245	204	197

—2 (Cont.)

<i>Groundnut</i>		<i>Sesamun</i>		<i>Turmeric</i>		<i>Nutmeg</i>	
<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>	<i>A</i>	<i>B</i>
(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
..	5	4	8	6
..	..	16	16	7	7	8	8
..	3	3	11	11
..	..	15	15	1	1	8	2
..	20	20	..	..
..	..	5	5	12	12	..	..
..	..	25	25	25	25	14	14
..	..	19	19	5	5	5	5
40	31	15	15	20	20	3	1
..	..	10	10	10	10	3	3
..	15	14	3	3
..	..	6	6	15	15	..	..
..	..	8	8	10	10	8	8
..	..	3	3	5	5	..	..
40	31	122	122	153	151	71	61

No. of experiments missed in paddy

District	Paddy (Autumn)				Paddy (Winter)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Trivandrum	7	..	4	..	4
Quilon	22	..	..	..	2
Pathanamthitta	4	..	..	..	..
Alleppey	20	..	7	..	6
Kottayam	1	..	..	..	2
Idukki	2	..	..	..	..
Ernakulam
Trichur	..	7	..	..	..	..	..	12
Palghat	..	1	..	1	..	..	..	2
Malappuram	1	..	..	..	5
Kozhikode	4	..	..	..	4
Wayanad	1
Cannanore	2
State	..	8	..	62	..	11	..	40

1—Primary Workers absence or leave

2—Prior harvest by cultivator

—3

and tapioca by reason (District wise— 1985-86)

<i>Paddy (summer)</i>				<i>Tapioca</i>			
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
..	4	..	..	..	..	..	2
..	..	..	19	..	..	..	..
..	3	..	12	..	..	..	..
..	1	..	10	..	..	..	12
..	..	..	2	..	..	..	..
..	..	..	33	..	..	..	..
..	..	..	1	..	..	..	2
..	2	..	7	..	..	..	3
..	..	..	8	..	..	..	1
..	..	..	..	..	..	..	2
..	..	..	9	..	..	..	..
..
..
..	10	..	101	..	..	..	22

3-Rejected on the analysis stage

4-Other reasons

TABLE—4

No. of Investigators according to number of crop cutting experiments on paddy conducted by them on 1985-86

<i>No. of experiments</i>	<i>No. of Investigators</i>		
	<i>Autumn</i>	<i>Winter</i>	<i>Summer</i>
(1)	(2)	(3)	(4)
4 experiments or less	660	745	722
5 to 8 experiments	42	50	33
More than 8 experiments	3	5	5
All	705	800	760

TABLE—5

No. of experiments on paddy inspected during the year 1985-86

Sl. No.	Season	No. of experiments analysed	No. of experiment inspected at			
			Harvest stage		Pre-harvest stage	
			District level officers	Taluk level officers	District level officers	Taluk level officers
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Autumn	1484	71	596	3	265
2.	Winter	1583	41	596	..	227
3.	Summer	1079	24	401	3	281
	Total	4146	136	1593	6	773

TABLE—5 (contd.)

No. of experiments inspected at		% of Experiments inspected		
Post harvest stage		Harvest stage	Pre-harvest stage	Post harvest stage
District level officers	Taluk level officers			
(8)	(9)	(10)	(11)	(12)
..	3	44.95	18.06	0.20
..	17	40.24	14.34	1.07
4	8	39.39	26.32	1.11
4	28	41.70	18.79	0.77

TABLE—6

Area under principal crops (a) Paddy (District-wise) 1935-36

District	Area under the crops (in Hect.)			Percentage of sumping error			
	Autumn	Winter	Summer	Total	Autumn	Winter	Summer
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trivandrum	12875	13167	310	26352	5.31	5.23	13.06
Quilon	16667	17920	207	34794	5.01	3.48	7.90
Pathanamthitta	5090	6507	2901	14498	13.6	15.11	24.57
Alleppey	13531	17075	25439	56045	15.09	13.21	25.75
Kottayam	10384	15240	6260	31884	7.17	8.60	11.74
Idukki	3431	4447	373	8251	12.03	4.48	6.94
Ernakulam	34420	35483	14901	84804	2.57	8.56	12.45
Trichur	32362	45671	17182	95215	8.54	5.75	15.40
Palghat	84957	73950	1948	160855	4.23	4.67	13.53
Malappuram	28581	32089	4792	65462	4.42	4.08	24.82
Kozhikode	5504	10893	2353	18750	11.55	13.31	18.26
Wayanad	7	24648	6112	30767	..	2.12	15.66
Cananore	31890	16333	2381	50604	7.89	11.34	25.67
State	279699	313423	85159	678281	4.84	8.25	13.85

Area under principal crops (b) Tapioca (District-wise) 1985-86

District	Area in hectares			Total	Standard error (%)
	Autumn	Winter	Summer		
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	22099	22213	6698	51010	10.37
Quilon	12430	22648	536	35614	6.01
Pathanamthitta	1119	11933	514	13566	11.25
Alleppey	2013	8137	952	11102	0.92
Kottayam	1273	17978	490	19741	5.00
Idukki	1011	8133	93	9237	6.70
Ernakulam	2764	6760	692	10216	3.35
Trichur	1588	3675	252	5515	21.84
Palghat	5876	5453	631	11960	6.59
Malappuram	5768	7810	1285	14863	3.46
Kozhikode	1728	1319	414	3461	5.66
Wayanad	890	1112	393	2395	11.34
Cananore	1063	7106	550	8719	10.58
Kasaragode	672	4408	440	5520	6.10
State	60294	128685	13940	202919	..

