CHAPTER - FOUR

COMMERCIALISATION OF FARMING - HIGH AREA GROWTH RATES OF COMMERCIAL CROPS (1950-51 to 1983-84)

4.1 AREA, YIELD AND OUTPUT OF SUGARCANE

Among the various cash crops grown in the taluka sugarcane is one of them. The sugarcane crop is highly water intensive with the growth of perennial sources of irrigation one can expect the spread of sugarcane cultivation in the taluka. In the beginning of the period the area under sugarcane formed 3.29 percent to the gross cropped area of the taluka (1950-53 average). By the end of the period, the percentage share in the gross cropped area increased to 6.51 percent (1981-84) averages). If one looks at index numbers of the sugarcane area constructed for the whole period (assuming 1950-51 base year) the expansion in the sugarcane area has occurred during the whole period. In the first short period 1950-1966 the area under sugarcane grew at the rate of 0.34 percent compound per annum. The yield of the crop did not improve during the period because the annual compound growth rate worked out to be (-) 0.01 percent. This growth rate points out that the yield remained almost stagnant. The output of the crop increased at the rate of 0.41 percent compound per annum. This can also be regarded marginal rate of output growth resulting from the marginal area growth.

In the next period the area under sugarcane expanded rapidly. The annual area growth rate for this period worked out to be 4.07 percent. This area growth rate points out that during the same period; the perennially irrigated area expanded more or less at the same rate. This crop being the staple crop, given the perennial water resources available in the taluka, it has an edge over other crops. Since the establishment of cooperative sugar factory in the taluka the spurt in the area expansion took place. The cooperative sugar factory insured a definite market for sugarcane and at the same time,the fixed remunerative prices to the sugar cane growers which were usually higher than minimum support prices declared by the government every year. The increasing irrigation facilities, favourable agro climatic conditions and the certainty in respect of and the remunerative prices offered by the cooperative sugar factory were responsible for the expansion of area under the crop. As far as the yield is concerned there has been no improvement at all. The annual compound growth rate of yield (in terms of gur) for this period worked out to be just 0.15 percent. This is rather a paradoxical situation where the output growth of the crop is the result of mainly area contribution, instead of yield contribution. As the annual compound growth rate of output worked out to be 4.23 percent which is very close to the area growth rate (4.07 percent).

As compaired to other crops, heavy doses of chemical fertilisers have been applied but the result in terms of improvement in yield seems to be almost nil. Even the long term growth rates of area under and output of sugarcane reveal the same relationship. The area growth rate for the whole period under review worked out to be 3.12 percent compound per annum; whereas the yield of the crop increased at the rate of 0.53 percent compound per annum. The output growth rate of 3.69 percent for the whole period was largely responsible to the area expansion. The area expansion was mainly because of the phobia of the farmers for sugarcane cultivation without regard to the adequacy of water required for the sugarcane cultivation. For many times during the initial stages of the growth of the sugarcane plants irrigation resources become exhausted and the application of the fertilisers without adequate water after that stage will not result into the increase in the yield per hectare. With efficient and optimum water management and use and if the area is allowed to remain under sugar cane cultivation according to the availability of water then, their will be a contraction of the sugar cane area and with the better management of the resources - land, water and chemical fertilisers; the productivity of the crop will improve. If one looks at the behaviour of the yield of sugarcane during the first short period (1950-51 to 1965-66)the yield index remained far below

the base year's index (100) and tended to fluctuate rather moderately over the period. The output of sugar did never exceed the base years' level of output per hectare. During this period, most probably the traditional technique of sugar cane cultivation prevailed. In the traditional technique of cultivation the new Hyvs of sugar cane plants and the application of chemical fertilizers were not introduced hence the farmers of sugar cane cultivation in the irrigated small pockets of the taluka relied an antiquated method of sugar cane cultivation. During the next sub-period a break-through on the front of yield seems to have been achieved which is evident from the observation of yield behaviour index. Though the yield index remained above the base years level, the per hectare yield tended to fluctuate rather violently. Both the area and yield contributed to the growth of out output but the contribution of area seems to be far in access of yield contribution. But if we compare the growth rate of yield during the two sub-period we notice that the annual compound growth rate of yield registered in the next period positive and this growth could be regarded as an improvement over the negative growth rate or stagnancy in respect of yield growth rate registered during the first period. The area expansion of sugar cane could be attributed to the establishment of the Daulat Setakari Sahakari Sakhar

