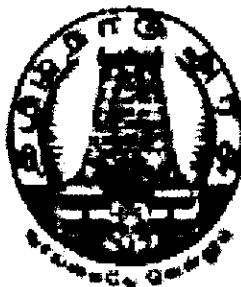


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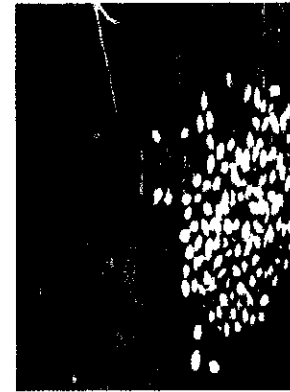


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# REPORT ON MINOR CROPS

**FASLI – 1422  
(2012 – 13)**



**PRINCIPAL SECRETARY/COMMISSIONER  
DEPARTMENT OF ECONOMICS AND STATISTICS  
CHENNAI – 600 006.**



# **REPORT ON MINOR CROPS TAMIL NADU**

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CHENNAI-600 006.**

# PREFACE

Land is of variable quality and finite in nature. Agricultural production is Supply determined rather than Demand determined. Due to shortage of assured irrigation farmers have to depend exclusively upon the vagaries of rainfall for the supply of an important input, viz. water to a large extent. Either too little rain or too much rain negatively influences Agricultural production and yield rates for different crops.

The Minor crops Scheme implemented in TamilNadu comprising of chillies, coriander, ginger, onion, potato, tapioca, turmeric and cashewnut plays a significant role in the agricultural economy. These minor crops yield immense benefits to the society. All these crops except Cashewnut is being used as a culinary item. With respect to Cashewnut, it has high export potential and generates huge foreign exchange earnings. The Crop Estimation Survey on selected minor crops like chillies, onion and potato was initiated in Tamil Nadu during 1971-72. Subsequently the survey was extended to include tapioca, turmeric, ginger, coriander and cashewnut. This report presents the results of Crop Estimation Survey conducted on the above minor crops for the year 2012-13. A mixed trend has been noticed in area, production and yield rate during 2012-13 compared to that of previous year. In short, the performance of these minor crops during 2012-13 is like a curator's egg. Besides this, adoption of agricultural technology for minor crops leaves much to be desired.

Chapter I of this report contains a brief Introduction to the Survey, Chapter II deals with the Estimation procedure, Chapter III highlights the Results of the survey, Chapter IV presents the Time series data for a ten-year period ending by 2013 and Chapter V furnishes the charts.

The information presented here would be highly useful and furnish a good insight to the administrators, planners, research scholars, students and other users. The time-series data on area, production and yield rates which are a rich source of material for the researchers, will kindle their interest and enthusiasm in the subject matter. Constructive feedback from the users of this document for improving the contents of this report is solicited.

Sd/-Dr.Niranjana Mardi,  
PRINCIPAL SECRETARY / COMMISSIONER.

Chennai - 6.

Date : 15.05. 2014.

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## EXECUTIVE SUMMARY

During 2012-13, Crop Estimation Survey was conducted for the minor crops such as chillies, onion, potato, tapioca, turmeric, ginger, coriander and cashewnut. The main objective of this survey is to provide a whole gamut of information on area covered, average yield per hectare and production of minor crops at district and State level. During 2012-13, 1210 experiments were planned and conducted in 28 Districts for the above 8 crops. A mixed trend have emerged regarding changes in area, production and yield rate, as indicated below.

### Findings of the Survey

Table - 1

#### CROPWISE AREA, AVERAGE YIELD AND PRODUCTION OF MINOR CROPS

Sl. No.	Crops	Area (ha.)			Average Yield (Kg/Ha.)			Production(Tonnes)		
		2012-13	2011-12	% Variation	2012-13	2011-12	% Variation	2012-13	2011-12	% Variation
1	Chillies	47110	56442	-16.53	381.02	436.557	-12.72	17950	24640	-27.15
2	Onion	24034	34912	-31.17	8290.69	10797.07	-23.21	199234	376947	-47.15
3	Turmeric	46151	67246	-31.37	3787.02	5478.557	-30.88	174775	368411	-52.56
4	Tapioca	81027	105349	-23.09	34179.61	37662.92	-9.25	2769471	3967751	-30.20
5	Ginger	322	635	-49.29	9605.38	11042.5	-13.02	3093	7012	-55.89
6	Potato	4268	4673	-8.67	17848.17	19731.89	-9.55	76176	92207	-17.39
7	Coriander	8171	10804	-24.37	90.43	467.322	-80.65	739	5049	-85.36
8	Cashewnut	93302	97033	-3.85	211.47	263.128	-19.63	19730	25532	-22.72

An insight into the table above reveals that during 2012-13 the area covered under <sup>Ginger and</sup> Turmeric substantially decreased by 49.29 and 31.37 percent whereas against the area under Tapioca and Coriander decreased by 23.09 percent and 24.37 percent respectively and in respect of Cashewnut and Chillies it was

decreased by 3.85 percent and 16.53 percent respectively when compared to that of previous year.

The average yield of Cashewnut decreased tremendously by 19.63 percent and as a result the Production of Cashewnut also has declined by 22.72 percent.

The area covered under Turmeric has decreased to the tune of 31.37 percent and there is sizeable decrease of Average yield per hectare by 30.88 percent and eventually the production of Turmeric decreased sumptuously by 52.56 percent which has reflected the upward trend of Turmeric prices during 2012-13.

The production of Cashewnut, Chillies, Onion, turmeric, Tapioca, Ginger, Coriander and potato have shown a negative trend during 2012-13 over that of the previous year.

## **CHAPTER - I**

### **THE SURVEY ON MINOR CROPS**

#### **INTRODUCTION**

The Scheme for the conduct of Crop Estimation Survey on selected minor crops like Chillies, Onion and Potato was initiated in Tamil Nadu during 1971-72 (Fasli 1381) in order to estimate the yield rate and production in a scientific manner by conducting crop cutting experiments. Subsequently the survey was extended to cover the following crops in a phased manner, as detailed below.

Tapioca	from 1975-76
Turmeric	from 1980-81
Ginger	
Coriander	from 1990-91
Cashewnut	from 1993-94

#### **OBJECTIVE OF THE SURVEY**

The main objective of this survey is to obtain reliable estimates of average yield per hectare and production of certain minor crops at the district and State level with a reasonable degree of precision. In addition to this, certain additional information on manuring, high yielding varieties and other agricultural practices adopted in respect of these crops were also collected and analysed in the tables annexed.

#### **COVERAGE**

The survey was conducted in the districts, where these crops are grown more predominantly. During 2012-13, 28 districts were covered under this survey.

#### **SAMPLING DESIGN OF THE SURVEY**

The sampling design adopted for this survey is a stratified multi-stage random sampling technique. The taluk is taken as stratum and villages within the taluk form the primary sampling units. Selection of fields and selection of experimental plots on specified size in each selected field form the second and third stages of sampling units.

## SAMPLE SIZE

The following Table shows the number of experiments planned and conducted during the year 2012-13.

**Number of Experiments Planned and Conducted**

Crop	No. of Experiments	
	Planned	Conducted
1. Chillies	190	170
2. Onion	190	190
3. Turmeric	200	200
4. Tapioca	210	210
5. Potato		
Summer	<b>64</b>	64
Winter	56	56
6. Ginger	30	26
7. Coriander	80	80
8. Cashewnut	190	190
<b>Total</b>	1210	<b>1186</b>

1210 experiments were planned and 1186 were conducted.

## PLOT SIZE

The size of the experimental plot is given below:

Chillies, Onion and Turmeric	:	5M X 5M
Potato	:	10M X 2M
Tapioca and coriander	:	2M X 2M
Ginger	:	2M X 1M
Cashewnut	:	Entire selected garden.

## PERIOD OF THE SURVEY

The periodicity of the Survey extended over a full Fasli year starting from July 2012 to June 2013.



## **COLLECTION AND SUPERVISION**

At the district level, Block Statistical Inspectors are the primary workers of the survey for all crops except cashewnut and coriander for which the fieldwork is entrusted with the Assistant Horticulture Officers of the Department of Horticulture and Plantation Crops. In order to ensure maximum accuracy in yield estimation the fieldwork is supervised by the respective Statistical Officers, Assistant Director of Statistics, Deputy Director of Statistics and Regional Joint Director of Statistics at various stages.

