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Working Paper No. 107

Land Use Pattern in Tamil Nadu

by

M. Thangaraj

MADRAS INSTITUTE OF DEVELOPMENT STUDIES

79, SECOND MAIN ROAD, GANDHI NAGAR, ADYAR

MADRAS 600 020

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Abstract

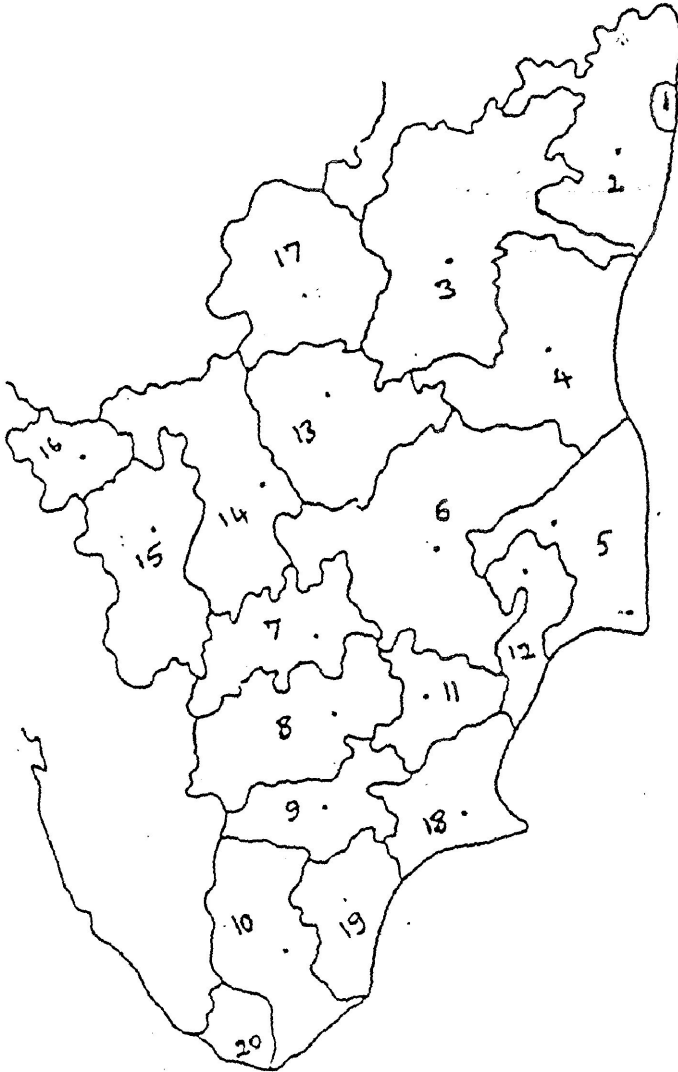
The objective of this study is to examine the land use pattern in Tamilnadu. The specific issues addressed to in this report are (i) whether is there any scope for further expansion in the area of land for cultivation and (ii) is there any way for further reduction in the ceiling on landholdings for full and efficient utilisation of land.

The data on land use pattern by districts were collected from Season and crop reports and by size class of operational holdings from Agricultural census. An attempt was made to study the land use pattern by district level and state level. Linear trend analysis and Location co-efficient have been used to estimate the variation in the land use pattern. The report is organized into eleven specific issues involved in the land use pattern as given in the Season and Crop report.

The results of the analysis indicate that there is a greater scope for further expansion of land for cultivation, as the existance of vast area of land under the use of cultivable waste, permanent pastures and grazing lands, miscellaneous tree crops and groves, current fallows and other fallows. More than half of the geographical area is unsown. The study also indicates that the area of land under the cultivable waste, current fallows and other fallows was higher in the large size holdings than that of the small size holdings. This in fact suggests that there is a need for reduction of ceiling on landholdings for proper and efficient utilisation of land.

II

MAP OF TAMILNADU



Districts

1. MADRAS
2. CHENGLEPUT
3. NORTH ARCOT
4. SOUTH ARCOT
5. THANJAVUR
6. TIRUCHIRAPALLI
7. ANNA
8. MADURAI
9. KAMARAJAR
10. TIRUNELVELI
11. T. THIRUMAGANAR
12. PUDUKOTTAI
13. SALEM
14. PERIYAR
15. COIMBATORE
16. NILGIRIS
17. DHARMAPURI
18. RAMANATHAPUR
19. CHIDAMBARANAS
20. KANYAKUMARI

LAND USE PATTERN IN TAMIL NADU

M.Thangaraj *

Land is an important productive asset and also the major source of livelihood for most of the rural people in India. The basic needs, such as, food, shelter, fuel and clothing are directly obtained from land. It also provides multiple utilities to the owner or the user. The existing land use pattern is unbalanced, as the share of forest land to the total geographical area is lower than that of the minimum required for the protection of the environment from ecological degradation. The increasing needs consequent to growth of population require a revision or rectification of existing land-use pattern. The problem of land use pattern has hardly received any attention in Tamil Nadu. The non-cropped area also has not been researched very well by the social scientists. This in fact, calls for an investigation as to how the land has been utilised and to suggest measures to increase the production.

An attempt has been made in this paper to examine the land use pattern in Tamil Nadu. The objective of the study is to analyse the land use pattern and also to indicate the broad direction of changes needed for proper and efficient utilisation of land. An effort is also made to study the land use pattern by size of operational holdings.

This study intends to verify the following hypotheses.

* Madras Institute of Development Studies.

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(i) High incidence of landlordism has been largely responsible for the high percentage of land unused and

(ii) There is no scope for further expansion of the area under cultivation.

The data were mainly collected from season and crop reports, for the period of 19 years from 1970-71 to 1988-89 and from the Agricultural censuses for the years 1970-71, 1976-77, 1979-80 and 1985-86. The data collected from Season and Crop Report with regard to the reference period are not uniform for all districts, as some of the districts were divided. Pudukottai district was created in 1974 with three taluks from Tiruchirapalli district and one coastal taluk and a few bordering villages from Thanjavur district. Coimbatore district was bifurcated into Coimbatore and Periyar and the data are available separately from 1979-80; Madurai district was divided into Madurai and Anna and the data are given separately from 1985-86; Ramanathapuram district was trifurcated into Ramanathapuram, Kamarajar and T.Thirumaganar and the data are presented separately from 1984-85; and Tirunelveli district was bifurcated into Tirunelveli and Chidambaranar and the data are available separately from 1986-87. Agricultural census data related to the years 1970-71 and 1979-80 are complete census and 1976-77 and 1985-86 are estimated based on 20 per cent sample of the villages. The study covers state level, regional level (inland and coastal) and district level of Tamil Nadu. Inland region consists of 11 districts, viz., North Arcot, Dharmapuri, Salem, Periyar, The Nilgiris, Coimbatore, Tiruchirapalli, Anna, Madurai T.Thirumaganar, and Kamarajar and

the coastal region consists of 9 districts viz., Madras, Chingleput, South Arcot, Thanjavur, Pudukottai, Ramanathapuram, Chidambaranar, Tirunelveli and Kanyakumari. The data on land use pattern given in the season and crop report represent the total geographical area which include both rural and urban areas while the Agricultural census provides the data pertaining to the operational holdings. Linear trend analysis and location coefficient have been used to estimate the variation in the land use pattern. Time has been taken as independent variable and the type of land use has been taken as dependent variable. It should be noted that as the number of observation (reference period) was less for the newly formulated districts, the regression results may not be significant. However the data and results were given separately for those districts which were divided without regard to the division. The required formulas are therefore specified as:

$$1. \quad Y_t = a_0 + b_1 X_t$$

$$X = \text{Land use type}$$

$$a_0 \text{ and } b_1 = \text{constant and co-efficient}$$

$$t = \frac{L_{ij}/L_i}{L_j/L}$$

$$2. \quad L_{Ci} = \frac{L_{ij}/L_i}{L_j/L}$$

$$L_{Ci} = \text{Location coefficient at the } i^{\text{th}} \text{ district}$$

$$L_{ij} = \text{The extent land in the } i^{\text{th}} \text{ district in the } j^{\text{th}} \text{ type of land use.}$$

$$L_i = \text{Total area of the } i^{\text{th}} \text{ district}$$

$$L_j = \text{Total area under } j^{\text{th}} \text{ type of land use in the state, and}$$

$$L = \text{Total area of the state.}$$

On the basis of the use, land can be broadly divided into two broad groups viz., arable land and non-arable land. The arable land constitutes all cultivable land comprising of (i) net sown area, (ii) current fallows (iii) other fallow lands and (iv) land under tree crops and groves not included in the net sown area. The non arable land consists of the land under (i) cultivable waste (ii) barren and uncultivable land (iii) land put to non-agricultural uses and (iv) pastures and other grazing land.

The season and crop report classifies the land into nine categories on the basis of utilisation. They are: (1) forest (2) Barren and uncultivable land, (3) land put to non-agricultural uses, (4) cultivable waste (5) permanent pastures and other grazing land (6) miscellaneous tree crops and groves not included in the net area sown (7) current fallows (8) other fallow lands and (9) net sown area. Agricultural census classifies the land use into six fold. They are (1) net sown area (2) current fallows (3) fallow land other than current fallows, (4) the permanent pastures and other grazing and land under miscellaneous tree crops have been clubbed together and are recorded as "uncultivated area other than fallow land", (5) similarly land not available for cultivation includes forests, land put to non agricultural uses and barren and uncultivable land and (6) cultivable waste. The definitions of Agricultural census clearly indicate that there is practically no difference between the nine fold classification of land use pattern adopted for season and crop report and the six fold classification of land use adopted for Agricultural census by the state government.

1. Forest Land

Forest land represents all lands classified as forest under any legal enactment dealing with forests or administered as forests, whether state or private owned and whether wooded or maintained as potential forest land. Most of the forest areas are situated in and around hilly and mountainous terrain. The total area under forest does not represent the forest cover area, as lot of forest area does not have any tree. The area under forest could be seen from Appendix 1. About 22 lakh hectares of land was under forest in 1988-89 which represents about 17 per cent of the total geographical area. It is worthwhile to mention the goal of the National forest policy enunciated in 1952. The National forest policy states that one third of the country's total area should be under forests. The state has to go a long way to achieve the national goal of bringing the area of land under forest to one third of the total geographical area of the state. The national forest policy further states that, in the hilly terrain, the proportion of forest cover should be 60 per cent of its geographical area and in the plain 20 per cent. The percentage of forest area to the total geographical area was low in 10 districts viz., Madras, Chengalpattu, South Arcot, Trichirapalli, Pudukottai, Thanjavur, Ramanathapuram, Kamarajar T. Thirumanaganar and Chidamabaranar during 1970-71 to 1988-89. The percentage was higher for other districts. The total area under forest accounted for 1.1 per cent in Ramanathapuram, 38.2 per cent in Dharmapuri and 56 per cent in the Nilgiris district. It could also be seen from the appendix that the total area under forest was more in the hilly terrain viz., the Nilgiris,

Dharmapuri, North Arcot, Salem, Periyar and Madurai. Further it could also be seen that the percentage of area under forest varies from 15.1 per cent to 16.6 per cent over the years at the state level. The regional level data show that the area classified as forest has increased from 339499 ha. in 1970-71 to 352342 ha. in 1988-89 in the coastal region and from 1673507 ha. in 1970-71 to 1811834 ha. in 1988-89 in the inland region. Thus the data clearly show that the increase in the forest area was highest in the inland region than that of the coastal region. The data reveal that the second largest utilisation of land in the state is under forest area. The state level, regional level and district level data show that the area under forest is far below the estimates of national forest policy. The data clearly show that the spatial distribution of forest is uneven. It is worthwhile to examine the linear trend analysis.

The desired sign of the linear trend was in the positive direction, as the state administered policy towards the extension of land under forest through social forestry, etc. The observed sign (Table 1) was in the negative direction in (1) Coimbatore (old), (2) Periyar, (3) Tiruchirapalli (4) Pudukottai and (5) Chidambaranar, but the negative trend was significant only in Coimbatore (old) and Pudukottai districts. While in the rest of the district the trend was positive but the trend was not significant in South Arcot, Coimbatore (new), Thanjavur, Madurai (new), Anna, Ramanathapuram (new), Kamarajar, T.Thirumaganar and Tirunelveli (new). At the state level, the observed trend was positive and also significant.

Table:1 Linear trend analysis: Forest land

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Signif- icance
1 MADRAS	-	-	-	-	
2 CHENGLEPUT	488	88	0.643	5.54	S
3 SOUTH ARCOT	390	371	0.061	1.05	NS
4 PUDUKOTTAI	-109	19	0.677	-5.61	S
5 THANJAVUR	33	61	0.017	0.55	NS
6 RAMANATHAPURAM-old	263	66	0.48	3.96	S
6 RAMANATHAPURAM-new	31	59	0.083	0.52	NS
7 TIRUNELVELI-old	318	47	0.728	6.75	S
7 TIRUNELVELI-new	1267	557	0.838	2.27	NS
8 CHIDAMBARANAR	-877	506	0.75	-1.73	NS
9 KANYAKKUMARAI	335	61	0.642	5.52	S
10 NORTH ARCOT	10	2	0.734	6.84	S
11 SALEM	624	155	0.488	4.02	S
12 DHARMAPURI	1533	313	0.585	4.9	S
13 COIMBATORE-old	-679	227	0.346	-3	S
13 COIMBATORE-new	150	334	0.025	0.45	NS
14 PERIYAR	-258	160	0.246	-1.62	NS
15 TIRUCHIRAPALLI	-969	541	0.159	-1.79	NS
16 MADURAI-old	1507	595	0.274	2.53	S
16 MADURAI-new	6414	3703	0.6	1.73	NS
17 ANNA	10241	4354	0.735	2.35	NS
18 KAMARAJAR	169	56	0.75	3	NS
19 T.THIRUMAHANAR	675	709	0.232	0.95	NS
20 THE NILGIRIS	2410	377	0.706	6.38	S
21 STATE	6911	1225	0.652	5.64	S

Note: S and NS denote significant and not significant at 5%

2. Barren and uncultivable land

This category of land represents mountain, deserts etc. which are practically useless for non-agricultural purpose and unfit for cultivation. This land can not be brought under cultivation without reclamation involving heavy investment. It is a non arable land and is considered as community land. The distribution of area under barren and uncultivated land could be seen from the Appendix 2. The state level data show that the land under this class has drastically reduced from 832035 ha. (6.4 per cent) in 1970-71 to 512597 ha. (3.9 per cent) in 1988-89. There was a marked decline in the barren and uncultivable land in the Nilgiris district. The extent of land under this type accounted for 13.3 per cent of the total area upto 1975-76 and it continued to decline since 1976-77 to less than 2 per cent. In Kanyakumari district, the area of land under this class was more than 10 per cent upto 1972-73 and it declined to less than 5 per cent from 1973-74. Regional level data show that in the coastal region the barren and uncultivable land declined from 374071 ha. in 1970-71 to 219578 ha. in 1988-89 and in the inland region from 457964 ha. in 1970-71 to 293019 ha. in 1988-89. Thus the data clearly show that the decline in the barren and uncultivable land was more in the case of coastal region than that of the inland region.

The expected sign of the coefficient of X for the barren and uncultivable land was negative. This is mainly due to decrease in the per capita availability of arable land consequent to rapid increase in the population. At the district level, the

coefficients were (Table 2) positive in Coimbatore (old), Thanjavur, Anna and Chidambaranar, but the value of positive coefficients were significant only in Thanjavur and Coimbatore districts. At the state level, the observed linear trend was negative and significant. The negative linear trend at the state level indicates that the unproductive land was put to productive purposes. This was a significant and positive development for our economy.

3. Land put to non-agricultural uses

The land put to non agricultural uses represents all lands occupied by buildings, roads, railways, or under water eg. river, canal, and other lands put to uses other than agriculture. The increase in the area under this type of land indicates that the agricultural land is being diverted to non-agricultural purposes. Though, this is not a desirable trend for agricultural development yet it is an index for economic development as this land is being used for developmental activities. It is clear from Appendix 3 that the area of land put to non agricultural uses has increased remarkably from 11.4 per cent in 1970-71 to 14.0 per cent in 1988-89 at the state level. The land under this class has increased remarkably in Kanyakumari districts than that of the other districts. At the Regional level, the proportion of land put to non-agricultural uses was higher in the coastal region (Madras with 98%, Chingleput 26%, South Arcot 13%, Thanjavur 18%, Pudukottai 26%, Ramanathapuram 19%, Chidambaranar 19%, Tirunelveli 14% and Kanyakumari 14%) than that of the inland

Table:2 Linear trend analysis: Barren and uncultivable land.

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Signif- icance
1 MADRAS	-	-	-	-	-
2 CHENGLEPUT	-1090	264	0.501	-4.13	S
3 SOUTH ARCOT	-3864	306	0.903	-12.61	S
4 THANJAVUR	356	76	0.563	4.68	S
5 PUDUKOTTAI	-2	30	0.0003	-0.07	NS
6 RAMANATHAPURAM-old	-2205	411	0.628	-5.36	S
6 RAMANATHAPURAM-new	-601	347	0.5	-1.73	NS
7 TIRUNELVELI-old	-690	311	0.224	-2.22	NS
7 TIRUNELVELI-new	-138	80	0.75	-1.73	NS
8 CHIDAMBARANAR	1770	1022	0.75	1.73	NS
9 KANYAKKUMARAI	-752	144	0.615	-5.21	S
10 NORTH ARCOT	-1813	129	0.921	-14.1	S
11 SALEM	-374	170	0.221	-2.2	S
12 DHARMAPURI	-1623	208	0.782	-7.81	S
13 COIMBATORE-old	1656	383	0.523	-4.32	S
13 COIMBATORE-new	-104	13	0.89	-8.03	S
14 PERIYAR	-40	27	0.222	-1.51	NS
15 TIRUCHIRAPALLI	-718	89	0.791	-8.03	S
16 MADURAI-old	-195	214	0.047	-0.91	NS
16 MADURAI-new	-173	227	0.225	-0.76	NS
17 ANNA	409	5173	0.003	0.08	NS
18 KAMARAJAR	-21	12	0.5	-1.73	NS
19 T. THIRUMAHANAR	-10	215	0.0007	-0.05	NS
20 THE NILGIRIS	-2033	351	0.664	-5.8	S
21 STATE	-16367	1688	0.847	-9.69	S

Note: S and NS denote significant and not significant at 5%

region (North Arcot with 14%, Dharmapuri 5%, Salem 8%, Periyar 9%, The Nilgiris 4%, Coimbatore 11%, Tiruchirapalli 14%, Anna 10%, Madurai 11%, T.Thirumaganar 27% and Kamarajar 16%) in 1988-89. The total area has increased from 828001 ha. in 1970-71 to 9136003 ha. in 1988-89 in the coastal region and from 148857 ha. in 1970-71 to 1824177 ha. in 1988-89 in the inland region. But the data clearly show that the increase in the area was more in the inland region than that of the coastal region. This use of land ranks third next to net sown area and the land under the forest. Thus there has been an increase in the area of land put to non-agricultural uses due to rapid growth of commercial establishments, educational institutions, transportation etc. The use of land under this category has increased steadily over the years and it is bound to increase in future also.

The expected sign of the co-efficient of X was positive for the land put to non agricultural uses. The direction of the trend was not positive (Table 3) in (1) Salem, (2) Dharmapuri, (3) Tiruchirapalli, (4) Pudukottai, (5) Thanjavur, (6) Madurai (new), (7) T.Thirumaganar, (8) Tirunelveli (new), and (9) The Nilgiris, the negative coefficient was significant only in (1) Dharmapuri, (2) Pudukottai and (3) the Nilgiris. At the state level, as expected, the trend was positive and significant. This indicates that there was a positive development in the land to put to non agricultural uses.

It is worthwhile noting that though there is a decrease in the land under barren and uncultivable land and an increase in

Table:3 Linear trend analysis: Land put to non-agricultural uses.

	X Coef.	Std Err of Coef.	R Sqared	t value	Level of Signifi- cance
1 MADRAS	335	54	0.69	6.2	S
2 CHENGLEPUT	2096	139	0.93	15.12	S
3 SOUTH ARCOT	3380	338	0.85	10	S
4 PUDUKOTTAI	-849	121	0.77	-7.04	S
5 THANJAVUR	-493	681	0.03	-0.72	NS
6 RAMANATHAPURAM-old	2698	293	0.83	9.21	S
6 RAMANATHAPURAM-new	846	344	0.67	2.46	NS
7 TIRUNELVELI-old	2639	399	0.72	6.62	S
7 TIRUNELVELI-new	-219	683	0.09	-0.32	NS
8 CHIDAMBARANAR	43	1460	0.0009	0.03	NS
9 KANYAKKUMARAI	660	123	0.63	5.37	S
10 NORTH ARCOT	3634	262	0.92	13.86	S
11 SALEM	-215	227	0.05	-0.94	NS
12 DHARMAPURI	-2565	324	0.79	-7.91	S
13 COIMBATORE-old	4065	610	0.72	6.67	S
13 COIMBATORE-new	579	265	0.37	2.18	NS
14 PERIYAR	1164	310	0.64	3.76	S
15 TIRUCHIRAPALLI	-1454	935	0.12	-1.56	NS
16 MADURAI-old	1990	138	0.92	14.41	S
16 MADURAI-new	-1851	1492	0.43	-1.24	NS
17 ANNA	1062	197	0.94	5.4	S
18 KAMARAJAR	568	105	0.91	5.4	S
19 T. THIRUMAHANAR	-1134	582	0.56	-1.95	NS
20 THE NILGIRIS	-182	42	0.52	-4.3	S
21 STATE	19807	1388	0.92	14.27	S

Note: S and NS denote significant and not significant at 5%

the land put to non agricultural uses the total area under these two categories remains more or less the same. Therefore, the land that has been converted from barren and uncultivable land to cultivation seems to have been compensated by the land transformed from the cultivated land into non-agricultural uses. Practically, there is no increase in the net sown area.

Buildings are necessary for residential and commercial purposes for basic human activities and also it accounts for one of the major components of land put to non agricultural uses. An attempt has been made to examine the population density and the land put to non agricultural uses. A comparison of data on population density (Table 4) and the area of land put to non-agricultural uses and the land man ratio or per capita availability of land and the intensity of cropping pattern (Table 5) reveal an interesting observation. It denotes that the two variables viz., population density and the land put to non-agricultural uses are positively correlated but not significantly. The land man ratio or per capita availability of land and the intensity of cropping pattern (Table 5) are negatively correlated.