Karkhana, Halkarni, Chandgad which went into production from 1977-78 agricultural harvesting season. With a view to augmenting supply of raw material - sugar cane the cooperative sugar factory encouraged the formation of cooperative lift irrigation schemes on Tamraparni and Ghattprabha rivers. With expansion of these irrigation sources the area under sugar cane cultivation increased almost pari pasu. For instance out of the gross irrigated area 1578 hectares the irrigated area under sugar cane was 1371 hectare forming 87 percent of the gross irrigated area we find by the end of the period under review, almost all gross irrigated area is being used for the cultivation of sugar cane. Out of 2982 hectares of gross irrigated area 2938 hectares of land (averages of 1981-82 to 1983-84) forming 99 percent. So this is a proof of the above statement that the sugarcane area expanded pari pasu with the expansion of gross irrigated area in the taluka. The management of cooperative sugar factory and especially the members of the board of the directors who come from farmers' community and especially sugar cane farmers, encourage small and marginal farmers to become the members of the lift irrigation societies. After the completion of the lift irrigation schemes the marginal and small farmers have shifted to the cultivation of sugar cane which has now emerged a major commercial crop of the taluka.

But unfortunately the yield of the crop despite heavy doses of fertilizers and other inputs - water, energy also the improvement in yield over the long period seems to be for from satisfactory. The output growth in the taluka was mainly an account of the area expansion under sugar cane, rather than yield improvement.

On the whole, a shift towards cultivation of commercial crops especially towards cultivation of irrigated sugar cane and rainfed groundnut crops has occurred in the taluka. The expansion of sugar cane area could be attributable to the expansion of irrigation sources that have been developed due to the initiative taken by the cooperative sugar factory since its inception.

4.2 AREA, YIELD AND PRODUCTION GROWTH RATE OF GROUNDNUT

Though the groundnut falls under the category of edible oil seeds, it can be considered as a commercial crop of the taluka. The medium soil that is not too fertile and not too barren land is required for the cultivation of groundnut crop. Strongly enough groundnut area index doubled in the year 1955-56 and thereafter it remained unchanged up to 1959-60. During the 1960s the index moved rapidly in upward direction touching the level of 869.14 in 1971-72. The rapid movement of the area index continued for another five years touching the index of 1372.84 in 1975-76. During the later part of the period, mild fluctuations occurred. The area

index continued its uptrend and touched the peak of 1745.68 in 1982-83. As a result between 1950 and 1966 between 1966 and 1984 and 1950-51 to 1984 the area under groundnut increased by 9.8, 6.92 and 9.54 percent compound per annum correspondingly. From these growth rates periodwise, one can observe that the groundnut area has registered higher growth rates when compared to the area growth rates of other major crops grown in the taluka. Looking at the productivity growth rates during these corresponding periods we conclude that the performance of the crop in terms of the yield periodwise seems to be not much satisfactory as compared to its area growth rates. One can be satisfied with the productivity growth rates as they are not negative. The production of this crop increased at the rates of 11.09, 8.83 and 10.15 percent compound per annum during those corresponding periods. These growth rates of production are joint results of area growth and productivity appreciation. Though contribution from the area growth being marginal, one can observe that the groundnut crop has emerged as a competitive and substitute crop for any other crops not necessarilly for any particular cereal but some pulse crops like tur, gram and others which have been loosing their area constantly in the period under reference. This crop being a ka kharif crop and Chandgad taluka coming under assured rainfall shed, the farmers because of their increasing monetary demand, prefer to allot

more and more portion of their holdings to its cultivation and hence we find an increasing trends of the groundnut area over the period. As an evidence to this we would point out that the relative share of the groundnut in the gross cropped area of the taluka formed 0.30 percent (the averages of 1950-53) in the beginning which later on changed to 2.87 percent (1981-84 averages) by the end of the period. Incidentally it can be noted that this crop being legume crop which helps to restore fertility of the soil could be introduced as a rotation crop for every alternative year in the overall cropping pattern of the taluka. Since the late 1960s the new Hyvs have been adopted by the cultivators these new Hyvs pushed the growth of productivity during the later part of the period. The traditional varieties have almost being replaced by the new varieties and among the new varieties the Fule Pragati variety seems to have been established in the taluka.

