Research Study No. 60

AGRICULTURAL DEVELOPMENT IN RAMANATHAPURAM DISTRICT, TAMIL NADU

DISTRICT REPORT, No. 3.

Dr. C. Arputharaj

R. Rajagopalan

Agricultural Economics Research Centre

University of Madras

Madras-600 005

1979

PREFACE

In recent years, more and more emphasis is being given to district level plans, particularly in the field of agriculture, the district being a more homogeneous unit than the State. In order to develop district level agricultural plan, it is highly important to make a study of the agricultural conditions of the districts in detail.

The present report is an attempt to study the various aspects of the agricultural economy of Ramanathapuram district in Tamil Nadu. The report traces the progress of agriculture and allied activities in the district during the period 1950-51 to 1975-76.

Our thanks are due to the officials of the different departments of Government of Tamil Nadu, who willingly provided us with the data required for the study.

Dr. C. Arputharaj,
Deputy Director & Head,
Agricultural Economics
Research Centre,
University of Madras.

Madras-600 005,
Dated: 12.1.1979.

Project Team

Dr. C. Arputharaj, Deputy Director & Head	...	Overall supervision and technical guidance
Mr. R. Rajagopalan, Senior Research Investigator	...	Drafting of the Report
Miss B. Anuradha, Statistical Assistant	...	Tabulation, Statistical Analysis and drafting of the report.
Mr. M. Venkataraman, Junior Assistant	...	Stencilling
Mr. S. Kirubackaran, Junior Assistant	...	Stencilling

SUMMARY

Ramanathapuram, a backward district in Tamil Nadu, is frequently affected by severe droughts caused by the failure of monsoons. Situated in the southern part of the State, the district is an uninteresting plain with poor soil. There are no perennial rivers in the district. The climate is hot and dry. The rainfall is very scanty and uncertain.

In 1971, the district had a population of 28.60 lakhs. Ramanathapuram is one of the less densely populated districts in the State. Literates formed 39.7 per cent of the total population in 1971. The total number of workers in 1971 was 10,20,345, forming 35.71 per cent of the total population. Cultivators and agricultural labourers formed 63.4 per cent of the total workers.

The total geographical area of the district was estimated at 1,250,275 hectares in 1975-76. Net sown area and total cropped area had increased between 1950-51 and 1975-76. Large stretches of area remaining waste in the district could be brought under cultivation, if irrigation and credit facilities are provided.

The district has no well built Government canal system for irrigation. The district mainly depends on rainfed tanks and wells. Food crops in general and paddy in particular, occupy most of the irrigated lands. Between 1950-51 and 1975-76, the total area of food and non-food crops has increased. The proportion of area under food crops has increased, while that of non-food crops has declined.

Paddy is the principal crop of the district. In 1975-76, it was cultivated in 235,930 hectares forming 38.1 per cent of the total cropped area. Cumbu, cholam, ragi and varagu are the important millets grown in the district. Next to paddy, cotton is the most important crop of the district. Nearly one fifth of the State's cotton area is found in this district. Mainly a dry crop, cotton was cultivated in nearly 50,000 hectares in 1975-76 accounting for 8.1 per cent of the total cropped area. Coconut, cashew, palmyrah, sugarcane, chillies, tamarind and coriander are the other crops grown in the district.

The district has achieved significant increases in production levels of principal crops. From 83000 tonnes in 1950-51, cereal production increased to 408,000 ~~hectares~~ tonnes in 1975-76. In the same period total production of food grains rose from 85000 tonnes to 413,000 tonnes ~~in 1975-76~~. Paddy production increased from 37985 tonnes in 1950-51 to 272,380 tonnes in 1975-76. Pulses and chillies also showed increasing trends in production. Cotton production increased during the pdriod 1950-61 but declined in the period 1960-61 to 1975-76. Millets production also exhibited a similar pattern. It should be pointed out that the area under these crops had a negative growth rate in the period 1960-61 to 1975-76.

Use of improved seeds, application of fertilisers and knowledge and use of better methods of cultivation have resulted in the increase in yield of many crops in the district. The average yield of paddy increased from 388 kg. per hectare in 1950-51 to 1155 kg. in 1975-76.