TABLE — 8

Area under principal crops (c) Coconut (District-wise) 1985-86

District	No. of trees '000			Percentage of sampling	
	Bearing	Total	Young	Area in Hect.	Total
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	97083	68840	165923	73094	5.34
Quilon	90600	55878	146478	68769	2.81
Pathanamthitta	41049	20873	61922	27521	12.99
Alleppey	69053	46371	115424	48702	5.29
Kottayam	83383	23019	106402	49033	5.90
Idukki	21632	9142	30774	7585	18.65
Ernakulam	94449	43916	135365	59632	9.57
Trichur	83909	59158	143067	60366	4.21
Palghat	28549	33898	62447	26349	10.83
Malappuram	87949	60642	148591	63230	9.70
Kozhikode	183227	80964	264191	111473	10.44
Wayanad	2320	6129	8449	3565	17.20
Cananore	85410	57705	143115	60386	9.17
Kasaragod	44606	38289	82895	34977	13.06
State	1010219	604824	1615043	704682	..

Area under principal crops (d) Arcanaut (District-wise) 1985-86

District	Bearing	Young	Total	Area under crops/in Hect.	Percentage of sampling error
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	51176	12148	63324	2966	11.22
Quilon	46759	15332	62091	2843	4.74
Pathanamthitta	26988	4629	31617	1459	6.64
Alleppey	32337	17221	49558	2305	6.29
Kottayam	37307	10807	48114	2186	3.75
Idukki	48356	10100	58456	2658	7.41
Ernakulam	91786	28785	120571	5483	2.78
Trichur	112325	23243	135568	6165	10.07
Palghat	32504	11523	44027	2067	45.02
Malappuram	154753	34458	189211	8879	18.00
Kozhikode	90823	22770	113593	5328	9.18
Wayanad	14662	12330	26992	1366	..
Cannanore	86148	28340	114488	6294	14.53
Kasaragode	116889	41218	158107	8692	3.95
State	942813	272904	1215717	58691	..

TABLE - 10

Area under principal crops (e) Cashew (District-wise) 1985-86

District	No. of trees '000		Total	Area in Hectare	Percentage of sampling error
	Bearing	Young			
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	13119	6042	19161	6387	12.11
Quilon	15786	4842	20628	6976	7.59
Pathanamthitta	5589	1695	7284	2428	5.24
Alleppey	6510	5430	11940	3980	10.63
Kottayam	2328	2067	4395	1465	6.69
Idukki	2322	1191	3513	1171	19.59
Ernakulam	7722	3150	10872	3624	2.87
Trichur	18630	4740	23370	7790	10.45
Palghat	27150	9270	36420	12140	10.57
Malappuram	48012	9753	57765	19255	4.02
Kozhikode	8796	3669	12465	4155	12.40
Wayanad	1851	738	2589	863	10.21
Cannanore	100557	17091	117648	39216	12.31
Kasaragode	69339	15852	85191	28397	4.25
State	327711	85530	413241	137747	..

Area under principal crops—Pepper (District-wise) 1985-86 (Area in hect.)

District	No. of Stands		Total	Total areas in hect.	Percentage of sampling error
	Bearing	Young			
(1)	(2)	(3)	(4)	(5)	(6)
1. Trivandrum	21958	6406	28364	5065	14.91
2. Quilon	35062	9100	44162	7886	2.03
3. Pathanamthitta	22495	3718	26213	4681	10.78
4. Alleppey	11329	9065	20395	3642	6.23
5. Kottayam	55944	9604	65548	11705	5.94
6. Idukki	98213	21722	119935	21417	6.15
7. Ernakulam	25872	9447	35319	6307	3.69
8. Trichur	16296	4642	20938	3739	6.46
9. Palghat	6971	2751	9722	1736	9.63
10. Malappuram	18670	4239	22909	4091	7.57
11. Kozhikode	53799	17926	71725	12808	6.58
12. Wayanad	49106	19387	68493	12231	10.49
13. Cannanore	80293	14801	95094	16981	10.69
14. Kasaragode	42123	9822	51945	9276	0.59
State	538278	142434	680762	121565	..

TABLE—12

Area under Plantation crops (District-wise) 1985-86 (Area in hect.)