4.3 AREA UNDER TOTAL OIL SEED CROPS

After having discussed the behaviour of the area yield and output of groundnut over the period we intend to analyse in this para the behaviour of the area under all oil-seeds as reported by the government agencies in the beginning of the period. The relative share of the area under oil seeds in the gross cropped area worked out to be just 1.09 percent (an average of the triennial ending 1953). This relative share grew

upto 3.06 percent in the gross cropped area by the end of the period. This can be borne by the behaviour of the area index number worked out for the period. From the index numbers it seems that the area under oilseeds nearly quadrapuled (the index being 397.53). Similarly the annual compound growth rate of area under oil-seeds worked out to be 5.40 percent for the whole period. As has been analysed, the area under groundnut and its behaviour over the period the growth rate of the area under oil-seeds was mainly responsible for the tremendous growth of groundnut area (9.54 percent compound per annum). The difference between these two could be accounted for by the decrease in the area under other oil seeds crops and the substitution of that area for the cultivation of groundnut. Since the area under each individual oil seed crop is not available, we are being constrained to work out the annual compound growth rate for areas under these crops over the period. By and large we can say that those some of the oil seed crops are in the process of being dropped out from the taluka crop pattern. The overall trend of the area under oil seeds seems to be positive and that is mainly because of the expansion of the ground nut area. We may further point out that the cultivation of minor millets once dominate in the crop pattern of the taluka, has become most insignificant. This may be taken as an indicator of a shift from the subsistence farming to

the commercialised farming. The area growth including the area growth of sugar cane; we can decisively say that the farmers have become commercial minded and their decision with regard to the cultivation of crops are governed by the monetary returns which they can get by offering those crops for sale in the market. Economically these decisions are rational decisions and the farmers do respond to the price incentives by changing the area proportion under a varieties of crops cultivated in the taluka.

4.4 THE BEHAVIOUR OF AREA UNDER FRESH FRUITS AND VEGETABLES

Chandgad taluka being assured rainfall area and the overall climatic condition being suitable for growth of fruit crops and also vegetables; the area under fresh fruits and vegetables formed 4.00 percent to the gross cropped area (average of triennial ending 1953), which changed to 3.61 percent (the average of triennial ending 1984). The area under this category of fruit crops more or less remained unchanged. Looking to the index numbers and the annual compound growth rate of the area we can observe that the area under fresh fruits and vegetables has been falling off. Certain vegetable crops such as potatoes and sweet potato have emerged as a supplementary cash crop to the cultivators. But the cultivation of these crops is gradually being substituted for the cultivation of minor millets. But some other

fruit crops have been receding into the background. There is, however, a wider scope for horticulturisation, for the suitable agro-climatic conditions that available in the taluka. Among the various fruit crops the cultivation of cashew nuts has a comparative advantage over other horticultural crops. In view of the favourable relative prices for cashew nuts and the bright prospect of exports the future demand for cashew nuts within the country seem to be brighter the extension of cultivation of cashew trees should be encouraged in the taluka. The other fresh fruits like mangoes and chikoos have similarly bright prospects for their cultivation in the taluka. In the process of economic development the incomes of the people are expected to grow and with growth of income and the lower and middle income strata people are expected to climb up the ladder of income distribution. The income elasticity of demand is expected to change in favour of fresh fruits and vegetables the farmers will have the additional source of income with larger magnitude. So in this entire area a scientific and extensive cultivation of these crops should be under taken with the help of some government assistance. The same analysis could be made applicable to the fresh vegetables stated earlier. There is scope for cultivation of those crops during the kharif season. However, over the whole period the area under fresh fruits and vegetable has been declining at

the rate of (-) 0.34 percent compound per annum. Though we cannot discuss the area decline under each individual fruit and vegetable crop we, however, it can be observed that in recent years the farmers have revealed a strong inclination towards converting their agricultural plots into the cashewnut gardens which could be attributed to the demand push rise in price for cashew nuts. The overall declining growth rate could be attributable to the inter crop substitution effected by the farmers. A shift from cultivation of cereals and other food crops to silviculture will help to restore the disturbed ecological balance due to deforestation within the area or the region.