In the period 1950-51 to 1975-76, only rice, pulses, chillies and groundnut had positive growth rates for area. The growth rates of production were all positive except ragi, varagu and cotton. The yield growth rates were mostly positive but were low. Only cotton and groundnut had negative growth rates for yield. Decomposition analysis revealed that for obtaining higher production levels in future, extension of area alone will not be sufficient. Since rainfall is an important factor in the agriculture of Ramanathapuram district, its effect was examined. Statistical analysis showed that in years of high rainfall, rice yield is higher by more than 200 kg. per hectare and that of cholam by 90 kg. than in years of low rainfall.

There is considerable scope for increasing the use of improved seeds, fertilisers and plant protection measures. Use of improved farm machinery is also not very common in the district. Most of the villages are electrified and a well developed net work of roads also exists. The district is fairly well served by an adequate number of branches of commercial banks and co-operative credit societies.

The district has a high animal population. Dairying and sheep rearing are two important subsidiary occupations followed by the cultivators and agricultural labourers. Poultry development has not been significant in the district.

Ramanathapuram has the largest coastal line in Tamil Nadu. About ten per cent of the active marine fishermen of the State are found in the district. The geographical location of the fishing grounds makes it possible to carry on fishing throughout the year. The district's marine fish landings accounted for about one fifth of the State's total landings. The Indo-Norwegian project at Mandapam has transformed the Fishing operations in the district. If the whole coastal area is provided with fishing harbours, boat-repairing yards and rapid transport of the catch is assured, marine fishing is bound to make very significant improvements in the district.

Area under forests is very low in the district and steps are being taken to increase the forest area.

The average size of operational holding in the district was 1.34 hectares, according to the 1971 Agricultural Census. Small and marginal farmer households together with agricultural labour households accounted for nearly 84 per cent of the total cultivating households. Nearly 97 per cent of the total number of holdings were owned and self operated.

There are thirteen regulated market Centres in the district. The commodities traded in the regulated markets include paddy, groundnut, gingelly, chillies, cotton, cane jaggery and cashewnuts.

The farm harvest prices of principal agricultural commodities have been rising during the period 1950 to 1974. The retail prices of the important food grains have also been steadily increasing in the same period. Wages of agricultural labour had increased by more than three times between 1960-61 and 1975-76.

In order to push up the economy of this backward district, some development programmes have been implemented and some more are being contemplated. Among them, mention should be made about Drought Prone Area Programme, the High Yielding Varieties Programme, and Scheme for improving

minor irrigation. The important schemes envisaged in the 'Perspective Plan' for the district include 'Integrated Dryland Development Scheme', 'Dry Farming Scheme' and Intensive Cotton Development Scheme. Others envisaged are 'Opening of Farmers' training Centre', 'Intensive Vegetable Schemes' schemes for reclamation of acid, saline and alkaline lands and schemes for production of good quality seeds. A number of schemes have also been planned to be implemented for improvement of dairying, sheep rearing, forestry and fishing.