## CHAPTER II

### ESTIMATION PROCEDURE

The following estimation procedure is adopted for finalising the estimates of average yield. The average yield of crops at Taluk level is calculated as a simple mean of individual plot yields. It can be denoted mathematically as follows:

$$\bar{Y}_i = \left\{ \sum_{i=1}^{m_i} \sum_{r=1}^2 Y_{ri} \right\} / n_i$$

Where  $\bar{Y}_i$  = average yield for  $i^{\text{th}}$  taluk.

$Y_{ri}$  = yield of  $i^{\text{th}}$  experiments in  $i^{\text{th}}$  village.

$n_i$  = number of experiments in  $i^{\text{th}}$  taluk.

$m_i$  = number of villages in  $i^{\text{th}}$  taluk.

The average yield for the district is calculated by combining the stratum means using the area under the respective crop in the stratum as weight.

Mathematically,

$$\bar{Y}(d) = \left\{ \sum_{i=1}^{t_k} \bar{Y}_i \times a_i \right\} / \sum_{i=1}^{t_k} a_i$$

Where  $\bar{Y}(d)$  = average yield for the district

$a_i$  = area in the  $i^{\text{th}}$  taluk.

$t_k$  = number of taluks in the districts.

The estimates of average yield for each category of crops are then pooled to arrive at the estimated average yield for the combined crop at district and State level by using the area under the respective category as weight.

The Sampling error which gives an indication of the limits within which the estimated average yield likely to vary is worked out by using the formula.

$$SE = \sqrt{\bar{Y}_i} = \frac{\left[ F \sum_{i=1}^{t_k} (a_i^2 / n_i) + (E \sim F) \sum_{i=1}^{t_k} (a_i^2 / n_i) \sum_{i=1}^{t_k} n_i^2 / \lambda_i n_i \right]}{\left[ \sum_{i=1}^{t_k} a_i \right]^2}$$

Where  $\bar{Y}(d)$  = Estimated district mean yield

$n_{ij}$  = The number of fields with 'j'<sup>th</sup> village of the 'i'<sup>th</sup> taluk..

$n_i$  = Number of experiments conducted in the taluk.

$m_i$  = The number of selected villages in the 'i'<sup>th</sup> taluk

$t_k$  = Number of taluks in the districts.

$a_i$  = Area of the crop in the 'i'<sup>th</sup> taluk.

$E$  = SSBV (i.e) the estimate of the mean square between the field

DF within the village

$F$  = SSWV (i.e) the estimate of the mean square within the village  
DF

$\lambda_i =$  Correction factor

$$= \left[ n_i^2 - \sum_{j=1}^{n_i} n_{ij} \right] / n_i (n_i - 1)$$

The district average is worked out separately for each category such as season of crops, for irrigated and unirrigated categories, as the case may be by making use of the above formula. The district average for the combined crop is arrived at by pooling the estimates for each category on the basis of the area under the respective category. The estimates for the State are obtained by using weighted average method. The district-wise area figures under the crops are used as weight.

In case where crops are grown as mixed crops, the plot yields are estimated in proportion to the percentage of the mixed crop in the experimental field.

### CHAPTER III

#### RESULTS OF THE SURVEY

#### CHILLIES

Chillies are an important culinary ingredient.

It may be noted that the districts of Ramanathapuram and Thoothukudi put together contribute a large chunk of 58 per cent to State aggregate production. According to the Season and Crop Report 2012-13, area under chillies decreased by 16.53 per cent from 56442 ha. during 2011-12 to 47110 ha. during 2012-13. During the same period estimated average yield dropped up by 12.72 per cent from 437 to 381 kg/ha. Estimated production come down from 24640 tonnes to 17950 tonnes exhibiting an decrease of 27.15 per cent. Relevant information is portrayed below.

**Table-2**  
**District Wise Area, Average Yield and Production of Chillies**  
**Year 2012-13**

Sl. No.	District	No. of Experiments		Area as per Season and Crop Report (ha.)	Estimated Average Yield (kg./ha)	Estimated Production (tonnes)
		Planned	Analysed			
1	SALEM	10	10	636	640.934	408
2	TIRUCHIRAPPALLI	10	10	937	531.527	498
3	DINDIGUL	10	10	1401	694.745	973
4	RAMANATHAPURAM	50	50	18995	389.646	7401
5	VIRUDHUNAGAR	20	20	1786	836.055	1493
6	SIVAGANGAI	20	20	3830	129.542	496
7	TIRUNELVELI	10	10	1181	1007.746	1190
8	THOOTHUKUDI	30	30	11897	257.239	3060
9	ARIYALUR	10	10	211	254.829	54
	TOTAL FOR THE DISTRICTS COVERED IN THE STATE	190	170	40874	381.024	15574
	TOTAL FOR THE ENTIRE STATE	190	170	47110	381.024	17950

Chillies crop is predominantly grown in Ramanathapuram District covering 18995 hectare and the estimated average yield of Chillies is 390 kg/hectare.

### Adoption of Modern Agricultural Practices

Yield rate will go up provided the farmers embrace the modern farm technology in cultivation of crops. Traditionally low yielding varieties are dominating the scene. Out of 190 farmers, only 11 per cent used high yielding crops, 61 per cent applied chemical fertilizers and 85 per cent used pesticides in the cultivation of chillies. Relevant information is shown below.

**Table-3**

### Extent of Application of High Yield Variety Seeds, Fertilizers and Pesticides.

**Year: 2012-13.**

Sl. No.	DISTRICT	Percentage of Area under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	SALEM	100	0	0	50	50	0	100	0
2	TIRUCHIRAPPALLI	0	54	46	48	52	0	100	0
3	DINDIGUL	0	62	38	17	17	65	23	77
4	RAMANATHAPURAM	93	0	7	68	20	12	96	4
5	VIRUDHUNAGAR	19	0	81	57	43	0	100	0
6	SIVAGANGAI	100	0	0	33	0	67	28	72
7	TIRUNELVELI	60	0	40	44	44	11	80	20
8	THOOTHUKUDI	100	0	0	73	18	9	97	3
9	ARIYALUR	0	0	100	100	0	0	69	31
	<b>STATE</b>	<b>84</b>	<b>3</b>	<b>11</b>	<b>61</b>	<b>20</b>	<b>17</b>	<b>85</b>	<b>13</b>

## ONION

Onion is widely used for seasoning the food items. Area under onion went down by 31.17 per cent from 34912 ha. during 2011-12 to 24031 ha. during 2012-13. Average yield decreased from 10797 kg/ha to 8291 kg./ha. registering a fall of 23.21 per cent. Total production dropped by 47.15 per cent from 376947 tonnes to 199234 tonnes. Relevant information is displayed below.

**Table-4**

**District-wise Area, Average Yield and Production of Onion year 2012-13**

Sl. No.	District	No. of Experiments		Area as per Season and Crop Report (ha.)	Estimated Average Yield (kg./ha)	Estimated Production (tonnes)
		Planned	Analysed			
1	SALEM	10	10	911	7264.461	6618
2	NAMAKKAL	20	20	1363	12162.032	16577
3	COIMBATORE	10	10	907	11289.337	10239
4	ERODE	10	10	686	8257.622	5665
5	TIRUCHIRAPPALLI	30	30	3274	9585.865	31384
6	PERAMBALUR	30	30	6513	6924.224	45097
7	MADURAI	10	10	341	4675.584	1594
8	DINDIGUL	20	20	2580	7450.994	19224
9	VIRUDHUNAGAR	10	10	949	8174.974	7758
10	TIRUNELVELI	10	10	1770	10662.820	18873
11	THOOTHUKUDI	10	10	1507	3297.303	4969
12	THIRUPPUR	20	20	1592	11021.405	17546
	<b>TOTAL FOR THE DISTRICTS COVERED IN THE STATE</b>	<b>190</b>	<b>190</b>	<b>22393</b>	<b>8285.840</b>	<b>185545</b>
	<b>TOTAL FOR THE ENTIRE STATE</b>	<b>190</b>	<b>190</b>	<b>24031</b>	<b>8290.688</b>	<b>199234</b>

As born out in table above, Perambalur district stands first in the area sown, followed by Tiruchirappalli and Dindigul districts. In respect of the yield, Namakkal district ranks first, followed by Coimbatore and Tiruppur.