4.5 THE AREA UNDER CONDIMENTS AND SPICES

The area under condiments and spices formed a very insignificant portion of the gross cropped area, that is 0.55 percent (average of the triennial ending 1953) which increased to 0.87 percent by the end of the period, the increase being rather marginal. Among the crops that are included in the category of condiments and spices, the chillies and korta are the important crops that are cultivated in the taluka. From the behaviour of the area index we observed that the overall trend of the area under them seems to be increasing. The annual compound growth rate of the area for the whole period worked out to be 3.09 percent. Only during

the beginning of the 1980s it seems from the behaviour of the area index, that the area under condiments and spices has started rather declining but prior to 1980s the area tended to be more than trippled and hence the index number touched the maximum level of 320.37 in 1978-79. The high annual compound growth rate of the area could be attributed to the increasing area of chillies. From the available data regarding the area under chillies one can note that between 1962-63 and 1980-81 area under it exactly doubled it increased from 234 hectares (1962-63) to 464 hectares in 1980-81. These crops are also commercial crops but the farmers do not cultivate these crops for sale purposes but for domestic consumption purposes. The farmers now-a-days prefer to cultivate such crops by allotting small portions of their aggregate holdings to satisfy their domestic consumption requirement rather than to go in for their purchase in the market. Of course, this is not true with all the farmers but it is definitely true with well to do farmers having large holdings.

Table No.4.1

The Annual Compound Growth Rates of Area, Yield and Output of Major Cash Crops during 1950-51 to 1983-84

Sr. No.	Crops	Period	Area	Yield	Output
1.	Sugarcane	Period I	0.34	(-)0.01	0.41
		Period II	4.07	0.15	4.23
		The Whole Period III	3.12	0.53	4.23
2.	Groundnut	Period I	9.82	1.16	11.09
		Period II	6.92	1.77	8.83
		The Whole Period III	9.54	0.55	10.15
3.	Total Oilseeds	Period I	N.W.	-	-
		Period II	N.W.	-	-
		The Whole Period III	5.40	-	-
4.	Fresh Fruits and Vegetables	Period I	N.W.	-	-
		Period II	N.W.	-	-
		The Whole Period III	(-)0.34	-	-
5.	Condiments and Spices	Period I	N.W.	-	-
		Period II	N.W.	-	-
		The Whole Period III	3.09	-	-

Note :
(1) Period - I - Pre Hyvs 1950-51 to 1965-66
(2) Period -II - Post Hyvs 1966-67 to 1983-84
(3) The Whole Period -III- The Whole Period 1950-51 to 1983-84
(4) N.W. = Not worked out.

Source : Compiled ourselves from the data available in the sources in Table No.2.1