C O N T E N T S

*****

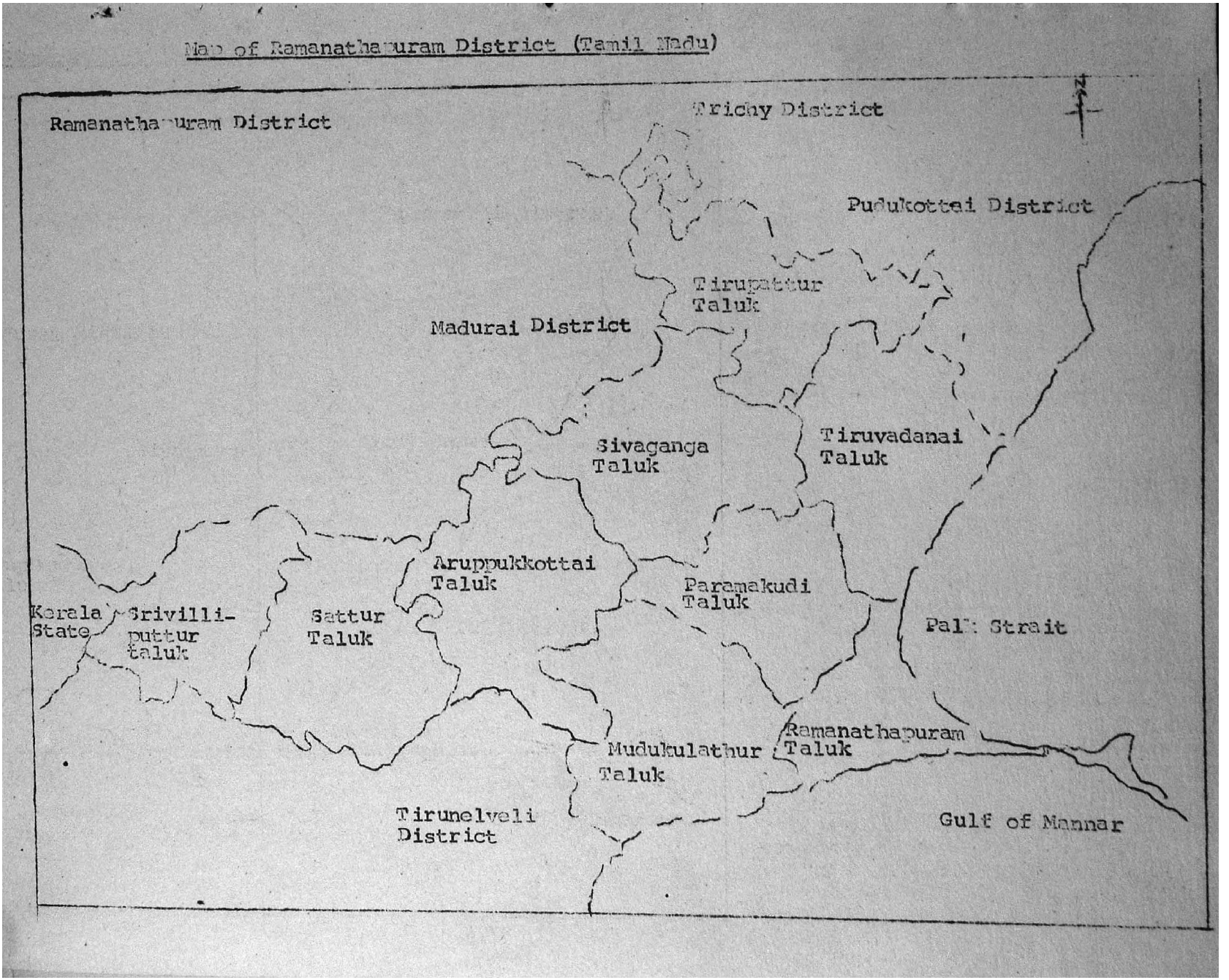
List of Tables.

*****

Appendix Tables

Appendix Tables (Contd.)

Map of Ramanathapuram District (Tamil Nadu)



Section One - Report

AGRICULTURAL ECONOMIC DEVELOPMENT IN RAMANATHAPURAM DISTRICT

INTRODUCTION

The present district of Ramanathapuram in Tamilnadu, first came into existence on the first June, 1910. Two big zamindaries viz., Ramnad and Sivaganga under the old Madurai district and portions of Srivilliputtur and Sattur taluks, belonging to Tirunelveli district were put together to constitute the district of Ramnad. It is a dry district, with a vast sandy coastal belt and no perennial rivers. Poor soil, uncertain and insufficient rainfall and lack of assured irrigation facilities make farming difficult and risky. However, the people of the district are very industrious and dynamic. The labour class migrate in large numbers to adjoining districts like Thanjavur, during periods of peak agricultural activity. In the past, a good number used to go to Burma and Ceylon in search of job.