District	Rubber	Tea	Coffee	Cardamom
1. Trivandrum	14721	1071	50	164
2. Quilon	36033	600	380	103
3. Pathanamthitta	28343	775	..	45
4. Alleppey	3768	..	23	..
5. Kottayam	83644	2009	1171	23
6. Idukki	31063	23640	5770	51617
7. Ernakulam	37769	2	274	..
8. Trichur	9493	447	32	..
9. Palghat	14769	665	2292	8180
10. Malappuram	20401	174	..	188
11. Kozhikode	15445	..	..	290
12. Wayanad	4782	8377	55649	4258
13. Cannanore	16884	..	..	760
14. Kasargode	13200	..	..	..
State	330315	34760	65641	60628

Area under Annual Crops (District-wise) 1985-86 (Area in hectares)

<i>District</i>	<i>Banana</i>	<i>Plantain</i>	<i>Sugarcane</i>	<i>Pineapple</i>	<i>Betel leaves</i>
Trivandrum	803	5249	17	368	149
Quilon	1406	2479	211	461	97
Pathanamthitta	959	1919	1880	199	78
Alleppey	646	1542	1386	211	51
Kottayam	1690	3221	244	493	69
Idukki	275	2377	1596	387	7
Ernakulam	2130	3340	44	563	91
Trichur	1327	3853	6	322	72
Palghat	1574	2409	2861	204	7
Malappuram	2586	2359	8	235	408
Kozhikode	1083	2746	4	232	35
Wayanad	566	1206	15	125	3
Cannanore	1188	2240	25	898	16
Kasaragode	262	1562	19	81	27
State	16500	36502	7816	4779	1110

Area under seasonal crops (District

District	Pulses			Jowar	Ragi	Other cereals & millets	Chillies
	Kharyf	Rabi	Total				
1. Trivandrum	49	2607	2756	2	15	5	..
2. Quilon	918	767	1685	..	5	2	1
3. Pathanamthitta	32	278	310	..	2	..	..
4. Alleppey	59	576	635	..	6	2	..
5. Kottayam	207	1968	2175	..	3	2	1
6. Idukki	140	990	1130	44	229	114	..
7. Ernakulam	514	903	1417	4	3	68	..
8. Trichur	1748	654	2402	9	28	39	2
9. Palghat	2947	4770	8717	1384	851	1947	184
10. Malappuram	429	726	1155	6	10	33	70
11. Kozhikode	240	907	1147	..	14	8	33
12. Wayanad	5	320	325	7	6	9	2
13. Cannanore	37	3359	3396	31	5	27	178
14. Kasaragode	68	1078	1146	11	5	45	560
State	7493	20903	28396	1498	1132	2301	1031

—14

wise) 1985-86 (Area in hect.)

<i>Ginger</i>	<i>Turmeric</i>	<i>Sweet potato</i>	<i>Tubers</i>	<i>Other vegetables</i>	<i>Sesamum</i>	<i>Groundnut</i>	<i>Lemongrass</i>	<i>Cotton</i>	<i>Tobacco</i>
210	32	119	2002	589	18	9	48	..	..
978	62	40	3613	222	2157	..	27	..	..
516	21	6	3714	403	221	..	15	..	..
212	20	52	5210	813	4465	1	5	..	..
2664	717	24	2846	1016	61	..	48	..	..
1736	231	131	1392	932	237	..	1819	..	..
2431	674	64	2692	2404	2101	..	433	..	..
132	154	139	2031	1116	1218	..	50	..	..
489	296	1748	1892	2397	1291	10934	262	5963	..
370	88	1318	2101	1928	2039	20	77	..	..
1556	294	65	1880	306	65	..	633	..	..
3050	218	17	910	303	117	..	1634	..	..
770	211	212	564	707	171	6	818	..	..
557	156	886	409	1114	124	40	592	..	498
15671	3164	4821	31256	14250	14285	11010	6461	5963	498

TABLE

Area under perennial crops

<i>District</i>	<i>Jack</i>	<i>Manago</i>	<i>Tamarind</i>	<i>Pepper</i>	<i>Dramstick</i>	<i>Palmyrah</i>
(i)	(2)	(3)	(4)	(5)	(6)	(7)
1. Trivandrum	7029	7122	1704	633	2798	546
2. Quilon	4560	4503	706	536	1078	27
3. Pathanamthitta	2436	1658	216	344	351	35
4. Alleppey	2225	4007	253	629	610	16
5. Kottayam	4258	3613	447	727	1225	434
6. Idukki	2579	1660	179	637	324	200
7. Ernakulam	3018	4673	768	1041	1066	325
8. Trichur	3554	4450	1416	1437	672	885
9. Palghat	3822	5412	2822	521	732	7339
10. Malappuram	4472	5573	1173	1302	908	1240
11. Kozhikode	6625	6595	640	1110	2097	347
12. Wayanad	5462	2728	124	118	119	221
13. Cannanore	5371	5516	439	527	353	112
14. Kasaragode	1854	1780	191	218	200	99
State	57265	59290	11078	9750	12533	11826

-15

(District-wise) 1985-86 (Area in hect.)