Land not available for cultivation

Agricultural census provides the data on land use pattern by size class of operational holdings. It is in this context, worthwhile to investigate the land not available for cultivation by size of operational holdings. The land not available for cultivation includes the area of land under private forests, land

Table 4

Population and area of districts in Tamil Nadu

Districts	Percentage of population to total population (1981)	Percentage to total area (1981)	Population Density per Sq.Km. based on cultivated area (1981)*	Population Density Per Sq.Km.		
				1971	1981	1991**
1) Madras	6.77	0.13	---	15172	19274	21811
2) Chengalpattu	7.47	6.05	1119	356	460	588
3) North Arcot	9.12	9.43	981	306	360	494
4) Thiruvannamalai Sambuvarayar	---	---	---	---	---	323
5) South Arcot	8.68	8.38	687	332	386	447
6) Dharmapuri	4.13	7.40	530	174	208	249
7) Salem	7.11	6.65	856	346	398	453
8) Periyar	4.27	6.31	638	219	252	283
9) Coimbatore	6.32	5.74	811	345	410	473
10) The Nilgiris	1.30	1.96	1079	194	247	277
11) Madurai	9.37	9.71	771	312	359	525
12) Dindigul Quaid-E- Milleth	---	---	---	---	---	292
13) Tiruchirappalli	7.46	8.53	630	288	326	371
14) Thanjavur	8.40	6.37	712	429	491	547
15) Pudukottai	2.39	3.58	605	203	248	284
16) Ramanathapuram	6.89	9.68	546	227	265	268
17) T.Thirumaganar	---	---	---	---	---	263
18) Kamarajar	---	---	---	---	---	363
19) Tirunelveli	7.38	8.79	852	280	313	366
20) Chidambaranar	---	---	---	---	---	315
21) Kanyakumari	2.94	1.29	1749	726	845	945
Tamil Nadu	100.00	100.00	812	317	372	428

Source: Census of India 1981 (Tamil Nadu), Portrait of Population pp34, 35, 39, 41

* Cultivated area includes Net area sown and land under miscellaneous tree crops

** Dinamani (Tamil Daily) March 27, 1991

Table 5

Land-man ratio and intensity of cropping

Sl.No.	District	Man-land ratio 1981*	Intensity of cropping 1977-78**
1)	Madras		
2)	Chengalpattu	0.208	141.3
3)	North Arcot	0.197	134.0
4)	South Arcot	0.194	128.6
5)	Dharmapuri	0.259	125.3
6)	Salem	0.215	118.0
7)	Periyar	0.315	116.7
8)	Coimbatore	0.329	115.9
9)	Nilgiris	0.226	102.3
10)	Madurai	0.265	114.8
11)	Tiruchirapalli	0.281	111.4
12)	Thanjavur	0.192	160.6
13)	Pudukottai	0.270	107.8
14)	Ramanathapuram	0.375	106.0
15)	Tirunelveli	0.312	119.4
16)	Kanyakumari	0.072	137.1
	Tamil Nadu	0.246	123.4

Source: Ramesh A., and Tiwari P.S., (ed.) Basic Resource Atlas of Tamil Nadu, Department of Geography, University of Madras, Madras, 1983

Note: * Total available land (net sown area, current fallows and other fallow) per head of rural population in ha.
 ** Total cropped area as percent of net sown area.

put to non-agricultural uses and barren and uncultivated land. Agricultural census does not provide data separately for area under forest, land put to non-agricultural uses and barren and uncultivated land, and a total of all these items is put together under the title land not available for cultivation. It could be seen from Table 6 that the land not available for cultivation has increased steadily with increase in the size of operational holdings in 1970-71. The percentage of land not available for cultivation was less than 2 per cent upto the size classes of less than 10.00 ha. while the percentage was more than 2 in the size of holdings more than 10.00 ha in 1970-71 and 1979-80. The main reason for the fluctuation in the land not available for cultivation could be mainly due to the data obtained from census method in 1970-71 and 1979-80 and sample method in 1976-77 and 1985-86. The percentages of land not available for cultivation were more or less the same for all size classes in 1970-71 and 1979-80. Not only there was a wide difference in the percentages of land not available for cultivation but also the percentages were small in 1976-77 and 1985-86 compared to 1970-71 and 1979-80. This clearly indicates that there was under reporting of data in the sample method in 1976-77 and 1985-86. There was a sharp decline in absolute as well as percentage in the size class of more than 50 ha. and the percentage of total area declines as the size class declines in the initial years but this is not so in the latter years in the land not available for cultivation. This may be due to shift of land from large size holdings to relatively small size holdings. Though there was a fluctuation in the land not available for

Table 6

Distribution of land not available for cultivation to total operated area in Tamil Nadu (in ha.)

Size class		1970-71	1976-77	1979-80	1985-86
1)	0.0 - 0.5	7463 (1.67)	4669 (0.72)	13354 (1.62)	2866 (0.34)
2)	0.5 - 1.0	12325 (1.53)	6409 (0.67)	15280 (1.41)	4670 (0.40)
3)	1.0 - 2.0	24864 (1.61)	10932 (0.69)	21776 (1.27)	8984 (0.51)
4)	2.0 - 3.0	18253 (1.63)	8048 (0.72)	17064 (1.55)	5804 (0.54)
5)	3.0 - 4.0	13095 (1.70)	5351 (0.71)	10121 (1.40)	3798 (0.54)
6)	4.0 - 5.0	9870 (1.76)	4509 (0.81)	5977 (1.17)	2502 (0.52)
7)	5.0 - 7.5	-- --	6677 (0.86)	9098 (1.33)	3836 (0.57)
8)	7.5 - 10.0	23866* (1.81)	3507 (0.83)	6657 (1.84)	1892 (0.54)
9)	10.0 - 20.0	13123 (2.04)	8945 (1.81)	8678 (2.04)	3538 (0.83)
10)	20.0 - 30.0	4263 (2.72)	1667 (1.51)	1869 (1.80)	468 (0.53)
11)	30.0 - 40.0	1866 (2.84)	444 (1.20)	735 (2.04)	232 (0.89)
12)	40.0 - 50.0	1381 (5.29)	212 (1.28)	656 (3.14)	104 (1.07)
13)	Above 50.0	11524 (14.48)	4006 (4.25)	2407 (1.88)	396 (0.44)
14)	Total	141892 (1.88)	65376 (0.86)	113673 (1.47)	39090 (0.51)

* Size class 5.0 - 10.0

Note: Figures in brackets indicate the percentage of land not available for cultivation to total area in each size class.

cultivation but the trend shows that the percentage of land not available for cultivation was also small in the small size classes than that of the large size classes in 1979-80 and 1985-86. Thus the data indicate very clearly that the percentage of land not available for cultivation to total operated area was more in the case of higher size holdings whereas it was lower in the smaller size of holdings. This in fact, calls for reduction of ceiling on land holdings as the land not available for cultivation appears to be minimum in the lower size class of operational holdings.

It should be noted that there are several factors such as land concentration, productivity, income, technology, irrigation etc. determine the level of ceiling on landholdings. However, in this paper, the need for reduction in the level of ceiling on landholdings has been discussed based on land use pattern only.

4. Cultivable waste

The area of land under cultivable waste represents all land available for cultivation whether not taken up for cultivation or taken up for cultivation once but not cultivated during the current year and previous five years or more in succession. The cultivable waste lands are definitely cultivable but are at present lying as waste on account of number of severe limitations. These limitations may occur as a result of excessive sandyness, waterlogging, flood and erosion, weed jungle, scarcity of water, distance from house site to land and danger from wild animals. Given such limitations, it is

uneconomic to cultivate the cultivable waste land and if these limitations are removed, then this land can be brought under cultivation. It could be seen from the Appendix 4 that the land under this category has come down steadily from 306862 ha. (3.9 per cent) in 1970-71 to 289161 ha. (2.2 per cent) in 1988-89 at the state level. Among all districts only in Dharmapuri district, the cultivable waste land has increased. This may be due to non-availability of water for cultivation. An attempt has also been made to assess the percentage of area of land under irrigation. As can be seen from the Table 7 that the area under irrigation is low in Dharmapuri district when compared to other districts in Tamil Nadu. The land under this category has been drastically reduced in three districts viz. Ramanathapuram, the Nilgiris, and Kanyakumari. The area classified as cultivable waste has declined from 269983 ha. in 1970-71 to 148778 ha. in 1988-89 in the coastal region and from 236879 ha. in 1970-71 to 140389 ha. in 1988-89 in the inland region. Thus the data very clearly denote that the decrease in the area classified as cultivable waste was more in the coastal region than that of the inland region. It is important to note that the existence of cultivable waste land provides a greater scope for further extension of cultivation in Tamil Nadu, as these lands can be reclaimed by applying scientific measures.

The expected sign of the X coefficient was negative for the cultivable waste land. The linear trend analysis (Table 8) shows that the trend was positive only in 5 districts viz., (1)

Table 7
Total net area irrigated excluding wells supplementing other sources/percentage
of net area irrigated to net area sown

Districts	1970-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80
1) Madras	---	---	---	---	---	---	---	---	---	---
2) Chengalpattu	249161 (74.2)	240001 (70.0)	229636 (68.7)	228297 (69.9)	174978 (61.0)	243069 (71.7)	260914 (77.7)	260571 (74.5)	259770 (75.2)	269815 (81.7)
3) South Arcot	299555 (50.2)	305184 (50.1)	308019 (49.9)	300067 (51.0)	343138 (65.6)	286920 (53.1)	302920 (53.3)	357337 (62.1)	353636 (60.6)	356671 (60.4)
4) North Arcot	264470 (49.1)	271685 (51.4)	284009 (53.6)	287495 (53.1)	264629 (50.0)	258691 (48.2)	248856 (45.8)	286860 (52.3)	255520 (48.1)	267823 (51.3)
5) Salem	120374 (29.7)	116485 (27.8)	160155 (37.5)	148444 (34.5)	119520 (30.1)	115263 (27.4)	89071 (22.1)	109177 (25.2)	127763 (29.4)	153685 (34.7)
6) Dharmapuri	63218 (15.5)	63097 (15.6)	65115 (16.1)	67505 (19.3)	68762 (18.2)	65618 (15.5)	53525 (12.9)	72753 (17.1)	77406 (17.4)	82718 (18.9)
7) Coimbatore	255704 (35.2)	286812 (37.3)	308028 (41.1)	311747 (42.0)	262714 (40.6)	290914 (41.6)	214074 (31.6)	304564 (41.4)	308792 (42.5)	145968 (39.0)
8) Periyar	---	---	---	---	---	---	---	---	---	173125 (50.6)
9) Tiruchirapalli	231369 (30.7)	241736 (31.2)	196757 (31.9)	194402 (31.9)	153728 (28.3)	166638 (28.8)	140301 (24.2)	176217 (28.7)	206818 (34.0)	216389 (36.2)
10) Pudukottai	---	---	107223 (50.4)	102182 (49.3)	66528 (40.7)	98665 (50.1)	93618 (47.7)	107049 (50.1)	106049 (51.2)	108924 (52.0)
11) Thanjavur	506790 (82.6)	516653 (83.3)	472816 (86.3)	447850 (86.4)	470696 (87.4)	474126 (86.1)	376846 (70.8)	473994 (85.9)	482716 (86.9)	485350 (86.6)
12) Madurai	198325 (34.0)	207104 (34.5)	217964 (35.8)	229191 (39.0)	185524 (34.9)	193900 (33.7)	175974 (31.3)	225148 (37.7)	241158 (41.2)	245697 (41.5)
13) Anna	---	---	---	---	---	---	---	---	---	---
14) Ramanathapuram	220603 (36.1)	250625 (38.7)	254259 (38.9)	253391 (39.5)	149933 (31.4)	216213 (35.8)	213470 (34.8)	255852 (40.5)	243059 (39.1)	259263 (41.7)
15) Kamarajar	---	---	---	---	---	---	---	---	---	---
16) T.Thirumaganar	---	---	---	---	---	---	---	---	---	---
17) Tirunelveli	149884 (32.2)	175835 (35.8)	176790 (36.3)	183079 (37.5)	149286 (37.4)	126217 (33.4)	132598 (30.0)	173550 (36.2)	177776 (38.0)	185327 (39.5)
18) Chidambaranar	---	---	---	---	---	---	---	---	---	---
19) The Nilgiris	486 (0.9)	404 (0.7)	258 (0.4)	378 (0.7)	11 ---	196 (0.3)	321 (0.6)	3728 (6.3)	3689 (6.3)	4112 (7.0)
20) Kanyakumari	31897 (39.3)	34055 (40.4)	34375 (40.2)	31534 (40.1)	28615 (34.1)	28690 (33.5)	27093 (33.4)	28852 (35.2)	29055 (35.7)	29277 (35.9)
State	2591836 (42.0)	2709676 (42.7)	2815404 (44.5)	2815563 (45.6)	2438062 (43.9)	2565120 (42.8)	2329581 (38.8)	2835652 (45.0)	2873197 (46.0)	2984144 (47.9)

Source: Season and crop reports (various years)

Table 7 (contd..)

Total net area irrigated excluding wells supplementing other sources/percentage of net area irrigated to net area sown

Districts	80-81	81-82	82-83	83-84	84-85	85-86	86-87
1) Madras	---	---	---	---	---	---	---
2) Chengalpattu	224713 (80.4)	229981 (79.5)	192244 (79.1)	247445 (82.5)	243915 (78.6)	243527 (78.4)	190841 (77.7)
3) South Arcot	286208 (56.2)	310117 (46.1)	213436 (46.0)	243533 (49.0)	292027 (54.0)	321535 (51.1)	296961 (51.1)
4) North Arcot	172993 (40.5)	193193 (44.1)	176100 (43.3)	212873 (42.3)	245246 (49.2)	236923 (46.9)	209444 (47.3)
5) Salem	104918 (30.1)	132666 (33.4)	97782 (27.7)	129836 (31.4)	129683 (32.6)	91649 (24.1)	93689 (23.7)
6) Dharmapuri	66390 (20.9)	76506 (20.8)	58769 (16.7)	74357 (18.8)	40159 (10.1)	77121 (18.8)	81903 (20.0)
7) Coimbatore	162334 (45.9)	153174 (41.8)	152186 (43.7)	143333 (39.3)	167628 (45.0)	142027 (39.6)	144630 (39.9)
8) Periyar	171854 (57.8)	161250 (50.7)	124991 (43.1)	155745 (48.4)	160180 (49.5)	116035 (37.0)	122934 (38.8)
9) Tiruchirapalli	180353 (36.1)	188974 (33.8)	148313 (27.9)	174177 (30.5)	180441 (32.3)	144828 (27.4)	150406 (27.6)
10) Pudukottai	74292 (51.9)	103418 (56.6)	81204 (49.6)	104284 (52.4)	91603 (50.5)	102413 (51.5)	101468 (52.6)
11) Thanjavur	480667 (86.4)	473994 (85.8)	433888 (85.3)	463723 (86.9)	474874 (87.0)	450111 (87.6)	456318 (88.7)
12) Madurai	231893 (45.2)	239908 (41.9)	188602 (36.0)	261164 (40.4)	218953 (41.0)	124368 (46.1)	127045 (45.0)
13) Anna	---	---	---	---	---	69414 (27.8)	68178 (26.6)
14) Ramanathapuram	212025 (39.0)	257942 (42.8)	209207 (38.3)	247317 (42.3)	63631 (32.5)	62741 (30.5)	60432 (29.7)
15) Kamraj	---	---	---	---	65196 (32.0)	56095 (30.1)	52732 (27.8)
16) T.Thirumaganar	---	---	---	---	77050 (65.5)	70459 (56.6)	69265 (57.3)
17) Tirunelveli	174448 (40.2)	158630 (39.7)	148739 (38.1)	161533 (38.7)	160052 (38.6)	161976 (40.0)	70560 (61.6)
18) Chidambaranar	---	---	---	---	---	---	34336 (15.2)
19) The Nilgiris	440 (0.8)	516 (0.9)	515 (0.9)	511 (0.9)	522 (0.9)	522 (0.9)	504 (0.7)
20) Kanyakumari	26984 (33.8)	28605 (35.3)	28946 (35.7)	28253 (35.0)	29192 (35.8)	29048 (35.3)	24059 (30.9)
State	570520 (48.0)	2708874 (47.2)	2254922 (42.9)	2618084 (44.9)	2640352 (45.6)	2500792 (43.9)	2355705 (42.5)

Source: Season and crop reports (various years)

Table:8 Linear trend analysis: Cultivable waste land.

	X Coef.	Std Err of Coef.	R Sqared	t value	Level of Signif- icance
1 MADRAS	-	-	-	-	-
2 CHENGLEPUT	-1928	364	0.623	-5.3	S
3 SOUTH ARCOT	-639	470	0.098	-1.36	NS
4 PUDUKOTTAI	-382	86	0.567	-4.44	S
5 THANJAVUR	-323	96	0.401	-3.37	S
6 RAMANATHAPURAM-old	-3079	556	0.643	-5.54	S
6 RAMANATHAPURAM-new	-411	414	0.247	-0.99	NS
7 TIRUNELVELI-old	-296	110	0.299	-2.69	S
7 TIRUNELVELI-new	101	1175	0.007	0.08	NS
8 CHIDAMBARANAR	382	314	0.596	1.22	NS
9 KANYAKKUMARAI	-128	16	0.797	-8.17	S
10 NORTH ARCOT	-813	126	0.712	-6.48	S
11 SALEM	-425	29	0.928	-14.84	S
12 DHARMAPURI	726	66	0.877	11	S
13 COIMBATORE-old	-1433	300	0.574	-4.78	S
13 COIMBATORE-new	68	22	0.551	3.13	S
14 PERIYAR	-365	96	0.642	-3.79	S
15 TIRUCHIRAPALLI	-1529	284	0.631	-5.39	S
16 MADURAI-old	-882	88	0.854	-9.97	S
16 MADURAI-new	-372	202	0.629	-1.84	NS
17 ANNA	-616	276	0.713	-2.23	NS
18 KAMARAJAR	-342	164	0.593	-2.09	NS
19 T. THIRUMAHANAR	234	839	0.025	0.28	NS
20 THE NILGIRIS	-1097	88	0.901	-12.41	S
21 STATE	-11711	854	0.917	-13.72	S

Note: S and NS denote significant and not significant at 5%

Dharmapuri, (2) Coimbatore (new), (3) T.Thirumaganar, (4) Tirunelveli (new), and (5) Chidambaranar, but the positive trend was significant only in two districts viz., Dharmapuri and Coimbatore (new). As expected, the trend was negative and significant at the state level.

The size-wise distribution of cultivable waste land to total operated area in Tamil Nadu is shown the Table 9. The percentage of land under the cultivable waste has steadily increased with the increase in the size of operational holdings in 1970-71, the percentage of area of this land has increased with the increase in all size of holdings except the size classes of 30.0 - 40.0 ha. and above 50.0 ha in 1976-77; the percentage of area under this category has increased with the increase in the size of the holdings except the size of holdings 50.0 ha. and above in 1979-80; and in 1985-86, the area under this type of land has increased with the increase in the all size classes except 30.00 -40.00 ha. The percentage of land under this class has increased from 1.95 per cent in 1970-71 to 2.31 per cent in 1976-77; decreased to 1.03 per cent in 1979-80 and to 0.39 per cent in 1985-86. Thus the data very clearly indicate that the small size holdings are more efficient in utilising the land than that of large size holding, as the percentage of area of cultivable waste land to total area operated by them is small. This, in fact, again calls for a reduction of ceiling on land holdings as the cultivable waste land appears to be minimum in the lower size class of operational holdings.

Table 9
Distribution of cultivable waste land to total operated area
in Tamil Nadu (ha.)

Size class	1970-71	1976-77	1979-80	1985-86
1) 0.0 - 0.5	4495 (1.00)	8755 (1.35)	5895 (0.72)	1123 (0.13)
2) 0.5 - 1.0	9861 (1.22)	12818 (1.34)	7945 (0.73)	2006 (0.17)
3) 1.0 - 2.0	22992 (1.49)	26140 (1.65)	13226 (0.77)	3813 (0.22)
4) 2.0 - 3.0	19379 (1.73)	19786 (1.77)	10211 (0.93)	3323 (0.31)
5) 3.0 - 4.0	14011 (1.82)	15523 (2.06)	7133 (0.99)	3218 (0.46)
6) 4.0 - 5.0	10779 (1.92)	12413 (2.23)	5265 (1.03)	2162 (0.45)
7) 5.0 - 7.5	---	21741 (2.80)	8697 (1.27)	3713 (0.55)
8) 7.5 - 10.0	28790* (2.18)	15085 (3.57)	5027 (1.39)	2522 (0.72)
9) 10.0 - 20.0	18743 (2.87)	20558 (4.16)	7452 (1.75)	3802 (0.90)
10) 20.0 - 30.0	6630 (4.22)	12159 (11.01)	2634 (2.54)	1387 (1.59)
11) 30.0 - 40.0	3171 (4.83)	3025 (8.17)	1028 (2.84)	156 (0.60)
12) 40.0 - 50.0	1849 (7.08)	3774 (22.84)	1349 (6.46)	264 (2.73)
13) Above 50.0	6499 (8.17)	3045 (3.23)	3354 (2.61)	2481 (2.74)
Total	146926 (1.95)	174822 (2.31)	79216 (1.03)	29970 (0.39)

* Size class 5.0 to 10.0

Note: Figures in brackets indicate the percentage of cultivable waste land to total operated area in each size class.

