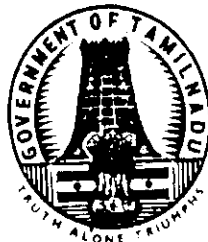


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REPORT ON FRUITS AND VEGETABLES FASLI - 1420 (2010-11)



**DIRECTOR
DEPARTMENT OF ECONOMICS AND STATISTICS
CHENNAI - 600 006.**



REPORT
ON
FRUITS AND VEGETABLES

TAMIL NADU
Fasli 1420 (2010-11)

DIRECTOR
DEPARTMENT OF ECONOMICS AND STATISTICS
CHENNAI - 600 006

PREFACE

Fruits and vegetables play an important role in the agricultural economy in terms of its value addition and employment generation. The Crop Estimation Survey on Fruits, Vegetables and other Minor Crops is being implemented in Tamilnadu as a Centrally- Sponsored Scheme with 100 percent funding by GOI from 1982-83 onwards to estimate the area and yield of selected crops. The results of the survey carried out during 2010-11 are presented in this Report.

During 2010-11, the survey covered eight fruit crops viz mango, jack, guava, lemon, orange, banana, grapes and pine-apple and five vegetable crops viz brinjal, lady's finger, tomato, cabbage and sweet- potato.

This Report consists of six parts. Part-I outlines the objectives of the Survey, Part-II explains the concepts and definitions, Part-III presents the estimation procedure, Part-IV provides the survey results, Part-V the findings of the survey and Part-VI contains a time-series data on fruits and vegetables crops for the 10 year period.

It is hoped that this Report will be useful to administrators, policy-makers, research scholars, Programme officials of Agriculture and Horticulture Departments and to those interested in the development of horticulture in Tamil Nadu.

(Sd/-) T.K.PONNUSAMY

DIRECTOR

Place: Chennai-6.

Date: 10.05.2013

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PART – I

INTRODUCTION

Fruits and Vegetables are high value addition crops which are labour-intensive, generating employment. It is an essential item of human diet and also an important source of nutrition. They are sources of carbohydrates, next only to cereals. These crops are generally commercial in nature fetching lucrative incomes and having large export potential. Despite the fact that crops occupy a pre-eminent position among horticultural crops, reliable data and information of area, production and yield of these crops are found to be inadequate for planning purposes both at micro and macro level. Government of India have extended a scheme for the conduct of Crop Estimation Survey on Fruits and Vegetables to gauge the area and average yield of each crop as in the case of principal crops.

The Crop Estimation Survey on Fruits and Vegetables is being implemented in Tamil Nadu from 1982-83 as a Centrally-Sponsored Scheme with 100 percent financial assistance by the Government of India.

COVERAGE

Currently, the following eight fruits and five vegetable crops are covered under this survey.

A. Fruits

1. Mango, 2. Banana, 3. Guava, 4. Lemon, 5. Orange, 6. Jack, 7. Grapes and 8. Pineapple

B. Vegetables

1. Tomato, 2. Brinjal, 3. Lady's Finger, 4. Cabbage and 5. Sweet Potato

OBJECTIVES

The main objectives of the survey are:

1. to arrive at reliable estimates of average yield per hectare and production estimates of each crop both at district and state level
2. to collect ancillary information on cultivation practices of selected fruits and vegetables.

In addition, it also covers the following aspects pertaining to tree crops.

- i. Estimation of number of bearing and non-bearing trees.
- ii. Estimation of average yield per bearing tree.

SAMPLING DESIGN

The sampling technique adopted for the survey is a multistage stratified random sampling. Taluk within a district constitutes the stratum. The three stages of sampling are as follows:

- i. The selected village is the first stage sampling unit.
- ii. The field / orchard within the selected village is the second stage unit.
- iii. The experimental plot within the selected field is the third and ultimate sampling unit.

The villages are selected in proportion to the area under each crop in the taluk covered under the survey. In each selected village, two experimental plots are chosen for the crop.

In case of fruit tree crops viz. mango, guava, jack, lemon and orange, the revenue villages growing the above tree crops constitute the sampling unit. In each of the village selected, two gardens growing the specified tree crop are selected randomly for tree enumeration. From 1998-99 onwards, it has been decided to conduct the survey on garden only. For yield estimation, all the bearing trees in the selected garden are taken in to account.

SAMPLE SIZE

During the year 2010-11, 1180 experiments were planned in 590 villages. The following table shows the details of crop wise experiments planned.

Crop	No. of villages selected
A. Fruits	
1. Mango	115
2. Banana	95
3. Guava	35
4. Lemon	25
5. Jack	35
6. Orange	25
7. Grapes	35
8. Pineapple	10
Total	375
B. Vegetables	
1. Tomato	70
2. Brinjal	60
3. Lady's Finger	30
4. Cabbage	25
5. Sweet Potato	30
Total	215
Fruits and Vegetables Total	590

PLOT SIZE

The experimental plot size for the conduct of crop cutting experiments for each fruit and vegetable crop (excluding tree crops) is given below:

A. FRUITS	PLOT SIZE
1. Banana	5m X 5m
2. Grapes	5m X 5m
3. Pineapple	5m X 1m
B. VEGETABLES	
1. Brinjal	5m X 5m
2. Lady's Finger	5m X 5m
3. Tomato	5m X 5m
4. Cabbage	10m X 2m
5. Sweet Potato	2m X 2m

PERIODICITY OF THE SURVEY

The period of the Survey is one full Fasli year starting from July to June.

COLLECTION OF DATA

The Assistant Statistical Investigators were entrusted with the task of field work exclusively engaged for this Scheme in 26 districts of the State. The field work such as selection of garden, recording of yield etc., in the case of fruit tree crops and selection of field, plot, recording of yield with regard to other crops are carried out by the Assistant Statistical Investigators appointed exclusively for this scheme. The village Administrative Officers of the selected villages rendered necessary assistance in the selection of field and collection of information from the cultivators.

SUPERVISION

In order to ensure accuracy at every stage, the field work of Assistant Statistical Investigator was supervised by the respective Divisional Statistical Officers, Assistant Directors of Statistics and Regional Deputy Directors.

RESPONSE

Survey was conducted in all the 1180 experiments planned for the year 2010-11.

The following table shows the number of experiments planned and conducted during 2010-11.