## Adoption of Modern Agricultural Practices

Out of 190 farmers contacted, 72 per cent applied traditional variety of seeds in onion(K) and 63 per cent in onion(R) while 26 per cent followed high yielding varieties in onion(K) and 15 per cent in onion(R). About 53 per cent used chemical fertilizers in onion(K) and 44 percent in onion(R). Crop was treated with pesticides in the cases of 81 percent of total farmers in onion(K) and 82 per cent in onion (R). Relevant information is set out below:

**Table-5**  
**Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.**

**Year: 2012-13**

**Onion (Kharif)**

Sl. No.	DISTRICT	PERCENTAGE AREA UNDER							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	SALEM	14	0	86	45	55	0	93	7
2	NAMAKKAL	100	0	0	57	29	14	100	0
3	COIMBATORE	100	0	0	60	40	0	17	83
4	ERODE	10	0	90	6	2	91	2	98
5	TIRUCHIRAPPALLI	50	50	0	47	53	0	100	0
6	PERAMBALUR	100	0	0	50	50	0	100	0
7	MADURAI	90	10	0	90	10	0	0	100
8	DINDIGUL	70	0	30	67	20	14	59	41
9	TIRUNELVELI	29	0	71	56	44	0	100	0
10	THIRUPPUR	100	0	0	61	25	14	100	0
	<b>STATE</b>	<b>72</b>	<b>2</b>	<b>26</b>	<b>53</b>	<b>39</b>	<b>9</b>	<b>81</b>	<b>19</b>



**Table-6****Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.****Year: 2012-13****Onion (Rabi)**

Sl. No.	DISTRICT	PERCENTAGE AREA UNDER							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	NAMAKKAL	36	55	8	38	38	24	64	36
2	TIRUCHIRAPPALLI	45	55	0	48	43	9	92	8
3	PERAMBALUR	100	0	0	50	50	0	100	0
4	MADURAI	0	0	100	50	50	0	100	0
5	DINDIGUL	0	42	58	0	0	100	0	100
6	VIRUDHUNAGAR	100	0	0	60	27	13	100	0
7	THOOTHUKUDI	100	0	0	62	38	0	100	0
8	THIRUPPUR	24	0	76	50	50	0	100	0
	<b>STATE</b>	<b>63</b>	<b>22</b>	<b>15</b>	<b>44</b>	<b>38</b>	<b>18</b>	<b>82</b>	<b>18</b>

**TURMERIC**

Turmeric is a ten-month long crop usually sown during May-June and harvested during March-April every year. It is used as a culinary ingredient. This crop is thriving in the districts of Erode, Salem and Dharmapuri because of presence of enterprising farmers and assured water supply.

Total area under turmeric dropped by 31.37 per cent from 67246 ha during 2011-12 to 46151 ha during 2012-13. Yield rate dropped by 30.88 per cent from 5479 kg / ha to 3787 kg/ha. Total production fell by 52.56 per cent from 368411 tonnes to 174775 tonnes. Relevant information is presented in Table-7.

**Table-7**  
**District-wise Area, Average Yield and Production of Turmeric**

**Year 2012-13**

Sl. No.	District	No. of Experiments		Area as per Season and Crop Report (ha.)	Estimated Average Yield (kg./ha)	Estimated Production (tonnes)
		Planned	Analysed			
1	VILLUPURAM	20	20	2989	2168.255	6481
2	VELLORE	10	10	1137	4141.296	4709
3	THIRUVANNAMALAI	10	10	956	8510.027	8136
4	SALEM	30	30	8633	3507.781	30283
5	NAMAKKAL	20	20	2508	4916.808	12331
6	DHARMAPURI	30	30	10685	2898.389	30969
7	COIMBATORE	10	10	1367	6050.671	8271
8	ERODE	20	20	10929	4275.463	46727
9	TIRUCHIRAPPALLI	10	10	1544	4407.743	6806
10	KARUR	10	10	257	8742.276	2247
11	PERAMBALUR	10	10	1314	3502.829	4603
12	KRISHNAGIRI	10	10	1436	3676.290	5279
13	THIRUPPUR	10	10	1710	3120.822	5337
	<b>TOTAL FOR THE DISTRICTS COVERED IN THE STATE</b>	<b>200</b>	<b>200</b>	<b>45465</b>	<b>3787.024</b>	<b>172177</b>
	<b>TOTAL FOR THE ENTIRE STATE</b>	<b>200</b>	<b>200</b>	<b>46151</b>	<b>3787.024</b>	<b>174775</b>

### **Adoption of Modern Agricultural Practices**

Out of the total 200 sample farmers, 42 per cent of farmers adopted high yielding varieties, 44 per cent used chemical fertilizers and 82 per cent treated to crop with pesticides. Relevant information is presented in Table 8.

Table -8

## Extent of Application of High Yielding Varieties, Seeds, Fertilizers and Pesticides

Sl. No.	DISTRICT	Percentage of Area Under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	VILLUPURAM	11	29	60	64	36	0	71	29
2	VELLORE	100	0	0	48	52	0	100	0
3	THIRUVANNAMALAI	82	0	18	22	67	11	82	18
4	SALEM	23	0	77	54	44	2	100	0
5	NAMAKKAL	77	0	23	50	50	0	100	0
6	DHARMAPURI	82	7	11	18	18	64	33	67
7	COIMBATORE	89	11	0	50	50	0	100	0
8	ERODE	38	3	59	50	50	0	100	0
9	TIRUCHIRAPPALLI	0	0	100	50	50	0	100	0
10	KARUR	40	0	60	50	50	0	87	13
11	PERAMBALUR	0	75	25	46	54	0	100	0
12	KRISHNAGIRI	30	60	10	56	44	0	100	0
13	THIRUPPUR	90	10	0	47	53	0	100	0
	STATE	49	9	42	44	41	16	82	18

## TAPIOCA

Tapioca is an annual crop. It has multiple uses such as human consumption and production of starch. This crop is predominantly grown in the districts of Nammakkal, Salem and Dharmapuri.

Total area decreased by 23.09 per cent from 105349 ha. during 2011-12 to 81027 ha. during 2012-13. The yield rate decreased by 9.25 per cent from 37663 kg/ha. to 34180 kg/ha. Total production dropped by 30.20 per cent from 3967751 tonnes to 2769471 tonnes. Relevant information is presented below:

**Table-9**  
**District-wise Area, Average Yield and Production of Tapioca**

Sl. No.	District	No. of Experiments		Area as per Season and Crop Report (ha.)	Year: 2012-13	
		Planned	Analysed		Estimated Average Yield (kg./ha)	Estimated Production (tonnes)
1	CUDDALORE	10	10	2654	28732.418	76256
2	VILLUPURAM	20	20	11517	32774.365	377462
3	THIRUVANNAMALAI	10	10	2970	43967.755	130584
4	SALEM	30	30	14269	28745.908	410175
5	NAMAKKAL	30	29	14506	40253.081	583911
6	DHARMAPURI	40	40	18430	29186.117	537900
7	ERODE	10	10	4487	29339.662	131647
8	TIRUCHIRAPPALLI	10	10	5122	46138.377	236321
9	KARUR	10	10	951	34801.856	33097
10	PERAMBALUR	10	10	1298	69515.775	90231
11	KANYAKUMARI	10	10	942	32998.577	31085
12	KRISHNAGIRI	10	10	725	35137.500	25475
13	THIRUPPUR	10	10	235	23352.806	5488
	<b>TOTAL FOR THE DISTRICTS COVERED IN THE STATE</b>	<b>210</b>	<b>210</b>	<b>78106</b>	<b>34179.605</b>	<b>2669632</b>
	<b>TOTAL FOR THE ENTIRE STATE</b>	<b>210</b>	<b>210</b>	<b>81027</b>	<b>34179.605</b>	<b>2769471</b>

### Adoption of Modern Agricultural Practices

28 per cent of 210 sample farmers adopted high yield varieties, 46 per cent applied chemical fertilizers and 93 per cent treated the crop with pesticides. Relevant information is exhibited below:

**Table -10**

#### Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.

**Year 2012-13**

Sl. No.	DISTRICT	Percentage of Area Under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	CUDDALORE	0	0	100	57	43	0	100	0
2	VILLUPURAM	12	74	15	52	48	0	96	4
3	THIRUVANNAMALAI	75	0	25	0	0	100	25	75
4	SALEM	0	52	48	47	39	14	100	0
5	NAMAKKAL	0	104	0	45	45	9	82	22
6	DHARMAPURI	72	15	14	36	32	32	98	2
7	ERODE	0	0	100	51	49	0	100	0
8	TIRUCHIRAPPALLI	0	40	60	68	32	0	100	0
9	KARUR	100	0	0	100	0	0	100	0
10	PERAMBALUR	0	100	0	50	50	0	100	0
11	KANYAKUMARI	20	80	0	0	100	0	100	0
12	KRISHNAGIRI	100	0	0	100	0	0	100	0
13	THIRUPPUR	0	0	100	75	17	8	100	0
	<b>STATE</b>	<b>24</b>	<b>49</b>	<b>28</b>	<b>46</b>	<b>39</b>	<b>16</b>	<b>93</b>	<b>8</b>

## **POTATO**

Potato is mainly grown in the district of Dindigul and The Nilgiris. It is raised during two seasons viz. Summer and Winter. Summer crop is sown during May and June whereas winter crop is raised during October and November.