5. Permanent pastures and other grazing land

This represents all grazing lands whether they are permanent pastures and meadows or not. These lands are included in the arable land. It consists of both common and private land. Though it is meant for grazing, the land under this type has been encroached by the farmers to increase the income for the family. The distribution of permanent pastures and other grazing land could be seen from the Appendix 5. At the state level, 230658 ha or 1.8 per cent of the land was under this category in 1970-71 and it has declined to 127020 ha or 1 per cent in 1988-89. Regional level analysis shows that by and large the area classified as permanent pasture and other grazing land has declined in both inland and coastal region. But the decrease in the area was more in the case inland region than that of coastal region, as the area classified as permanent pasture and other grazing land has declined from 99853 ha. in 1970-71 to 57045 ha. in 1988-89 in the coastal region and from 130805 ha. in 1970-71 to 69975 ha. in 1988-89. It is expected that the extent of land classified as permanent pastures and other grazing land positively correlated with the livestock population. An examination has been made to study whether there is any relationship between the density of live stock population and the proportion of area under permanent pasture and other grazing land to the total geographical area (Table 10). In Chengalpattu district, the percentage at pasture and grazing land to total geographical area was highest (3.7 %) but the density of livestock population 201 per sq.km. While in Thanjavur district,

Table 10
Livestock population 1982

Districts	Percentage of pasture and grazing land to total geographical area *	Density of livestock population per sq.km.	Area in Sq.Km. (1981)	Livestock Population	Cattle, buffaloes, goat and sheep
1) Madras		522	170	88687	70373
2) Chengalpattu	3.7	201	7863	1583070	1481336
3) South Arcot	0.8	244	10895	2656352	2452904
4) North Arcot	0.8	198	12268	2435004	2313794
5) Salem	1.5	294	8650	2542950	2279085
6) Dharmapuri	1.2	187	9622	1796615	1677303
7) Periyar	0.5	218	8209	1793292	1627338
8) Coimbatore	0.3	166	7469	1237449	1112079
9) The Nilgiris	2.5	41	2549	104051	96189
10) Thanjavur	0.5	292	8280	2414208	2286485
11) Trichirapalli	2.4	234	11095	2599633	2429579
12) Pudukottai	1.2	216	4661	1005085	953737
13) Madurai & Anna	0.6	167	13297	2222296	2100830
14) Ramanathapuram, Kamarajar and T.Thirumaganar	0.2	208	8491	1763549	1680064
15) Tirunelveli Kattabomman and Chidambaranar	1.9	112	15556	1741235	1625655
16) Kanyakumari	0.2	120	1684	202615	173697
Tamil Nadu	1.2	201	130058	26186091	24360448

Sources: 1. Annual Statistical Abstract of Tamilnadu, 1986-87
Commissioner of Statistics, Government of Tamil Nadu, Madras
1988 p.80

* Appendix 5 (present paper)

the percentage of pasture and grazing land was only 0.5 per cent but the density of livestock population was significantly higher with 292 per sq.km. The data indicate that there was no relationship between the density of livestock population and the proportion of area under permanent pastures and other grazing land.

The expected sign of the coefficient of X for permanent pastures and other grazing land was in the negative direction. The observed sign was negative (Table 11) both at the state level and at the district level except in three district viz., (1) Dharmapuri, (2) Pudukottai and (3) Ramanathapuram (new) and the positive coefficient was significant only in Dharmapuri and Pudukottai.

6. Miscellaneous tree crops and groves not included in the net area sown:

This represents all cultivable land which is not included under net area sown but is put to agricultural uses. This type of land facilitates the farmers to cultivate annual plantation or tree crops viz., mangoes, coconut, casuarina, jack, plantain, guava, etc. A considerable proportion of orchards is sown with crops which contribute fairly to the total income of the farmers. The distribution of area of land used for miscellaneous tree crops and groves not included in the net area sown could be seen from Appendix 6. The area under this type of land has declined steadily due to population growth. At the state level the area of this class of land declined from 266448 ha or 1.7 per cent in 1970-71 to 119218 ha. or 0.9 per cent in 1988-89. At regional

Table:11 Linear trend analysis: Permanant pastures and other grazing land

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Significance
1 MADRAS	—	—	—	—	—
2 CHENGLEPUT	-1362	193	0.746	-7.06	S
3 SOUTH ARCOT	-206	32	0.704	-6.37	S
4 PUDUKOTTAI	40	16	0.299	2.53	S
5 THANJAVUR	-125	24	0.623	-5.3	S
6 RAMANATHAPURAM-old	-105	22	0.564	-4.69	S
6 RAMANATHAPURAM-new	16	9	0.5	1.73	NS
7 TIRUNELVELI-old	-621	101	0.692	-6.17	S
7 TIRUNELVELI-new	-1149	844	0.649	-1.36	NS
8 CHIDAMBARANAR	-1766	1019	0.75	-1.73	NS
9 KANYAKKUMARAI	-1	7	0.001	-0.14	NS
10 NORTH ARCOT	-565	99	0.658	-5.72	S
11 SALEM	-141	17	0.804	-8.35	S
12 DHARMAPURI	103	22	0.565	4.7	S
13 COIMBATORE-old	-883	84	0.867	-10.53	S
13 COIMBATORE-new	-53	10	0.79	-5.49	S
14 PERIYAR	-722	111	0.842	-6.53	S
15 TIRUCHIRAPALLI	-1619	121	0.913	-13.34	S
16 MADURAI-old	-389	51	0.776	-7.67	S
16 MADURAI-new	-76	20	0.876	-3.76	NS
17 ANNA	-112	64	0.6	-1.73	NS
18 KAMARAJAR	0	0	ERR	ERR	
19 T. THIRUMAHANAR	-5	2	0.603	-2.13	NS
20 THE NILGIRIS	-139	35	0.484	-3.99	S
21 STATE	-5870	453	0.908	-12.94	S

Note: S and NS denote significant and not significant at 5%

level the land classified under this type has declined from 151357 ha. in 1970-71 to 68415 ha. in 1988-89 in the coastal region and from 75091 ha. in 1970-71 to 50803 ha. in 1988-89. Thus the data clearly show that the area of this type has declined in both the region but the decline was more in the coastal region. The main reason for the increase in the area under this type of land may be due to conversion of arable land into this type of land due to inadequate water supply; and the decline in the area of land under this type may be due to conversion of this type of land to cultivable area and land put to non agricultural uses.

The sign of the X coefficient for miscellaneous tree crops and groves not included in the net area sown was in the positive direction, as it is generally expected that the area under this type tends to increase along with increase in the growth of the population in order to meet the increased demand for fruits etc. But the sign was negative (Table 12) at the state level and at the district level except in (1) Salem, (2) Dharmapuri (3) T.Thirumaganar, (4) Tirunelveli (old) and new, but the positive sign was not significant in T.Thirumaganar and Tirunelveli (new).

The break up of the permanent pastures and other grazing land and the land under miscellaneous tree crops and groves not included in the net sown area is not available separately to investigate the size-wise distribution of these lands. Permanent pastures and other grazing lands include all grazing lands, whether they are permanent pastures and meadows or not. Village common grazing lands have been excluded for the purposes of

Table:12 Linear trend analysis: Land under miscellaneous tree crops and groves not included in the net area sown

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Significance
1 MADRAS	-	-	-	-	-
2 CHENGLI PUT	-1102	232	0.57	-4.74	S
3 SOUTH ARCOT	-670	206	0.383	-3.25	S
4 PUDUKOTTAI	-381	101	0.485	-3.76	S
5 TRANJAVUR	-1376	134	0.861	-10.27	S
6 RAMANATHAPURAM-old	-199	96	0.203	-2.08	NS
6 RAMANATHAPURAM-new	-1478	466	0.77	-3.17	NS
7 TIRUNELVELI-old	447	212	0.208	2.11	S
7 TIRUNELVELI-new	434	57	0.983	7.59	NS
8 CHIDAMBARANAR	-8450	6045	0.661	-1.04	NS
9 KANYAKKUMARAI	-51	20	0.275	-2.54	S
10 NORTH ARCOT	-206	57	0.433	-3.61	S
11 SALEM	114	17	0.722	6.64	S
12 DHARMAPURI	289	70	0.498	4.1	S
13 COIMBATORE-old	-140	165	0.04	-0.85	NS
13 COIMBATORE-new	-641	179	0.614	-3.57	S
14 PERIYAR	-628	139	0.717	-4.51	S
15 TIRUCHIRAPALLI	-607	86	0.745	-7.05	S
16 MADURAI-old	-453	52	0.818	-8.73	S
16 MADURAI-new	-240	121	0.664	-1.98	NS
17 ANNA	-28	22	0.43	-1.22	NS
18 KAMARAJAR	-618	202	0.758	-3.07	NS
19 T. THIRUMAHANAR	5	53	0.003	0.09	NS
20 THE NILGIRIS	-408	56	0.758	-7.3	S
21 STATE	-5031	754	0.724	-6.68	S

Note: S and NS denote significant and not significant at 5%

agricultural census. Land under miscellaneous tree crops etc. includes all cultivable land which is not included in the net area sown but put to some agricultural use. Lands under casuarina trees thatching grasses bamboo bushes and other groves for fuel etc. which are not included under orchards have been included under this category. An examination has been made to analyze these two types under one title viz., other uncultivated land excluding fallow land. The distribution of other uncultivated land excluding fallow land to the total operated land is shown in Table 13. It could be seen from the table that the percentage of other uncultivated land excluding fallow land to the total operated area has increased with the increase in the size of operational holdings. The total area under this type of land to the total operated area has decreased from 1.53 per cent in 1970-71 to 0.74 per cent in 1976-77; it increased to or 0.97 per cent in 1979-80 and it decreased to or 0.37 per cent in 1985-86. The data again indicate that the large size holdings leave more land without cultivation than that of small size holdings. This in fact calls again for a reduction of ceiling on landholdings as the other uncultivated land excluding fallow land was minimum in the lower size of class operational holdings. The existance of vast area of this land gives a scope for further extension of cultivation in the future.

7. Current fallows

The area under current fallows represents the cropped area which are kept fallow during the year. Current fallows form a

Table 13
Distribution of other uncultivated land excluding fallow land to total operated area in Tamilnadu (ha.)

Size class		1970-71	1976-77	1979-80	1985-86
1)	0.0 - 0.5	4875 (1.09)	6421 (0.99)	6084 (0.74)	984 (0.12)
2)	0.5 - 1.0	6463 (0.80)	6792 (0.71)	8683 (0.80)	1626 (0.23)
3)	1.0 - 2.0	13798 (0.90)	10139 (0.64)	14805 (0.87)	4368 (0.25)
4)	2.0 - 3.0	10954 (0.98)	7601 (0.68)	9089 (0.83)	3101 (0.29)
5)	3.0 - 4.0	8090 (1.05)	5200 (0.69)	6224 (0.86)	2184 (0.31)
6)	4.0 - 5.0	7149 (1.27)	3395 (0.61)	5089 (1.00)	1762 (0.37)
7)	5.0 - 7.5	----	4892 (0.63)	7738 (1.13)	2646 (0.39)
8)	7.5 - 10.0	22618* (1.71)	3719 (0.88)	4804 (1.33)	2006 (0.56)
9)	10.0 - 20.0	21187 (3.29)	4992 (1.01)	6272 (1.47)	2640 (0.62)
10)	20.0 - 30.0	7509 (4.87)	486 (0.44)	2496 (2.41)	1148 (1.31)
11)	30.0 - 40.0	4813 (7.33)	570 (1.54)	739 (2.04)	162 (0.62)
12)	40.0 - 50.0	1767 (6.77)	312 (1.89)	460 (2.20)	233 (2.41)
13)	Above 50.0	6444 (8.10)	1405 (1.49)	2519 (1.96)	5571 (6.15)
14)	Total	115669 (1.53)	55924 (0.74)	75002 (0.97)	28431 (0.37)

* Size class 5.0 to 10.0

Note: Figures in brackets indicate the percentage of other uncultivated land excluding fallow land to total operated area in each size class.

part of the arable land. Therefore, area under current fallows is added to the area under net sown area to get the total cropped area. It could be seen from the Appendix 7 that the total area under this class of land has increased from 964640 ha. or 7.4 per cent of the total geographical area in 1970-71 to 154463 ha. or 11.9 per cent in 1988-89 at state level. Regional level data show that there was an increase in the area classified as current fallows in the inland region (from 572627 ha. in 1970-71 to 948777 ha. in 1988-89) and in the coastal region (from 392013 ha. in 1970-71 to 597686 ha. in 1988-89) but the rate of increase in current fallows was lower in the coastal region than that of the inland region. The reason for a very high percentage of current fallows to total geographical area may be mainly due to inadequate supply of water including rainfall for irrigation. This is well documented from the Table 14 that the actual rainfall was less than the normal rainfall and the level of rainfall was minimum in three years viz., 1974-75, 1980-81 and 1982-83 compared to the rest of the year. The area under this class of land (Appendix 7) was higher in 1974-75 at state level and at the district level except the Nilgiris and Dharmapuri districts, and again the area under this class was higher in 1980-81 at the state level and at the district level; and further the area under this class of land was higher in 1982-83 both at the state level and district level except in Kanyakumari district. Thus in a year of fairly sufficient level of rain, the percentage of current fallows decreases considerably whereas in a year of insufficient rain the area under such land increases suddenly. The area under current fallows may not decrease in the

Table 14
Distribution of rainfall by years in Tamil Nadu

Year	Rainfall	
	Normal	Actual
1970-71	945.7	918.1
1971-72	945.7	968.8
1972-73	945.7	992.3
1973-74	945.7	842.2
1974-75	945.7	647.4
1975-76	945.7	857.2
1976-77	945.7	941.4
1977-78	945.7	1123.7
1978-79	942.8	1091.3
1979-80	942.8	1091.3
1980-81	942.8	669.3
1981-82	942.8	952.7
1982-83	942.8	662.6
1983-84	942.8	1222.5
1984-85	942.8	791.4
1985-86	942.8	950.9
1986-87	945.7	700.9
1987-88*	945.0	982.8
1988-89**	-----	708.8

Source: Season and crop report of Tamil Nadu, 1985-86,
Dept. of Statistics, Madras.

Statistical handbook of Tamilnadu, 1988
Dept. of Statistics, p.109

Tamilnadu Economic Appraisal, 1989, p.101.

future due to insufficient water or rainfall for cultivation in Tamil Nadu, although it is stated that the area under current fallows is bound to decrease to a negligible level in the future due to increase in the growth of population. The sandy soil, inadequate water for irrigation and the hilly terrain must have compelled the farmers to leave the land uncultivated. It is in this respect, a study has to be undertaken to investigate as to what reasons these lands are kept fallow and who is leaving the land uncultivated. A study conducted by Nadkarni and Deshpande (1979) shows that the proportion of current fallows increases significantly with an increase in the size of operated area.

The expected direction of the sign of the trend for current fallows was in the negative. The observed coefficient (Table 15) was positive in majority of the districts except (1) Periyar, (2) Madurai (old and new), (3) Anna, (4) Ramanathapuram (old), (5) Kamarajar, (6) T.Thirumaganar, (7) Tirunelveli (new) and (8) Chidambaranar, but the trend was not significant. The X coefficient was positive and significant at the state level. It is quite contrary to what was expected.

The sizewise distribution of area under current fallows to total operated area could be seen from the Table 16. The area under this type of land has increased with the increase in the size of operational holdings. The positive relationship between the size class and the percentage of current fallows was very high upto 1979-80; but this relationship was not so high in 1985-86. This was due to large scale shift of land from the larger

Table:15 Linear trend analysis: Area under current fallows

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Signifi- cance
1 MADRAS	-	-	-	-	-
2 CHENGLEPUT	4562	920	0.59	4.96	S
3 SOUTH ARCOT	3608	1578	0.24	2.29	S
4 PUDUKOTTAI	1774	1118	0.14	1.59	NS
5 THANJAVUR	1453	506	0.33	2.87	S
6 RAMANATHAPURAM-old	-788	2410	0.01	-0.33	NS
6 RAMANATHAPURAM-new	2261	3427	0.13	0.66	NS
7 TIRUNELVELI-old	2877	1347	0.21	2.14	S
7 TIRUNELVELI-new	-29692	14449	0.81	-2.05	NS
8 CHIDAMBARANAR	-7599	2605	0.89	-2.92	NS
9 KANYAKKUMARAI	68	66	0.06	1.03	NS
10 NORTH ARCOT	4938	1104	0.54	4.47	S
11 SALEM	1199	1133	0.06	1.06	NS
12 DHARMAPURI	542	1355	0.01	0.4	NS
13 COIMBATORE-old	5986	1826	0.39	3.28	S
13 COIMBATORE-new	1347	1319	0.12	1.02	NS
14 PERIYAR	-2629	2042	0.17	-1.29	NS
15 TIRUCHIRAPALLI	5576	1387	0.49	4.02	S
16 MADURAI-old	-219	1993	0.001	-0.11	NS
16 MADURAI-new	-6958	4650	0.53	-1.5	NS
17 ANNA	-18354	22104	0.26	-0.83	NS
18 KAMARAJAR	-11792	10046	0.31	-1.17	NS
19 T. THIRUMAHANAR	-4982	4934	0.25	-1.01	NS
20 THE NILGIRIS	768	133	0.66	5.76	S
21 STATE	33863	12825	0.29	2.64	S

Note: S and NS denote significant and not significant at 5%

Table 16

Distribution of area under current fallows to total operated area in Tamil Nadu (ha.)

	Size class	1970-71	1976-77	1979-80	1985-86
1)	0.0 - 0.5	50275 (11.22)	97022 (14.96)	111934 (13.62)	215720 (25.26)
2)	0.5 - 1.0	93673 (11.62)	154967 (16.20)	152375 (14.05)	284571 (24.52)
3)	1.0 - 2.0	199968 (12.98)	278508 (17.58)	261513 (15.30)	446132 (25.20)
4)	2.0 - 3.0	150376 (13.43)	206910 (18.51)	180007 (16.34)	283185 (26.33)
5)	3.0 - 4.0	106512 (13.76)	146421 (19.43)	125045 (17.36)	192825 (27.52)
6)	4.0 - 5.0	80758 (14.36)	115891 (20.82)	95195 (18.66)	136223 (28.57)
7)	5.0 - 7.5	----	169111 (21.78)	147004 (21.49)	202231 (29.93)
8)	7.5 - 10	209861* (15.89)	98285 (23.26)	85026 (23.56)	111992 (32.15)
9)	10.0 - 20.0	125002 (19.39)	141992 (28.53)	117227 (27.57)	138791 (32.74)
10)	20.0 - 30.0	35624 (22.69)	33894 (30.69)	28525 (27.51)	28125 (32.19)
11)	30.0 - 40.0	15751 (23.99)	13343 (36.04)	11766 (32.56)	7729 (29.74)
12)	40.0 - 50.0	6003 (23.00)	4332 (26.22)	5074 (24.30)	3546 (36.62)
13)	Above 50.0	12010 (15.10)	27544 (29.22)	27279 (21.26)	20540 (22.66)
14)	Total	1085814 (14.40)	1487220 (19.65)	1347970 (17.49)	2071610 (26.91)

* Size class 5.0 to 10.0

Note: Figures in brackets indicate current fallows to total operated area in each size class.

size class of landholdings to the smaller size holdings in 1985-86. The total area of this land has increased from 1085814 ha. or 14.40 per cent of the total operated area in 1970-71 to 2071610 ha. or 26.91 per cent in 1985-86. Thus the data clearly show that the land left without cultivation by the farmers was more in the case of large farmers than that of the small farmers and the land under this type without cultivation has increased over a period of time. This in fact calls for a reduction of ceiling on landholdings as the area under the current fallows was minimum in the lower size class of operational holdings.

8. Other fallow lands

This represents lands which are taken up for cultivation but are temporarily out of cultivation for a period of not less than one year and not more than five years. The lands classified under other fallows are definitely cultivable. These lands are left without cultivation by the farmers due to poverty, lack of irrigation, inadequate rainfall, weeds, etc. At the state level, the area of this land has fluctuated over a period of 19 years (Appendix 8.) The area under this type of land was 895074 ha. which accounted for 6.9 per cent of the geographical area in 1988-89 in Tamil Nadu. The district level data also mainly show that the area under this category fluctuated over a period of 19 years. The highest percentage of this land is noticed in T.Thirumaganar which accounted for about 26 per cent followed by Kamarajar and Tirunelveli districts and accounted for 21 per cent and 20 per cent respectively. The regional level analysis shows that 3 out of 9 districts viz., South Arcot, Chidambaranar and

Kanyakumari in the coastal region and 3 out of 11 districts viz., Salem, Coimbatore and Tiruchirapalli in the inland region, the area classified as other fallows has declined. The area classified as other fallows has increased from 292220 ha. in 1970-71 to 360498 ha. in 1988-89 in the coastal region and 280742 ha. in 1970-71 to 534576 ha. in 1988-89 in the inland region. Thus the data very clearly show that the rate of increase in the other fallows was more in the case of inland region than that of the coastal region.

As far as the area of land under other fallows is concerned, the expected direction of the trend was negative. This is mainly in response to population explosion. The trend analysis (Table 17) shows that, at the district level, the trend was negative only in (1) Chingleput, (2) South Arcot, (3) Coimbatore (old) (4) Madurai (new) (5) Ramanathapuram (new) and (6) Chidambaranar but the trend was found to be not significant. At the state level, the trend was positive and significant. This is contrary to the expected direction of the trend. A comparison of data related to other fallow lands with rainfall indicates that the other fallow lands continue to persist irrespective of rainfall. However in a year of sufficient rainfall (i.e. more than normal rainfall) the other fallow lands had declined and in a year of insufficient rain the lands under this type had increased.

If we remove the obstacles which make the land unfit for cultivation, these lands can be cultivated. These lands can be brought under cultivation by applying manures, irrigation

Table:17 Linear trend analysis: Other fallow lands

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Signif- icance
1 MADRAS	-	-	-	-	-
2 CHENGLEPUT	-137	394	0.007	-0.35	NS
3 SOUTH ARCOT	-106	262	0.01	-0.41	NS
4 PUDUKOTTAI	1208	305	0.51	3.95	S
5 THANJAVUR	86	214	0.009	0.4	NS
6 RAMANATHAPURAM-old	9778	1373	0.749	7.12	S
6 RAMANATHAPURAM-new	-1566	1914	0.183	-0.82	NS
7 TIRUNELVELI-old	537	940	0.019	0.57	NS
7 TIRUNELVELI-new	15062	2707	0.968	5.54	NS
8 CHIDAMBARANAR	-2518	456	0.968	-5.52	NS
9 KANYAKKUMARAI	24	19	0.084	1.25	NS
10 NORTH ARCOT	272	496	0.017	0.55	NS
11 SALEM	367	257	0.107	1.43	NS
12 DHARMAPURI	794	149	0.625	5.32	S
13 COIMBATORE-old	-517	838	0.022	-0.62	NS
13 COIMBATORE-new	593	480	0.16	1.24	NS
14 PERIYAR	3263	1682	0.32	1.94	NS
15 TIRUCHIRAPALLI	894	866	0.059	1.03	NS
16 MADURAI-old	3069	1261	0.258	2.43	S
16 MADURAI-new	-5810	3003	0.652	-1.93	NS
17 ANNA	17281	15681	0.378	1.1	NS
18 KAMARAJAR	11426	12276	0.224	0.93	NS
19 T. THIRUMAHANAR	5676	1816	0.765	3.13	NS
20 THE NILGIRIS	51	54	0.049	0.94	NS
21 STATE	16794	5274	0.374	3.18	S

Note: S and NS denote significant and not significant at 5%

facilities and reclamation of land. The existence of this type of land provides a greater scope for increasing the area for cultivation.