NUMBER OF EXPERIMENTS PLANNED AND CONDUCTED

Crop	No. of Experiments	
	Planned	Conducted
A. FRUITS		
1. Mango	230	230
2. Banana	190	190
3. Guava	70	70
4. Lemon	50	50
5. Jack	70	70
6. Orange	50	50
7. Grapes	70	70
8. Pineapple	20	20
Sub Total	750	750
B. VEGETABLES		
1. Tomato	140	140
2. Brinjal	120	120
3. Lady's Finger	60	60
4. Cabbage	50	50
5. Sweet Potato	60	60
Sub Total	430	430
GRAND TOTAL (A+B)	1180	1180

PART II

CONCEPTS AND DEFINITION

The concepts and definition used in this survey are detailed below:

BEARING TREE

Bearing tree is defined as a tree of fruit bearing age, which had either borne fruits any time in the past or during the season.

NON BEARING TREE

Young tree which does not show flower or has not attained bearing age at the time of enumeration (or) tree which has reached the bearing age, but not found bearing fruit during the season, due to disease, old age, etc., are classified as non-bearing tree.

GARDEN

A garden is defined as a piece of land with a minimum number of 9 fruit trees planted in an order.

PURE GARDEN

A pure garden is defined as one which has 100% of the selected fruit crop trees.

MIXED GARDEN

It is the garden where more than 10 percent but less than 90 percent of the selected fruit trees are grown with other crops including perennial crops.

REPORTING AND NON-REPORTING VILLAGES

Reporting villages are the villages having recorded area in the Adangal for the crop selected for the Survey. Non reporting villages are those where no area is recorded in the Adangal for the crop selected for the survey.

PART III

ESTIMATION PROCEDURE OF FRUIT TREE CROPS

(Crops: Mango, Jack, Guava and Citrus Fruits)

Estimation of Number of Trees

- If N_{ij} - Total No. of villages growing the crop in the ' i^{th} ' stratum
- n_i - No. of villages selected for tree enumeration in the ' i^{th} ' stratum
- A_i - Total area under the crop in the ' i^{th} ' stratum as per "G" Return
- a_{ij} - Area under the crop in the ' j^{th} ' selected village of ' i^{th} ' stratum
- t_{ij} - No. of trees enumerated in the ' j^{th} ' selected village of ' i^{th} ' stratum
- b_{ij} - No. of bearing trees enumerated in the ' j^{th} ' selected village of ' i^{th} ' stratum

R_{ni} - Average No. of trees per hectare in the ' i^{th} ' stratum

$$= \frac{\sum_{j=1}^{n_i} t_{ij}}{\sum_{j=1}^{n_i} a_{ij}}$$

Estimated Total no of trees for the ' i^{th} ' stratum (T_g) = $R_{ni} \cdot A_i$

Ratio of bearing trees in the ' i^{th} ' stratum = $\frac{\sum_{j=1}^{n_i} b_{ij}}{\sum_{j=1}^{n_i} t_{ij}}$

Estimated total no. of bearing trees in the ' i^{th} ' stratum

$$(Bg) = \left[\frac{\sum_{j=1}^{n_i} b_{ij}}{\sum_{j=1}^{n_i} t_{ij}} \right] \times T_g$$

Estimation of Average yield per bearing tree

If m_{gi} = No. of Villages selected for yield estimation

B_{gi} = Total No. of bearing trees in the " j^{th} " selected village of " i^{th} " stratum.

Y_{gij} = Total yield of all the trees in the " j^{th} " selected village of " i^{th} " stratum

Estimated Average yield per bearing tree for the " i^{th} " stratum (R_{mgi}) =

$$\frac{\sum_{j=1}^{m_{gi}} Y_{gij}}{\sum_{j=1}^{m_{gi}} B_{gij}}$$

Its variance is $V(G_{gi}) =$

$$\left\{ \frac{N_i - m_{g_i}}{(N_i) \times (m_{g_i})} \cdot \frac{1}{(B_{g_j})^2} \right\} \times \frac{1}{m_{g_i} - 1} \times \sum_{j=1}^{m_{g_i}} (Y_{g_{ij}} - R_{m_{g_i}} \times B_{g_{ij}})^2$$

Percentage of sampling error = $\frac{\sigma}{R_{m_{gi}}} \times 100$

Where $\sigma = \frac{\sqrt{V(G_{g_i})}}{m_{g_i}}$

Estimation procedure of average yield of vegetable and other food crops (General Crop Estimation method)

If n_{ij} = No. of plots selected in the " j^{th} " village of " i^{th} " stratum

m_i = No. of villages selected in the " i^{th} " stratum

a_i = Area under the crop as per revenue record in the “ith” stratum

n_i = Total No. of plots selected in the “ith” stratum and considered for analysis

Y_{ijk} = Yield of ‘kth’ plot of ‘jth’ village in the ‘ith’ stratum

L = No. of districts selected

Average yield per plot for “ith” stratum is $\bar{Y}_i = \sum_{k=1}^{n_i} Y_{ijk} / \sum_{j=1}^{m_i} n_{ij}$

Estimation of average yield per plot for all the stratum covered =

$$\bar{Y} = \sum_{i=1}^L W_i \times \bar{Y}_i \quad \text{Where } W_i = \frac{a_i}{\sum_{i=1}^L a_i}$$

Sampling error of the estimate

E = Mean SSBV / DF

(i.e.) the estimate of the mean square between villages

F = Mean SSWV / DF

(i.e.) the estimate of the mean square within villages9-10

$$V[\bar{Y}] = \frac{E \sim F \times \sum_{i=1}^L a_i^2 / n_i}{\sum_{i=1}^L a_i^2}$$

$E \sim F$ whichever is greater

PART IV
RESULT OF THE SURVEY
SECTION-A

FRUITS

Estimates of number of Trees, Average Yield, and Production as per the survey are furnished below:

ESTIMATED NUMBER OF TREES, AREA, AVERAGE YIELD AND PRODUCTION
(2010-11)

Crop	Estimated no. of trees			Area as per Season and Crop Report (in ha.)	Estimated Average yield (kg./ha.)	Estimated Production (Tones)
	Bearing	Non-Bearing	Total			
Mango	16771737	1326167	18097904	139496	6867	957982
Banana	-	-	-	107394	44699	4800473
Guava	1409853	98695	1508548	7498	9109	68299
Lemon	1523796	177436	1701232	7484	4488	33592
Jack	286691	78177	364868	3058	15117	46229
Orange	250837	33300	284137	2067	1730	3577
Grapes	-	-	-	2463	16333	40230
Pineapple	-	-	-	809	41964	33949

MANGO

Mango is predominantly grown in Krishnagiri, Dharmapuri, Dindigul, Vellore and Tiruvallur Districts. During the year 2010-11 under mango, 115 villages were selected for conducting experiments. The district wise number of experiments planned / conducted estimated total number of trees and production estimates for 2010-11 are furnished below.