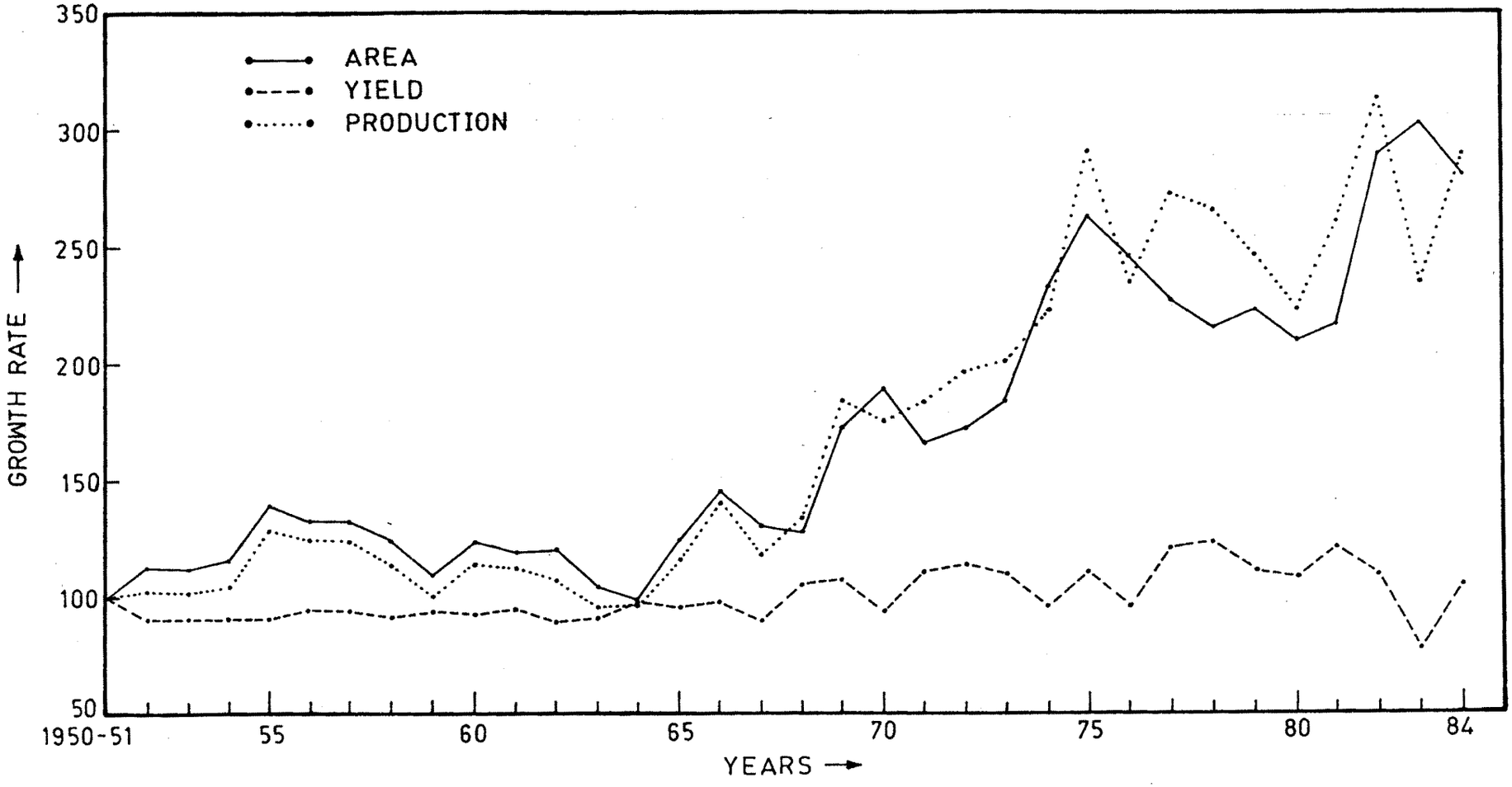
Table No.4.2

The Index Number of Area under, Yield and Output of Sugarcane in Chandgad Taluka during 1950-51 to 1983-84

Year	Area in Hects.	Index	Yield in Kgs.	Index	Output in M.Ts.	Index
1950-51	1012	100.00	8260	100.00	8359	100.00
1951-52	1153	113.93	7524	91.08	8675	103.78
1952-53	1133	111.96	7529	91.15	8530	102.04
1953-54	1174	116.00	7533	91.20	8844	105.80
1954-55	1416	139.92	7561	91.54	10706	128.08
1955-56	1336	132.02	7857	95.12	10497	125.58
1956-57	1336	132.02	7778	94.16	10391	124.31
1957-58	1255	124.01	7580	91.77	9513	113.80
1958-59	1093	108.00	7684	93.03	8399	100.48
1959-60	1255	124.01	7583	91.80	9517	113.85
1960-61	1203	118.87	7778	94.16	9357	111.94
1961-62	1220	120.55	7373	89.26	8995	107.61
1962-63	1054	104.15	7566	91.60	7975	95.41
1963-64	998	98.62	8068	97.68	8052	96.33
1964-65	1254	123.91	7766	94.02	9739	116.51
1965-66	1458	144.07	8019	97.08	11692	139.87
1966-67	1323	130.73	7409	89.70	9802	117.26
1967-68	1289	127.37	8680	105.08	11189	133.06
1968-69	1745	172.43	8842	107.05	15429	184.58
1969-70	1905	188.24	7682	93.00	14634	175.07
1970-71	1670	165.02	9163	110.93	15302	183.06
1971-72	1748	172.73	9393	113.72	16419	196.42
1972-73	1853	183.10	9040	109.44	16751	200.39
1973-74	2348	232.02	7900	95.64	18549	221.90
1974-75	2652	262.06	9159	110.88	24290	290.88
1975-76	2485	245.55	7879	95.39	19579	234.23
1976-77	2290	226.28	9940	120.34	22763	272.32
1977-78	2178	215.22	10182	123.27	22176	265.29
1978-79	2247	222.04	9165	110.96	20594	246.37
1979-80	2108	208.30	8846	107.09	18647	223.08
1980-81	2190	216.40	9946	120.41	21782	260.58
1981-82	2921	288.64	8955	108.41	26158	312.93
1982-83	3058	302.17	6419	77.71	19629	234.82
1983-84	2828	279.45	8517	103.11	24086	288.14

Source : (1) Census of India, 1961, District Census Handbook Kolhapur, compiled by The Maharashtra Census Office, Bombay published by the Director, Govt. Printing & Stationary, Maharashtra State, Bombay, 1964.

(2) Socio-Economic Review and District Statistical Abstracts of Kolhapur District published by the Deptt. of Agriculture and Cooperation the Govt. of Maharashtra (From 1960-61 onwards).