The size-wise distribution of fallow lands other than current fallows to the total operated area is shown in the Table 18. It could be seen from the table that the extent of fallow lands other than current fallows to total operated area has increased significantly with the increase in the size of operational holdings in 1970-71, 1976-77 and 1979-80; whereas in 1985-86 the share of fallow land other than current fallows has increased with the increase in the size of holdings upto 20.00 ha. and thereafter it declined with the increase in the size of landholdings. The total area under this type of land has declined from 223048 ha. or 2.96 per cent in 1970-71 to 83550 ha. or 1.10 per cent in 1976-77 and further to 71601 ha. or 0.93 per cent in 1979-80 and again declined to 19266 ha. or 0.25 per cent in 1985-86. Thus the data clearly indicate that the area under this class of land started declining due to large scale transfer of land from the larger size of holdings to the smaller holdings and subdivision of land among the family members due to increase in the growth of population.

9. Net sown area

This represents the net area sown with crops in any particular year. The net sown area depends on surface condition, fertility of soil, irrigation including rainfall and

Table 18

Distribution of fallow lands other than current fallows to total operated area in Tamil Nadu (ha.)

	Size class	1970-71	1976-77	1979-80	1985-86
1)	0.0 - 0.5	5373 (1.20)	6356 (0.98)	5035 (0.61)	1140 (0.13)
2)	0.5 - 1.0	13468 (1.67)	8801 (0.92)	8083 (0.75)	1840 (0.15)
3)	1.0 - 2.0	33487 (2.17)	17743 (1.12)	12146 (0.71)	3431 (0.19)
4)	2.0 - 3.0	28914 (2.58)	11290 (1.01)	8682 (0.79)	2381 (0.22)
5)	3.0 - 4.0	22665 (2.94)	7084 (0.94)	5105 (0.71)	1504 (0.21)
6)	4.0 - 5.0	17656 (3.14)	5622 (1.01)	4762 (0.93)	1571 (0.33)
7)	5.0 - 7.5	-----	8690 (1.12)	7514 (1.10)	2600 (0.38)
8)	7.5 - 10.0	46757* (3.54)	5197 (1.23)	5646 (1.56)	1478 (0.42)
9)	10.0 - 20.0	30132 (4.67)	6523 (1.32)	8140 (1.91)	2728 (0.64)
10)	20.0 - 30.0	10655 (6.79)	2132 (1.93)	2328 (2.25)	480 (0.55)
11)	30.0 - 40.0	5477 (8.34)	463 (1.25)	710 (1.96)	16 (0.06)
12)	40.0 - 50.0	2295 (8.79)	175 (1.06)	734 (3.51)	4 (0.04)
13)	Above 50.0	6170 (7.76)	3468 (3.68)	2716 (2.12)	93 (0.10)
14)	Total	223048 (2.96)	83550 (1.10)	71601 (0.93)	19266 (0.25)

* Size class 5.0 to 10.0

Note: Figures in brackets indicate percentage of fallow lands other than current fallows to total operated area in each size class.

technological development. The net sown area is considered as an index to measure economic development. It could be seen from the Appendix 9 that the net sown area never exceeded 50 per cent of the total geographical area at the state level. The net sown area was only 42.6 per cent at the state level in 1988-89. At the regional level, 3 out of 11 districts in the inland region and 2 out of 9 districts in the coastal region, the area classified as net area sown has declined. The data also show that the net area sown has declined from 2699942 ha. in 1970-71 to 2193701 ha. in 1988-89 in the coastal and from 3469231 ha. in 1970-71 to 3352954 ha. in 1988-89 in the inland region. Thus the data clearly indicate that though there was a decline in the net area sown in both the region but the decline was less for the inland region than that of the coastal region. The district level data also show that among all districts the net sown area exceeded more than 50 per cent in South Arcot, Tiruchirapalli, Thanjavur, Chidambaranar, and Kanyakumari over a period two decades. The high population density (Table 4), the high percentage irrigated area (Table 7) and rainfall (Table 14) appear to be responsible for the highest percentage of net sown area. The low percentage of this type of land was noticed in Tirunelveli, T.Thirumaganar and the Nilgiris districts. The other fallow land, cultivable waste and the area of land under forest were responsible for low percentage of net area sown. On the whole the net sown area has fluctuated but has not increased. The land under this category has not responded to the growth of population. Since the use of this land never exceeded 50 per cent of geographical area, there is a scope for further expansion

in the area of land under cultivation.

The expected sign of the trend was positive. This is mainly because vast area of land to be brought under cultivation to meet the basic needs consequent to increase in the population. But the trend analysis (Table 19) shows that the trend was positive only in 8 districts viz., (1) Periyar, (2) Madurai (new) (3) Anna, (4) Ramanathapuram (new), (5) Kamarajar (6) Tirunelveli (new) (7) Chidambaranar and (8) The Nilgiris, but the positive trend was significant only in the Nilgiris district. The trend analysis also shows that there was a negative and significant development at the state level. The main reason for the negative development in the net area was mainly due to increase in the area of land under current fallows and other fallows.

The size-wise distribution of net sown area to the total operated area is shown in the Table 20. The area under this class of land has decreased with the increase in the size of operational holdings. The net sown area has declined from 6020396 ha. or 78.11 per cent of the total geographical area in 1979-80 to 5511035 ha. or 71.58 per cent in 1985-86. Thus the data clearly show that the percentage of net sown area to the total operated area by the small farmers was more than that of the large farmers. The data indicate that the ceiling on land holdings has to be reduced as the net sown area was higher in the lower size class of operational holdings.

Table:19 Linear trend analysis: Net area sown

	X Coef.	Std Err of Coef.	R Sqared	t value	Level of Signifi- cance
1. MADRAS	-	-	-	-	-
2 CHENGLEPUT	-4030	1065	0.457	-3.78	S
3 SOUTH ARCOT	-1811	1606	0.07	-1.13	NS
4 PUDUKOTTAI	-1281	1008	0.097	-1.27	NS
5 THANJAVUR	-3914	881	0.537	-4.44	S
6 RAMANATHAPURAM-old	-6205	1896	0.387	-3.27	S
6 RAMANATHAPURAM-new	1215	4294	0.026	0.28	NS
7 TIRUNELVELI-old	-5282	1403	0.454	-3.76	S
7 TIRUNELVELI-new	14395	13177	0.544	1.09	NS
8 CHIDAMBARANAR	19014	6924	0.883	2.75	NS
9 KANYAKKUMARAI	-127	23	0.121	-1.53	NS
10 NORTH ARCOT	-5929	1452	0.495	-4.08	S
11 SALEM	-1045	1104	0.05	-0.95	NS
12 DHARMAPURI	-36	1374	0.00004	-0.03	NS
13 COIMBATORE-old	-4304	1276	0.401	-3.37	S
13 COIMBATORE-new	-2455	1233	0.331	-1.99	NS
14 PERIYAR	93	1824	0.0003	0.05	NS
15 TIRUCHIRAPALLI	-8986	2137	0.51	-4.21	S
16 MADURAI-old	-2613	1237	0.208	-2.11	S
16 MADURAI-new	14248	6704	0.693	2.13	NS
17 ANNA	709	13428	0.001	0.05	NS
18 KAMARAJAR	571	4530	0.005	0.13	NS
19 T. THIRUMAHANAR	-693	5378	0.006	-0.13	NS
20 THE NILGIRIS	618	136	0.549	4.55	S
21 STATE	-38987	11353	0.41	-3.43	S

Note: S and NS denote significant and not significant at 5%

Table 20

Distribution of net sown area to total operated area in Tamil Nadu
(ha)

	Size class	1970-71	1976-77	1979-80	1985-86
1)	0.0 - 0.5	375727 (83.83)	525322 (81.00)	680001 (82.69)	631988 (74.02)
2)	0.5 - 1.0	670134 (83.15)	766802 (80.16)	891830 (82.26)	865784 (74.60)
3)	1.0 - 2.0	1245164 (80.84)	1240771 (78.32)	1386521 (81.08)	1303895 (73.64)
4)	2.0 - 3.0	891540 (79.64)	864194 (77.31)	875787 (79.56)	777629 (72.31)
5)	3.0 - 4.0	607701 (78.71)	574005 (76.17)	567117 (78.68)	497097 (70.95)
6)	4.0 - 5.0	436056 (77.55)	414803 (74.52)	393991 (77.21)	332555 (69.75)
7)	5.0 - 7.5	989166* (74.88)	556335 (72.81)	504050 (73.68)	460710 (68.18)
8)	7.5 - 10.0	-----	296756 (70.23)	253860 (70.32)	228465 (65.58)
9)	10.0 - 20.0	436936 (67.76)	312177 (63.17)	277606 (65.26)	272371 (64.26)
10)	20.0 - 30.0	92340 (58.81)	60101 (54.42)	65823 (63.49)	55761 (63.82)
11)	30.0 - 40.0	34576 (52.66)	19178 (51.80)	21165 (58.56)	17696 (68.08)
12)	40.0 - 50.0	12810 (49.07)	7717 (46.71)	12610 (60.39)	5532 (57.13)
13)	Above 50.0	36917 (46.40)	54795 (58.13)	90040 (70.17)	61552 (67.91)
14)	Total	5829066 (77.28)	5701956 (75.34)	6020396 (78.11)	5511035 (71.58)

* Size class 5.0 to 10.0

Note: Figures in brackets indicate the net sown area to total operated area in each size class.

10. Area sown more than once

The area sown more than once is an index to calculate the agricultural development. The agricultural development is positively associated with the increase in the area sown more than once. The area sown more than once has declined in 1988-89 as compared to 1970-71 at the state level (Appendix 10) which accounted for 9.3 per cent of the total geographical area in 1970-71 and has declined to 6.9 per cent in 1988-89. The regional level analysis shows that except the Chidambaranar district in the coastal region and Salem, Dharmapuri, Anna and the Nilgiris districts in the inland region, the area sown more than once has declined in Tamil Nadu. On the whole, the area sown more than once has declined to 496235 ha. in 1988-89 from 688632 ha. in 1970-71 in the coastal region and to 408080 ha. in 1988-89 from 526201 ha. in 1970-71 in the inland region. Thus the data clearly show that area sown more than once has declined in both the region but the decline was less in the inland region than that of the coastal region. The main reason for the highest percentage of these lands was due to increase in the pressure of population to meet the food items, and the availability of water for irrigation (Table 7). It is worthwhile to mention that 44.9 per cent of the total land was put to cultivation more than once in Thanjavur in 1984-85. The year to year fluctuations in the area sown more than once have been a noticeable feature of land use pattern in Tamil nadu. The main reason for decrease in the area sown more than once was may be due to inadequate supply of water including rainfall for

cultivation and late release of water from irrigation tanks for cultivation.

As far as the net sown area is concerned, the expected trend of the X coefficient was positive. The district wise linear trend analysis (Table 21) show that the X coefficients were positive only in 8 districts viz., (1) South Arcot, (2) Salem, (3) Madurai (new), (4) Anna, (5) Ramanathapuram (new), (6) Tirunelveli (new), (7) Chidambaranar and (8) The Nilgiris. But the positive trend was significant only in Salem district. The trend analysis also shows that the observed trend was negative and significant at the state level.

11. Total cropped area

The distribution of total cropped area over a period of two decades at the district level, regional level and state level is shown in Appendix 11. Though year to year fluctuation has been a noticeable feature of the data, the total cropped area is on the decrease at the state level. Regional level analysis shows that the area classified as total cropped area has declined from 3388574 ha. in 1970-71 to 268936 ha. in 1988-89 in the coastal region and from 3995432 ha. in 1970-71 to 3761023 ha. in 1988-89 in the inland region. Thus the data very clearly indicate that the decrease in the total cropped area was more in the coastal region than that of the inland region. At the district level, the total cropped area fluctuated in all districts. There was not much change in the total cropped area in three districts, viz., Dharmapuri, Thanjavur and Madurai. A very high percentage

Table:21 Linear trend analysis: Area sown more than once

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Signif- icance
1 MADRAS	-	-	-	-	-
2 CHENGLEPUT	-4017	1040	0.468	-3.86	S
3 SOUTH ARCOT	711	1297	0.017	0.55	NS
4 PUDUKOTTAI	-32	197	0.002	-0.16	NS
5 THANJAVUR	3961	1962	0.193	-2.02	NS
6 RAMANATHAPURAM-old	-795	358	0.225	-2.22	S
6 RAMANATHAPURAM-new	266	84	0.771	3.18	NS
7 TIRUNELVELI-old	-2271	634	0.43	-3.58	S
7 TIRUNELVELI-new	3744	1840	0.805	2.03	NS
8 CHIDAMBARANAR	4576	4772	0.479	0.96	NS
9 KANYAKKUMARAI	-1057	191	0.644	-5.55	S
10 NORTH ARCOT	-4083	1358	0.347	-3.01	S
11 SALEM	2077	694	0.345	2.99	S
12 DHARMAPURI	-546	856	0.023	-0.64	NS
13 COIMBATORE-old	-2746	925	0.341	-2.97	S
13 COIMBATORE-new	-18	1845	0.000012	-0.01	NS
14 PERIYAR	-4973	1672	0.525	-2.97	NS
15 TIRUCHIRAPALLI	-3081	520	0.674	-5.92	S
16 MADURAI-old	-1722	525	0.388	-3.28	S
16 MADURAI-new	5237	7580	0.193	0.69	NS
17 ANNA	506	541	0.304	0.94	NS
18 KAMARAJAR	-567	1495	0.046	-0.38	NS
19 T. THIRUMAHANAR	-429	254	0.487	-1.69	NS
20 THE NILGIRIS	57	39	0.112	1.46	NS
21 STATE	-21043	7256	0.331	-2.9	S

Note: S and NS denote significant and not significant at 5%

of the total cropped area was noticeable in Thanjavur district. The main reason for the very high percentage of this land in Thanjavur was due to high population density and high percentage of area irrigated; very low percentage of this area was noticeable in T.Thirumaganar with 25.7 per cent and Tirunelveli with 27.4 per cent in 1988-89. The total cropped area was 27.5 per cent in the Nilgiris in 1988-89. The main reason for the low percentage of this area in the Nilgiris district was due to the predominance of hilly terrain. However, the total cropped area depends upon availability of water for cultivation. The main reason for the low percentage of this area is mainly due to inadequate supply of water including rainfall for cultivation.

The desired direction of the sign was positive for the total cropped area. This is mainly due to increase in the basic needs consequent to rapid growth of population. The sign of the trend (Table 22) was found to be positive only in 8 districts viz., (1) Salem, (2) Madurai(new) (3) Anna, (4) Ramanathapuram (new) (5) Kamarajar (6) Tirunelveli (new) (7) Chidambaranar, and (8) The Nilgiris, but the positive trend was significant only in the Nilgiris district. The observed trend at the state level was negative and significant.

Location coefficients

Location coefficient is one of the techniques to measure the degree of concentration of land use pattern at district or regional level. The location coefficients has been calculated for three points in time viz., 1970-71 1979-80 and 1988-89.

Table:22 Linear trend analysis: Total cropped area.

	X Coef.	Std Err of Coef.	R Squared	t value	Level of Significance
1 MADRAS	-	-	-	-	-
2 CHENGLEPUT	-7784	2116	0.443	-3.68	S
3 SOUTH ARCOT	-1170	2605	0.012	-0.45	NS
4 PUDUKOTTAI	-1314	1149	0.08	-1.14	NS
5 THANJAVUR	-7875	2244	0.42	-3.51	S
6 RAMANATHAPURAM-old	-7000	2117	0.391	-3.31	S
6 RAMANATHAPURAM-new	1481	4342	0.037	0.34	NS
7 TIRUNELVELI-old	-7553	1843	0.497	-4.1	S
7 TIRUNELVELI-new	18138	15016	0.593	1.21	NS
8 CHIDAMBARANAR	23585	11699	0.803	2.02	NS
9 KANYAKKUMARAI	-1184	246	0.577	-4.82	S
10 NORTH ARCOT	-10011	2710	0.445	-3.69	S
11 SALEM	1032	1611	0.024	0.64	NS
12 DHARMAPURI	-582	1459	0.009	-0.4	NS
13 COIMBATORE-old	-7045	1957	0.432	-3.6	S
13 COIMBATORE-new	-2473	2564	0.104	-0.96	NS
14 PERIYAR	-4880	3287	0.216	-1.48	NS
15 TIRUCHIRAPALLI	-12067	2208	0.637	-5.47	S
16 MADURAI-old	-4336	1483	0.334	-2.92	S
16 MADURAI-new	19485	7752	0.76	2.51	NS
17 ANNA	1215	12976	0.004	0.09	NS
18 KAMARAJAR	4	5779	0	0	NS
19 T. THIRUMAHANAR	-1122	5456	0.014	-0.21	NS
20 THE NILGIRIS	649	166	0.473	3.91	S
21 STATE	-60030	17488	0.409	-3.43	S

Note: S and NS denote significant and not significant at 5%

Table : 23

Minimum and Maximum Location Coefficients of the land use pattern by districts: 1970-71, 1979-80, 1988-89

		1970-71		1979-80		1988-89	
		District	Location Coefficient	District	Location Coefficient	District	Location Coefficient
1. Forest Area	Maximum	The Nilgiris	2.76	The Nilgiris	3.60	The Nilgiris	3.40
	Minimum	Thanjavur	0.10	Thanjavur	0.09	Ramathapuram(new)	0.07
2. Barren and Uncultivable land	Maximum	South Arcot	2.25	South Arcot	2.48	South Arcot	2.10
	Minimum	Coimbatore	0.50	Periyar	0.20	T.Thirumaganar	0.21
3. Land put to non Agricultural uses	Maximum	Madras	8.77	Madras	7.58	Madras	7.01
	Minimum	The Nilgiris	0.40	The Nilgiris	0.27	The Nilgiris	0.25
4. Cultivable waste	Maximum	The Nilgiris	2.18	Tirunelveli	2.00	Tirunelveli (new)	2.64
	Minimum	Dharmapuri	0.21	Kanyakumari & Coimbatore	0.12	Kanyakumari	0.05
5. Permanent pastures & other grazing land	Maximum	Chingleput	3.20	Chingleput	3.00	Chingleput	3.20
	Minimum	Ramanathapuram	0.22	Ramanathapuram	0.17	Periyar	0.10
6. Land under miscellaneous tree crops and groves not included in the net sown area	Maximum	Chingleput	3.06	South Arcot	3.20	South Arcot	3.22
	Minimum	Salem, Madurai, Coimbatore, Kanyakumari	0.24	Kanyakumari	0.13	Ramathapuram (new) & Kamarajar	0.00
7. Area under current fallows	Maximum	Ramathapuram	1.66	Periyar	1.77	Ramathapuram(new)	1.85
	Minimum	Kanyakumari	0.14	Kanyakumari	0.15	Kanyakumari	0.04
8. Other fallow land	Maximum	Tirunelveli	2.57	Tirunelveli	2.79	T.Thirumaganar	3.69
	Minimum	Kanyakumari	0.18	Kanyakumari	0.09	Kanyakumari	0.09
9. Net area sown	Maximum	Thanjavur	1.33	Thanjavur	1.42	Thanjavur	1.52
	Minimum	The Nilgiris	0.45	The Nilgiris	0.48	Tirunelveli (new)	0.49
10. Area sown more than once	Maximum	Thanjavur	2.99	Thanjavur	3.58	Thanjavur	4.13
	Minimum	The Nilgiris	0.01	The Nilgiris	0.11	T.Thirumaganar	Negligible
11. Total cropped area	Maximum	Thanjavur	1.60	Thanjavur	1.84	Thanjavur	1.88
	Minimum	The Nilgiris	0.38	The Nilgiris	0.41	T.Thirumaganar	0.52

As far as forest area is concerned, the location coefficient (LCi) was highest (Table 23) in the Nilgiris district, a hilly terrain, with 2.76 and least in Thanjavur district, the most fertile and irrigated tract, with 0.10 in 1970-71. The position with respect to maximum and minimum location coefficients remained the same in 1979-80; but 1988-89, the Ramanathapuram (new) happened to be the least concentrated, while the Nilgiris district continued to be the highest concentration in the area under forest. Similarly the South Arcot, Madras and Chingleput have accounted for highest location coefficient for barren and uncultivated land; land put to non-agricultural uses; and land under permanent pastures and other grazing land in 1970-71, 1979-80 and 1988-89, but the districts get fluctuated as they move from one point of time to another with respect to minimum location coefficients. Thanjavur district alone has represented for the highest concentration in the net area sown, area sown more than once and total cropped area in 1970-71, 1979-80 and 1988-89. The value of location coefficients also increased over the period of time. This confirms that in the most fertile and irrigated region, the concentration of the net area sown, area sown more than once and the total cropped area will be the highest. The concentration of land put to non-agricultural uses was minimum in the Nilgiris district in all the three points in time, this again confirms that the location coefficient will be minimum in the hilly terrain. The concentration of area under current fallows and other fallows was minimum in Kanyakumari district for all the three points in time. The change in the location coefficients with respect to maximum and minimum,

clearly indicate the pattern of land use pattern was not consistent.

The results of the study indicate that there is a greater scope for further extension of area of land for cultivation, as the existence of vast area of land under the use of cultivable waste, permanent pastures and grazing lands, miscellaneous tree crops and groves, current fallows and other fallows which can be brought under cultivation in Tamil Nadu. These lands can be reclaimed and used for cultivation by applying scientific methods. More than half of the geographical area is unsown and it is not true to say that there is no scope for further extension of land for cultivation. The prevalence of landlordism or largeholdings has been responsible for the high percentage of land uncultivated as the high percentage of land is not available for cultivation in the higher size of operational holdings. The percentage of area of land under the cultivable waste, permanent pastures and other grazing lands, land under miscellaneous tree crops and groves, current fallows and other fallows was higher in the large size holdings and the percentage of area of land under the net sown area was high in the small size holdings than that of the large size holdings. This suggests that there is a need for reduction of ceiling on landholdings for proper and efficient utilisation of land and it is sufficient for technological upgrading and improved profitability of farming. It is disheartening to note that the uncultivated area is also found even in the irrigated region. Effort should be made to redistribute the waste land to the landless and to reclaim the

current fallow lands and other fallow lands. Studies have to be conducted at the micro level as to know who is leaving the land uncultivated whether the resident owner, non resident owner, absentee landlord or tenant leave the land uncultivated.