**NUMBER OF EXPERIMENTS PLANNED, CONDUCTED,
BEARING AND NON- BEARING TREES(MANGO)**

Sl. No.	District	No. of Experiments		Estimated no. of Trees		
		Planned	Conducted	Bearing	Non Bearing	Total
1	Kancheepuram	10	10	669220	188682	857901
2	Thiruvallur	20	20	957816	37897	995713
3	Vellore	20	20	2108947	106523	2215470
4	Salem	10	10	440371	74113	514484
5	Dharmapuri	20	20	1637512	68195	1705706
6	Krishnagiri	30	30	5577565	158420	5735985
7	Erode	10	10	237669	15941	253610
8	Coimbatore	10	10	277748	6359	284107
9	Thiruchirappalli	10	10	273518	6776	280294
10	Madurai	10	10	936943	0	936943
11	Theni	20	20	909080	52447	961527
12	Dindigul	10	10	1423375	167612	1590988
13	Virudhunagar	10	10	234990	189820	424810
14	Thirunelveli	10	10	502013	167876	669888
15	Kanniyakumari	10	10	225527	47839	273366
16	Ariyalur	10	10	36577	721	37927
17	Tirupur	10	10	322868	36947	359315
STATE		230	230	16771737	1326167	18097904

The estimated total number of mango trees for the State during 2010-11 was 180.98 lakhs of which 92.67 percent were bearing trees. Out of 180.98 lakhs trees in the State Krishnagiri district stood first with 57.36 lakh trees, followed by 22.15 lakh mango trees in Vellore district and 17.06 lakh trees in Dharmapuri district.

ESTIMATED PRODUCTION AND YIELD OF MANGO CROP

Sl. No.	District	Area as per Season and Crop Report (in ha.)		Estimated Average Yield (kg./ha)		Estimated production (in tonnes)	
		2010-11	2009-10	2010-11	2009-10	2010-11	2009-10
1	Kancheepuram	3247	3200	4786	1825	15540	5840
2	Thiruvallur	10523	10199	3056	2177	32157	22201
3	Ariyalur	500	-	7871	-	3935	-
4	Vellore	12456	12261	7309	4761	91044	58378
5	Salem	4352	3522	4854	5116	21124	18019
6	Dharmapuri	13058	9955	5638	5002	73622	49792
7	Krishnagiri	33298	32208	7331	6943	244109	223621
8	Erode	869	865	10146	1332	8817	1153
9	Coimbatore	2574	2644	4433	1710	11411	4520
10	Thiruchirapalli	2421	2496	2473	5963	5987	14885
11	Madurai	6891	6720	4778	3298	32925	22163
12	Theni	9298	9204	4458	4154	41448	38235
13	Dindugul	14992	14747	13235	4917	198413	72508
14	Virudhunagar	2729	2678	2137	2877	5832	7704
15	Tirupur	1734	-	8461	-	14671	-
16	Thirunelveli	5916	5483	9883	3457	58465	18955
17	Kanniyakumari	1401	1591	5408	4268	7576	6790
STATE		139496	132697	6867	4795	957982	636330

The area under mango crop as per Season and Crop Report for the year 2010-11 was at 139496 hectare as against 132697 hectare in 2009-10 with an increase of 5.12 percent over the year 2009-10.

The estimated average yield per hectare for the State came to 6867 kg during 2010-11 as against 4795 kg. in 2009-10, the increase in yield rate being 43 percent. The increase in the yield rate was due to increase in area and yield.

The total production of mango during 2010-11 was 957982 tonnes as against 636330 tonnes in 2009-10. There was an increase of 50.55 percent due to increase in area.

BANANA

District wise number of experiments planned, conducted and yield estimates are given in the table below:

NUMBER OF EXPERIMENTS, AND YIELD ESTIMATES

Sl. No.	District	No. of Experiments		Area as per Season and Crop Report (in ha)		Estimated Average Yield (kg./ha)		Estimated production (in tonnes)	
		Planned	Conducted	2010-11	2009-10	2010-11	2009-10	2010-11	2009-10
1	Cuddalore	10	10	5016	4805	49638	38570	248983	185329
2	Vellore	10	10	6837	6645	40980	42775	280177	284238
3	Ariyalur	10	10	120	-	36740	-	4409	-
4	Coimbatore	20	20	8118	9617	50550	40770	410368	392089
5	Erode	30	30	10127	10919	38594	33925	390842	370426
6	Thiruchirappalli	20	20	8233	8534	50579	43552	416415	371673
7	Thanjavur	10	10	3470	3603	49324	36734	171154	132352
8	Pudukottai	10	10	2955	3426	54324	64102	160527	219614
9	Theni	10	10	5965	5779	75665	77765	451345	449406
10	Dindugul	10	10	4897	4680	36258	40779	177554	190848
11	Thirunelveli	10	10	9157	9446	25458	24939	233123	235570
12	Thoothukudi	10	10	10016	9760	45257	57912	453295	565224
13	Kanyakumari	10	10	5451	6817	37293	32268	203285	219970
14	Tiruppur	10	10	2853	3364	44721	39579	127588	133145
15	Villupuram	10	10	1169	-	36671	-	42869	-
16	Karur	-	-	-	5277	-	44467	-	234650
STATE		190	190	107394	113681	44700	42996	4800473	4887841

Erode, Thoothukudi Coimbatore, Thirunelveli, Thiruchirapalli and Vellore are the main banana producing districts in the State. The area covered under banana as per Season and Crop Report for the year 2010-11 stood at 107394 hectare as against 113681 hectare in 2009-10 the decrease being of 5.53 percent.

The estimated average yield rate per hectare worked out to 44700 kg. in 2010-11 as against 42996 kg. in 2009-10. The increase in the yield rate was 3.96 percent.