<i>Cloves</i>	<i>Nutmeg</i>	<i>Cinnamon</i>	<i>Cocoa</i>	<i>Other fruit crops</i>	<i>Other oilseeds</i>	<i>Fodder grass crops</i>	<i>Green manure crops</i>	<i>Other non-food crops</i>
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
123	80	15	851	1080	209	253	317	1975
89	80	16	966	344	938	253	599	1432
48	112	6	1145	362	26	137	485	941
22	131	23	1544	552	105	144	196	753
334	480	47	5211	743	115	339	273	2125
87	158	33	1920	897	68	338	229	2232
103	1092	39	1695	632	187	105	222	5639
30	266	35	742	518	154	83	376	2701
9	55	170	209	1925	562	84	1056	12300
9	83	16	430	605	55	22	2651	5302
10	44	58	823	773	69	43	837	2473
9	7	18	294	853	53	76	385	5144
5	150	159	617	1016	66	102	892	7146
2	109	40	440	736	62	24	646	4733
880	2847	675	16887	11036	2669	2003	9164	54896

TABLE
Source wise-Area under

<i>Sl. No.</i>	<i>District</i>	<i>Government canals</i>	<i>Private canals</i>	<i>Govt. Tanks & wells</i>
1.	Trivandrum	5170	318	1003
2.	Quilon	299	93	114
3.	Pathanamthitta	447	..	46
4.	Alleppey	2250	6	109
5.	Kottayam	1062	96	368
6.	Idukki	578	51	79
7.	Ernakulam	17607	84	1108
8.	Trichur	19155	474	1208
9.	Palghat	46917	280	282
10.	Malappuram	569	485	114
11.	Kozhikode	2153	115	124
12.	Wayanad	58	201	15
13.	Cannanore	124	1538	199
14.	Kasaragode	257	263	53
	State	96646	4004	4822

TABLE
Area under Irrigation

<i>Sl. No.</i>	<i>District</i>	<i>Paddy</i>	<i>Vegetable</i>	<i>Tubers</i>	<i>Coconut</i>
(1)	(2)	(3)	(4)	(5)	(6)
1	Trivandrum	8280	467	28	844
2	Quilon	3881	260	6	155
3	Pathanamthitta	4930	151	1	36
4	Alleppey	5815	771	387	16767
5	Kottayam	12906	257	25	12
6	Idukki	4240	9	6	18
7	Ernakulam	60942	95	6	9820
8	Trichur	58438	237	18	27427
9	Palghat	71179	496	5	3103
10	Malappuram	20170	1069	180	3982
11	Kozhikode	2280	165	20	254
12	Wayanad	13430	65	3	52
13	Cannanore	7564	246	48	1451
14	Kasaragode	8479	738	2	9212
	State	282534	5026	735	73133

—16

Irrigation (Hects) 1985-86

<i>Private tanks and wells</i>	<i>Minor and lift irrigation</i>	<i>Other sources</i>	<i>Total</i>
804	1255	1406	956
522	279	2844	4151
168	401	2309	3371
14422	3484	3441	23712
653	511	3549	6239
84	223	2382	3397
8632	11225	7495	46151
18034	6025	13005	57901
11623	1535	6639	67276
8655	4418	12755	26996
643	1014	1097	5146
102	33	8456	8865
1197	138	6962	10158
11169	407	10869	23018
76708	30948	83209	296337

—17

(crop-wise) 1985-86

<i>Arcanutt</i>	<i>Cloves & Nutmeg</i>	<i>Other condiments & spices</i>	<i>Banana</i>	<i>Betel leaves</i>	<i>Sugar-cane</i>	<i>Others</i>	<i>Total</i>
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
3	45	2	461	83	5	1355	11573
1	7	..	52	89	2	245	4698
..	1	5	79	9	50	3	5265
37	62	58	178	24	67	584	24750
..	117	31	80	11	..	1156	14595
2	15	5	3	..	77	31	4406
679	396	36	947	10	3	1872	74806
2686	76	316	1156	19	..	1044	91417
1334	18	277	766	6	1069	2120	80373
2497	5	44	1176	300	2	817	30242
33	2	9	1173	18	..	2162	61166
7	..	..	45	..	..	69	13671
338	23	255	835	13	12	1026	11811
6883	..	..	..	..	..	115	25429
14500	767	1038	6951	582	1287	12599	399152

TABLE

Irrigated and un-irrigated area under

<i>Sl. No.</i>	<i>District</i>	<i>High yielding</i>		<i>Total</i>
		<i>Irrigated</i>	<i>Un-irrigated</i>	
(1)	(2)	(3)	(4)	(5)
1	Trivandrum	205	2701	2906
2	Quilon	68	10518	10586
3	Pathanamthitta	16	2638	2654
4	Alleppy	..	4155	4155
5	Kottayam	141	5888	6029
6	Idukki	168	367	535
7	Ernakulam	7617	5543	13160
8	Trichur	336	5291	5627
9	Palaghat	6026	20195	26221
10	Malappuram	170	3388	3558
11	Kozhikode	..	912	912
12	Wayanad	..	..	..
13	Cannanore	2	7437	7439
	State	14749	69033	83782

High yielding and other varieties (Autumn paddy)