### ***Potato (Summer)***

The area covered under the crop as per Season and Crop Report for 2012-13 was 2801 ha. against 3130 ha. in 2011-12. The area under cultivation substantially decreased by 10.51 per cent. The estimated yield per hectare stood at 15645 kg/ha. during 2012-13 against 18244 kg/ha. in 2011-12. The yield rate decreased by 14.24 per cent. The estimated production for 2012-13 was at 43822 tonnes against 57104 tonnes in 2011-12 recording a phenomenal decrease of 23.26 per cent.

### ***Potato (Winter)***

The winter area as per Season and Crop Report for 2012-13 was put at 1467 ha. against 1543 ha. in the previous year. The area under cultivation decreased by 4.93 per cent. The estimated yield per hectare was 22054 kg./ha. in 2012-13 against 22750 kg./ha. in 2011-12, the decrease being 3.06 per cent.

The estimated production for 2012-13 was at 32354 tonnes against 35103 tonnes in 2011-12 the decrease being 7.83 per cent. The decrease in the production was due to the significant decrease in the area.

### ***Potato (Combined)***

The area under potato in both seasons combined together for the State was at 4268 ha. during 2012-13 against 4673 ha. in 2011-12 recording a decrease of 8.67 per cent. With respect to yield rate it decreased by 9.55 per cent from 19732 kg/ha. to 17848 kg/ha. Estimated total production dropped by 17.39 per cent from 92207 tonnes to 76176 tonnes. Relevant information is in Table-11.

**Table- 11**  
**District-wise Area, Average Yield and Production of Potato**

Year : 2012-13

Year : 2012-13					
District	No. of Experiments		Area as per Season & Crop Report (ha.)	Estimated Average Yield (kg/ha)	Estimated Production (tonnes)
	Planned	Analysed			
POTATO (Summer)					
ERODE	14	14	372	12964.286	4823
DINDIGUL	30	30	1715	13133.333	22524
THE NILGIRIS	20	20	672	23539.972	15819
TOTAL FOR THE DISTRICTS COVERED IN THE STATE	64	64	2759	15645.249	43165
TOTAL FOR THE ENTIRE STATE	64	64	2801	15645.249	43832
POTATO (Winter)					
DINDIGUL	20	20	502	12472.500	6261
THE NILGIRIS	20	20	525	21433.163	11252
KRISHNAGIRI	16	16	438	33780.625	14796
TOTAL FOR THE DISTRICTS COVERED IN THE STATE	56	56	1465	22054.279	32310
TOTAL FOR THE ENTIRE STATE	56	56	1467	22054.279	32354
POTATO (Combined)					
ERODE	14	14	374	13012.896	4867
DINDIGUL	50	50	2217	12983.699	28785
THE NILGIRIS	40	40	1197	22615.933	27071
KRISHNAGIRI	16	16	467	32654.445	15250
TOTAL FOR THE DISTRICTS COVERED IN THE STATE	120	120	4255	17854.896	75973
TOTAL FOR THE ENTIRE STATE	120	120	4268	17848.165	76176

### Adoption of Modern Agricultural Practices during summer season

Of the total 64 sample farmers, 96 per cent used High Yield Variety seeds, 30 per cent applied chemical fertilizers. 72 per cent of Pesticides was used. Relevant information is displayed below:

**Table-12**  
(Potato kharif)  
**Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.**

Sl. No.	DISTRICT	Percentage of Area Under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	ERODE	14	0	86	50	50	0	100	0
2	DINDIGUL	0	0	100	6	6	88	53	47
3	THE NILGIRIS	0	10	92	81	19	0	103	0
	<b>TOTAL FOR THE ENTIRE STATE</b>	<b>2</b>	<b>3</b>	<b>96</b>	<b>30</b>	<b>15</b>	<b>54</b>	<b>72</b>	<b>29</b>

### Adoption of Modern Agricultural Practices during winter season.

Out of the total 56 sample farmers, 100 per cent used High Yielding Varieties and 37 per cent applied chemical fertilizers. Relevant information is furnished below:

**Table -13**  
(Potato Rabi)

**Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.**

Sl. No.	DISTRICT	Percentage of Area Under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UNMANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	DINDIGUL	0	0	100	0	0	100	0	100
2	THE NILGIRIS	0	0	100	61	20	20	75	25
3	KRISHNAGIRI	0	0	100	50	50	0	100	0
	<b>STATE</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>37</b>	<b>22</b>	<b>41</b>	<b>57</b>	<b>43</b>



## GINGER

The ginger crop requires copious and well-distributed rainfall. The crop is predominantly sown in The Nilgiris District. Generally this crop is planted during April-May and harvested in January-February. The area under the crop as per Season and Crop Report stood at 322 ha. in 2012-13 as against 635 ha. in 2011-12. The decrease in area was 49.29 per cent.

The estimated average yield per hectare went down to 9605 kg/ha. during 2012-13 from 11043 kg/ha. in 2011-12. The yield rate sharply fell by 13.0 per cent. The estimated production for 2012-13 was put at 3093 tonnes against 7012 tonnes in 2011-12, the fall being 55.89 per cent. Relevant information is furnished below

**Table-14**  
**Area, Average Yield and Production of Ginger**

District	No. of Experiments		Area as per Season & Crop Report (ha.)	Estimated Average Yield (kg/ha)	Estimated Production (tonnes)
	Planned	Analysed			
KANYAKUMARI	4	4	10	35083.333	351
THE NILGIRIS	22	22	298	8750.411	2608
<b>TOTAL FOR THE DISTRICTS COVERED IN THE STATE</b>	<b>30</b>	<b>26</b>	<b>308</b>	<b>9605.376</b>	<b>2958</b>
<b>TOTAL FOR THE ENTIRE STATE</b>	<b>30</b>	<b>26</b>	<b>322</b>	<b>9605.376</b>	<b>3093</b>

### Adoption of Modern Agricultural Practices

Out of total 30 sample farmers, 54 per cent used unmanured area and 100 per cent were untreated by pesticides with respect of ginger crop. Relevant information is portrayed in Table-15.

**Table-15****Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.**

Sl. No.	DISTRICT	Percentage of Area Under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPRVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT DF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	KANYAKUMARI	100	0	0	0	50	50	100	0
	THE NILGIRIS	91	9	0	10	36	54	100	0
	STATE	91	9	0	9	37	54	100	0

**CORIANDER**

Coriander crop is mainly grown in the districts of Thoothukudi, Virudhunagar and Ramanathapuram. Coriander is mainly sown as an unirrigated crop and usually raised during the month of October-November, ie North East Monsoon period and the crop is harvested in January-February.

Total area under coriander fell down by 24.37 per cent from 10804 ha. during 2011-12 to 8171 ha. during 2012-13. Yield rate dropped by 80.65 per cent from 467 kg/ha. to 90 kg/ha. Total production decreased from 5049 tonnes to 739 tonnes, the drop being a significant 85.36 per cent. Relevant information is in Table-16.

**Table-16**  
**District-wise Area, Average Yield and Production of Coriander**  
**Year 2012-13**

Sl. No.	District	No. of Experiments		Area as per Season and Crop Report (ha.)	Estimated Average Yield (kg/ha)	Estimated Production (tonnes)
		Planned	Analysed			
1	TIRUCHIRAPPALLI	10	10	226	715.763	162
2	RAMANATHAPURAM	10	10	1391	27.417	38
3	VIRUDHUNAGAR	20	20	1538	188.996	291
4	THOOTHUKUDI	30	30	3329	10.952	36
5	THIRUPPUR	10	10	228	350.509	80
	<b>TOTAL FOR THE DISTRICTS COVERED IN THE STATE</b>	<b>80</b>	<b>80</b>	<b>6712</b>	<b>90.428</b>	<b>607</b>
	<b>TOTAL FOR THE ENTIRE STATE</b>	<b>80</b>	<b>80</b>	<b>8171</b>	<b>90.428</b>	<b>739</b>

## Adoption of Modern Agricultural Practices

Out of 80 sample farmers, 100 per cent used local varieties, 27 per cent applied chemical fertilizers.