The estimated production for the year 2010-11 was put at 4800473 tonnes as against 4887841 tonnes in 2009-10, decline by 1.79 percent.

GUAVA

Guava crop is mainly grown in the districts of Dindigul, Virudhunagar, Cuddalore, Madurai, Vellore and Tirunelveli. The estimated total number of trees for 2010-11 stood at 1508548 out of which 93.46 percent trees are bearing trees.

The area under guava for 2010-11 was at 7498 hectares as against 7017 hectares in 2009-10 which shows an increase of 6.85 percent.

The estimated average yield per hectare was put at 9109.029 kg. in 2010-11 as against 13185.50 kg in 2009-10, the yield decreased by 30.91 percent.

The estimated production for the year 2010-11 was at 68299 tonnes as against 92523 tonnes in 2009-10 recording a decrease of 26.18 percent.

LEMON

The main lemon growing districts in the State are Dindugul, Thirunelveli and Thiruchirappalli. The estimated number of trees for 2010-11 was put at 17.01 lakhs, out of which 89.57 percent are bearing trees.

The area for 2010-11 was at 7484 hectare as against 7463 hectare in 2009-10 which showed an increase of 0.28%.

The estimated yield rate per hectare worked out to 4488 kg. in 2010-11 as against 2933 kg. 2009-10 showing an increase of 53.02 percent .

The estimated production for the State during the year 2010-11 was at 33592 tonnes as against 21886 tonnes in 2009-10 the increase being 53.49 percent.

JACK FRUIT

Districts such as, Cuddalore, Namakkal, Dindugul and Kanniyakumari are the main Jackfruit growing districts in the State. The total number of trees estimated for 2010-11 was at 3.65 lakhs and the percentage of bearing trees worked out to 78.57%.

The area as per the Season and Crop Report was put at 3058 hectares in 2010-11 as against 2926 hectares in 2009-10, showing an increase of 4.51 percent.

The estimated yield rate per hectare was calculated at 15117 kg. in 2010-11 as against 13475 kg in 2009-10. It showed an increase of 12.18 percent.

The estimated production for 2010-11 stood at 46229 tonnes as against 39427 tonnes in 2009-10. There was an increase of 17.25 percent due to the increase in area and yield rate.

ORANGE

Salem, Dindugul and The Nilgiris are major Orange growing districts in the State. The total number of trees was estimated at 2.84 lakhs for 2010-11 and the percentage of bearing trees worked out to 88.28 percent.

The area as per the Season and Crop Report was at 2067 hectares for 2010-11 as against 2039 hectares in 2009-10, which showed an increase of 1.37 percent.

The estimated yield rate per hectare was put at 1730 kg. in 2010-11 as against 2057 kg. in 2009-10, which showed a decrease of 15.90 percent in the yield rate.

The State production for 2010-11 was estimated at 3577 tonnes as against 4194 tonnes in 2009-10. The decrease in the production of orange was 14.71 percent.

GRAPES

Grapes are mainly cultivated in Theni, Coimbatore, Dindigul, Tirunelveli, Krishnagiri and Vellore districts. The area as per Season and Crop Report worked out to is 2463 hectares in 2010-11 as against 2546 hectares in 2009-10, the decrease being 3.26 percent.

The estimated yield rate per hectare was put at 16333 kg. in 2010-11 as against 17338 kg in 2009-10, a decrease of 5.79 percent.

The estimated production was 40230 tonnes in 2010-11 as against 44144 tonnes in 2009-10, the decrease being 8.87 percent due to shortfall in area and yield rate.

PINEAPPLE

Namakkal is the major Pineapple growing district in the State. The area as per the Season and Crop Report was at 809 hectares in 2010-11 as against 500 hectares in 2009-10 showing an increase of 61.8 percent.

The estimated yield rate per hectare stood at 41965 kg. in 2010-11 as against 36052 kg. in 2009-10 the increase being 16.40 percent.

The estimated production was at 33949 tonnes in 2010-11 as against 18026 tonnes in 2009-10 the increase being 88.33 percent. The increase was due to the increase in area and yield rate.

SECTION – B

VEGETABLES

Area as per Season and Crop Report, estimated average yield and Production of Vegetables in Tamil Nadu during the year 2010-11 are furnished below :-

AREA, ESTIMATED AVERAGE YIELD AND PRODUCTION

Sl. No.	Crop	Area as per Season and Crop Report (in Ha.)	Estimated Average Yield (Kg./Ha.)	Estimated Production (Tonnes)
1	Brinjal	7871	9997	78685
2	Cabbage	2222	51837	115181
3	Lady's Finger	6229	8397	52302
4	Sweet Potato	496	18550	9201
5	Tomato	22087	13506	298315

BRINJAL

Brinjal is mainly cultivated in Vellore, Salem, Coimbatore and Krishnagiri districts. As per the Season and Crop Report the area under Brinjal worked out to 7871 hectares in 2010-11 as against 6912 hectares in 2009-10, there being an increase of 13.87 percent.

The estimated average yield rate per hectare stood at 9997 kg in 2010-11 as against 9390 kg. in 2009-10 showing an increase of 6.46 percent.

The estimated production was put at 78685 tonnes in 2010-11 as against 64902 tonnes in 2009-10. Due to increase in yield rate production had increased by 21.24 percent.

CABBAGE

Cabbage is mostly being cultivated in The Nilgiris, Krishnagiri and Theni District of Tamil Nadu. The area under this crop as per Season and Crop Report is 2222 hectares in 2010-11 as against 2154 hectares in 2009-10. There was an increase of 3.16 percent.

The estimated average yield per hectare worked out to 51837 kg. in 2010-11 as against 56726 kg. in 2009-10, decrease being 8.62 percent.

The estimated production for the year 2010-11 was worked out at 115181 tonnes as against 122187 tonnes in 2009-10, the decrease being 5.73 percent due to decrease in yield.

LADY'S FINGER

This crop is mainly cultivated in Vellore, Salem, Dharmapuri, Coimbatore, Dindigul and Tirunelveli Districts. The area under this crop as per Season and Crop Report was at 6229 hectares in 2010-11 as against 5224 hectares in 2009-10 exhibiting an increase of 19.24 percent.