APPENDIX 1:

FOREST AREA

(ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (4.1)	0 (4.3)	0 (4.3)	0 (4.4)	0 (4.4)	0 (5.5)	0 (5.4)	0 (5.4)	0 (5.4)	0 (5.4)
2 CHENGLEPUT	33734 (4.1)	35075 (4.3)	36055 (4.3)	36055 (4.4)	36055 (4.4)	43150 (5.5)	42789 (5.4)	42652 (5.4)	42553 (5.4)	42547 (5.4)
3 SOUTH ARCOT	64179 (5.9)	64179 (5.9)	64179 (5.9)	64179 (5.9)	52819 (4.8)	52819 (4.8)	51668 (4.7)	50602 (4.6)	50602 (4.6)	50264 (4.5)
4 NORTH ARCOT	318887 (25.9)	318887 (25.9)	318887 (25.9)	318887 (25.9)	318887 (25.9)	318888 (25.9)	318888 (25.9)	318887 (25.9)	318887 (25.9)	318887 (25.9)
5 SALEM	166906 (19.4)	157562 (18.3)	157248 (18.2)	157248 (18.2)	157248 (18.2)	157248 (18.2)	157248 (18.3)	155570 (18.1)	167129 (19.4)	167129 (19.4)
6 DHARMAPURI	317294 (33.3)	317294 (33.0)	317294 (33.0)	317294 (33.0)	317294 (33.0)	317294 (32.9)	317294 (32.9)	326318 (33.9)	326318 (33.9)	326318 (33.9)
7 COIMBATORE-old	404558 (25.9)	404559 (25.9)	404493 (25.9)	403757 (25.9)	388600 (24.7)	388534 (24.8)	388534 (25.4)	388535 (24.7)	388535 (24.7)	388534 (24.7)
7 COIMBATORE-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	155770 (20.8)
8 PERIYAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	232764 (28.2)
9 TIRUCHIRAPALLI	97009 (6.8)	101722 (7.1)	78176 (7.0)	77973 (7.0)	77974 (7.0)	77974 (7.0)	77526 (7.0)	77384 (6.9)	59025 (5.3)	55391 (5.0)
10 PUDUKOTTAI	0 (0.0)	0 (0.0)	25730 (5.5)	25036 (5.4)	25284 (5.4)	25284 (5.4)	23999 (5.1)	23999 (5.1)	23999 (5.2)	23999 (5.1)
11 THANJAVUR	14112 (1.5)	14110 (1.5)	11844 (1.4)	10619 (1.3)	10619 (1.3)	10451 (1.3)	10451 (1.3)	10519 (1.3)	11288 (1.4)	11620 (1.4)
12 MADURAI-old	260022 (20.6)	260022 (20.6)	260022 (20.6)	260022 (20.6)	240472 (19.0)	240473 (19.1)	240362 (19.0)	253772 (20.0)	262806 (20.8)	253560 (20.0)
12 MADURAI-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
13 ANNA	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
14 RAMANATHAPURAM-old	45413 (3.7)	43868 (3.5)	43841 (3.5)	43660 (3.5)	47831 (3.8)	47831 (3.8)	47568 (3.8)	47568 (3.8)	47568 (3.8)	48193 (3.9)
14 RAMANATHAPURAM-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
15 KAMARAJAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
16 T.THIRUMAHANAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
17 TIRUNELVELI-old	133631 (11.7)	132241 (11.6)	132241 (11.6)	132488 (11.6)	133524 (11.7)	132676 (11.6)	133687 (11.7)	133684 (11.7)	136249 (11.9)	136994 (12.0)
17 TIRUNELVELI-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
18 CHIDAMBARANAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
19 THE NILGIRIS	108831 (42.8)	108831 (42.8)	108831 (42.7)	108831 (42.8)	108831 (42.8)	108831 (42.8)	139237 (54.7)	139236 (54.7)	141040 (55.4)	143425 (56.2)
20 KANYAKKUMARAI	48430 (29.0)	48956 (29.3)	48739 (29.2)	52386 (31.4)	50746 (30.4)	50539 (30.3)	51281 (30.7)	54611 (32.7)	54707 (32.7)	54644 (32.7)
21 STATE	2013006 (15.5)	2007306 (15.4)	2007580 (15.4)	2008435 (15.5)	1966184 (15.1)	1971992 (15.2)	2000532 (15.4)	2023337 (15.6)	2030686 (15.6)	2021555 (15.6)

Note: Figures in brackets give percentages of forest area to total geographical area

APPENDIX 1: CONTD. FOREST AREA

(ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	304 (1.8)
2 CHENGLEPUT	42547 (5.4)	42547 (5.4)	42538 (5.4)	42595 (5.4)	42657 (5.4)	43098 (5.5)	43098 (5.5)	43592 (5.6)	43592 (5.5)
3 SOUTH ARCOT	50264 (4.6)	51182 (4.7)	51427 (4.7)	51089 (4.7)	51708 (4.7)	69670 (6.4)	71276 (6.6)	73112 (6.7)	73112 (6.7)
4 NORTH ARCOT	318887 (25.9)	319023 (25.9)	319023 (25.9)	319023 (26.1)	319023 (26.1)	319023 (26.1)	319023 (26.1)	319023 (26.1)	319023 (26.1)
5 SALEM	167129 (19.4)	167207 (19.4)	166807 (19.3)	166807 (19.3)	166807 (19.3)	166807 (19.3)	166807 (19.3)	166807 (19.3)	169051 (19.6)
6 DHARMAPURI	327047 (33.9)	327187 (34.0)	327187 (34.0)	327187 (34.0)	327187 (34.0)	327297 (34.2)	334012 (34.9)	334158 (34.9)	366231 (38.2)
7 COIMBATORE-old	388597 (24.7)	388597 (24.7)	394364 (25.1)	394369 (25.1)	394374 (25.1)	394462 (25.1)	388564 (24.8)	388564 (24.8)	386563 (24.6)
7 COIMBATORE-new	155770 (20.8)	155770 (20.8)	161537 (21.6)	161542 (21.6)	161542 (21.6)	161542 (21.0)	155644 (20.9)	155644 (20.9)	158685 (21.2)
8 PERIYAR	232827 (28.3)	232827 (28.3)	232827 (28.3)	232827 (28.2)	232832 (28.2)	232920 (28.3)	232920 (28.3)	232920 (28.3)	227878 (27.7)
9 TIRUCHIRAPALLI	55391 (5.0)	55414 (5.0)	55548 (5.0)	56755 (5.1)	75615 (6.8)	75615 (6.8)	79630 (7.2)	79341 (7.1)	79341 (7.1)
10 PUDUKOTTAI	23999 (5.2)	24000 (5.1)	23732 (5.1)	23732 (5.1)	23732 (5.1)	23738 (5.1)	23738 (5.1)	23738 (5.1)	23738 (5.1)
11 THANJAVUR	11623 (1.4)	11633 (1.4)	11633 (1.4)	11641 (1.4)	11641 (1.4)	11725 (1.4)	11725 (1.4)	11725 (1.4)	15921 (1.9)
12 MADURAI-old	253560 (20.0)	253568 (20.0)	253568 (20.0)	253568 (20.0)	253568 (20.0)	253568 (20.0)	271050 (21.4)	299576 (22.6)	299576 (23.0)
12 MADURAI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	139274 (21.1)	160653 (23.7)	160653 (23.7)	160653 (23.7)
13 ANNA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	114294 (18.8)	110397 (18.4)	138923 (21.4)	138923 (22.2)
14 RAMANATHAPURAM-old	48513 (3.9)	48768 (3.9)	48768 (3.9)	48768 (3.9)	48768 (3.9)	46740 (3.7)	46740 (3.7)	47610 (3.8)	52707 (4.2)
14 RAMANATHAPURAM-new	0 (0)	0 (0)	0 (0)	0 (0)	4488 (1.1)	4181 (1.0)	4181 (1.0)	4488 (1.1)	4488 (1.1)
15 KAMARAJAR	0 (0)	0 (0)	0 (0)	0 (0)	25987 (6.1)	25989 (6.1)	25989 (6.2)	26552 (6.3)	26552 (6.3)
16 T. THIRUMAHANAR	0 (0)	0 (0)	0 (0)	0 (0)	18291 (4.5)	16570 (4.1)	16570 (4.1)	16570 (4.1)	21667 (5.4)
17 TIRUNELVELI-old	138057 (12.1)	137045 (12.0)	137045 (12.1)	137045 (12.0)	137045 (12.0)	137045 (12.0)	136557 (12.0)	136858 (12.0)	137336 (12.0)
17 TIRUNELVELI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	123801 (18.2)	124102 (18.2)	126334 (18.5)
18 CHIDAMBARANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	12756 (2.8)	12756 (2.8)	11002 (2.4)
19 THE NILGIRIS	142616 (56.0)	143140 (56.2)	143201 (56.4)	143200 (56.4)	143200 (56.4)	143200 (56.4)	144113 (56.7)	143526 (56.4)	143529 (56.4)
20 KANYAKKUMARAI	54644 (32.7)	55044 (32.9)	55044 (32.9)	54453 (32.6)	54453 (32.6)	54331 (32.5)	54393 (32.5)	54211 (32.4)	54155 (32.4)
21 STATE	2022874 (15.6)	2024355 (15.6)	2029885 (15.6)	2030232 (15.6)	2049778 (15.8)	2066319 (15.9)	2090726 (16.1)	2121842 (16.3)	2164176 (16.6)

Note: Figures in brackets give percentages of forest area to total geographical area

APPENDIX 2:

BARREN AND UNCULTIVABLE LAND

(ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (6.1)	0 (6.2)	0 (6.2)	0 (6.2)	0 (6.2)	0 (3.9)	0 (3.9)	0 (3.8)	0 (4.1)	0 (4.1)
2 CHENGLEPUT	50358 (14.4)	51065 (14.4)	51206 (14.4)	51206 (14.4)	51206 (12.2)	31021 (11.5)	30686 (11.4)	30686 (11.5)	32066 (11.5)	32407 (11.4)
3 SOUTH ARCOT	157283 (14.4)	157285 (14.4)	157284 (14.4)	157055 (14.4)	132535 (12.2)	125284 (11.5)	123508 (11.4)	125677 (11.5)	125678 (11.5)	123969 (11.4)
4 NORTH ARCOT	76132 (6.2)	76170 (6.2)	76184 (6.2)	76670 (6.2)	69075 (5.6)	67184 (5.5)	69736 (5.5)	66366 (5.4)	65887 (5.3)	65488 (5.3)
5 SALEM	88387 (10.3)	71670 (8.3)	69937 (8.1)	69937 (8.1)	69937 (8.1)	69937 (8.1)	66625 (7.7)	69325 (8.1)	69325 (8.0)	69272 (8.1)
6 DHARMAPURI	80488 (8.4)	80488 (8.4)	80488 (8.4)	80488 (8.4)	80488 (8.4)	79492 (8.3)	79680 (8.2)	79680 (8.3)	79681 (8.3)	75022 (7.8)
7 COIMBATORE-old	49817 (3.2)	49673 (3.2)	50027 (3.2)	49759 (3.2)	19608 (1.3)	19274 (1.2)	19253 (1.2)	19253 (1.2)	19253 (1.2)	19253 (1.2)
7 COIMBATORE-new	0 (3.4)	0 (3.4)	0 (3.7)	0 (3.7)	0 (3.6)	0 (3.6)	0 (3.6)	0 (3.6)	0 (3.3)	11734 (3.2)
8 PERIYAR	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	7519 (4.4)
9 TIRUCHIRAPALLI	48986 (3.4)	48262 (3.4)	40662 (3.7)	40662 (3.7)	40528 (3.6)	40528 (3.6)	40528 (3.6)	40528 (3.6)	37052 (3.3)	36331 (3.2)
10 PUDUKOTTAI	0 (3.3)	0 (3.3)	10843 (2.3)	9647 (2.1)	7980 (1.7)	10840 (2.3)	9800 (2.1)	9800 (2.1)	9803 (2.1)	9803 (2.1)
11 THANJAVUR	32185 (3.3)	32185 (3.3)	28880 (3.5)	31177 (3.8)	31201 (3.8)	34368 (4.2)	31977 (3.9)	28380 (3.5)	34935 (4.3)	35807 (4.4)
12 MADURAI-old	80339 (6.4)	79182 (6.3)	79001 (6.3)	76798 (6.2)	85432 (6.8)	85233 (6.7)	86651 (6.8)	84747 (6.7)	76707 (6.1)	76706 (6.1)
12 MADURAI-new	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
13 ANNA	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
14 RAMANATHAPURAM-old	53974 (4.3)	53974 (4.3)	53741 (4.3)	53589 (4.3)	19965 (1.6)	19580 (1.6)	19817 (1.6)	20004 (1.6)	17496 (1.4)	17483 (1.4)
14 RAMANATHAPURAM-new	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
15 KAMARAJAR	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
16 D. THIRUMAHANAR	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
17 TIRUNELVELI-old	60013 (5.3)	53274 (4.7)	52961 (4.6)	52775 (4.6)	54304 (4.8)	40119 (3.5)	36438 (3.2)	32272 (2.8)	33601 (2.9)	32869 (2.9)
17 TIRUNELVELI-new	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
18 CHIDAMBARANAR	0 (3.3)	0 (3.3)	0 (3.5)	0 (3.8)	0 (3.8)	0 (4.2)	0 (3.9)	0 (3.5)	0 (4.3)	0 (4.4)
19 THE NILGIRIS	33815 (13.3)	33815 (13.3)	33814 (13.2)	33814 (13.3)	33814 (13.3)	33814 (13.3)	4831 (1.9)	4930 (1.9)	4247 (1.7)	4247 (1.7)
20 KANYAKKUMARAI	20258 (12.1)	18176 (10.9)	17656 (10.6)	7933 (4.7)	6021 (3.6)	7486 (4.5)	5790 (3.5)	5387 (3.2)	4650 (2.8)	4586 (2.7)
21 STATE	832035 (6.4)	805219 (6.2)	802644 (6.2)	793510 (6.1)	702094 (5.4)	664160 (5.1)	623520 (4.8)	617035 (4.7)	610381 (4.7)	603243 (4.6)

Note: Figures in brackets give percentages of barren and uncultivable land to total geographical area

APPENDIX 3: CONTD. LAND PUT TO NON-AGRICULTURAL USES. (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	17097 (100.0)	17097 (100.0)	17097 (100.0)	17097 (100.0)	17097 (100.0)	17097 (100.0)	17097 (100.0)	17097 (100.0)	16797 (98.2)
2 CHENGLEPUT	189600 (24.2)	191688 (24.4)	192699 (24.6)	192606 (24.5)	195515 (24.9)	201849 (25.7)	203297 (25.9)	208122 (26.5)	209645 (26.7)
3 SOUTH ARCOT	134741 (12.4)	139093 (12.8)	140762 (12.9)	156477 (14.4)	156477 (14.4)	146730 (13.5)	143715 (13.2)	143640 (13.2)	146258 (13.4)
4 NORTH ARCOT	145168 (11.8)	153223 (12.5)	162138 (13.2)	151799 (12.4)	149462 (12.2)	150152 (12.3)	159098 (13.0)	167074 (13.6)	171056 (14.0)
5 SALEM	62629 (7.3)	62989 (7.3)	63272 (7.3)	64074 (7.4)	64221 (7.4)	64514 (7.5)	67381 (7.8)	67414 (7.8)	65609 (7.6)
6 DHARMAPURI	51128 (5.3)	49374 (5.1)	49260 (5.1)	48975 (5.1)	48268 (5.0)	49632 (5.2)	48077 (5.0)	48132 (5.0)	49156 (5.1)
7 COIMBATORE-old	136918 (8.7)	136066 (8.6)	138456 (8.8)	144113 (9.2)	145188 (9.2)	150107 (9.6)	152273 (9.7)	146367 (9.3)	149203 (9.5)
7 COIMBATORE-new	75612 (10.1)	76340 (10.2)	76920 (10.3)	81796 (10.9)	81157 (10.8)	81121 (10.8)	80038 (10.8)	77608 (10.4)	78571 (10.5)
8 PERIYAR	61306 (7.4)	59726 (7.3)	61536 (7.5)	62317 (7.6)	64031 (7.8)	68986 (8.4)	72335 (8.8)	68759 (8.4)	70632 (8.6)
9 TIRUCHIRAPALLI	160963 (14.5)	161032 (14.5)	160621 (14.4)	160719 (14.5)	155661 (14.0)	155832 (14.0)	153627 (13.8)	154012 (13.8)	155168 (13.9)
10 PUDUKOTTAI	125835 (27.0)	127268 (27.3)	127268 (27.3)	127268 (27.3)	127272 (27.3)	122047 (26.2)	122954 (26.4)	123106 (26.4)	123188 (26.4)
11 THANJAVUR	147003 (17.9)	149620 (8.2)	150039 (18.3)	150639 (18.3)	150700 (18.4)	150969 (18.4)	151153 (18.4)	151766 (18.5)	151311 (18.4)
12 MADURAI-old	126258 (10.0)	126942 (10.0)	127805 (10.1)	128238 (10.1)	128294 (10.1)	137377 (10.8)	131736 (10.4)	130292 (9.8)	135228 (10.4)
12 MADURAI-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	80601 (12.2)	74261 (11.0)	72073 (10.7)	75159 (11.1)
13 ANNA	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	56776 (9.4)	57475 (9.6)	58219 (9.0)	60069 (9.6)
14 RAMANATHAPURAM-old	255666 (20.5)	255853 (20.5)	255902 (20.5)	256029 (20.5)	256449 (20.5)	255472 (20.5)	256448 (20.5)	256965 (20.6)	257104 (20.6)
14 RAMANATHAPURAM-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	76576 (18.2)	79915 (19.0)	79867 (18.9)	79915 (18.9)	80807 (19.1)
15 KAMARAJAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	63639 (15.1)	64642 (15.3)	65450 (15.5)	65730 (15.6)	65936 (15.6)
16 T. THIRUMAHANAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	116234 (28.7)	110915 (27.4)	111131 (27.5)	111320 (27.5)	110361 (27.3)
17 TIRUNELVELI-old	162509 (14.2)	163496 (14.3)	163211 (14.3)	164541 (14.4)	163742 (14.4)	163706 (14.3)	162065 (14.20)	158178 (13.9)	161715 (14.2)
17 TIRUNELVELI-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	93618 (13.7)	92216 (13.5)	93181 (13.7)
18 CHIDAMBARANAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	68447 (14.9)	65962 (14.3)	68534 (14.9)
19 THE NILGIRIS	9022 (3.5)	8948 (3.5)	9078 (3.6)	9122 (3.6)	9202 (3.6)	9255 (3.6)	8849 (3.5)	8942 (3.5)	8857 (3.5)
20 KANYAKUMARI	23851 (13.7)	23666 (14.2)	23922 (14.3)	23827 (14.2)	23882 (14.3)	24035 (14.3)	24051 (14.4)	24132 (14.4)	23882 (14.3)
21 STATE	1747388 (13.5)	1766337 (13.6)	1781530 (13.7)	1795524 (13.8)	1791430 (13.8)	1798774 (13.9)	1801921 (13.9)	1805299 (13.8)	1824177 (14.0)

APPENDIX 4: CULTIVABLE WASTE (ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
2 CHENGLEPUT	45786	48956	45447	46457	48767	21759	21220	19733	17903	16760
	(5.6)	(5.9)	(5.5)	(5.6)	(5.9)	(2.8)	(2.7)	(2.5)	(2.3)	(2.2)
3 SOUTH ARCOT	37881	32020	31607	30731	66184	62776	54066	53237	50895	45917
	(3.5)	(2.9)	(2.9)	(2.8)	(6.1)	(5.8)	(5.0)	(4.9)	(4.7)	(4.2)
4 NORTH ARCOT	40221	37897	29462	27150	31846	31400	26346	25936	27587	26915
	(3.3)	(3.1)	(2.4)	(2.2)	(2.6)	(2.6)	(2.1)	(2.2)	(2.2)	(2.2)
5 SALEM	27103	27023	27247	27247	27247	26569	26468	23495	25174	24420
	(3.1)	(3.1)	(3.2)	(3.2)	(3.2)	(3.1)	(3.1)	(2.7)	(2.9)	(2.8)
6 DHARMAPURI	7722	8593	8083	8561	10507	10312	10160	9753	9726	10191
	(0.8)	(0.9)	(0.8)	(0.9)	(1.1)	(1.1)	(1.1)	(1.0)	(1.0)	(1.1)
7 COIMBATORE-old	39348	27697	29597	28338	8913	6926	7112	6815	6893	6331
	(2.5)	(1.8)	(1.9)	(1.8)	(0.6)	(0.4)	(0.5)	(0.4)	(0.4)	(0.4)
7 COIMBATORE-new	0	0	0	0	0	0	0	0	0	2296
	0	0	0	0	0	0	0	0	0	(0.3)
8 PERIYAR	0	0	0	0	0	0	0	0	0	4035
	0	0	0	0	0	0	0	0	0	(0.5)
9 TIRUCHIRAPALLI	69792	63758	43613	46152	47415	45529	41886	39915	49600	44585
	(4.9)	(4.5)	(4.3)	(4.1)	(4.3)	(4.1)	(3.8)	(3.6)	(4.5)	(4.0)
10 PUDUKOTTAI	0	0	20730	19569	20101	18590	14991	14220	14671	13724
	0	0	(4.4)	(4.2)	(4.3)	(4.0)	(3.2)	(3.1)	(3.1)	(2.9)
11 THANJAVUR	27932	26331	19689	21239	21839	20247	19910	15487	19679	18878
	(2.9)	(2.7)	(2.4)	(2.6)	(2.7)	(2.5)	(2.5)	(1.9)	(2.4)	(2.3)
12 MADURAI-old	31166	31166	30751	29826	30326	25917	26935	22205	25922	19198
	(2.5)	(2.4)	(2.4)	(2.4)	(2.3)	(2.0)	(2.1)	(1.8)	(2.0)	(1.5)
12 MADURAI-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
13 ANNA	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
14 RAMANATHAPURAM-old	89307	87353	86035	82045	40832	40952	41327	40466	36363	35911
	(7.2)	(7.0)	(6.9)	(6.6)	(3.2)	(3.3)	(3.3)	(3.2)	(2.9)	(2.9)
14 RAMANATHAPURAM-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
15 KAMARAJAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
16 T.THIRUMAHANAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
17 TIRUNELVELI-old	66555	66704	60256	57588	62454	56915	65881	62901	63526	59777
	(5.8)	(5.8)	(5.3)	(5.0)	(5.5)	(5.0)	(5.8)	(5.5)	(5.6)	(5.2)
17 TIRUNELVELI-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
18 CHIDAMBARANAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
19 THE NILGIRIS	21527	19664	19271	19879	18996	16508	20630	20815	13368	12976
	(8.5)	(7.7)	(7.6)	(7.8)	(7.5)	(6.5)	(8.1)	(8.3)	(5.2)	(5.1)
20 KANYAKKUMARAI	2522	1914	1559	2440	1252	748	1654	1312	589	460
	(1.5)	(1.1)	(0.9)	(1.5)	(0.8)	(0.4)	(1.0)	(0.8)	(0.4)	(0.3)
21 STATE	506862	479076	457347	447222	436679	385148	378586	356290	361896	336043
	(3.9)	(3.7)	(3.5)	(3.4)	(3.4)	(3.0)	(2.9)	(2.7)	(2.8)	(2.6)