Ironically, in the post independent era, a series of misfortunes have contributed to the development of Ramanathapuram district. The ban on the entry of Indians to Ceylon, Burma and other overseas countries have made the people think of their own district. The cyclone of 1955 caused such damage to the district that the government carried out large scale repairs and renovation of tanks. This has stabilised the district's agriculture. The communal riots of 1957 made the government develop internal communications and devote greater attention to improve the economic conditions. In short, in recent years, the district has been showing distinct signs of development.

Location:

Ramanathapuram district is situated between $9^{\circ}.5'$ and $10^{\circ}.25'$ of the northern latitude and $77^{\circ}.20'$ and $79^{\circ}.28'$ of the eastern longtitude. Stretching from the western Ghats to the Bay of Bengal, the district covers an area of 12578 sq.Kms. representing 10.34 per cent of the area of Tamilnadu. It is bounded on the north by the districts of Madurai, Tiruchirapalli and

Pudukottai, on the east by the Palk Bay and on the south by the Gulf of Mannar and Tirunelveli district. The Kerala State forms the boundary on the western side. The district is divided into eleven taluks NINE and 32 panchayat unions.

Physical Features:

Except for the parts of the Western Ghats on the Western and South Western sides of Srivilliputhur taluk and a few detached hills in Tirupattur taluk, the district is an uninteresting plain. The Western Ghats rise steeply on the eastern side to a height of about 5000 feet, but slopes down gradually on the western side into the Kerala region. Hence, the watershed to the east is limited and no important river descends into the plain.

Soils:

Black loamy soil suitable for cotton cultivation is found in Sattur taluk and large portions of Srivilliputtur and Aruppukottai taluks. Around the northern parts of Srivilliputtur, the soil is red loam. The rest of the district is covered by red lateritic soil

in which nothing will flourish except some natural growth of odai, palmyra, bamboo and some jungle shrubs. The coastal area is sandy. Rocks containing limestone and graphite are found in Srivilliputtur, Sattur, Aruppukottai, Tirupathur and Sivaganga taluks. Clay, useful for brick making is found in many areas of the district.

Rivers:

There are no perennial rivers in the district. The chief river of the district, Vaigai, originating in the Western Ghats, enters Ramnad, after flowing through Madurai district. The river divides the district into almost two equal parts. Though the river directly benefits only an area of 2400 hectares, it feeds 283 tanks with an ayacut of 42,000 hectares. Arjunanadi, Sevalperi, Gundar, Sarugani and Manimuthar are other rivers flowing into the district. Besides these, there are a number of small streams which, being benefited by the North East monsoon, feed a number of tanks in the district.

Climate:

Ramanathapuram district is hot and dry in the coastal regions. The mercury seldom falls below 70°F.

April, May, and June are the hottest months. December and January are comparatively cool and by February, the temperature begins to rise.

Rainfall:

The district receives only scanty rainfall. The normal rainfall (worked out on the basis of 50 years data from 1901) is 839.5 m.m. This is less than the State average rainfall of 945.7 m.m. The bulk of the rainfall falls in the district during the North East Monsoon, (October to December) which, in most of the years, not only sets late but also is irregular and insufficient. In the period 1950-51 to 1975-76, the annual rainfall has been normal or above normal in ten years only. In many years, the district gets only a very low rainfall. Since Ramanathapuram is heavily dependent on rainfed tanks for irrigation, timely and sufficient rainfall is the most important factor in the agriculture of the district. Rainfall data for the period 1950-51 to 1975-76 are given in Appendix Table-I.

Population:

In 1971, the population of the district was 28.60 lakhs, forming seven per cent of the State's population. The sex ratio was 1042 females per 1000 males which was higher than the corresponding State figure. According to the 1971 census, 73.89 per cent of the district's population lived in rural areas which was higher than the State percentage of 69.74. The population of the scheduled ~~tribes~~ castes was 4.61 lakhs.

The decennial population growth rate (in percentage) was as follows:

Period	Population growth rate (percentage) Ramanathapuram District	Tamil Nadu
1951-61	16.33	11.85
1961-71	18.11	22.30

The district has the lowest population density in Tamilnadu, excepting the districts of Nilgiris and Dharmapuri. Even though the population density had increased from 196 per square kilometre in 1961 to 227 per square kilometre in 1971, it was well below 1971 State figure of 317. The population details of the

district are given in Table-I.