The estimated yield per hectare was put at 8397 kg. in 2010-11 as against 8000 kg. in 2009-10 the increase being 4.96 percent. Sufficient water, proper maintenance of crop and using the high yield variety of seeds are principal factors for increased yield.

The estimated production was at 52302 tonnes in 2010-11 as against 41794 tonnes in 2009-10, the increase being 25.14 percent. The increase in area and yield rate reflects the increase in production.

SWEET POTATO

The Sweet Potato crop is mainly grown in Dharmapuri, Villupuram, Karur, Dindigul, Virudhunagar and Tirunelveli Districts in the State. The area under this crop as per the Season and Crop Report was put at 496 hectares in 2010-11 as against 778 hectares in 2009-10, which displayed a decrease of 36.25 percent.

The estimated yield per hectare worked out to 18550 kg. in 2010-11 as against 14629 kg in 2009-10 which depicted an increase of 26.80 percent.

The estimated production for the year 2010-11 stood at 9201 tonnes as against 11381 tonnes in 2009-10. A decrease of 19.15 percent was due to decrease in production and decrease in area.

TOMATO

Tomato crop is mainly cultivated in Krishnagiri, Dharmapuri, Coimbatore, Salem, Dindugul and Theni districts in Tamil Nadu. The area under this crop as per the Season & Crop Report worked out to is 22087 hectares in 2010-11 as against 23792 hectares in 2009-10, the decrease being 7.17 percent.

The estimated yield per hectare worked out to 13506 kg. in 2010-11 as against 13090 kg. in 2009-10, showing an increase of 3.17 percent.

The estimated total production was put at 298315 tonnes in 2010-11 as against 311450 tonnes in 2009-10, showing a decrease of 4.22 percent. Decrease in area pulled down the total production.

The results of the survey reveal that the average yields of mango, banana, jack, lemon and pineapple have increased and the average yields of orange, guava and grapes have decreased during the year 2010-11. In respect of vegetable crops the average yields have increased in tomato, brinjal, lady's finger, and sweet potato.

The production of all vegetables except cabbage has increased due to the increase in yield rate.

The Production of mango, lemon, jack and pineapple has increased due to the increase in yield rate. Production of banana, guava, orange and grapes have decreased due to the decrease in yield rate. Production of cabbage and sweet potato have decreased.

PART VI

Time Series data in Area, Estimated Average yield and Production of fruits and vegetables

AREA OF FRUITS AND VEGETABLE CROPS FROM 2000-2001 TO 2010-11

(in ha.)

CROP		2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
A FRUITS											
1	Mango	110835	111958	114926	118444	125104	125856	128221	130012	132697	139496
2	Banana	84542	76771	71088	81498	94648	105206	112793	115804	113681	107394
3	Guava	9719	9479	8274	8066	8453	7792	7141	7050	7017	7498
4	Lemon	8460	7722	7932	8124	8146	7964	7767	7409	7463	7484
5	Jack	2651	2744	2687	2773	2911	2919	2955	2910	2926	3058
6	Orange	2652	2565	2718	2580	2151	2139	2004	2089	2039	2067
7	Grapes	2354	2444	2484	2475	2611	2581	2607	2532	2546	2463
8	Pineapple	473	1240	735	446	653	634	692	581	500	809
B VEGETABLES											
1	Tomato	27071	23096	22214	25306	21995	22433	22924	22751	23792	22087
2	Brinjal	9998	7791	9034	7958	7107	6059	6331	7275	6912	7871
3	Lady's Finger	6209	5302	5465	4949	4778	3578	3853	5054	5224	6229
4	Cabbage	1915	2151	1181	1393	1619	2313	2240	1250	2154	2222
5	Sweet Potato	1096	814	1039	1397	1417	1127	1088	658	778	496

ESTIMATED AVERAGE YIELD OF FRUITS AND VEGETABLE CROPS FROM 2001-2002 TO 2010-11

(in tonnes/ha.)