<i>Irrigated</i>	<i>Other varieties</i>		<i>Irrigated</i>	<i>Total</i>	
	<i>Un-irrigated</i>	<i>Total</i>		<i>Un-irrigated</i>	<i>Total</i>
(6)	(7)	(8)	(9)	(10)	
3518	6451	9969	3723	9152	
..	6081	6081	68	16599	
..	2436	2436	16	5074	
..	9376	9376	..	13531	
..	4193	4355	303	10081	
162	1941	2896	1123	2308	
955	14210	21260	14667	19753	
7050	26567	26735	504	31858	
168	54477	58736	10285	74672	
4259	24928	25023	265	28316	
95	4592	4592	..	5504	
..	7	7	..	7	
..	24449	24451	4	31886	
2					
16209	179708	195917	30958	248741	

TABLE—19

Irrigated and un-irrigated areas under High yielding and other varieties (Winter paddy) 1985-86

District	High yielding			Other variety			Total	
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Trivandrum	199	1219	1418	4164	7585	11749	4363	8804
Quilon	218	1721	1939	3463	12518	15981	3681	14239
Pathanamthitta	1255	381	1636	783	4088	4871	2038	4469
Alleppey	793	3077	3870	1224	11981	13205	2017	15058
Kottayam	4996	5057	10053	4777	410	5187	9773	5467
Idukki	1006	350	1356	1998	1093	3091	3004	1443
Ernakulam	3927	205	4132	27575	3776	31351	31502	3981
Trichur	4266	1447	5713	36486	3472	39958	40752	4919
Palghat	4618	201	4819	54442	14689	69131	59060	14890
Malappuram	969	513	1482	14254	16353	30607	15223	16866
Kozhikode	10	824	834	71	9988	10059	81	10812
Wayanad	707	661	1368	8280	15000	23280	8987	15661
Cannanore	1909	121	2030	11821	2482	14303	13730	2603
State	24873	15777	40650	169338	103435	272773	194211	119212

TABLE—20

Irrigated and unirrigated area under high yielding and other varieties summer paddy 1985-86

District	High yielding		Other varieties		Total	
	Irrigated	Unirrigated	Irrigated	Unirrigated	Total irrigated	Unirrigated
Trivandrum	49	7	145	109	254	194
Quilon	..	3	132	72	204	132
Puthanamthitta	2765	21	2786	4	115	2876
Alleppey	3164	13228	634	8413	9047	3798
Kottayam	1880	2918	4798	512	1462	2830
Idukki	95	36	131	224	242	113
Ernakulam	1863	28	1891	1002	13010	14773
Trichur	6158	..	6158	..	11024	17182
Palghat	431	5	436	109	1512	1834
Malappuram	2363	23	2386	87	2406	4682
Kozhikode	1404	57	1461	97	892	2199
Wayanad	1968	146	2114	1523	3998	4443
Cannanore	234	..	234	72	2147	2309
State	22374	16472	38846	11322	46313	57365
						27794

TABLE
Classification of Area Under

<i>District</i>	<i>Total geographical area</i>	<i>Forest</i>	<i>Land put to non-agricultural uses</i>	<i>Barren & uncultivable land</i>	<i>Permanent pastures & grazing land</i>
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	218600	49861	17815	2438	31
Quilon	251838	81438	23554	882	26
Pathanamthitta	268750	155214	9168	948	6
Alleppey	136058	..	26540	467	10
Kottayam	219550	8141	20169	2124	47
Idukki	514962	260907	13969	19215	2082
Ernakulam	235319	8163	34628	2433	156
Trichur	299390	103619	22653	2261	136
Palghat	438980	136257	30223	13295	237
Malappuram	363230	103417	19638	7845	320
Kozhikode	233330	41386	17795	1944	111
Wayanad	212560	78787	5724	2078	144
Cannanore	296797	48734	22365	14113	530
Kasaragode	196133	5625	14360	13064	387
State	3885497	1081509	278601	83107	4223

—21

Land Utilisation

<i>Land under misc. tree crops</i>	<i>Cultivable waste</i>	<i>Fallow other than current fallow</i>	<i>Current Fallow</i>	<i>Net area sown</i>	<i>Area sown more than once</i>	<i>Total cropped area</i>
(7)	(8)	(9)	(10)	(11)	(12)	(13)
222	2378	1474	1364	143017	74994	218011
284	801	905	1153	142795	80676	223471
158	512	531	1112	101101	10260	111361
134	2091	1287	2510	103019	53015	156034
280	1259	2255	2702	182573	55933	238506
14320	35270	1245	1983	165971	30616	196587
1114	5315	2312	2808	178430	68745	247175
1361	5503	3087	4891	155879	63102	218981
8581	24698	4204	5436	216049	102392	318441
3054	14463	4343	8876	201274	33921	235195
2849	2949	1376	2451	162469	41876	204345
3419	4841	1512	1852	114203	31174	145377
8575	6464	2348	4167	189501	21941	211442
5877	19015	1159	1942	134704	6922	141626
50228	125559	28038	43247	2190985	675567	2866552