GRAPH NO. 4·1 — THE INDEX NUMBERS OF AREA, YIELD AND PRODUCTION OF SUGAR CANE IN CHANDGAD TALUKA DURING 1950-51 TO 1983-84.

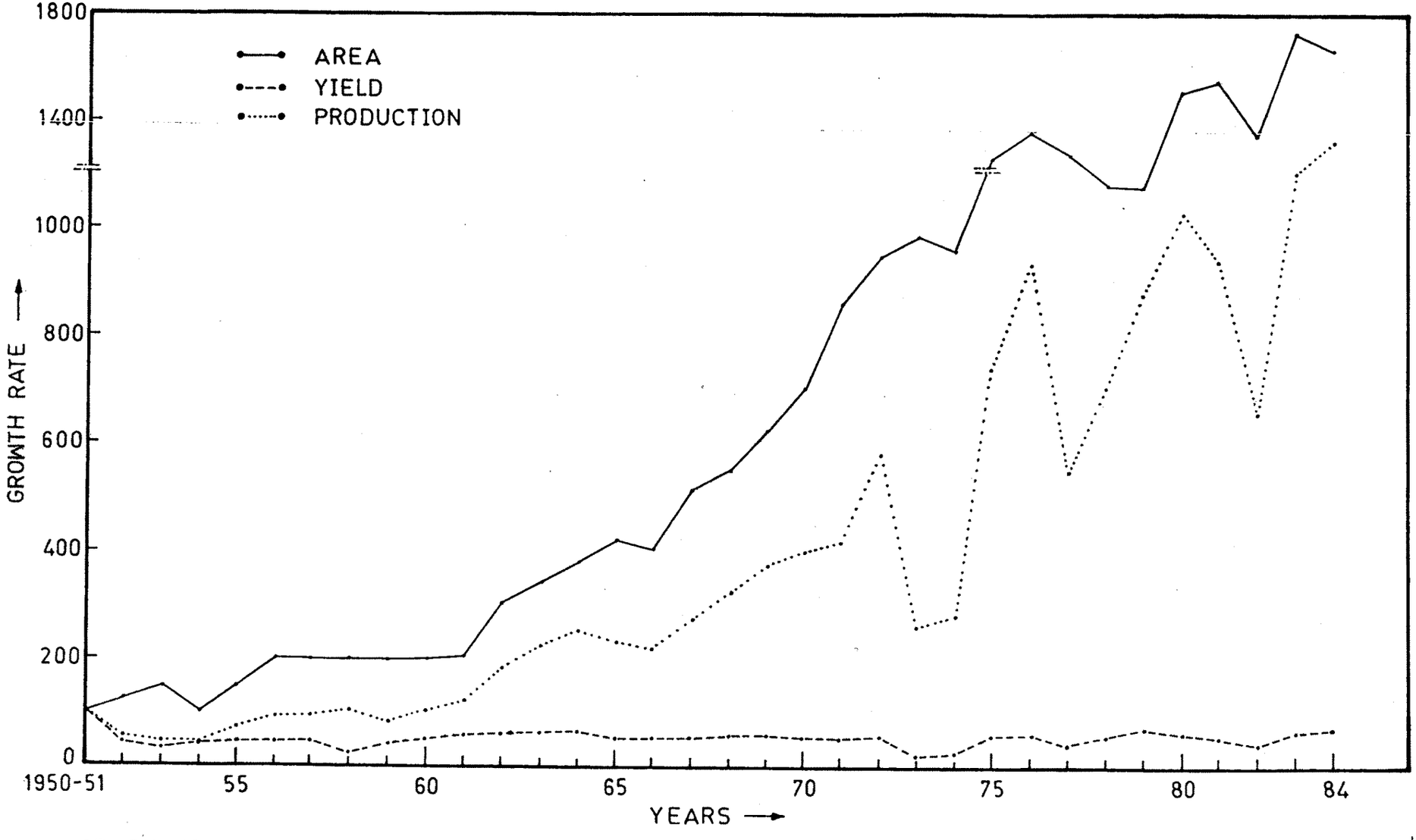
Table No.4.3

The Index Numbers of Area under, Yield and Output of Groundnut in Chandgad Taluka during 1950-51 to 1983-84