**Table -17**

**Extent of Application of High Yielding Varieties Seeds, Fertilizers and Pesticides.**

**Year: 2012-13**

Sl. No.	DISTRICT	Percentage of Area Under							
		Seeds			Fertilisers			Pesticides	
		LOCAL SEEDS	IMPROVED SEEDS	HIGH YIELDING SEEDS	CHEMICAL FERTILISER	OTHER MANURES	UN MANURED	TREATMENT OF PESTICIDES / INSECTICIDES	UN-TREATED BY PESTICIDES /INSECTICIDES
1	TIRUCHIRAPPALLI	100	0	0	0	80	20	100	0
2	RAMANATHAPURAM	100	0	0	37	63	0	100	0
3	VIRUDHUNAGAR	100	0	0	6	94	0	100	0
4	THOOTHUKUDI	100	0	0	36	50	13	91	9
5	THIRUPPUR	100	0	0	0	0	100	100	0
	<b>STATE</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>62</b>	<b>11</b>	<b>96</b>	<b>4</b>

## CASHEWNUT

Cashewnut is a commercial and value added crop. It is bound to earn substantial foreign exchange earnings. Since the crop is xerophytic by nature, it requires minimum care and maintenance. This crop is dominant in the districts of Ariyalur and Cuddalore.

Total area fell by 3.85 per cent from 97033 ha. during 2011-12 to 93302 ha. during 2012-13. Yield rate decreased by 19.63 per cent from 263 kg/ha. to 211 kg/ha. In sympathy with fall in area and productivity, total production contracted from 25532 tonnes to 19730 tonnes the decline being 22.72 percent. Relevant information is presented below:

**Table-18**

### **District-wise Area, Average Yield and Production of Cashewnut**

**Year 2011-12**

SL. NO	District	No of Experiments		Area as per Season & Crop Report (Ha.)	Estimated Average Yield (Kg/ha)	Estimated Production (tonnes)
		Planned	Analysed			
1	CUDDALORE	30	30	30404	218.901	6655
2	VILLUPURAM	20	20	5187	509.530	2643
3	THANJAVUR	10	10	1502	170.781	257
4	NAGAPATTINAM	10	10	1891	621.603	1175
5	PUDUKOTTAI	30	30	7370	156.051	1150
6	THENI	20	20	5110	625.235	3195
7	SIVAGANGAI	20	20	3679	79.297	292
8	TIRUNELVELI	20	20	4173	27.242	114
9	ARIYALUR	30	30	29574	112.136	3316
	<b>TOTAL FOR THE DISTRICTS COVERED IN THE STATE</b>	<b>190</b>	<b>190</b>	<b>88890</b>	<b>211.465</b>	<b>18797</b>
	<b>TOTAL FOR THE ENTIRE STATE</b>	<b>190</b>	<b>190</b>	<b>93302</b>	<b>211.465</b>	<b>19730</b>

**Chapter IV**  
**TIMES SERIES DATA**

Area, yield and production for the past 10 years are furnished in the following Tables.

**Trend in Area**

(in ha.)

Year	Chillies	Onion	Turmeric	Tapioca	Potato	Ginger	Corian- der	Cashew- nut
2003-04	75206	23452	16181	95022	4341	395	27722	102763
2004-05	66990	26491	21616	110589	5034	574	19350	104659
2005-06	49033	29169	25970	127122	5005	660	21062	106059
2006-07	61418	29587	30528	139628	5190	669	17425	103968
2007-08	67408	29809	27303	140092	4066	625	13288	101309
2008-09	65412	30255	29875	124301	4367	817	14139	99168
2009-10	58476	31024	33366	118647	4611	864	15977	99043
2010-11	53626	31959	51446	119618	4624	587	10824	96710
2011-12	56442	34912	67246	105349	4673	635	10804	97033
2012-13	47110	24031	46151	81027	4268	322	8171	93302

**Trend in Average Yield**

(in kg/ha)

Year	Chillies	Onion	Turmeric	Tapioca	Potato	Ginger	Corian- der	Cashew- nut
2003-04	532.8	9004.5	4156.1	33691.3	16149.0	14175.0	290.5	383.2
2004-05	666.2	9677.2	5479.6	41267.9	15705.1	19296.3	433.6	425.2
2005-06	649.1	8015.3	5520.0	38210.9	14903.8	19293.8	305.1	413.5
2006-07	695.5	8731.3	5745.2	40360.4	14921.8	18637.5	325.8	491.1
2007-08	505.6	9635.0	5347.8	42203.0	16765.6	19037.5	385.3	571.6
2008-09	503.4	9453.4	5768.9	36470.8	18438.4	20000.0	340.6	520.5
2009-10	534.1	9752.5	5067.2	34468.2	18365.4	16050.0	395.2	500.0
2010-11	404.5	9365.3	5403.3	32448.5	19232.6	9845.5	418.7	413.6
2011-12	436.6	10797.1	5478.6	37662.9	19731.9	11042.5	467.3	263.1
2012-13	381.0	8290.7	3787.0	34179.6	17848.2	9605.4	90.4	211.5

### Trend in Production

(in tonnes)

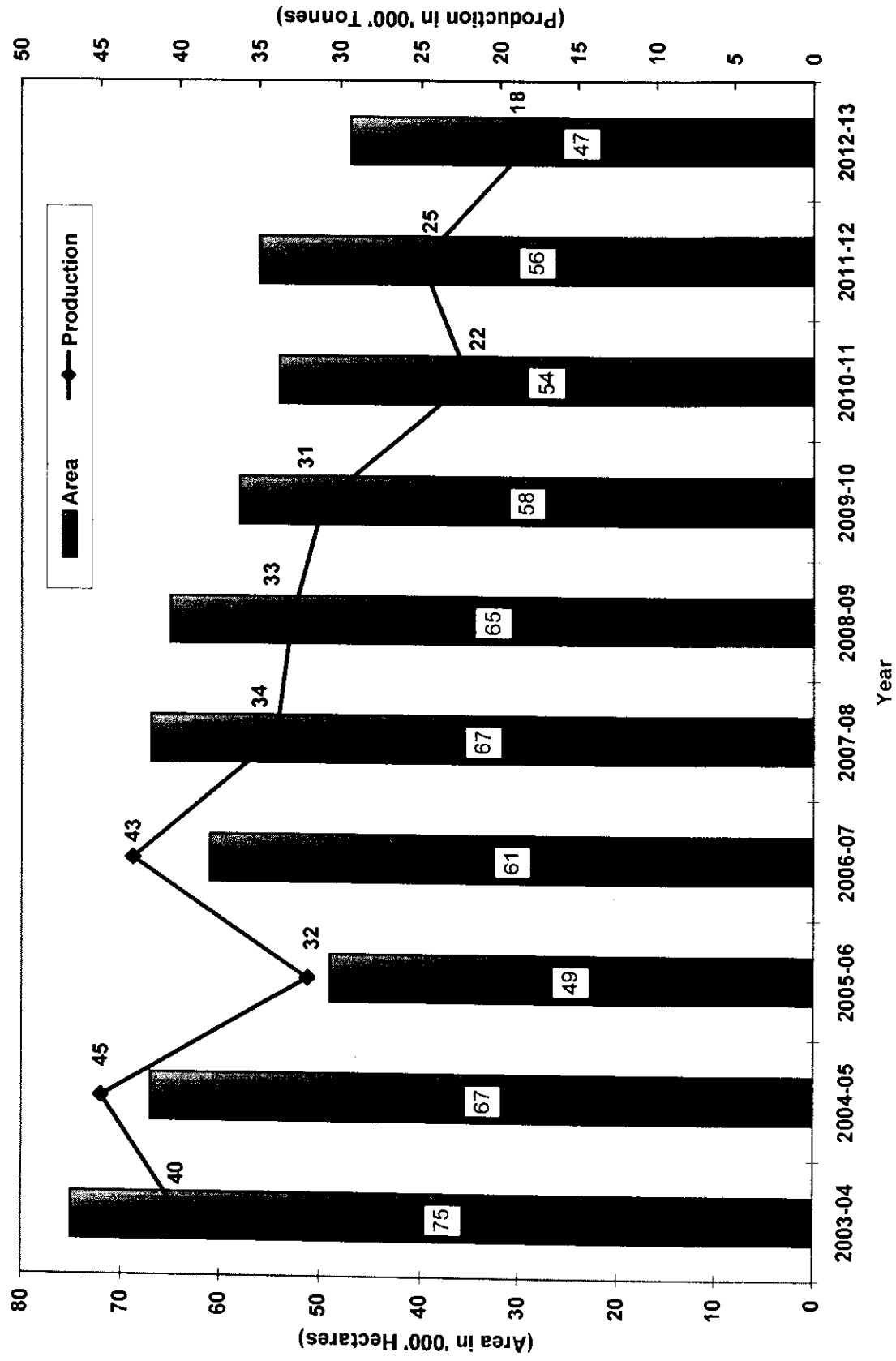
Year	Chillies	Onion	Turmeric	Tapioca	Potato	Ginger	Corian- der	Cashew -nut
2003-04	40067	211173	67250	3201414	70103	5599	8052	39380
2004-05	44631	256359	118447	4563776	79060	11076	8391	44497
2005-06	31830	233796	143358	4857440	74593	12735	6425	43858
2006-07	42719	258333	175388	5635436	77443	12468	5676	51057
2007-08	34084	287210	146008	5912307	68169	11898	5120	57905
2008-09	32924	286040	172334	4533359	80539	16340	4817	51667
2009-10	31230	302563	169071	4089545	84683	13867	6315	49546
2010-11	21691	299304	277979	3881425	88932	5779	4532	39995
2011-12	24640	376947	368411	3967751	92207	7012	5049	25532
2012-13	17950	199234	174775	2769471	76176	3093	739	19730