Note: Figures in brackets indicate percentage of cultivable waste to total geographical area

APPENDIX 4: CONTD. CULTIVABLE WASTE (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2 CHENGLEPUT	15944 (2.0)	15482 (2.0)	14153 (1.8)	13880 (1.8)	13660 (1.8)	13497 (1.7)	18692 (2.4)	18377 (2.3)	20193 (2.6)
3 SOUTH ARCOT	50841 (4.7)	49819 (4.6)	38842 (3.6)	36910 (3.4)	36849 (3.4)	33113 (3.0)	32323 (3.0)	30852 (2.8)	29928 (2.8)
4 NORTH ARCOT	26194 (2.1)	25172 (2.1)	31256 (2.5)	24905 (2.0)	24167 (2.0)	22694 (1.9)	20309 (1.7)	20203 (1.7)	20359 (1.6)
5 SALEM	24336 (2.8)	23327 (2.7)	23135 (2.7)	22863 (2.7)	22303 (2.6)	21530 (2.5)	21317 (2.5)	21171 (2.5)	19421 (2.2)
6 DHARMAPURI	16476 (1.7)	16015 (1.7)	16672 (1.7)	16271 (1.7)	18236 (1.9)	19335 (2.0)	18612 (1.9)	18179 (1.9)	18551 (1.9)
7 COIMBATORE-old	6496 (0.4)	8207 (0.5)	7084 (0.5)	6592 (0.4)	5957 (0.4)	5987 (0.4)	5087 (0.3)	5171 (0.3)	4089 (0.3)
7 COIMBATORE-new	1945 (0.3)	1939 (0.3)	1932 (0.3)	2088 (0.3)	2126 (0.3)	2557 (0.3)	2289 (0.3)	2614 (0.4)	2623 (0.4)
8 PERIYAR	4551 (0.6)	6268 (0.8)	5152 (0.6)	4504 (0.5)	3831 (0.5)	3430 (0.4)	2798 (0.3)	2557 (0.3)	1466 (0.2)
9 TIRUCHIRAPALLI	44586 (4.0)	44605 (4.0)	45423 (4.1)	41422 (3.7)	25914 (2.3)	25914 (2.3)	34071 (3.1)	32773 (3.0)	33486 (3.0)
10 PUDUKOTTAI	13721 (2.9)	13522 (2.9)	13522 (2.9)	13522 (2.9)	13513 (2.9)	14253 (3.1)	14253 (3.1)	14253 (3.1)	14294 (3.1)
11 THANJAVUR	18357 (2.2)	18338 (2.2)	18338 (2.2)	18324 (2.2)	18354 (2.2)	18370 (2.2)	18946 (2.3)	19335 (2.3)	18985 (2.3)
12 MADURAI-old	18814 (1.5)	18585 (1.5)	19504 (1.5)	19159 (1.5)	18729 (1.5)	19025 (1.5)	19953 (1.6)	17512 (1.3)	16545 (1.3)
12 MADURAI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	10088 (1.5)	10547 (1.6)	9775 (1.4)	9106 (1.4)
13 ANNA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8937 (1.5)	9406 (1.6)	7737 (1.2)	7439 (1.2)
14 RAMANATHAPURAM-old	35032 (2.8)	32675 (2.6)	32675 (2.6)	32540 (2.6)	32330 (2.6)	33553 (2.7)	32960 (2.6)	31630 (2.5)	30693 (2.5)
14 RAMANATHAPURAM-new	0 (0)	0 (0)	0 (0)	0 (0)	7417 (1.7)	4717 (1.1)	4311 (1.0)	4311 (1.0)	5564 (1.3)
15 KAMARAJAR	0 (0)	0 (0)	0 (0)	0 (0)	8679 (2.1)	7180 (1.7)	7210 (1.7)	7038 (1.7)	7038 (1.7)
16 T. THIRUMAHANAR	0 (0)	0 (0)	0 (0)	0 (0)	16234 (4.0)	21656 (5.3)	21439 (5.3)	20281 (5.0)	18091 (4.5)
17 TIRUNELVELI-old	59134 (5.2)	59454 (5.2)	60879 (5.3)	60643 (5.3)	60184 (5.3)	59008 (5.2)	58668 (5.1)	56571 (5.0)	59632 (5.2)
17 TIRUNELVELI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	39274 (5.8)	37339 (5.5)	39475 (5.8)
18 CHIDAMBARANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	19394 (4.2)	19232 (4.2)	20157 (4.4)
19 THE NILGIRIS	12996 (5.1)	9471 (3.7)	8547 (3.4)	8548 (3.4)	8548 (3.4)	8548 (3.4)	3355 (1.3)	2889 (1.2)	2809 (1.1)
20 KANYAKKUMARAI	509 (0.3)	430 (0.3)	413 (0.2)	143 (0.1)	139 (0.1)	112 (0.1)	113 (0.1)	111 (0.1)	182 (0.1)
21 STATE	343436 (2.6)	335462 (2.6)	330443 (2.5)	315722 (2.4)	298883 (2.3)	294939 (2.3)	298659 (2.3)	289027 (2.2)	289167 (2.2)

Note: Figures in brackets indicate percentage of cultivable waste to total geographical area

APPENDIX 5: PERMANENT PASTURES AND OTHER GRAZING LAND (ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
2 CHENGLEPUT	48244	47527	47846	47773	48244	33966	31644	30428	28455	28515
	(5.8)	(5.8)	(5.8)	(5.8)	(5.8)	(4.3)	(4.2)	(3.9)	(3.6)	(3.6)
3 SOUTH ARCOT	9358	9247	9225	9220	10994	10994	8579	8755	8755	8758
	(0.9)	(0.8)	(0.8)	(0.8)	(1.0)	(1.0)	(0.8)	(0.8)	(0.8)	(0.8)
4 NORTH ARCOT	18312	18292	18230	19039	12193	9376	9307	8972	10540	10200
	(1.5)	(1.5)	(1.5)	(1.5)	(1.0)	(0.8)	(0.8)	(0.7)	(0.9)	(0.8)
5 SALEM	15689	15201	14663	14663	14663	14090	13771	13309	13178	13191
	(1.8)	(1.8)	(1.7)	(1.7)	(1.7)	(1.6)	(1.6)	(1.6)	(1.5)	(1.5)
6 DHARMAPURI	11688	11781	11708	11409	11120	11370	11494	11799	11761	12240
	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	(1.2)	(1.3)
7 COIMBATORE-old	18181	18140	17663	17633	9473	9229	9302	9302	9302	8782
	(1.2)	(1.2)	(1.1)	(1.1)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)	(0.6)
7 COIMBATORE-new	0	0	0	0	0	0	0	0	0	2383
	0	0	0	0	0	0	0	0	0	(0.3)
8 PERIYAR	0	0	0	0	0	0	0	0	0	6399
	0	0	0	0	0	0	0	0	0	(0.8)
9 TIRUCHIRAPALLI	45054	44675	41030	40685	40693	40693	40693	40694	29308	28209
	(3.2)	(3.1)	(3.7)	(3.7)	(3.7)	(3.7)	(3.7)	(3.7)	(2.6)	(2.5)
10 PUDUKOTTAI	0	0	4687	4802	4458	4411	5483	5482	5482	5482
	0	0	(1.0)	(1.0)	(1.0)	(0.9)	(2.1)	(1.2)	(1.2)	(1.2)
11 THANJAVUR	6369	6372	5860	5537	5027	4101	3969	4168	3561	4065
	(0.7)	(0.7)	(0.7)	(0.7)	(0.6)	(0.5)	(0.5)	(0.5)	(0.4)	(0.5)
12 MADURAI-old	13089	13049	13049	13049	12572	11757	12239	12103	7622	7771
	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(0.9)	(1.0)	(1.0)	(0.6)	(0.6)
12 MADURAI-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
13 ANNA	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
14 RAMANATHAPURAM-old	4794	4999	4937	4937	3336	3100	3237	3255	2942	2973
	(0.4)	(0.4)	(0.4)	(0.4)	(0.3)	(0.2)	(0.3)	(0.3)	(0.2)	(0.2)
14 RAMANATHAPURAM-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
15 KAMARAJAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
16 T. THIRUMAHANAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
17 TIRUNELVELI-old	31088	31094	30751	30628	25778	22214	22594	22414	22795	20475
	(2.7)	(2.7)	(2.7)	(2.7)	(2.3)	(1.9)	(2.0)	(2.0)	(2.0)	(1.8)
17 TIRUNELVELI-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
18 CHIDAMBARANAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
19 THE NILGIRIS	8792	8792	8792	8783	8792	8792	5943	5934	7300	6484
	(3.5)	(3.5)	(3.4)	(3.4)	(3.5)	(3.5)	(2.3)	(2.3)	(2.9)	(2.5)
20 KANYAKKUMARAI	0	0	0	387	230	224	349	440	382	380
	0	0	0	(0.2)	(0.1)	(0.1)	(0.2)	(0.3)	(0.2)	(0.2)
21 STATE	230658	229169	228441	228555	207574	184317	178604	177055	161383	157525
	(1.8)	(1.8)	(1.8)	(1.8)	(1.6)	(1.4)	(1.4)	(1.4)	(1.2)	(1.2)

NOTE: FIGURES IN BRACKETS INDICATE PERCENTAGES OF PERMANENT PASTURES AND OTHER GRAZING LAND TO

APPENDIX 5: CONTD. PERMANENT PASTURES AND OTHER GRAZING LAND (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2 CHENGLEPUT	28731 (3.7)	28720 (3.7)	28815 (3.7)	28717 (3.7)	28317 (3.6)	28254 (3.6)	27097 (3.5)	25578 (3.3)	25368 (3.2)
3 SOUTH ARCOT	8758 (0.8)	8136 (0.7)	8416 (0.8)	7361 (0.6)	7361 (0.7)	7361 (0.7)	7361 (0.7)	6014 (0.5)	5681 (0.5)
4 NORTH ARCOT	10305 (0.8)	10208 (0.8)	10289 (0.8)	9837 (0.8)	8965 (0.7)	8887 (0.7)	9325 (0.8)	7188 (0.6)	7104 (0.6)
5 SALEM	13191 (1.5)	13166 (1.5)	13129 (1.5)	12941 (1.5)	12937 (1.4)	12951 (1.5)	12951 (1.5)	12951 (1.5)	12951 (1.5)
6 DHARMAPURI	13532 (1.4)	12911 (1.3)	11911 (1.2)	12701 (1.3)	13434 (1.5)	13474 (1.4)	12985 (1.3)	12565 (1.3)	12696 (1.3)
7 COIMBATORE-old	8620 (0.5)	8620 (0.5)	6486 (0.4)	4655 (0.3)	3288 (0.2)	3223 (0.2)	3138 (0.2)	3212 (0.2)	3062 (0.2)
7 COIMBATORE-new	2383 (0.3)	2383 (0.3)	2383 (0.3)	2267 (0.3)	2096 (0.3)	1984 (0.3)	1972 (0.2)	2109 (0.3)	2001 (0.3)
8 PERIYAR	6237 (0.8)	6237 (0.7)	4103 (0.5)	2388 (0.3)	1192 (0.1)	1239 (0.1)	1166 (0.1)	1103 (0.1)	1061 (0.1)
9 TIRUCHIRAPALLI	27625 (2.5)	27636 (2.5)	26700 (2.4)	26339 (2.4)	26237 (2.4)	26237 (2.4)	16291 (1.5)	17634 (1.6)	17607 (1.6)
10 PUDUKOTTAI	5482 (1.2)	5382 (1.2)	5382 (1.2)	5382 (1.2)	5382 (1.2)	5305 (1.1)	5305 (1.1)	5305 (1.1)	5208 (1.1)
11 THANJAVUR	4185 (0.5)	4185 (0.5)	4119 (0.5)	3980 (0.5)	3980 (0.5)	3890 (0.5)	3884 (0.5)	3847 (0.5)	3847 (0.5)
12 MADURAI-old	7771 (0.6)	7771 (0.6)	7768 (0.6)	7768 (0.6)	8125 (0.7)	8125 (0.6)	7593 (0.6)	7587 (0.6)	7501 (0.6)
12 MADURAI-new	0 0	0 0	0 0	0 0	0 0	830 (0.1)	670 (0.1)	664 (0.1)	578 (0.1)
13 ANNA	0 0	0 0	0 0	0 0	0 0	7295 (1.2)	6923 (1.1)	6923 (1.2)	6923 (1.1)
14 RAMANATHAPURAM-old	2947 (0.2)	2969 (0.2)	2969 (0.2)	2959 (0.2)	2965 (0.2)	3052 (0.2)	3032 (0.2)	3032 (0.2)	3032 (0.2)
14 RAMANATHAPURAM-new	0 0	0 0	0 0	0 0	776 (0.2)	856 (0.2)	856 (0.2)	856 (0.2)	856 (0.2)
15 KAMARAJAR	0 0	0 0	0 0	0 0	907 (0.2)	907 (0.2)	907 (0.2)	907 (0.2)	907 (0.2)
16 T. THIRUMAHANAR	0 0	0 0	0 0	0 0	1282 (0.3)	1289 (0.3)	1269 (0.3)	1269 (0.3)	1269 (0.3)
17 TIRUNELVELI-old	21758 (1.9)	21983 (1.9)	21834 (1.9)	21638 (1.9)	21609 (1.9)	21172 (1.9)	21816 (1.9)	22129 (1.9)	15988 (1.4)
17 TIRUNELVELI-new	0 0	0 0	0 0	0 0	0 0	0 0	13233 (1.9)	13546 (2.0)	10936 (1.6)
18 CHIDAMBARANAR	0 0	0 0	0 0	0 0	0 0	0 0	8583 (1.9)	8583 (1.9)	5052 (1.1)
19 THE NILGIRIS	6362 (2.5)	6413 (2.5)	6415 (2.5)	6415 (2.5)	6415 (2.5)	6415 (2.5)	6919 (2.7)	6919 (2.7)	6878 (2.7)
20 KANYAKKUMARAI	380 (0.2)	380 (0.2)	380 (0.2)	102 (0.1)	100 (0.1)	100 (0.1)	100 (0.1)	94 (0.1)	97 (0.1)
21 STATE	159647 (1.2)	158480 (1.2)	154613 (1.2)	150795 (1.2)	149115 (1.1)	148446 (1.1)	137797 (1.0)	134055 (1.0)	127020 (1.0)

APPENDIX 6:

LAND UNDER MISCELLANEOUS TREE CROPS AND GROVES NOT INCLUDED IN THE NET AREA SOWN (ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (0)	0 (0)	0* (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2 CHENGLEPUT	43208 (5.2)	37975 (4.6)	38836 (4.7)	39972 (4.8)	37379 (4.5)	27717 (3.5)	28093 (3.6)	26195 (3.3)	26149 (3.3)	29430 (3.8)
3 SOUTH ARCOT	47942 (4.4)	49177 (4.5)	52363 (4.8)	53734 (4.9)	53901 (4.9)	47415 (4.4)	48265 (4.4)	45214 (4.2)	46844 (4.3)	51893 (4.8)
4 NORTH ARCOT	12763 (1.0)	12627 (1.0)	12503 (1.0)	12395 (1.0)	10368 (0.8)	10119 (0.8)	10687 (0.9)	10696 (0.9)	12963 (1.1)	12918 (1.1)
5 SALEM	3252 (0.4)	5382 (0.6)	5085 (0.6)	5067 (0.6)	5143 (0.6)	5085 (0.6)	5257 (0.6)	5262 (0.6)	5292 (0.6)	5358 (0.6)
6 DHARMAPURI	3624 (0.4)	3738 (0.4)	3708 (0.4)	3446 (0.4)	5212 (0.5)	5426 (0.5)	5630 (0.6)	9076 (0.9)	8597 (0.9)	9123 (0.9)
7 COIMBATORE-old	6123 (0.4)	6128 (0.4)	6413 (0.4)	6420 (0.4)	12837 (0.8)	12885 (0.8)	13072 (0.8)	12626 (0.8)	12555 (0.8)	12522 (0.8)
7 COIMBATORE-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7886 (1.1)
8 PERIYAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4636 (0.6)
9 TIRUCHIRAPALLI	21309 (1.5)	25378 (1.8)	17723 (1.6)	17922 (1.6)	16990 (1.5)	16997 (1.5)	16040 (1.4)	15991 (1.4)	13091 (1.2)	11984 (1.1)
10 PUDUKOTTAI	0 (0)	0 (0)	11804 (2.5)	14470 (3.1)	11005 (2.4)	7957 (1.7)	7687 (1.6)	8128 (1.7)	7987 (1.7)	8320 (1.8)
11 THANJAVUR	32120 (3.3)	34368 (3.5)	33567 (4.1)	29862 (3.6)	28491 (3.5)	20193 (2.4)	19490 (2.4)	20219 (2.5)	18390 (2.2)	17913 (2.2)
12 MADURAI-old	20183 (1.6)	20145 (1.6)	19982 (1.6)	20939 (1.6)	15684 (1.2)	15680 (1.2)	15013 (1.2)	15119 (1.2)	15278 (1.2)	15043 (1.2)
12 MADURAI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
13 ANNA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
14 RAMANATHAPURAM-old	8464 (0.7)	10200 (0.8)	10603 (0.9)	10828 (0.9)	7032 (0.6)	5044 (0.4)	6394 (0.5)	7550 (0.6)	9290 (0.8)	8951 (0.7)
14 RAMANATHAPURAM-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
15 KAMARAJAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
16 T. THIRUMAHANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
17 TIRUNELVELI-old	19026 (1.7)	16410 (1.4)	16358 (1.4)	16359 (1.4)	18937 (1.7)	22597 (2.0)	13083 (1.1)	12854 (1.1)	14578 (1.3)	13634 (1.2)
17 TIRUNELVELI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
18 CHIDAMBARANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
19 THE NILGIRIS	7837 (3.1)	7835 (3.1)	7489 (2.9)	7489 (2.9)	7489 (2.9)	7489 (2.9)	3063 (1.2)	2815 (1.1)	2075 (0.8)	2277 (0.9)
20 KANYAKKUMARAI	597 (0.4)	512 (0.3)	543 (0.3)	1124 (0.7)	1300 (0.8)	2185 (1.3)	1620 (1.0)	529 (0.3)	334 (0.2)	304 (0.2)
21 STATE	266448 (1.7)	229875 (1.8)	236977 (1.8)	240027 (1.8)	231768 (1.8)	206789 (1.6)	193394 (1.5)	192274 (1.5)	193423 (1.5)	199670 (1.5)

Note: Figures in brackets indicate the percentages of land under miscellaneous tree crops and groves not included in the net area sown to total geographical area.