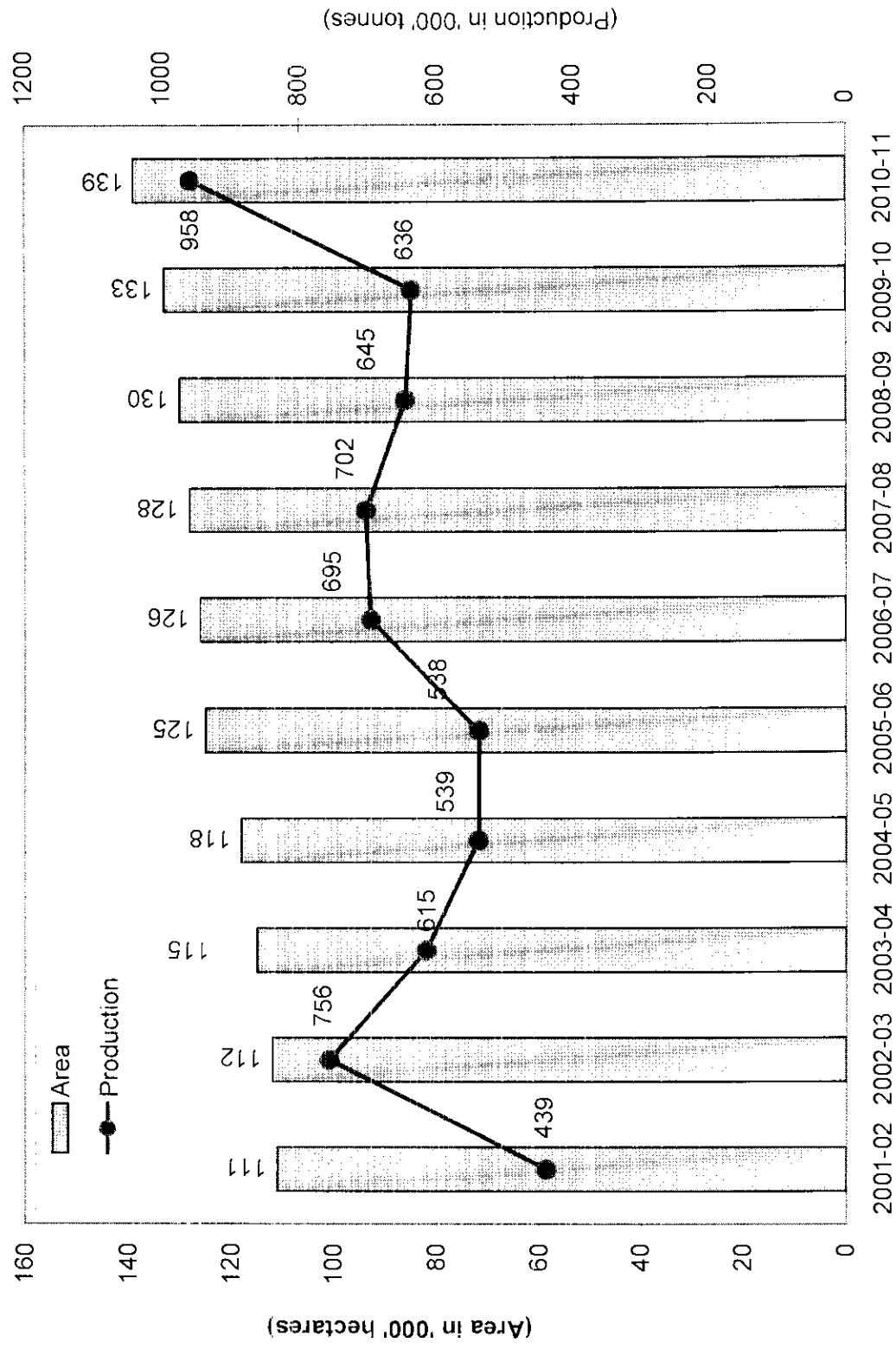
CROP	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
A FRUITS										
1 Mango	3.958	6.757	5.354	4.554	4.299	5.519	5.477	4.958	4.795	6.867
2 Banana	41.918	36.953	35.375	42.477	49.104	48.965	47.741	44.453	42.996	44.699
3 Guava	4.564	5.232	7.021	7.995	10.904	11.031	13.603	12.074	13.186	9.109
4 Lemon	1.182	1.109	1.044	1.619	2.523	2.583	2.986	2.788	2.933	4.488
5 Jack	18.744	11.321	9.662	8.943	12.346	13.848	14.749	13.238	13.475	15.117
6 Orange	0.700	1.552	1.962	1.718	1.962	2.021	2.277	1.965	2.057	1.730
7 Grapes	21.976	14.593	24.112	28.176	32.486	29.815	28.921	17.938	17.338	16.333
8 Pineapple	36.878	30.947	31.371	32.922	33.156	33.076	37.866	36.993	36.052	41.964
B VEGETABLES										
1 Tomato	9.529	12.318	10.149	12.705	12.627	12.611	13.047	13.017	13.091	13.506
2 Brinjal	8.351	7.625	11.180	12.650	10.690	11.099	10.011	7.960	9.390	9.996
3 Lady's Finger	8.466	7.450	7.002	8.973	7.525	7.498	6.688	7.608	8.000	8.396
4 Cabbage	48.199	58.702	63.568	66.734	53.426	56.247	50.395	52.978	56.726	51.836
5 Sweet Potato	17.046	13.662	14.484	15.117	20.857	16.799	13.585	13.287	14.629	18.550

ESTIMATED PRODUCTION OF FRUITS AND VEGETABLE CROPS FROM 2001-02 TO 2010-11

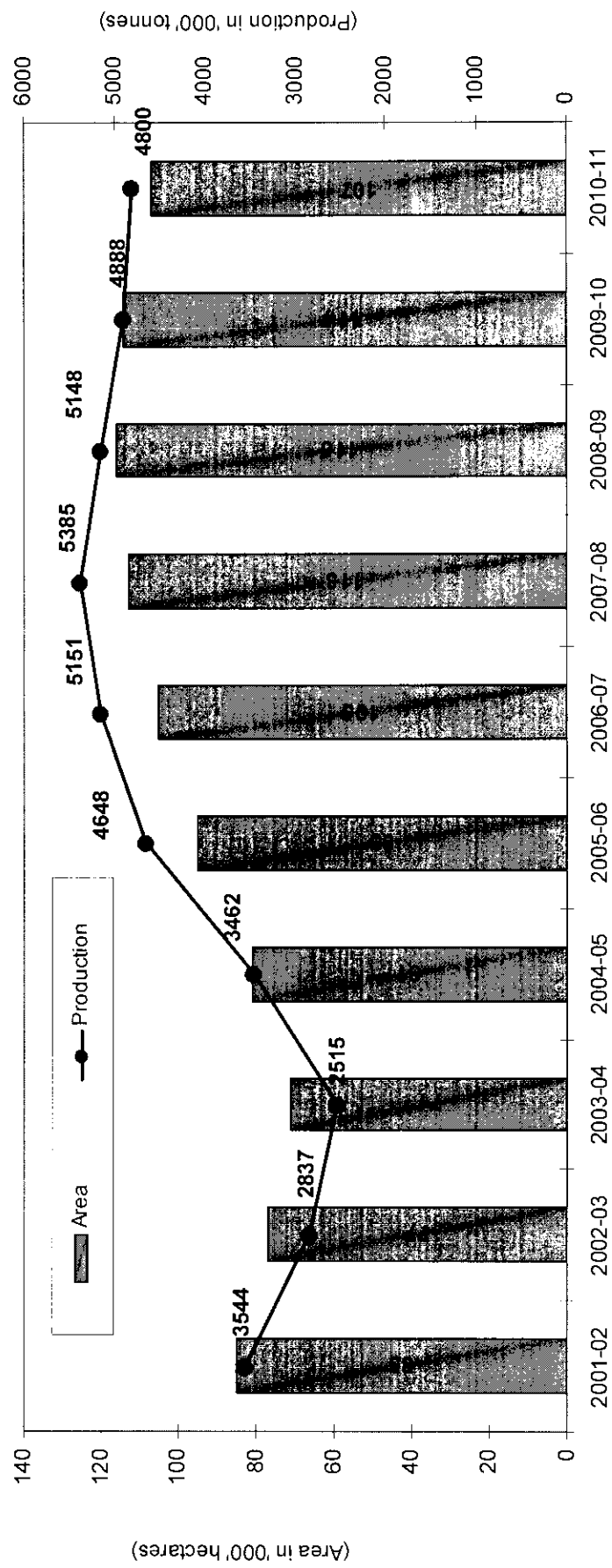
(in tonnes)