Glancing through the time series data on area reveals that wide variations are found in area coverage for all crops during the 10 year period under reference. In sympathy with the variations in area coverage, many oscillations are noticed in the level of production and yield rate for all crops. The main contributory factor is the significant deviation from the normal rainfall during the reference period.

#### **Conclusion:**

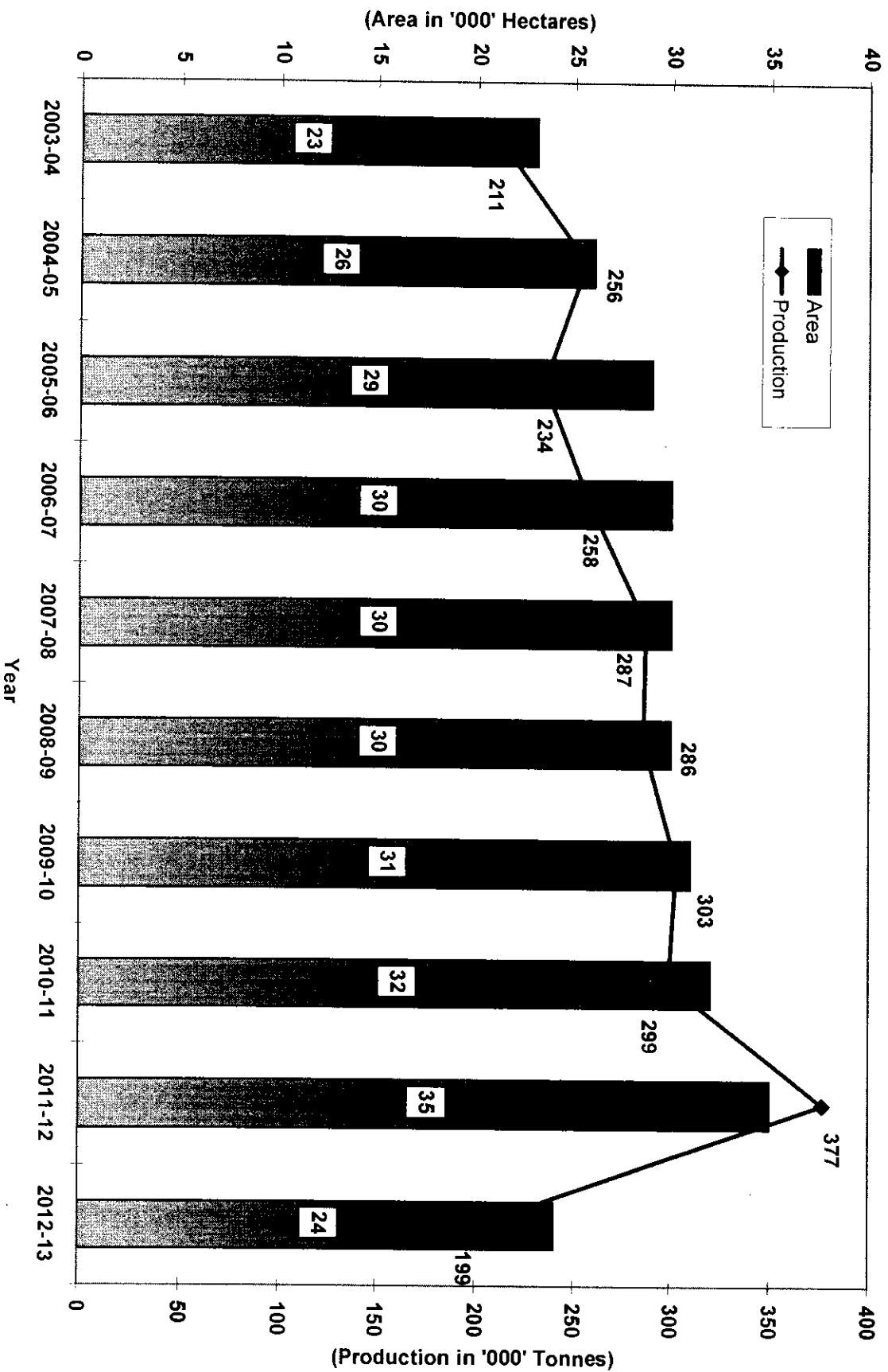
This versatile Report has carried out many information on Area, Production and ancillary information like application of HYV Seeds, manures, pesticides and cropping pattern followed. It is felt that the Market scenario has been facing fluctuations in day to day prices of Minor Crops which has been appraised in this report and hence experiment may be widely conducted to achieve good results.