Year	Area in Hects.	Index	Yield in Kgs.	Index	Output in M.Ts.	Index
1950-51	81	100.00	1719	100.00	139	100.00
1951-52	101	124.69	776	45.14	78	56.12
1952-53	121	149.38	543	31.59	66	47.48
1953-54	81	100.00	795	46.25	64	46.04
1954-55	121	149.38	815	47.41	99	71.22
1955-56	162	200.00	790	45.96	128	92.08
1956-57	162	200.00	845	49.16	137	98.56
1957-58	162	200.00	916	23.29	148	106.47
1958-59	162	200.00	748	43.51	121	87.05
1959-60	162	200.00	909	52.88	147	105.76
1960-61	168	207.41	1050	61.08	176	126.62
1961-62	245	302.47	1052	61.19	258	185.61
1962-63	280	345.68	1126	65.50	315	226.62
1963-64	308	380.25	1144	66.55	352	253.24
1964-65	346	427.16	940	54.68	325	233.81
1965-66	331	408.64	932	54.22	308	221.58
1966-67	418	516.05	914	53.17	382	274.82
1967-68	448	553.09	1002	58.29	449	323.02
1968-69	507	625.93	1038	60.38	526	378.72
1969-70	570	703.70	975	56.72	556	400.00
1970-71	704	869.14	834	58.52	587	422.30
1971-72	773	954.32	1055	61.37	816	587.05
1972-73	803	991.36	460	26.76	369	265.47
1973-74	781	964.20	512	29.78	400	287.77
1974-75	947	1169.14	1095	63.70	1037	746.04
1975-76	1112	1372.84	1175	68.35	1307	940.29
1976-77	1046	1291.36	740	46.05	774	556.83
1977-78	953	1176.54	1039	60.44	990	712.23
1978-79	958	1182.72	1283	74.64	1229	884.17
1979-80	1238	1528.39	1160	67.48	1436	1033.09
1980-81	1268	1565.43	1041	60.56	1320	949.64
1981-82	1108	1367.90	832	48.40	922	663.31
1982-83	1414	1745.68	1200	69.81	1697	1220.86
1983-84	1368	1688.89	1369	79.64	1873	1347.48

Source (1) Census of India, 1961, District Census Handbook Kolhapur, compiled by The Maharashtra Census Office, Bombay published by the Director, Govt. Printing & Stationary, Maharashtra State, Bombay, 1964.

(2) Socio-Economic Review and District Statistical Abstracts of Kolhapur District published by the Deptt. of Agriculture and Cooperation the Govt. of Maharashtra (From 1960-61 onwards).



GRAPH NO. 4·2 — THE INDEX NUMBERS OF AREA, YIELD AND PRODUCTION OF GROUNDNUT IN CHANDGAD TALUKA DURING 1950-51 TO 1983-84.