APPENDIX 6: CONTD. LAND UNDER MISCELLANEOUS TREE CROPS AND GROVES NOT INCLUDED IN THE NET AREA SOWN (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2 CHENGLEPUT	31026 (4.0)	33859 (4.3)	30753 (3.9)	31356 (4.0)	30578 (3.9)	30275 (3.9)	27037 (3.4)	11598 (1.5)	11528 (1.5)
3 SOUTH ARCOT	55567 (5.1)	54513 (5.0)	51640 (4.7)	44076 (4.2)	41953 (3.8)	44999 (4.1)	43393 (3.7)	37744 (3.5)	31584 (2.9)
4 NORTH ARCOT	12678 (1.0)	11557 (0.9)	9593 (0.8)	6743 (0.5)	10407 (0.9)	10034 (0.8)	8588 (0.7)	9380 (0.8)	8927 (0.7)
5 SALEM	5377 (0.6)	5407 (0.6)	5747 (0.7)	6305 (0.7)	6324 (0.8)	6350 (0.7)	6344 (0.7)	6348 (0.7)	6348 (0.7)
6 DHARMAPURI	9471 (1.0)	9529 (1.0)	9269 (1.0)	9093 (0.9)	8883 (0.9)	8734 (0.9)	8611 (0.9)	6704 (0.7)	6860 (0.7)
7 COIMBATORE-old	13847 (0.9)	17026 (1.1)	11115 (0.7)	9473 (0.6)	5534 (0.4)	5195 (0.3)	5273 (0.3)	5117 (0.3)	5026 (0.3)
7 COIMBATORE-new	7729 (1.0)	10690 (1.4)	5082 (0.7)	4296 (0.5)	3707 (0.5)	3782 (0.5)	3773 (0.5)	3672 (0.5)	3635 (0.5)
8 PERIYAR	6118 (0.7)	6336 (0.8)	6033 (0.7)	5177 (0.6)	1827 (0.2)	1413 (0.2)	1500 (0.2)	1395 (0.2)	1391 (0.2)
9 TIRUCHIRAPALLI	13134 (1.2)	14454 (1.3)	13225 (1.2)	14241 (1.2)	14521 (1.3)	13720 (1.2)	11955 (1.1)	9227 (0.8)	8377 (0.8)
10 PUDUKOTTAI	7852 (1.7)	8202 (1.8)	8082 (1.7)	1449 (0.3)	7807 (1.6)	5317 (1.1)	6120 (1.3)	7177 (1.5)	6485 (1.4)
11 THANJAVUR	18373 (2.2)	18168 (2.2)	16961 (2.1)	15639 (1.9)	16202 (2.0)	14985 (1.8)	15683 (1.9)	5965 (0.7)	4126 (0.5)
12 MADURAI-old	15054 (1.2)	15024 (1.2)	14890 (1.2)	14922 (1.2)	12869 (1.0)	12887 (1.0)	12198 (1.0)	12138 (0.9)	12015 (0.9)
12 MADURAI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1729 (0.3)	980 (0.1)	1034 (0.2)	911 (0.1)
13 ANNA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11158 (1.8)	11218 (1.9)	11104 (1.7)	11104 (1.8)
14 RAMANATHAPURAM-old	9652 (0.8)	8773 (0.7)	9020 (0.7)	7336 (0.6)	8997 (0.7)	8920 (0.7)	9157 (0.7)	2598 (0.2)	1701 (0.1)
14 RAMANATHAPURAM-new	0 (0)	0 (0)	0 (0)	0 (0)	5143 (1.2)	4495 (1.1)	4894 (1.2)	0 (0)	0 (0)
15 KAMARAJAR	0 (0)	0 (0)	0 (0)	0 (0)	2170 (0.5)	2478 (0.6)	2299 (0.5)	634 (0.1)	0 (0)
16 T. THIRUMAHANAR	0 (0)	0 (0)	0 (0)	0 (0)	1684 (0.4)	1947 (0.5)	1964 (0.5)	1964 (0.5)	1701 (0.4)
17 TIRUNELVELI-old	18147 (1.6)	20240 (1.8)	18142 (1.6)	18368 (1.6)	17751 (1.5)	25683 (2.2)	30387 (2.7)	32940 (2.9)	14356 (1.3)
17 TIRUNELVELI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8744 (1.3)	9277 (1.5)	9612 (1.4)
18 CHIDAMBARANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	21643 (4.7)	23063 (5.1)	4744 (1.0)
19 THE NILGIRIS	2290 (0.9)	2094 (0.8)	2095 (0.8)	2093 (0.8)	2093 (0.8)	2093 (0.8)	1548 (0.6)	1649 (0.6)	1549 (0.6)
20 KANYAKKUMARAI	288 (0.2)	338 (0.2)	228 (0.2)	230 (0.1)	240 (0.1)	307 (0.2)	306 (0.2)	271 (0.2)	275 (0.2)
21 STATE	212756 (1.6)	219184 (1.7)	200730 (1.5)	183324 (1.4)	184129 (1.4)	189499 (1.4)	186600 (1.4)	148606 (1.1)	119218 (0.9)

APPENDIX 7:

AREA UNDER CURRENT FALLOW

(ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
2 CHÉNGLEPUT	53430	50384	58915	64788	104231	93463	103108	89400	94113	99015
	(6.5)	(6.1)	(7.1)	(7.9)	(12.6)	(11.8)	(13.1)	(11.4)	(11.9)	(12.6)
3 SOUTH ARCOT	39493	28372	17594	50124	111631	91877	76569	69246	64888	64643
	(3.6)	(2.6)	(1.6)	(4.6)	(10.2)	(8.4)	(7.0)	(6.4)	(6.0)	(5.9)
4 NORTH ARCOT	68977	78404	86669	81687	85613	86284	82906	77070	90681	96001
	(5.6)	(6.4)	(7.0)	(6.6)	(7.0)	(7.0)	(6.8)	(6.2)	(7.4)	(7.8)
5 SALEM	62526	53109	56257	53639	92428	72260	86521	63901	58662	52707
	(7.2)	(6.2)	(6.5)	(6.2)	(10.7)	(8.4)	(10.1)	(7.4)	(6.8)	(6.1)
6 DHARMAPURI	42794	42950	41473	98098	74938	28998	38182	36845	24924	29386
	(4.4)	(4.5)	(4.3)	(10.2)	(7.8)	(3.0)	(4.0)	(3.8)	(2.6)	(3.1)
7 COIMBATORE-old	155741	132056	150822	167759	295570	265997	286357	243500	252752	254704
	(10.0)	(8.5)	(9.7)	(10.7)	(18.8)	(16.9)	(18.3)	(15.5)	(16.1)	(16.2)
7 COIMBATORE-new	0	0	0	0	0	0	0	0	0	108594
	0	0	0	0	0	0	0	0	0	(14.5)
8 PERIYAR	0	0	0	0	0	0	0	0	0	146110
	0	0	0	0	0	0	0	0	0	(17.7)
9 TIRUCHIRAPALLI	111478	101299	98011	106526	171561	133498	137288	110714	136206	153075
	(7.8)	(7.1)	(8.2)	(9.6)	(15.4)	(12.0)	(12.3)	(10.0)	(12.2)	(13.8)
10 PUDUKOTTAI	0	0	22674	26023	74503	51246	49690	37906	48390	47056
	0	0	(4.9)	(5.6)	(16.0)	(11.0)	(10.7)	(8.1)	(10.4)	(10.1)
11 THANJAVUR	24469	24825	20897	16602	28846	20614	37976	25243	17398	14191
	(2.5)	(2.6)	(2.6)	(2.0)	(3.5)	(2.5)	(4.6)	(3.1)	(2.1)	(1.7)
12 MADURAI-old	126963	113052	109466	118833	194321	162263	173820	141066	147551	153141
	(10.1)	(9.0)	(8.7)	(9.4)	(15.4)	(12.8)	(13.7)	(11.1)	(11.7)	(12.1)
12 MADURAI-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
13 ANNA	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
14 RAMANATHAPURAM-old	153462	124314	119946	130469	335961	199124	180519	164444	185482	182269
	(12.3)	(10.0)	(9.6)	(10.5)	(26.9)	(15.9)	(14.4)	(13.2)	(14.8)	(14.6)
14 RAMANATHAPURAM-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
15 KAMARAJAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
16 T. THIRUMAHANAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
17 TIRUNELVELI-old	119420	107874	82796	85444	158144	204976	146433	129314	132187	145065
	(10.5)	(9.4)	(7.2)	(7.5)	(13.7)	(18.0)	(12.8)	(11.3)	(11.6)	(12.7)
17 TIRUNELVELI-new	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
18 CHIDAMBARANAR	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
19 THE NILGIRIS	4148	3011	3889	2839	2838	4555	8434	7787	11379	11448
	(1.6)	(1.2)	(1.5)	(1.1)	(1.1)	(1.7)	(3.3)	(3.1)	(4.5)	(4.5)
20 KANYAKKUMARAI	1739	1146	1113	884	742	400	6063	2095	2818	2498
	(1.0)	(0.7)	(0.7)	(0.5)	(0.4)	(0.2)	(3.6)	(1.3)	(1.7)	(1.5)
21 STATE	964640	860796	863322	1003715	1731327	1415555	1413866	1198531	1267381	1305199
	(7.4)	(6.6)	(6.6)	(7.7)	(13.3)	(10.8)	(10.9)	(9.2)	(9.8)	(10.0)

NOTE :FIGURES IN BRACKETS INDICATE PERCENTAGES OF AREA UNDER CURRENT OF AREA UNDER CURRENT FALLOWS TO TOTAL

APPENDIX 7: CONTD. AREA UNDER CURRENT FALLOW

(ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 (18.6)	0 (16.4)	0 (22.2)	0 (15.3)	0 (13.5)	0 (12.5)	0 (18.4)	0 (16.5)	0 (16.7)
2 CHENGLEPUT	145523 (18.6)	128242 (16.4)	174132 (22.2)	120554 (15.3)	106172 (13.5)	98460 (12.5)	144867 (18.4)	129704 (16.5)	131432 (16.7)
3 SOUTH ARCOT	140098 (12.9)	94853 (8.7)	189848 (17.4)	102224 (9.4)	64796 (5.9)	52854 (4.8)	71236 (6.5)	92906 (8.5)	136736 (12.5)
4 NORTH ARCOT	187542 (15.2)	162692 (13.2)	181163 (14.7)	125431 (10.3)	128446 (10.5)	126514 (10.3)	147923 (12.1)	152904 (12.5)	134233 (11.0)
5 SALEM	144544 (16.8)	95639 (11.1)	138481 (16.1)	80067 (9.3)	81259 (9.4)	98448 (11.4)	80341 (9.3)	58294 (6.8)	54065 (6.3)
6 DHARMAPURI	142764 (14.8)	95463 (9.9)	103826 (10.8)	67777 (7.0)	72430 (7.5)	42525 (4.4)	46187 (4.8)	50154 (5.2)	40251 (4.2)
7 COIMBATORE-old	317849 (20.2)	281784 (17.9)	290977 (18.5)	238548 (15.2)	244557 (15.6)	261807 (16.7)	256874 (16.4)	261285 (16.7)	298085 (19.0)
7 COIMBATORE-new	126220 (16.9)	111744 (14.9)	129859 (17.2)	114584 (15.3)	108530 (14.5)	110540 (14.8)	107623 (14.5)	125198 (16.8)	143486 (19.2)
8 PERIYAR	191629 (23.2)	170040 (20.6)	161118 (19.5)	123964 (15.0)	136027 (16.5)	151267 (18.4)	149249 (18.1)	136087 (16.5)	154599 (18.8)
9 TIRUCHIRAPALLI	247918 (22.3)	187509 (16.8)	218188 (19.6)	181058 (16.3)	129583 (11.6)	158773 (14.3)	178276 (16.0)	196186 (17.6)	228739 (20.6)
10 PUDUKOTTAI	113801 (24.4)	75787 (16.2)	93978 (20.2)	67669 (14.5)	69326 (14.9)	51450 (11.0)	47874 (10.3)	46397 (10.0)	79214 (17.0)
11 THANJAVUR	16538 (2.0)	15895 (2.0)	58424 (7.1)	35423 (4.3)	25005 (3.0)	51712 (6.3)	45687 (5.6)	58242 (7.1)	34982 (4.3)
12 MADURAI-old	226976 (17.9)	172471 (13.6)	214207 (16.9)	170315 (13.5)	212988 (16.8)	177721 (14.0)	81812 (6.5)	57691 (4.4)	101338 (7.8)
12 MADURAI-new	0 (17.9)	0 (13.6)	0 (16.9)	0 (13.5)	0 (16.8)	75834 (14.0)	80302 (6.5)	53738 (4.4)	61496 (7.8)
13 ANNA	0 (17.9)	0 (13.6)	0 (16.9)	0 (13.5)	0 (16.8)	101887 (14.0)	1510 (6.5)	3953 (4.4)	39892 (7.8)
14 RAMANATHAPURAM-old	249882 (20.0)	173287 (13.9)	210987 (16.0)	177366 (14.2)	235711 (18.9)	120963 (9.7)	136731 (10.9)	92518 (7.4)	171183 (13.6)
14 RAMANATHAPURAM-new	0 (20.0)	0 (13.9)	0 (16.0)	0 (14.2)	83110 (18.9)	68796 (9.7)	84023 (10.9)	71199 (7.4)	93215 (13.6)
15 KAMARAJAR	0 (20.0)	0 (13.9)	0 (16.0)	0 (14.2)	97614 (19.7)	18249 (16.3)	23592 (19.9)	21319 (16.9)	37118 (22.0)
16 T. THIRUMAHANAR	0 (20.0)	0 (13.9)	0 (16.0)	0 (14.2)	54987 (23.1)	33918 (4.3)	29116 (5.6)	12374 (5.0)	40850 (8.8)
17 TIRUNELVELI-old	171614 (15.0)	183838 (16.1)	193073 (16.9)	164420 (14.4)	169965 (14.9)	153061 (13.4)	195836 (17.2)	138031 (12.1)	121253 (10.6)
17 TIRUNELVELI-new	0 (15.0)	0 (16.1)	0 (16.9)	0 (14.4)	0 (14.9)	0 (13.4)	154684 (17.2)	99966 (12.1)	95300 (10.6)
18 CHIDAMBARANAR	0 (15.0)	0 (16.1)	0 (16.9)	0 (14.4)	0 (14.9)	0 (13.4)	41152 (17.2)	38065 (12.1)	25953 (10.6)
19 THE NILGIRIS	11859 (4.7)	19201 (7.6)	17643 (6.9)	16385 (6.4)	14083 (5.5)	14139 (5.6)	12227 (4.8)	11521 (4.5)	14048 (5.5)
20 KANYAKUMARAI	3936 (2.3)	1835 (1.1)	1810 (1.1)	2073 (1.2)	1467 (0.9)	1543 (0.9)	5912 (3.5)	2527 (1.5)	854 (0.5)
21 STATE	2120844 (16.3)	1688496 (13.0)	2086737 (16.1)	1549310 (11.9)	1555788 (12.0)	1409970 (10.9)	1451781 (11.2)	1360734 (10.5)	1546463 (11.9)

NOTE : FIGURES IN BRACKETS INDICATE PERCENTAGES OF AREA UNDER CURRENT OF AREA UNDER CURRENT FALLOWS TO TOTAL

APPENDIX 8:

OTHER FALLOW LANDS(ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (4.6)	0 (4.6)	0 (4.7)	0 (4.8)	0 (4.9)	0 (2.1)	0 (2.2)	0 (2.7)	0 (2.5)	0 (2.4)
2 CHENGLEPUT	37604 (3.6)	38330 (3.7)	39008 (3.7)	39838 (3.6)	39588 (4.0)	16367 (3.7)	17660 (4.0)	21412 (4.0)	19849 (3.6)	18681 (3.1)
3 SOUTH ARCOT	49222 (4.2)	52164 (4.2)	54438 (4.4)	54854 (4.5)	44984 (3.7)	43163 (3.5)	43527 (3.5)	43763 (3.6)	39828 (3.2)	38963 (3.2)
4 NORTH ARCOT	38396 (4.5)	31883 (3.7)	35440 (4.1)	35440 (4.1)	30197 (3.5)	27194 (3.2)	33946 (3.9)	28614 (3.3)	27667 (3.2)	24073 (2.8)
6 DHARMAPURI	9947 (1.0)	7114 (0.7)	7636 (0.8)	6528 (0.7)	8571 (0.8)	8945 (0.9)	9069 (0.9)	7299 (0.8)	7287 (0.7)	10862 (1.1)
7 COIMBATORE-old	82665 (5.3)	76159 (4.9)	74465 (4.8)	74267 (4.8)	63494 (4.0)	39809 (2.5)	38692 (2.5)	24686 (1.6)	22627 (1.4)	29025 (1.8)
7 COIMBATORE-new	0 (3.8)	0 (3.4)	0 (3.2)	0 (2.6)	0 (2.9)	0 (2.9)	0 (2.8)	0 (2.4)	0 (2.4)	13010 (2.3)
8 PERIYAR	0 (2.4)	0 (2.1)	0 (2.2)	0 (2.2)	0 (2.5)	0 (2.7)	0 (2.8)	0 (2.7)	0 (1.5)	16045 (1.4)
9 TIRUCHIRAPALLI	53683 (3.4)	48121 (3.1)	35376 (2.9)	29167 (4.2)	31836 (3.7)	32301 (2.9)	31499 (3.0)	26914 (2.2)	26785 (2.3)	25224 (1.8)
10 PUDUKOTTAI	0 (2.4)	0 (2.1)	20093 (2.2)	22088 (2.2)	24806 (2.5)	22149 (2.7)	25341 (2.8)	19953 (2.7)	22984 (1.5)	22530 (1.4)
11 THANJAVUR	23711 (2.4)	20556 (2.1)	17831 (2.2)	17667 (2.2)	20102 (2.5)	22525 (2.7)	23355 (2.8)	22097 (2.7)	12479 (1.5)	11206 (1.4)
12 MADURAI-old	43404 (3.4)	39606 (3.1)	36163 (2.9)	53486 (4.2)	46432 (3.7)	36438 (2.9)	38016 (3.0)	28232 (2.2)	29311 (2.3)	23024 (1.8)
12 MADURAI-new	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
13 ANNA	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
14 RAMANATHAPURAM-old	60643 (4.9)	54211 (4.4)	53689 (4.3)	56203 (4.5)	88098 (7.0)	98267 (7.9)	106441 (8.5)	101492 (8.1)	76680 (6.1)	79194 (6.3)
14 RAMANATHAPURAM-new	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
15 KAMARAJAR	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
16 T. THIRUMAHANAR	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
17 TIRUNELVELI-old	129372 (11.3)	127902 (11.2)	156567 (13.7)	154408 (13.5)	153429 (13.4)	130556 (11.4)	130140 (11.4)	116132 (10.2)	114870 (10.1)	104664 (9.2)
17 TIRUNELVELI-new	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
18 CHIDAMBARANAR	0 (3.4)	0 (3.1)	0 (2.9)	0 (4.2)	0 (3.7)	0 (2.9)	0 (3.0)	0 (2.2)	0 (2.3)	0 (1.8)
19 THE NILGIRIS	3425 (1.3)	3426 (1.3)	3736 (1.4)	3736 (1.5)	3736 (1.4)	3736 (1.5)	7076 (2.8)	5963 (2.3)	7570 (3.0)	6052 (2.4)
20 KANYAKKUMARAI	1388 (0.8)	1026 (0.6)	874 (0.5)	1132 (0.7)	35 (0.1)	253 (0.2)	412 (0.2)	562 (0.3)	622 (0.4)	432 (0.3)
21 STATE	572962 (4.4)	540398 (4.2)	575239 (4.4)	587585 (4.5)	598904 (4.5)	521785 (4.0)	548821 (4.2)	490582 (3.8)	447571 (3.4)	427637 (3.3)

Note: Figures in brackets indicate percentage of other fallow land to total geographical area.

APPENDIX 9:

NET AREA SOWN

(ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (0.7)	0 (1.3)	0 (0.6)	0 (2.6)	0 (3.8)	0 (2.9)	0 (2.5)	0 (4.3)	0 (4.7)	0 (4.2)
2 CHENGLEPUT	335976 (40.7)	342654 (41.3)	334468 (40.6)	326436 (39.6)	287020 (34.8)	338957 (42.9)	335908 (42.5)	349957 (44.3)	345225 (43.7)	330332 (41.2)
3 SOUTH ARCOT	593424 (54.4)	609204 (55.9)	617211 (56.6)	585806 (53.7)	522717 (48.0)	540701 (49.6)	568120 (52.1)	575082 (52.8)	543694 (53.5)	590689 (54.2)
4 NORTH ARCOT	538641 (43.8)	528906 (43.0)	529579 (43.0)	532925 (43.3)	528851 (43.0)	536824 (43.6)	543447 (44.2)	548720 (44.6)	531352 (43.2)	522226 (42.4)
5 SALEM	405350 (47.0)	418082 (48.5)	427458 (49.6)	430094 (49.8)	396472 (46.0)	420990 (48.8)	402824 (46.7)	432268 (50.1)	434308 (50.4)	443382 (51.4)
6 DHARMAPURI	406858 (42.3)	404712 (42.0)	405448 (42.1)	350010 (36.3)	377463 (39.2)	423616 (44.0)	413703 (43.0)	421576 (44.1)	444531 (46.2)	438661 (45.5)
7 COIMBATORE-old	726880 (46.6)	769698 (49.3)	749113 (48.0)	735280 (47.1)	645595 (41.1)	698985 (44.4)	678017 (43.2)	735499 (46.8)	726617 (46.2)	716322 (45.5)
7 COIMBATORE-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	374502 (50.0)
8 PERIYAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	341820 (41.5)
9 TIRUCHIRAPPALLI	753705 (52.9)	774090 (54.1)	616469 (55.4)	608772 (54.7)	542956 (48.8)	578660 (52.0)	580711 (52.3)	613911 (55.2)	607852 (54.7)	597279 (53.7)
10 PUDUKOTTAI	0 (0.0)	0 (0.0)	212910 (45.7)	207123 (44.4)	163330 (35.0)	197060 (42.3)	196155 (42.1)	213473 (45.8)	207255 (44.5)	209424 (44.9)
11 THANJAVUR	613365 (63.3)	619900 (64.0)	548086 (66.9)	553022 (67.4)	538590 (65.7)	550815 (67.2)	532533 (64.9)	551827 (67.3)	555661 (67.7)	560476 (68.2)
12 MADURAI-old	583497 (46.3)	600773 (47.6)	608333 (48.2)	581472 (46.1)	531871 (42.0)	575410 (45.5)	562235 (44.4)	597298 (47.2)	585500 (46.2)	592200 (46.8)
12 MADURAI-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
13 ANNA	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
14 RAMANATHAPURAM-old	610887 (49.2)	448025 (52.2)	653088 (52.5)	640746 (51.6)	476183 (38.1)	604687 (48.4)	612988 (49.0)	631514 (50.5)	621242 (49.7)	621283 (49.7)
14 RAMANATHAPURAM-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
15 KAMARAJAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
16 T. THIRUMAHANAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
17 TIRUNELVELI-old	465136 (40.7)	490873 (43.0)	487327 (42.7)	487737 (42.7)	399227 (35.0)	378009 (33.1)	442070 (38.7)	479834 (42.0)	467617 (40.9)	469467 (41.1)
17 TIRUNELVELI-new	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
18 CHIDAMBARANAR	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
19 THE NILGIRIS	54300 (21.3)	57301 (22.5)	56852 (22.3)	57294 (22.5)	58178 (22.9)	58949 (23.2)	57083 (22.4)	58976 (23.2)	58482 (23.0)	58721 (23.1)
20 KANYAKKUMARAI	81154 (48.6)	84327 (50.5)	85450 (51.2)	78618 (47.1)	83993 (50.3)	85565 (51.2)	81098 (48.5)	81991 (49.0)	81497 (48.7)	81549 (48.7)
21 STATE	6169173 (47.5)	6347545 (48.8)	6331786 (48.7)	6175343 (47.5)	5553446 (42.6)	5989228 (46.1)	6006892 (46.3)	6295026 (48.4)	6250833 (48.1)	6232013 (48.0)