AREA AND PRODUCTION OF CHILLIES 2003-04 2012-13

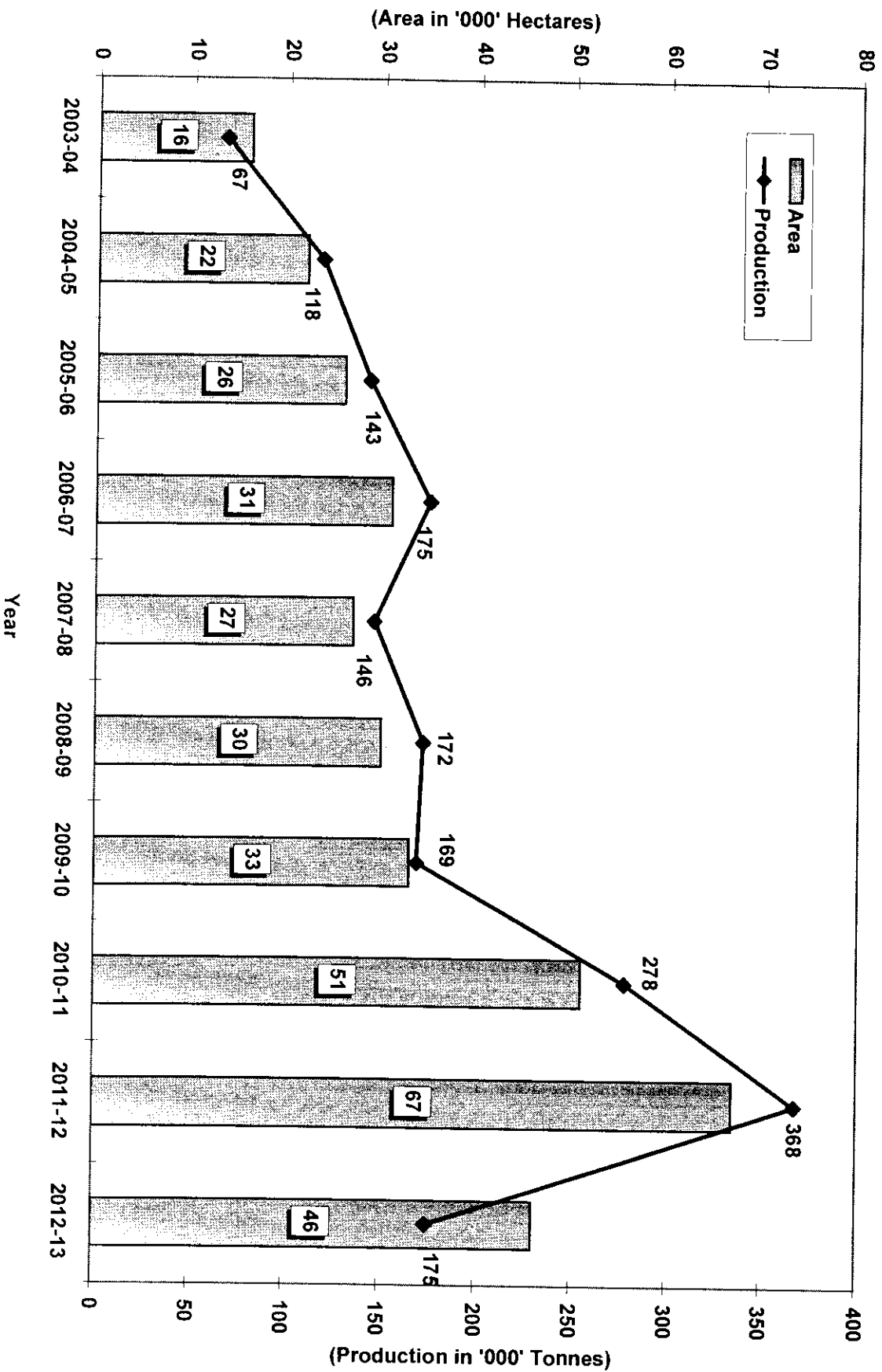




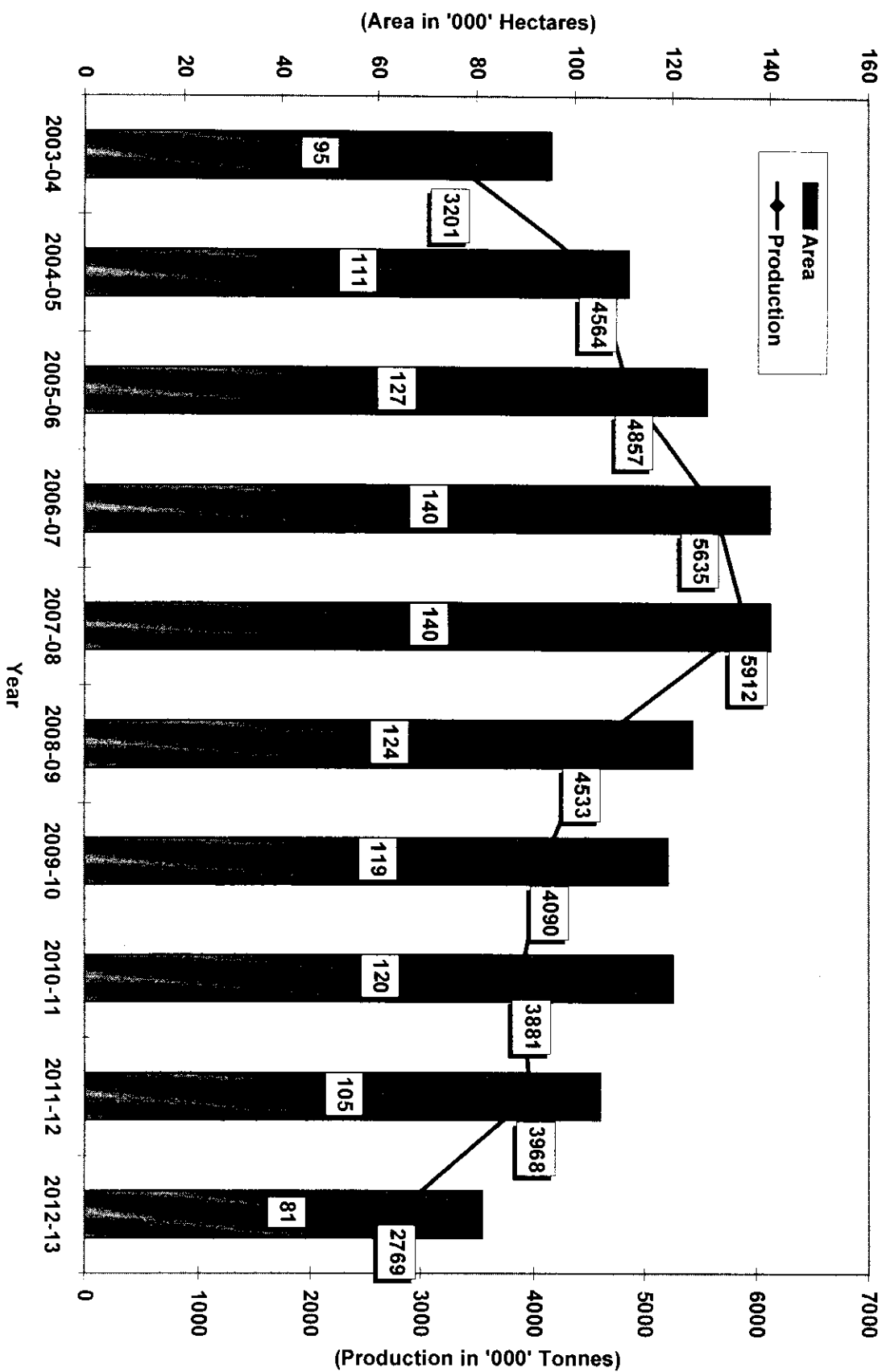
# AREA AND PRODUCTION OF ONION 2003-04 TO 2012-13



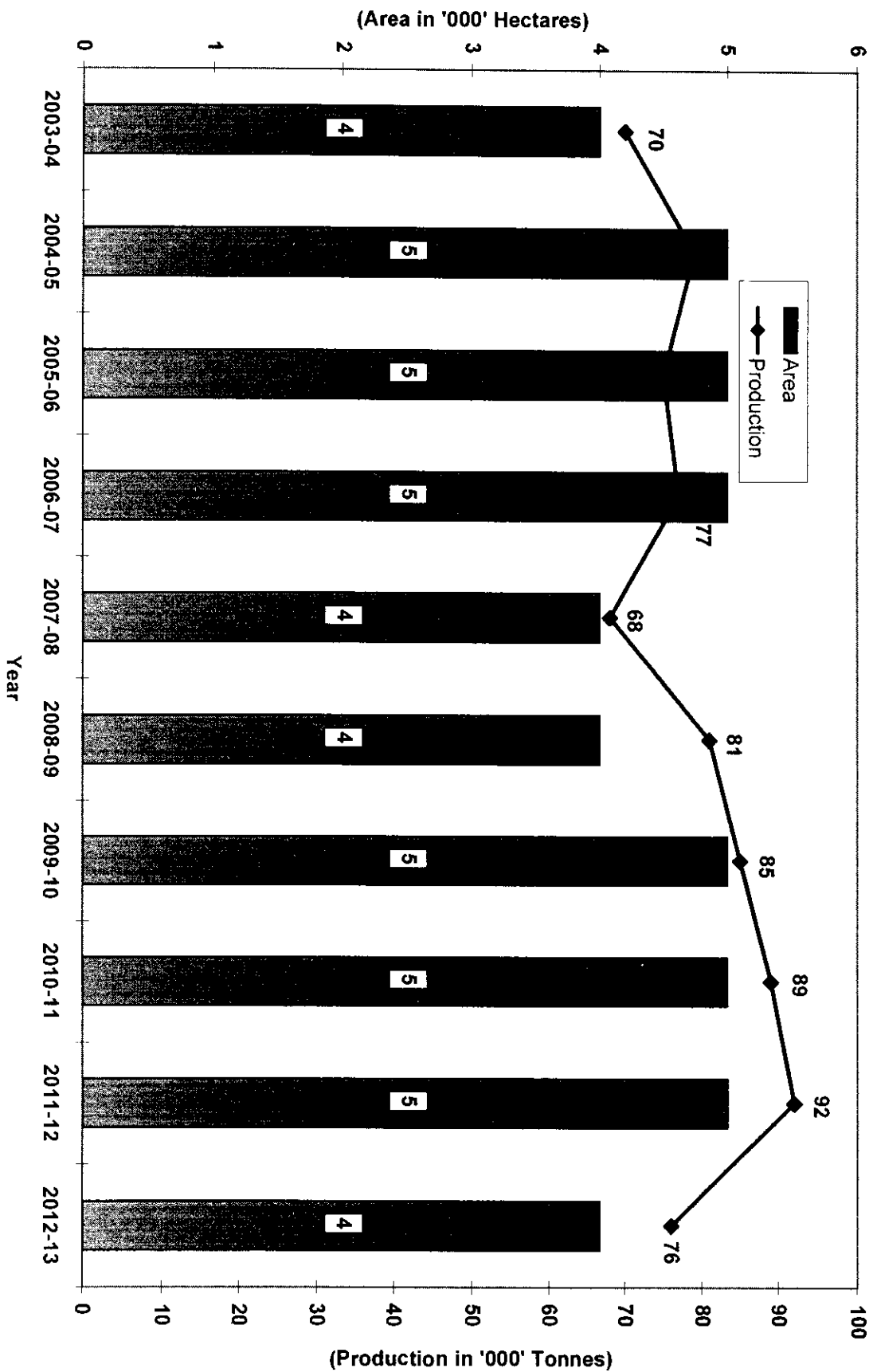
# AREA AND PRODUCTION TURMERIC 2003-04 TO 2012-13