CROP		2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
A FRUITS											
1	Mango	438658	756495	615370	539404	537780	694554	702260	644626	636330	957982
2	Banana	3543796	2836916	2514729	3461788	4647637	5151394	5384825	5148134	4887841	4800473
3	Guava	44358	49594	58093	64489	92168	85952	97137	85124	92523	68299
4	Lemon	10002	8561	8282	13155	20551	20569	23190	20658	21886	33592
5	Jack	49690	31064	25962	24798	35939	40424	43585	38522	39427	46229
6	Orange	1857	3980	5334	4432	4215	4323	4562	4105	4194	3577
7	Grapes	51731	35665	59893	69736	84820	76953	75398	45418	44144	40230
8	Pineapple	17443	38374	23057	14683	21652	20970	26203	21493	18026	33949
B VEGETABLES											
1	Tomato	257950	284499	225440	321519	277728	282912	299095	296142	311450	298315
2	Brinjal	83495	59404	100996	100673	75971	67247	63380	57917	64902	78685
3	Lady's Finger	52566	39500	38269	44410	35951	26829	25768	38449	41794	52302
4	Cabbage	92301	126268	75074	92961	86497	130099	112883	66223	122187	115181
5	Sweet Potato	18683	11121	15049	21118	29555	18933	14780	8743	11381	9201

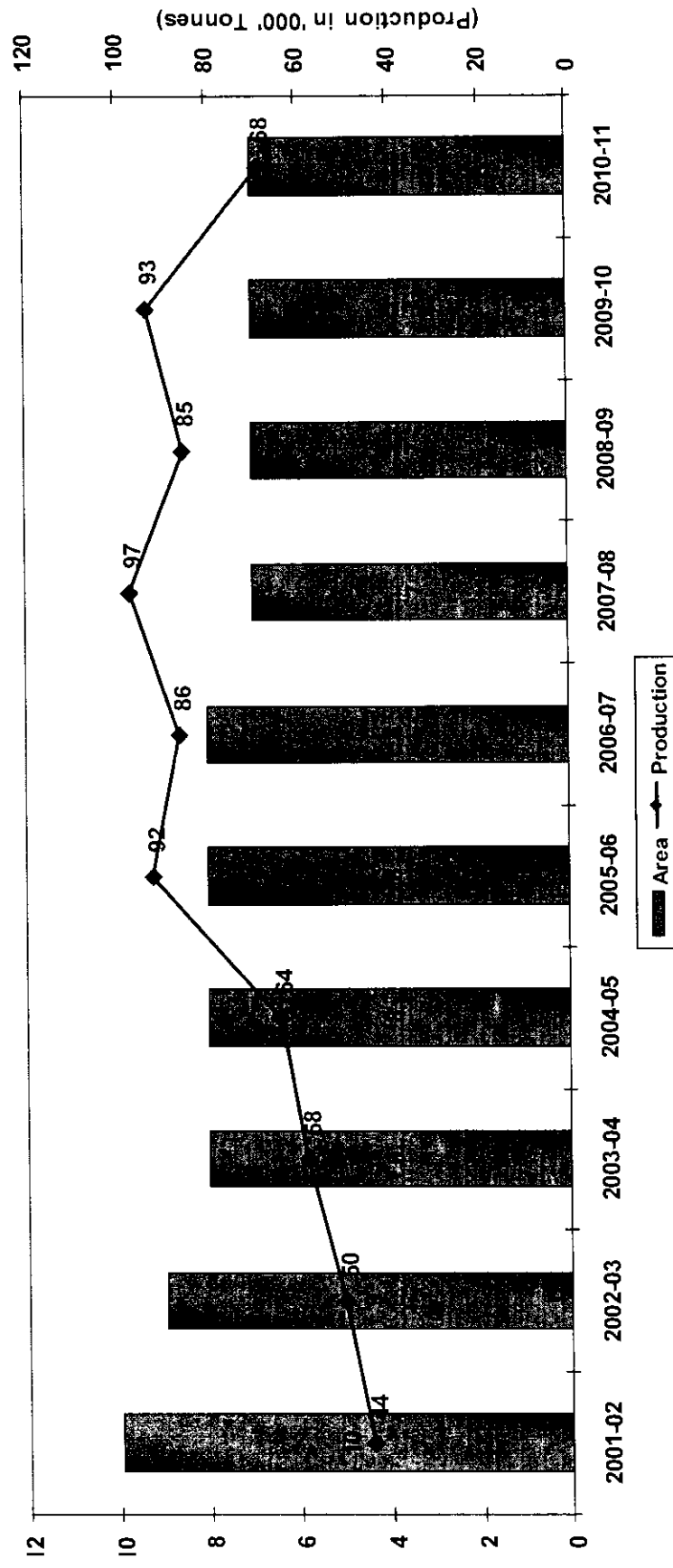
AREA AND PRODUCTION OF MANGO (2001-02 TO 2010-11)