TABLE
Area under Crops

District	Rice			Total	Cereals Jower
	Autumn	Winter	Summer		
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	12875	13167	310	26352	2
Quilon	16667	17920	207	34794	..
Pathanamthitta	5090	6507	2901	14498	..
Alleppey	13531	17075	25439	56045	..
Kottayam	10384	15240	6260	31884	..
Idukki	3431	4447	373	8251	44
Ernakulam	34420	35483	14901	84804	4
Trichur	32362	45671	17182	95215	9
Palghat	84957	73950	1948	160855	1384
Malppuram	28581	32089	4792	65462	6
Kozhikode	5504	10893	2353	18750	..
Wayanad	7	24648	6112	30767	7
Cannanore	18410	9188	670	28268	31
Kasaragode	13480	7145	1711	22336	11
State	279699	313423	85159	678281	1498

Table

District	Sugar crops			Pepper	Spices and	
	Sugar cane	Palmyrah	Total		Chillies	Ginge
(1)	(15)	(16)	(17)	(18)	(19)	(20)
Trivandrum	17	546	563	5065	..	210
Quilon	211	27	238	7886	1	978
Pathanamthitta	1380	35	1415	4681	..	516
Alleppey	1386	16	1402	3642	..	212
Kottayam	244	434	678	11705	1	2664
Idukki	1596	200	1796	21417	..	1736
Ernakulam	44	325	369	6307	..	2431
Trichur	6	885	891	3739	2	132
Palghat	2861	7339	10200	1736	184	489
Malappuram	8	1240	1248	4091	70	370
Kozhikode	4	347	351	12808	33	1556
Wayanad	15	221	236	12231	2	3050
Cannanore	25	112	137	16981	178	770
Kasaragode	19	99	118	9276	560	557
State	7816	11826	19642	121565	1031	15671

* Commodity board figures

—22

—1985-86

<i>and Millets</i>			<i>Pulses including Tur</i>			<i>Total</i>	
<i>Ragi</i>	<i>Other cereals</i>	<i>Total cereals & millets</i>	<i>Autumn</i>	<i>Winter</i>	<i>Summer</i>	<i>Total</i>	<i>Food grains</i>
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
15	5	26374	149	540	2067	2756	29130
5	2	34801	918	425	342	1685	36486
2	..	14500	32	115	163	310	14810
6	2	56053	59	215	361	635	56688
3	2	31889	207	199	1769	2175	34064
229	114	8638	140	240	750	1130	9768
3	68	84879	514	280	623	1417	86296
28	39	95291	1748	275	739	2402	97693
851	1947	165037	2947	4785	985	8717	173754
10	33	65511	429	184	542	1155	66666
14	8	18772	240	361	546	1147	19919
6	9	30789	5	19	301	325	31114
5	27	28331	37	2598	761	3396	31727
15	45	22397	68	540	538	1146	23543
182	2301	683262	7493	10776	10127	28396	711658

—22 (contd)

condiments

<i>Turmeric</i>	<i>*Cardamum</i>	<i>Betalnuts</i>	<i>Tamarind</i>	<i>Cloves</i>	<i>Nutmeg</i>	<i>Cinnamon</i>	<i>Total</i>
(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
32	164	2966	1704	123	80	15	10359
62	103	2843	706	89	80	16	12764
21	45	1459	216	48	112	6	7104
20	..	2305	253	22	131	23	6608
717	23	2186	447	334	480	47	18604
231	51617	2658	179	87	158	33	78116
674	..	5483	768	103	1092	39	16897
154	..	6165	1416	30	266	35	11939
296	3180	2067	2822	9	55	170	11008
88	188	8879	1173	9	83	16	14967
284	290	5328	640	10	44	58	21051
218	4258	1366	124	9	7	18	21283
211	760	6294	439	5	150	159	25947
156	..	8692	191	2	109	40	19583
3164	60628	58691	11078	880	2847	675	276230

TABLE—22 (Contd.)

District	Fresh fruits					Dry fruits				
	Jack (29)	Mango (30)	Banana (31)	Other Plantain (32)	Pineapple (33)	Pappaya (34)	Others (35)	Total (36)	Cashew- nut (37)	Total fruit trees (38)
Trivandrum.	7029	7122	808	5249	368	633	1080	22239	6387	28676
Quilon	4560	4503	1406	2479	461	536	344	14289	6876	21165
Pathanamthitta	2436	1658	959	1919	199	344	362	7877	2428	10305
Alleppey	2225	4007	646	1542	211	629	552	9812	3980	13792
Kottayam	4258	3613	1690	3221	493	727	743	14745	1465	16210
Idukki	2579	1660	275	2377	387	637	897	8812	1171	9983
Ernakulam	3018	4673	2130	3340	563	1041	632	15397	3624	10921
Trichur	3554	4450	1327	3853	322	1437	518	15461	7790	23251
Palghat	3822	5412	1574	2409	204	521	1925	15867	12140	28007
Malappuram	4472	5573	2586	2359	235	1302	605	17132	19255	36387
Kozhikode	6625	6595	1083	2746	232	1110	773	19164	4155	23319
Wayanad	5462	2728	566	1206	125	118	853	11058	863	11921
Cannanore	5371	5516	1188	2240	898	527	1016	16756	39216	55972
Kasaragode	1854	1780	262	1562	81	218	736	6493	28397	34890
State	57265	59290	16500	36502	4779	9780	11036	195152	137747	332899

TABLE—22 (Contd.)