Table-I Population of Ramanathapuram District

Particulars	1951	1961	1971
Rural Total	1,551,976	1,822,307	2,113,545
Males	N.A.	882,147	1,029,578
Females	N.A.	940,160	1,083,967
Urban Total	529,815	599,481	746,662
Males	N.A.	293,622	371,257
Females	N.A.	305,859	375,405
District Total	2,081,791	2,421,788	2,860,207
Males	996,167	1,175,769	1,400,835
Females	1,085,624	1,246,019	1,459,372

Source: Census of India - 1971.

N.A.: Not Available.

In 1971, there were 5,89,206 residential houses distributed over 34 towns and 1411 inhabited villages. Of the inhabited villages, nearly 35 per cent were having population ranging between 1000 and 2000. The

villages with population less than 1000 formed about 43 per cent. The distribution of villages by population is shown in Table-II.

Table-II Distribution of Villages by Population

Population Range	Number of Villages	Percentage to total
Less than 500	276	19.56
500 - 999	326	23.10
1000 - 1999	488	34.95
2000 - 4999	278	19.70
5000 - 9999	37	2.62
10000 and above	6	0.43
Total	1411	100.00

(Source: Credit Plan For Ramanathapuram District - Issed by Lead Bank Cell, Indian Overseas Bank - P.12)

Literacy:

The percentage of literates in the district has gone up from 21.4 in 1951 to 39.7 in 1971. The district has been having a higher literacy percentage than the State. The percentage of literacy among females is less than the State average, while in the case of

males, it has been higher. Table-III gives the percentage of literacy in the district.

Table-III Literacy (in percentages)

Particulars	1951	1961	1971
Males	35.5 (31.7)	48.3 (44.5)	54.5 (51.7)
Females	8.4 (10.0)	16.8 (18.2)	25.2 (26.8)
Total	21.4 (20.8)	32.1 (31.4)	39.7 (39.5)

Note: The figures in the paranthesis indicate the State Average.

Source: An Economic Appraisal, Tamil Nadu - 1975.

Workers:

The total number of workers in the district had decreased from 11,61,370 in 1961 to 10,20,345 in 1971. The workers formed 48 per cent of the total population in 1961 and 35.71 per cent in 1971. The corresponding State figures were 46 per cent and 35.8 per cent. Agriculture, being the main occupation, cultivators and agricultural labourers formed 63.4 per cent of the total workers in the district in 1971 and 67.4 per cent in 1961. The number of workers in all sectors excepting agriculture, household industry and other services had increased during the period 1961-1971.

The percentage of non-workers in 1971 was very high among the females (82.9 per cent) compared to that of males (45.61 per cent). Female workers formed 25.33 per cent of the total workers in 1971. Table-IV gives the details about workers in different sectors.

Table-IV Workers

Sl.No.	Category	1961 Number	1961 Percent	1971 Number	1971 Percent
1.	Cultivators	615,781	53.02	371,900	36.4
2.	Agricultural labourers	167,686	14.44	275,045	26.9
3.	Mining, Quarying, Fishing etc.	22,717	1.96	27,488	2.69
4.	Household industry	91,807	7.91	58,401	5.72
5.	Manufacturing other than household	51,245	4.41	90,760	8.90
6.	Construction	9,682	0.83	11,980	1.17
7.	Trade and Commerce	49,674	4.28	78,307	7.68
8.	Transport, storage and communication	10,441	0.90	14,498	1.42
9.	Other services	142,337	12.25	91,966	9.01
			100.00		100.00

(Source: Census of India - District Census Handbook - Ramanathapuram).

Land utilisation:

The total geographical area of the district was estimated at 1,250,275 hectares (by village papers) in 1975-76. In 1950-51, it was put down at 1,249,948 hectares. Between 1950-51 and 1975-76, there had been an increase in area under 'forests', 'land put to non-agricultural use', 'net area sown' and 'total cropped area'. In the same period area under "barren and uncultivable waste", 'cultivable waste', 'permanent pastures and grazing lands' and "miscellaneous tree crops and groves' have declined. Area under 'fallows' and area sown more than once have been fluctuating.