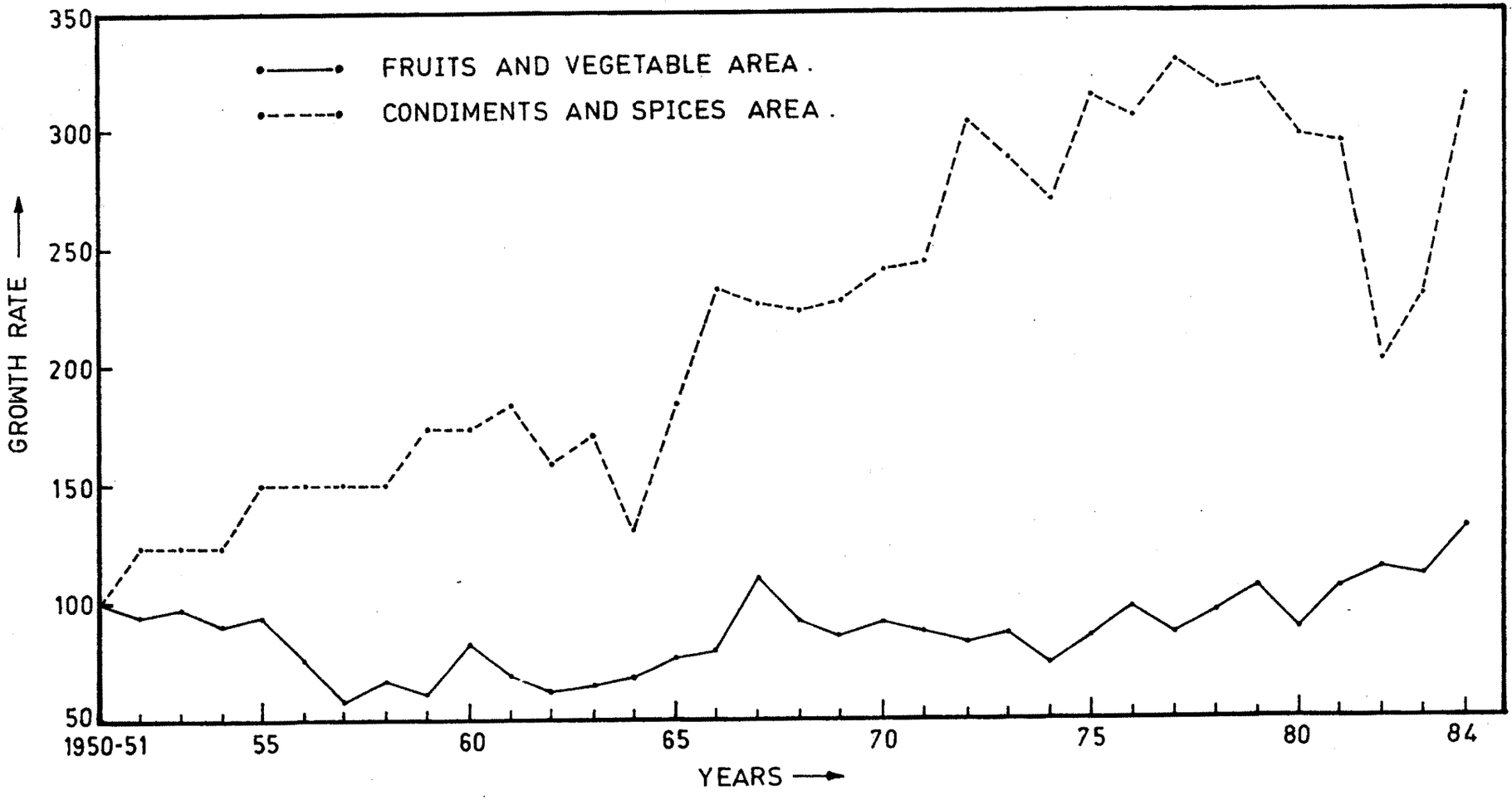
Table No.4.4

Index Numbers of Area of Fruits and Vegetable and Condiments and Spices in Chandgad Taluka during 1950-51 to 1983-84.

Year	Area in Hects.	Index	Area in Hects.	Index
1950-51	1376	100.00	162	100.00
1951-52	1295	94.11	202	124.69
1952-53	1336	97.09	202	124.69
1953-54	1255	91.21	202	124.69
1954-55	1295	94.11	243	150.00
1955-56	1052	76.45	243	150.00
1956-57	809	58.79	243	150.00
1957-58	931	67.66	243	150.00
1958-59	850	61.77	283	174.69
1959-60	1133	82.34	283	174.69
1960-61	935	67.95	298	183.95
1961-62	861	62.57	257	158.64
1962-63	900	65.41	277	170.99
1963-64	934	67.88	213	131.48
1964-65	1057	76.82	297	183.33
1965-66	1099	79.87	376	232.10
1966-67	1514	110.03	367	226.54
1967-68	1265	91.93	362	223.57
1968-69	1175	85.39	369	227.78
1969-70	1255	91.21	392	241.98
1970-71	1202	87.35	394	243.21
1971-72	1131	82.19	491	303.09
1972-73	1192	86.63	465	287.04
1973-74	1019	74.06	438	270.37
1974-75	1173	85.25	509	314.20
1975-76	1336	97.09	495	305.56
1976-77	1191	86.56	533	329.01
1977-78	1329	96.58	514	317.28
1978-79	1459	106.03	519	320.37
1979-80	1216	88.37	482	297.53
1980-81	1445	105.01	477	294.44
1981-82	1556	113.08	326	201.23
1982-83	1527	110.97	371	229.01
1983-84	1805	131.18	508	313.58

Source : (1) Census of India, 1961, District Census Handbook, Kolhapur compiled by The Maharashtra Census Office, Bombay published by the Director, Govt. Printing & Stationary, Maharashtra State, Bombay.

(2) Socio-Economic Review and Dist. Statistical Abstracts of Kolhapur District published by Agriculture & Cooperation Deptt. of Govt. of Maharashtra (From 1960-61 onwards)



GRAPH NO. 4·3 – THE INDEX NUMBERS OF AREA OF FRUITS AND VEGETABLE AND CONDIMENTS AND SPICES IN CHANDGAD TALUKA DURING 1950–51 TO 1983-84 .