District	Vegetables									
	Drum stick	Tubers	Sweet Potato	Autumn	Tapioca Winter	Summer	Total vegetables	Other vegetables	Total	
(1)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
Trivandrum	2798	2002	119	22099	22213	6698	51010	589	56518	125246
Quilon	1078	3613	40	12430	22648	536	35614	222	40567	111220
Pathanamthitta	351	3714	6	1119	11933	514	13566	403	18040	51674
Alleppey	610	5210	52	2013	8137	952	11102	813	17787	96277
Kottayam	1225	2846	24	1273	17978	490	19741	1016	24852	94408
Idukki	324	1392	131	1011	8133	93	9237	932	12016	111679
Ernakulam	1066	2692	64	2764	6760	692	10216	2404	16442	139025
Trichur	672	2031	139	1388	3675	252	5515	1116	9473	143247
Palghat	732	1892	1748	5876	5453	631	11960	2397	18729	241698
Malappuram	908	2101	1318	5768	7810	1285	14863	1928	21118	140386
Kozhikode	2097	1880	65	1728	1319	414	3461	306	7809	72449
Wayanad	119	910	17	890	1112	393	2395	303	3744	68298
Cannanore	353	564	212	1063	7106	550	8719	707	10555	124338
Kasaragod	200	409	886	672	4408	440	5520	1114	8129	86263
State	12533	31256	4821	60294	128685	13940	202919	14250	265779	1606208

TABLE—22 (Contd.)

District	Non food crops											
	Oil seed crops					Fibre					Drugs & narcotics	
	Ground nut	Sesamum	Coconut	Others	Total	Cotton	Betal Leaves	Tobacco	Lemon grass	Total		
(1)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)		
Trivandrum	9	18	73094	209	73330	..	149	..	48	197		
Quilon	..	2157	68769	938	71864	..	97	..	27	124		
Pathanamthitta	..	221	27521	26	27768	..	78	..	15	93		
Alleppey	1	4465	48702	105	53273	..	51	..	5	56		
Kottayam	..	61	49033	115	49209	..	69	..	48	117		
Idukki	..	237	17585	68	17890	..	7	..	1819	1826		
Ernakulam	..	2101	59632	187	61920	..	91	..	433	524		
Trichur	..	1218	60366	154	61738	..	72	..	50	122		
Palghat	10934	1291	26349	562	39136	5963	7	..	262	269		
Malappuram	20	2039	63230	55	65344	..	408	..	77	485		
Kozhikode	..	65	111473	69	111607	..	35	..	633	668		
Wayanad	..	117	3565	53	3735	..	3	..	1634	1637		
Cannanore	6	171	60386	66	60629	..	16	..	818	834		
Kasaragode	40	124	34977	62	35203	..	27	498	592	1117		
State	11010	14285	704682	2669	732646	5963	1110	498	6461	8069		

TABLE—22 (Conld.)

District	Plantation Crops				Fodder crops	Green maure crops	Other non-food crops	Total non-food crops	Total cropped area
	*Tea	*Coffee	Rubber	Cocoa					
(1)	(59)	(60)	(61)	(62)	(63)	(64)	(66)	(67)	(68)
Trivandrum	1071	50	14721	851	16693	253	1975	92765	218011
Quilon	600	380	36033	966	37979	253	1432	112251	223471
Pathanamthitta	755	..	28343	1145	30263	137	941	59687	111361
Alleppey	..	23	3768	1544	5335	144	753	59757	156034
Kottayam	2009	1171	83644	5211	92035	339	2125	144098	238506
Idukki	23640	5770	31063	1920	62393	338	2232	84908	196587
Ernakulam	2	274	37769	1695	39740	105	5639	108150	247175
Trichur	447	32	9493	742	10714	83	2701	75734	218981
Palghat	665	2292	14769	209	17935	84	12300	76743	318441
Malappuram	174	..	20401	430	21005	22	5302	94809	235195
Kozhikode	..	..	15445	823	16268	43	2473	131896	204345
Wayanad	5377	55649	4782	294	66102	76	5144	77079	145377
Cannanore	..	..	16884	617	17501	102	7146	87104	211442
Kasaragode	..	..	13200	440	13640	24	4733	55363	141626
State	34760	65641	330315	16887	447603	2003	54896	1260344	2866552

*Commodity board figures.

TABLE
Production of Impor-

District	Rice				Jowar
	Autumn	Winter	Summer	Total	
(1)	(2)	(3)	(4)	(5)	(6)
Trivandrum	26965	19806	335	47106	..
Quilon	31024	29551	260	60835	..
Pathanamthitta	7248	12231	8236	27715	..
Alleppey	13261	19288	69322	111971	..
Kottayam	12831	27201	18072	58104	..
Idukki	6872	9267	706	16845	19
Ernakulam	59352	59785	23619	142756	2
Trichur	41482	76281	34173	151936	3
Palghat	170701	133622	2657	306950	705
Malappuram	35796	47384	9876	93056	2
Kozhikode	6005	13499	2890	22394	..
Wayanad	6	44077	10717	54800	3
Cannanore	28413	14096	593	43102	14
Kasaragode	22036	10793	2622	35451	5
State	461992	526981	184078	1173051	753