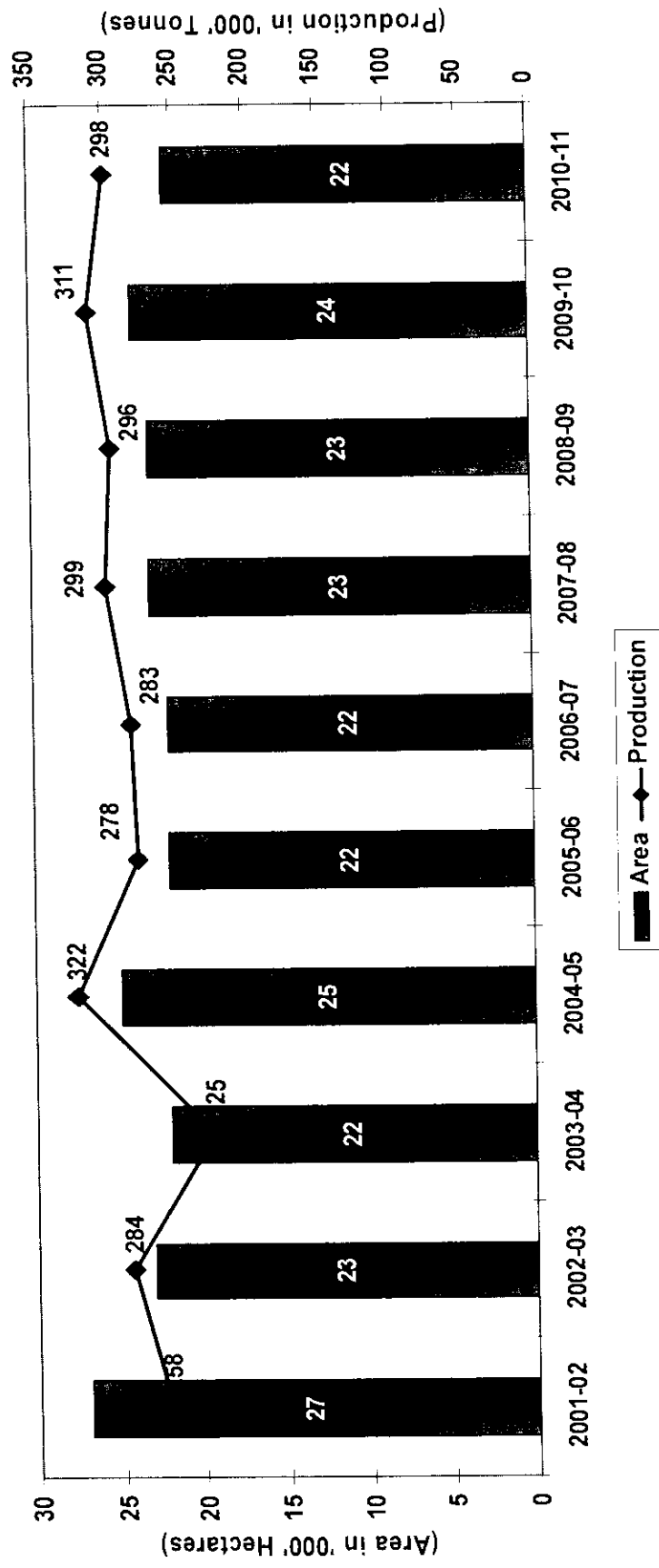
AREA AND PRODUCTION OF BANANA (2001-02 TO 2010-11)



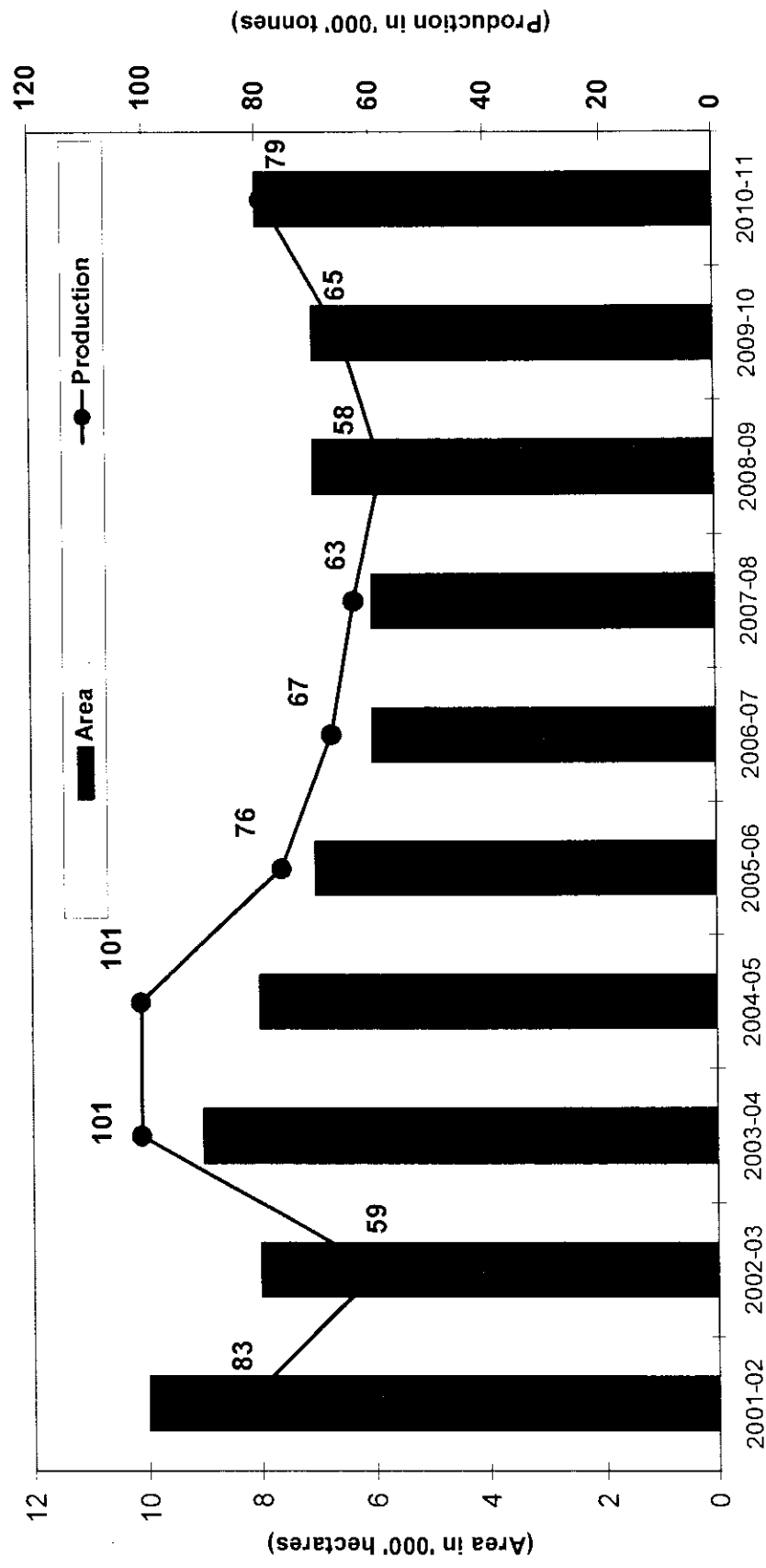
AREA AND PRODUCTION OF GUAVA (2001-02 TO 2010-11)



AREA AND PRODUCTION OF TOMATO (2001-02 TO 2010-11)



AREA AND PRODUCTION OF BRINJAL (2001-02 TO 2010-11)



AREA AND PRODUCTION OF LADY'S FINGER (2001-02 TO 2010-11)