Net area sown had been steadily increasing from 326,423 hectares in 1950-51 and touched the 600 thousand mark in 1962-63 and had remained about that level in all the following years except in 1974-75, when it fell very sharply to 476,813 hectares. Since the current fallows have always been above one hundred thousand hectares, there is enough scope for bringing more area under cultivation. The main reason for vast stretches of land in the district remaining waste are non-availability of irrigation facilities, low fertility of the soil and the poor economic status of the ryots. By affording required financial and other facilities, these areas can be profitably brought under cultivation.

Excepting the Nilgiris, this district has the lowest percentage for area sown more than once in Tamilnadu. Poor irrigation facilities are again in the way of growing a second crop. The intensity of cropping has been just above unity, fluctuating between 1.02 and 1.08. Particulars regarding land utilisation are given in Table-V. Yearwise data on land utilisation are presented in appendix tables 3 to 6.

Table-V Land Utilisation (Area in hectares)

Classification	1950-51	1960-61	1970-71	1975-76
Total geographical area	1,249,948 (100.0)	1,249,749 (100.0)	1,242,762 (100.0)	1,250,275 (100.0)
Forests	24,156 (1.9)	25,391 (2.0)	45,413 (3.7)	47,831 (3.8)
Land not available for cultivation	276,222 (22.1)	280,116 (22.4)	269,792 (21.6)	251,270 (20.1)
Cultivable waste, grazing lands, and land with miscellaneous tree crops	287,754 (23.0)	156,541 (12.6)	102,565 (8.3)	49,096 (3.9)
Fallow lands	335,394 (26.9)	204,924 (16.4)	214,105 (17.2)	297,391 (23.8)
Net area sown	326,423 (26.1)	582,777 (46.6)	610,887 (49.2)	604,687 (48.4)
Area sown more than once	19,611 (1.6)	47,538 (3.8)	13,535 (1.0)	13,849 (1.1)
Total Cropped area	346,034 (27.7)	630,315 (50.4)	624,422 (50.2)	618,536 (49.5)

Source: Season and Crop Reports of Tamil Nadu.

Irrigation:

Ramanathapuram is the only district barring the hilly district of Nilgiris, which has no well built Government Canal system for irrigation. Hence, the district mainly depends on rainfed tanks and wells for irrigating the crops. In 1975-76, as many as 7,196 tanks were providing irrigation for 177,772 hectares out of a total 216,213 hectares of net area irrigated. Nearly 38,000 hectares were irrigated by 64,766 wells. The percentage of area irrigated by wells has declined over the years. Brackish water in the eastern taluks of the district and the rocky nature of the soil in the western taluks are the limiting factors for more area under well irrigation.

Though more than one third of the net area sown is classified as irrigated, assured irrigation is available to less than ten per cent only. The net area irrigated had gone up from 135,703 hectares in 1950-51 to 216,213 hectares in 1975-76. However the percentage of net area irrigated to net area sownnhad declined in the same period from 41.6 to 35.8, due to the higher increase of net area sown.

In 1950-51, the gross area irrigated was 153,845 hectares, forming 44.5 per cent of the total gross cropped area. It has fluctuated over the years, since, as already pointed out, the main sources of irrigation are tanks which depend upon the monsoon rains for their water supply. The gross irrigated area stood at 228,376 hectares in 1975-76 and formed 36.9 per cent of the total gross cropped area. Area irrigated more than once also oscillated very widely recording the lowest figure of 240 hectares in 1961-62 and the highest figure of 51,855 hectares in 1953-54.

In 1971, modernisation of Vaigai project was taken up and when completed, it is expected to feed about 280 rainfed tanks with an ayacut of 42000 hectares. Pilavakkal scheme for constructing two reservoirs across Kavalai and Periyar rivers at a cost of Rs.186.22 lakhs has been taken up during the Fourth Plan period and is yet to be completed.