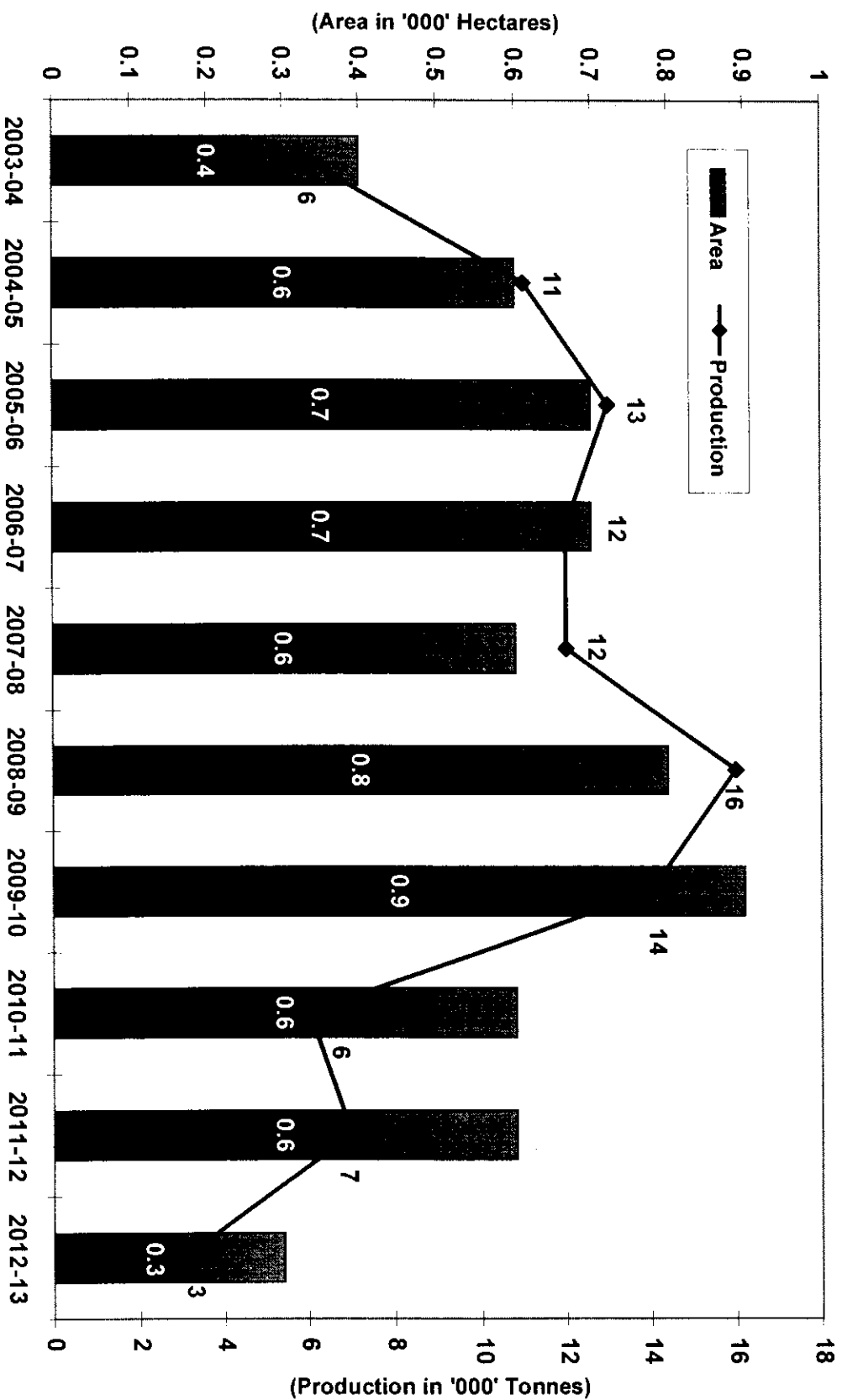
# AREA AND PRODUCTION OF TAPIOCA 2003-04 TO 2012-13



# AREA AND PRODUCTION OF POTATO 2003-04 TO 2012-13

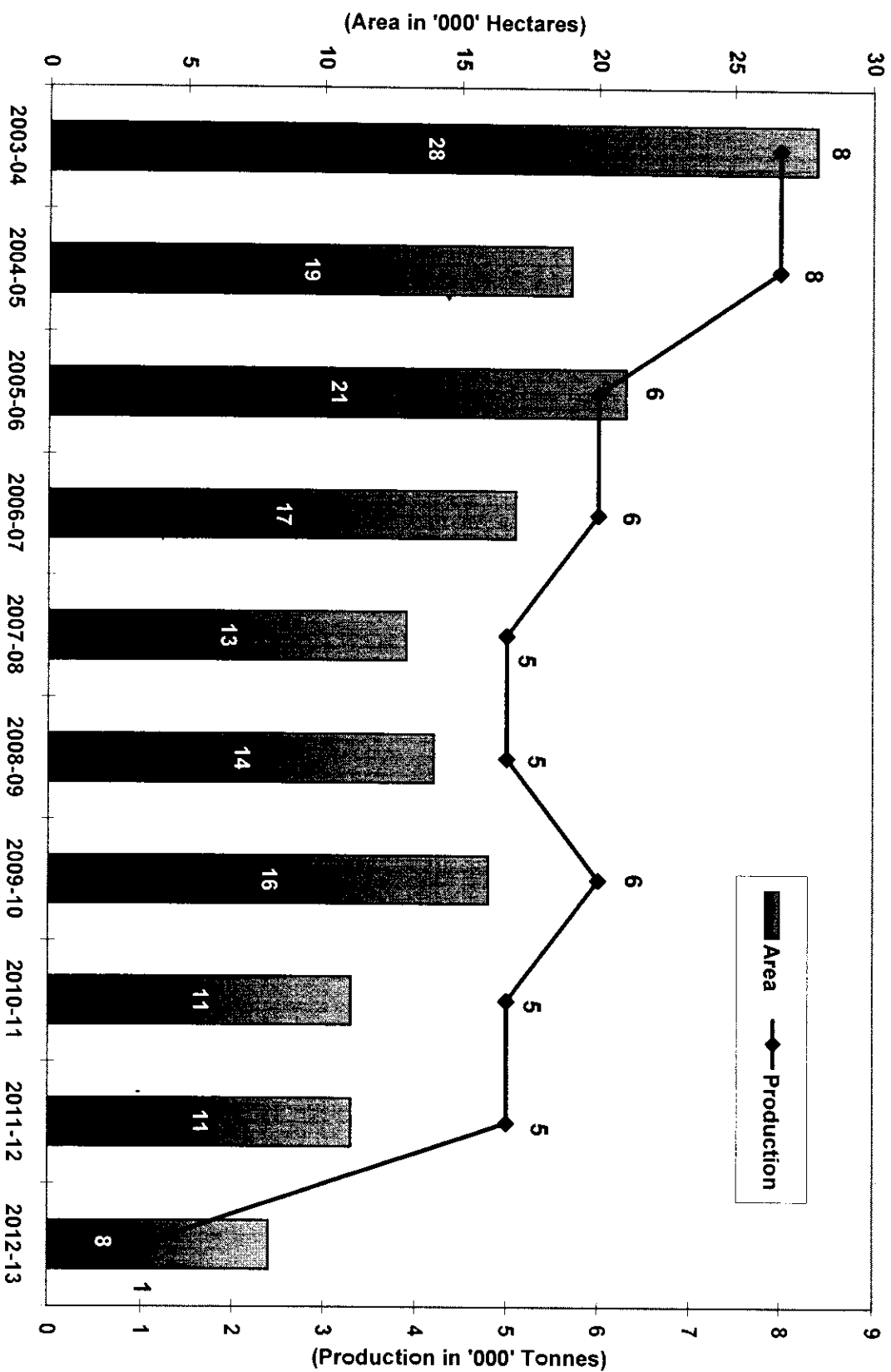


# AREA AND PRODUCTION OF GINGER 2003-04 TO 2012-13



# Coriander

## AREA AND PRODUCTION OF CORIANDER 2003-04 TO 2012-13



# AREA AND PRODUCTION OF CASHEWNUT 2003-04 TO 2012-13