TABLE

District	Groundnut	Betanuts million nuts	Tamarind	Mango	Jack Nos. '000
(1)	(15)	(16)	(17)	(18)	(19)
Trivandrum	5	263	4319	6452	28469
Quilon	..	426	1461	13981	47781
Pathanamthitta	..	340	301	4427	19023
Alleppey	1	262	182	8959	8766
Kottayam	..	302	504	4606	13970
Idukki	..	319	223	2742	8499
Ernakulam	..	1303	1042	12229	13747
Trichur	..	1180	2946	19628	14689
Palghat	5959	335	7359	39421	15203
Malappuram	11	1408	2087	23947	8121
Kozhikode	..	1117	1545	21276	16890
Wayanad	..	226	299	3196	8774
Cannanore	22	1353	753	22009	13783
Kasaragode	3	1730	327	7102	4758
State	6001	10664	23348	189975	222473

—23

tant Crops 1985-86

<i>Ragi</i>	<i>Other cereals</i>	<i>Pulzes</i>	<i>Sugarcane (gur)</i>	<i>Black Pepper</i>	<i>Dry chillies</i>	<i>Dry ginger</i>	<i>Cured Turmeric</i>
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
12	3	631	78	1567	..	853	21
4	1	1396	1217	2979	1	2744	105
2	..	240	8116	1524	..	1346	76
5	2	549	7992	648	..	680	37
2	1	1907	1450	1074	1	6407	2048
193	122	934	8349	4837	..	4997	563
3	43	1015	253	1083	..	8024	779
23	25	1715	35	566	2	215	259
699	1483	6567	14700	486	195	1188	571
9	21	857	42	1401	62	728	149
14	5	873	21	2905	29	2217	342
6	6	248	78	6523	2	11208	638
4	17	2649	130	5237	167	2239	446
4	29	894	99	2291	525	1620	167
980	1758	20475	42560	33121	984	44466	6201

—23 (Contd.)

<i>Banana</i>	<i>Other Plantain</i>	<i>Pine apple</i>	<i>Tapioca</i>	<i>Sweet potato</i>	<i>Pappaya</i>	<i>Drum stick</i>
(20)	(21)	(22)	(23)	(24)	(25)	(26)
9623	19997	4665	769231	603	3571	3361
16715	11098	5410	487200	193	466	1072
12828	8188	2194	295061	36	2289	301
9651	4713	2177	192065	321	3282	438
29085	16355	5324	390477	192	4936	474
3708	9505	4456	178274	1059	1274	340
26851	17083	6204	190528	502	4318	842
16017	8469	2681	65242	1090	6170	1195
20349	11566	2485	158829	13996	3866	734
29967	7045	2511	196935	11262	7946	952
14484	10238	3129	39282	362	544	1978
8142	6418	1686	48858	138	918	128
14938	8693	15457	177955	2115	2609	382
3338	6062	1394	86940	8841	1079	217
215696	145430	59773	3276877	40710	43268	12414

37/175/87

<i>District</i>	<i>Sesamum</i>	<i>Coconut (million nuts)</i>	<i>Cotton (bale of 170kg.)</i>	<i>Nutmeg</i>	<i>Tobacco</i>
(1)	(27)	(28)	(29)	(30)	(31)
Trivandrum	6	340	..	80	..
Quilon	748	272	..	53	..
Pathanamthitta	77	160	..	102	..
Alleppey	857	277	..	50	..
Kottayam	12	217	..	678	..
Idukki	75	71	..	223	..
Ernakulam	464	338	..	2885	..
Trichur	330	369	..	150	..
Palghat	214	108	9624	32	..
Malappuram	744	255	..	140	..
Kozhikode	24	603	..	15	..
Wayanad	52	5	..	10	..
Cannanore	83	281	..	308	..
Kasaragode	16	81	..	154	935
State	3702	3377	9624	4880	935

* Commodity Board Figures.

** The increase in production during the year compared to last year is Farm guide, Agriculture Department in place of 15% as per Cocoa survey

—23 (Conld.)

(in tonnes)

<i>Lemongrass Tea *</i> <i>oil</i>	<i>Coffee *</i>	<i>Rubber *</i>	<i>Cocoa **</i>	<i>Processed Cardamom</i>	<i>Raw cashewnut</i>	
(32)	(33)	(34)	(35)	(36)	(37)	(38)
3	915	21	8475	330	5	2464
2	200	160	19817	205	4	4455
1	259	..	15041	1230	..	951
1	..	10	2722	1859	..	706
3	386	445	50271	3580	..	164
126	39514	2440	14711	1542	2665	231
50	..	166	19419	1775	..	1931
2	1387	14	6412	214	..	2774
47	1402	969	7150	90	370	5444
2	..	..	11419	312	2	8122
11	..	..	12212	336	4	1889
28	8565	19325	1635	85	240	187
24	..	..	8652	529	50	26925
18	..	..	6764	91	..	23960
318	52628	23550	184700	12178	3340	80203

due to the change in the conversion ratio i.e. 30% from wet to dry as per conducted during 1980-81.

(1917)

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382

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