NOTE: FIGURES IN BRACKETS INDICATE THE PERCENTAGES OF NET AREA SOWN TO TOTAL GEOGRAPHICAL AREA

APPENDIX 9: CONTD. NET AREA SOWN (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2 CHENGLEPUT	279405 (35.5)	289309 (36.9)	243177 (31.0)	299775 (38.2)	310277 (39.5)	310749 (39.6)	245596 (31.3)	277578 (35.3)	274375 (34.9)
3 SOUTH ARCOT	509257 (46.6)	557319 (51.1)	463083 (42.5)	529307 (48.6)	595638 (54.7)	595622 (54.6)	581276 (53.3)	568711 (52.2)	543456 (49.9)
4 NORTH ARCOT	426767 (34.8)	438302 (35.6)	406695 (33.0)	502796 (41.1)	498467 (40.7)	505480 (41.3)	442378 (36.1)	432931 (35.4)	448321 (36.6)
5 SALEM	348024 (40.4)	396854 (46.1)	353123 (41.0)	414148 (48.0)	397785 (46.1)	379638 (44.0)	394566 (45.7)	422544 (48.9)	430746 (49.9)
6 DHARMAPURI	317758 (32.9)	367626 (38.2)	351683 (36.5)	395642 (41.1)	397552 (41.3)	409932 (42.8)	408889 (42.7)	407537 (42.6)	408188 (42.6)
7 COIMBATORE-old	650840 (41.4)	684281 (43.5)	638364 (40.6)	686661 (43.6)	696002 (44.3)	671938 (42.7)	679408 (43.4)	681259 (43.5)	639849 (40.7)
7 COIMBATORE-new	353490 (47.2)	366484 (48.9)	348423 (46.5)	364577 (48.7)	372364 (49.7)	358548 (47.9)	362521 (48.8)	347176 (46.7)	332375 (44.5)
8 PERIYAR	297350 (36.1)	317800 (38.5)	289941 (35.2)	322084 (39.1)	323638 (39.3)	313390 (38.1)	316887 (38.5)	334083 (40.6)	307474 (37.3)
9 TIRUCHIRAPALLI	499398 (44.9)	558813 (50.2)	532228 (47.8)	571671 (51.4)	558110 (50.2)	528935 (47.5)	544558 (48.9)	556266 (50.0)	522488 (47.0)
10 PUDUKOTTAI	143141 (30.7)	182868 (39.2)	163640 (35.1)	199191 (42.7)	181223 (38.8)	198740 (42.6)	192832 (41.3)	195789 (42.0)	161367 (34.6)
11 THANJAVUR	556107 (67.7)	552503 (67.3)	508505 (61.9)	533479 (65.0)	545926 (66.5)	513669 (62.6)	514711 (62.7)	505469 (61.5)	530819 (64.6)
12 MADURAI-old	513098 (40.5)	573061 (45.3)	524081 (41.4)	571772 (45.2)	533701 (42.1)	511944 (40.4)	538691 (42.5)	608221 (45.9)	538622 (41.3)
12 MADURAI-new	0 0	0 0	0 0	0 0	0 0	269790 (40.9)	282414 (41.7)	318910 (47.1)	305117 (45.1)
13 ANNA	0 0	0 0	0 0	0 0	0 0	242154 (39.9)	256277 (42.6)	289311 (44.6)	233505 (37.3)
14 RAMANATHAPURAM-old	544297 (43.5)	602496 (48.2)	546805 (43.8)	584742 (46.8)	516962 (41.3)	516784 (41.4)	513864 (41.1)	584485 (46.8)	488574 (39.1)
14 RAMANATHAPURAM-new	0 0	0 0	0 0	0 0	195615 (46.4)	206018 (48.8)	203288 (48.2)	223317 (52.9)	193041 (45.6)
15 KAMARAJAR	0 0	0 0	0 0	0 0	203790 (48.2)	186252 (44.1)	189627 (44.9)	216366 (51.2)	191587 (45.3)
16 T. THIRUMAHANAR	0 0	0 0	0 0	0 0	117557 (29.0)	124514 (30.8)	120949 (29.9)	144802 (35.8)	103946 (25.7)
17 TIRUNELVELI-old	433626 (38.0)	399284 (35.0)	389590 (34.2)	417930 (36.7)	414543 (36.3)	404936 (35.5)	340489 (29.8)	384727 (33.7)	407306 (35.7)
17 TIRUNELVELI-new	0 0	0 0	0 0	0 0	0 0	0 0	114477 (16.8)	151694 (22.2)	143266 (21.0)
18 CHIDAMBARANAR	0 0	0 0	0 0	0 0	0 0	0 0	226012 (49.2)	233033 (50.8)	264040 (57.5)
19 THE NILGIRIS	58555 (23.0)	56290 (22.1)	57004 (22.4)	58212 (22.9)	60444 (23.8)	60324 (23.7)	68899 (27.1)	71382 (28.1)	69196 (27.2)
20 KANYAKKUMARAI	79781 (47.7)	81074 (48.5)	81049 (48.5)	80802 (48.3)	81622 (48.8)	82201 (49.1)	77762 (46.5)	81216 (48.6)	83337 (49.8)
21 STATE	5360054 (41.2)	5740083 (44.1)	5259027 (40.5)	5846128 (45.0)	5788252 (44.5)	5690892 (43.8)	5543919 (42.7)	5778115 (44.3)	5546644 (42.6)

APPENDIX 10: AREA SOWN MORE THAN ONCE (ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2 CHENGLEPUT	126456 (15.3)	122107 (14.8)	118200 (14.3)	124572 (15.1)	91493 (11.1)	132149 (16.7)	144591 (18.3)	144733 (18.3)	147896 (18.7)	141262 (18.0)
3 SOUTH ARCOT	160023 (14.7)	146401 (13.4)	117576 (10.8)	155363 (14.3)	103646 (9.5)	153816 (14.1)	159377 (14.6)	164410 (15.1)	167000 (15.3)	190549 (17.5)
4 NORTH ARCOT	138293 (11.2)	174690 (14.2)	161430 (13.0)	175483 (14.3)	119518 (9.7)	133822 (10.9)	161126 (13.1)	186784 (15.2)	159636 (13.0)	170717 (13.9)
5 SALEM	68719 (8.0)	70756 (8.2)	75664 (8.1)	70651 (8.2)	48965 (5.7)	58506 (6.8)	63221 (7.3)	77888 (9.0)	84998 (9.8)	87179 (10.1)
6 DHARMAPURI	58772 (6.1)	56173 (5.8)	54143 (5.6)	115644 (12.0)	79958 (8.3)	46508 (4.8)	40029 (4.2)	107252 (11.1)	63484 (6.6)	64756 (6.7)
7 COIMBATORE-old	109312 (7.0)	115274 (7.4)	135301 (8.7)	136666 (8.8)	91731 (5.8)	118180 (7.5)	90259 (5.7)	119783 (7.6)	139270 (8.8)	144985 (9.2)
7 COIMBATORE-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	54921 (7.3)
8 PERIYAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	90064 (10.9)
9 TIRUCHIRAPALLI	80570 (5.6)	76992 (5.4)	97401 (8.8)	87947 (7.9)	56498 (5.1)	79368 (7.1)	59526 (5.4)	70132 (6.3)	77992 (7.0)	89732 (8.1)
10 PUDUKOTTAI	0 (0)	0 (0)	12084 (2.6)	14787 (3.2)	7334 (1.6)	18446 (4.0)	13600 (2.9)	16550 (3.6)	19715 (4.2)	14886 (3.2)
11 THANJAVUR	268940 (27.8)	299560 (30.9)	346974 (42.3)	366609 (39.9)	291145 (35.5)	325560 (39.7)	258688 (31.6)	334393 (40.8)	339424 (41.3)	335541 (40.8)
12 MADURAI-old	70251 (5.5)	78215 (6.2)	78286 (6.2)	80771 (6.4)	67088 (5.3)	62538 (4.9)	57905 (4.6)	88589 (7.0)	81603 (6.5)	82238 (6.5)
12 MADURAI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
13 ANNA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
14 RAMANATHAPURAM-old	13535 (1.0)	25448 (2.0)	23828 (1.9)	17654 (1.4)	14447 (1.2)	13849 (1.1)	14145 (1.1)	37746 (3.0)	29316 (2.3)	33913 (2.7)
14 RAMANATHAPURAM-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
15 KAMARAJAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
16 T. THIRUMAHANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
17 TIRUNELVELI-old	86214 (7.5)	91812 (8.0)	100415 (8.8)	92261 (8.1)	84666 (7.4)	71911 (6.3)	47656 (4.2)	93086 (8.2)	96658 (8.5)	100359 (8.8)
17 TIRUNELVELI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
18 CHIDAMBARANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
19 THE NILGIRIS	284 (0.1)	76 (0)	75 (0)	55 (0)	54 (0)	1194 (0.5)	2891 (1.1)	1369 (0.5)	2565 (1.0)	3083 (1.2)
20 KANYAKKUMARAI	33464 (20.1)	36354 (21.8)	45827 (27.5)	35336 (21.2)	29727 (17.9)	30160 (18.0)	27162 (16.2)	30433 (18.2)	23840 (14.3)	26073 (15.6)
21 STATE	1214833 (9.3)	1293888 (9.9)	1367177 (10.5)	1473809 (11.3)	1086270 (8.3)	1246007 (9.6)	1140176 (8.8)	1473148 (11.3)	1433397 (11.0)	1485273 (11.4)

Note : Figures in brackets indicate the percentage of area sown more than once to total geographical area

APPENDIX 10: CONTD. AREA SOWN MORE THAN ONCE (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
2 CHENGLEPUT	93528 (11.9)	97346 (12.4)	63124 (8.0)	101267 (12.9)	100597 (12.8)	107816 (13.7)	38768 (4.9)	61131 (7.8)	51592 (6.6)
3 SOUTH ARCOT	138681 (12.7)	149993 (13.8)	90476 (8.3)	180314 (16.5)	200142 (18.3)	199116 (18.3)	158292 (14.5)	141936 (13.0)	112124 (10.3)
4 NORTH ARCOT	75883 (6.2)	87513 (7.1)	47512 (3.9)	125473 (10.3)	127430 (10.4)	135046 (11.1)	83703 (6.8)	100875 (8.2)	101294 (8.3)
5 SALEM	40647 (4.7)	93629 (10.8)	65002 (7.5)	110906 (12.8)	111491 (12.9)	99484 (11.5)	79162 (9.2)	105380 (12.2)	90374 (10.5)
6 DHARMAPURI	59837 (6.2)	83744 (8.7)	44172 (4.6)	72775 (7.5)	80397 (8.3)	53691 (5.6)	54424 (5.7)	53073 (5.6)	59650 (6.2)
7 COIMBATORE-old	107234 (6.8)	106782 (6.8)	61661 (3.9)	81987 (5.2)	82802 (5.3)	59179 (3.8)	107398 (6.9)	98662 (6.3)	60540 (3.9)
7 COIMBATORE-new	41003 (5.5)	46660 (6.2)	39920 (5.3)	34799 (4.6)	44577 (6.0)	20468 (2.7)	79185 (10.7)	53351 (7.2)	32308 (4.3)
8 PERIYAR	66231 (8.0)	60122 (7.3)	21741 (2.6)	47188 (5.7)	38225 (4.6)	38711 (4.7)	28213 (3.4)	45311 (5.5)	28232 (3.4)
9 TIRUCHIRAPALLI	60816 (5.5)	59857 (5.4)	32436 (2.9)	50775 (4.5)	55915 (5.0)	41259 (3.7)	42443 (3.8)	34537 (3.1)	23318 (2.1)
10 PUDUKOTTAI	9374 (2.0)	18979 (4.1)	6848 (1.5)	15004 (3.2)	13312 (2.9)	13091 (2.8)	18205 (3.9)	12956 (2.8)	10655 (2.3)
11 THANJAVUR	339911 (41.4)	305165 (37.1)	223670 (27.2)	216613 (26.3)	368975 (44.9)	255868 (31.1)	289213 (35.2)	216431 (26.3)	234017 (28.5)
12 MADURAI-old	65381 (5.2)	55292 (4.3)	49335 (3.9)	69552 (5.4)	48821 (3.9)	53553 (4.2)	29211 (2.3)	42625 (3.2)	68226 (5.2)
12 MADURAI-new	0 0	0 0	0 0	0 0	0 0	40156 (6.1)	16965 (2.5)	29951 (4.4)	53285 (7.9)
13 ANNA	0 0	0 0	0 0	0 0	0 0	13397 (2.2)	12246 (2.0)	12674 (2.0)	14941 (2.4)
14 RAMANATHAPURAM-old	13877 (1.1)	14408 (1.1)	5532 (0.4)	9679 (0.7)	11448 (0.9)	9917 (0.8)	4859 (0.4)	16125 (1.3)	4693 (0.4)
14* RAMANATHAPURAM-new	0 0	0 0	0 0	0 0	36 0	0 0	220 (0.1)	1024 (0.2)	852 (0.2)
15 KAMARAJAR	0 0	0 0	0 0	0 0	8830 (2.1)	9365 (2.2)	4052 (1.0)	13843 (3.3)	3756 (0.9)
16 T. THIRUMAHANAR	0 0	0 0	0 0	0 0	2582 (0.6)	552 (0.1)	587 (0.1)	1258 (0.3)	85 0
17 TIRUNELVELI-old	81023 (7.1)	69652 (6.1)	56684 (5.0)	45175 (3.9)	72178 (6.3)	73081 (6.4)	44304 (3.9)	47535 (4.2)	60932 (5.3)
17 TIRUNELVELI-new	0 0	0 0	0 0	0 0	0 0	0 0	36242 (5.3)	43172 (6.3)	43729 (6.4)
18 CHIDAMBARANAR	0 0	0 0	0 0	0 0	0 0	0 0	8052 (1.8)	4363 (0.9)	17203 (3.8)
19 THE NILGIRIS	1149 (0.5)	1799 (0.7)	879 (0.4)	1048 (0.4)	1891 (0.7)	1785 (0.7)	473 (0.2)	1599 (0.6)	837 (0.3)
20 KANYAKKUMARAI	22124 (13.2)	25115 (15.0)	24118 (14.4)	18263 (10.9)	24558 (14.7)	25017 (15.0)	13975 (8.4)	16822 (10.0)	26063 (15.6)
21 STATE	1109465 (8.5)	1169274 (9.0)	771449 (5.9)	1098831 (8.5)	1299957 (10.0)	1127903 (8.7)	964430 (7.4)	950487 (7.3)	904315 (6.9)

APPENDIX 11: TOTAL CROPPED AREA (ha.)

	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
1 MADRAS	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2 CHENGLEPUT	462432 (56.0)	464761 (56.3)	452668 (54.9)	451008 (54.7)	378513 (45.9)	471106 (59.6)	480499 (60.8)	494690 (62.6)	493121 (62.4)	471594 (60.1)
3 SOUTH ARCOT	753447 (69.1)	755605 (69.3)	734787 (67.4)	741169 (68.0)	626363 (57.5)	694517 (63.7)	727497 (66.7)	739492 (67.9)	750694 (68.8)	781238 (71.6)
4 NORTH ARCOT	676934 (55.0)	703596 (57.2)	690982 (56.0)	708408 (57.6)	648369 (52.7)	670646 (54.5)	704573 (57.3)	735504 (59.8)	690988 (56.2)	692943 (56.3)
5 SALEM	474069 (55.0)	488838 (56.7)	503122 (58.4)	500745 (58.1)	445437 (51.7)	479496 (55.6)	466045 (54.0)	510156 (59.1)	519306 (60.2)	530561 (61.5)
6 DHARMAPURI	465630 (48.4)	460885 (47.8)	459591 (47.7)	465662 (48.3)	457421 (47.5)	470124 (48.8)	453732 (47.2)	531928 (55.2)	508015 (52.8)	503417 (52.3)
7 COIMBATORE-old	836192 (53.6)	883972 (56.7)	884414 (56.7)	871946 (55.9)	738326 (46.9)	817165 (51.9)	768276 (48.8)	855282 (54.4)	865887 (55.0)	861307 (54.8)
7 COIMBATORE-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	429423 (57.3)
8 PERIYAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	431884 (52.4)
9 TIRUCHIRAPALLI	834275 (58.5)	851082 (59.5)	713870 (64.2)	696719 (62.6)	599454 (53.9)	658028 (59.1)	640237 (57.6)	684043 (61.5)	685844 (61.7)	687011 (61.8)
10 PUDUKOTTAI	0 (0)	0 (0)	224994 (48.3)	221920 (47.6)	170664 (36.6)	215506 (46.3)	209755 (45.0)	230023 (49.4)	226970 (48.7)	224310 (48.1)
11 THANJAVUR	882305 (91.1)	919460 (94.9)	895054 (109.2)	919631 (112.2)	829735 (101.2)	876375 (106.9)	791221 (96.5)	886220 (108.1)	895085 (109.0)	896017 (109.1)
12 MADURAI-old	653748 (51.8)	678988 (53.8)	686619 (54.4)	662243 (52.5)	598959 (47.3)	637948 (50.3)	620140 (49.0)	685887 (54.2)	667103 (52.7)	674438 (53.3)
12 MADURAI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
13 ANNA	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
14 RAMANATHAPURAM-old	624422 (50.2)	673473 (54.2)	676916 (54.4)	658400 (53.0)	490630 (39.3)	618536 (49.5)	627133 (50.1)	669260 (53.5)	650558 (52.0)	655196 (52.4)
14 RAMANATHAPURAM-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
15 KAMARAJAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
16 T. THIRUMAHANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
17 TIRUNELVELI-old	551350 (48.2)	582715 (51.0)	587742 (51.5)	579998 (50.8)	483893 (42.4)	449920 (39.4)	489726 (42.9)	572920 (50.2)	564275 (49.4)	569828 (49.9)
17 TIRUNELVELI-new	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
18 CHIDAMBARANAR	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
19 THE NILGIRIS	54584 (21.4)	57377 (22.5)	56927 (22.3)	57349 (22.5)	58232 (22.9)	60143 (23.7)	59974 (23.6)	60345 (23.7)	61047 (24.0)	61804 (24.2)
20 KANYAKKUMARAI	114618 (68.7)	120681 (72.3)	131277 (78.7)	113954 (58.3)	113720 (68.2)	115725 (69.2)	108260 (64.7)	112424 (67.2)	105337 (63.0)	107622 (64.4)
21 STATE	7384006 (56.8)	7641433 (58.7)	7698963 (59.2)	7649152 (58.8)	6639716 (50.9)	7235235 (55.7)	7147068 (55.1)	7768174 (59.7)	7684230 (59.1)	7717286 (59.4)

NOTE: FIGURES IN BRACKETS INDICATE THE PERCENTAGES OF TOTAL CROPPED AREA TO TOTAL GEOGRAPHICAL AREA

APPENDIX 11: CONTD. TOTAL CROPPED AREA (ha.)

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
1 MADRAS	0	0	0	0	0	0	0	0	0
2 CHENGLEPUT	372933 (47.4)	386655 (49.3)	306301 (39.0)	401042 (51.1)	440874 (52.3)	418565 (53.3)	284364 (36.2)	338709 (43.1)	325967 (41.5)
3 SOUTH ARCOT	647938 (59.3)	707312 (64.9)	553559 (50.8)	709621 (65.1)	795780 (73.0)	794738 (72.9)	739568 (67.9)	710647 (65.2)	655580 (60.2)
4 NORTH ARCOT	502650 (41.0)	525815 (42.7)	454207 (36.9)	628269 (51.4)	625897 (51.1)	640526 (52.4)	526081 (43.0)	533806 (43.6)	549615 (44.9)
5 SALEM	388671 (45.1)	490483 (56.9)	418125 (47.5)	525054 (60.8)	509276 (59.0)	479122 (55.5)	473728 (54.9)	527924 (61.1)	521120 (60.4)
6 DHARMAPURI	377595 (39.1)	451370 (46.9)	395855 (41.1)	468417 (48.6)	477949 (49.6)	463623 (48.4)	463313 (48.4)	461410 (48.2)	467838 (48.8)
7 COIMBATORE-old	758074 (48.2)	791066 (50.3)	700025 (44.5)	768648 (48.9)	778804 (49.5)	731117 (46.5)	786806 (50.2)	779921 (49.8)	700389 (44.6)
7 COIMBATORE-new	394493 (52.7)	413144 (55.1)	388343 (51.8)	399376 (53.3)	416941 (55.7)	379016 (50.6)	441706 (59.4)	400527 (53.9)	364683 (48.8)
8 PERIYAR	363581 (44.1)	377922 (45.8)	311682 (37.8)	369272 (44.8)	361863 (43.9)	352101 (42.8)	345100 (41.9)	379394 (46.1)	335706 (40.7)
9 TIRUCHIRAPALLI	560214 (50.4)	618670 (55.6)	564664 (50.7)	622446 (55.9)	614025 (55.2)	570194 (51.2)	587001 (52.8)	590803 (53.1)	545806 (49.1)
10 PUDUKOTTAI	152515 (32.7)	201847 (43.3)	170488 (36.6)	214195 (45.9)	194535 (41.7)	211831 (45.4)	211037 (45.3)	208745 (44.8)	172022 (36.9)
11 THANJAVUR	896018 (109.1)	857668 (104.4)	732175 (89.1)	750092 (91.3)	914901 (111.4)	769537 (93.7)	803924 (97.9)	721900 (87.8)	764836 (93.1)
12 MADURAI-old	578479 (45.7)	628353 (49.6)	573416 (45.3)	641324 (50.6)	582522 (46.0)	565497 (44.7)	567902 (44.8)	650846 (49.1)	606848 (46.6)
12 MADURAI-new	0	0	0	0	0	309946 (47.0)	299379 (44.2)	348861 (51.5)	358402 (53.0)
13 ANNA	0	0	0	0	0	255551 (42.1)	268523 (44.7)	301985 (46.6)	248446 (39.7)
14 RAMANATHAPURAM-old	558174 (44.6)	616904 (49.3)	552337 (44.2)	594421 (47.5)	528410 (42.3)	341301 (27.3)	518723 (41.5)	600610 (48.1)	493269 (39.4)
14 RAMANATHAPURAM-new	0	0	0	0	195651 (46.4)	206018 (48.8)	203508 (48.2)	224341 (53.1)	193893 (45.8)
15 KAMARAJAR	0	0	0	0	212620 (50.3)	195617 (46.3)	193679 (45.8)	230209 (54.5)	195343 (46.2)
16 T. THIRUMAHANAR	0	0	0	0	120139 (29.6)	125066 (30.9)	121536 (30.0)	146060 (36.1)	104031 (25.7)
17 TIRUNELVELI-old	514649 (45.1)	468936 (41.1)	446274 (39.2)	463105 (40.6)	486721 (42.6)	478017 (41.9)	384793 (33.7)	432262 (37.9)	468236 (41.0)
17 TIRUNELVELI-new	0	0	0	0	0	0	150719 (22.1)	194866 (28.5)	186995 (27.4)
18 CHIDAMBARANAR	0	0	0	0	0	0	234074 (51.0)	237396 (51.7)	281243 (61.3)
19 THE NILGIRIS	59704 (23.5)	50889 (22.8)	57883 (22.8)	59260 (23.3)	62335 (24.5)	62109 (24.4)	69372 (27.3)	72981 (28.7)	70033 (27.5)
20 KANYAKKUMARAI	101905 (60.9)	106189 (63.5)	105167 (62.9)	99065 (59.2)	106180 (63.5)	107218 (64.1)	91737 (54.8)	98038 (58.6)	109400 (65.4)
21 STATE	6469519 (49.7)	6909357 (53.1)	6030476 (46.4)	6944959 (53.9)	7088209 (54.5)	6818795 (52.5)	6508349 (50.1)	6728602 (51.6)	6450959 (49.5)

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