More than 90 per cent of the total area irrigated are under food crops. The major portion of the irrigated area is under paddy, increasing from 62.09 per cent in 1950-51 to 71.46 per cent in 1975-76. The irrigated area under all the other food grains are very insignificant.

Area irrigated under chillies and sugarcane have increased significantly. Details regarding area irrigated by different sources and irrigated area of various crops are shown in the appendix tables 7 to 10.

Crop Seasons:

In Ramanathapuram district, paddy is generally cultivated as a single crop in areas irrigated by rainfed tanks. Hence, the cultivation of paddy starts during August-September, expecting the rains during the North East monsoon period of October-December. The crop is harvested during February-March. Paddy, as an irrigated crop is raised during the period August-September to January and in certain areas, another crop of irrigated paddy is cultivated between February and June. Chillies are generally cultivated during August-September to February-March. Cotton, sown in September-October, comes to harvest in April-May. March to October is the period in which irrigated cotton is grown. Crop season particulars are given in the appendix table-11.

Cropping Pattern:

The cropping pattern figures of the district in 1950-51 and 1975-76, reveal that the total area of food

and non-food crops has increased. The proportion of area under non-food crops has declined, while that of the food crops has increased.

Table-VI Cropping Pattern
(Area in hectares)

Crop	1950-51 Area	1950-51 Percent to total	1975-76 Area	1975-76 Percent to total
Cereals	211,170	61.0	417,831	67.6
Pulses	9,657	2.8	19,200	3.1
Total food Crops	234,663	67.8	488,453	79.0
Non-food Crops	111,371	32.2	130,083	21.0
Total food and Non-food crops	346,034	100.0	618,536	100.0

Source: Season and Crop Reports of Tamil Nadu.

Paddy is the predominant crop of the district. It was cultivated in 235,930 hectares or 38.1 per cent of the total cropped area, in 1975-76. Area under paddy was only 97,825 hectares in 1950-51.

Cumbu, cholam, ragi and varagu are the important millets grown in the district. Eight per cent of the area cropped was under cumbu in 1975-76. It was mostly grown in Sattur and Aruppukkottai taluks. Varagu, largely grown in Thiruvadanai, Aruppukkottai and Mudukalattur taluks, can be cultivated in poor soils. In spite of its long duration, varagu is preferred in certain areas because it is drought resistant and relatively free from pests and diseases. In 1975-76, it was cultivated in 41,389 hectares (6.7 per cent). Ragi was grown in 5.6 per cent of the gross cropped area and cholam in 2.4 per cent. Among pulses, blackgram and horsegram are important in the district.

Next to paddy, cotton is the most important crop of the district. About one fifth of the State's total cotton area is found here. Cotton was cultivated in nearly 50,000 hectares in 1975-76, accounting for 8.1 per-cent of the total cropped area. It is mostly grown under rainfed conditions. Climatic conditions are highly suited for the cultivation of long staple cotton varieties like cambodia. It is mostly cultivated in Rajapalayam, Srivilliputtur, Aruppukkottai and Mudukalattur taluks. Of the other important crops, groundnut occupied 4.4 per-cent of the total cropped area in 1975-76 and chillies

~~for~~ four per cent.

Coconut palms are largely found in the sandy and alkaline soils of the coastal areas. Cashew cultivation is becoming popular in the red laterite soil areas and in certain parts of sandy soil regions also. Palmyrah and sugarcane are the sugar crops, cultivated in the district, but the area under them is not much. As for condiments and spices, apart from chillies, tamarind and coriander are grown.

The area under the principal crops of the district and their percentages to the total sown area for the years 1950-51 to 1975-76 are presented in the appendix tables 12, 13 and 14.

Production of Principal Crops:

The district has achieved remarkable increases in production levels of principal crops. Cereal production had increased from 83,046 tonnes in 1950-51 to 408,530 tonnes in 1975-76, reaching the highest figure of 487,960 tonnes in 1973-74. Starting from 84,926 tonnes in 1950-51, total production of foodgrains reached the highest peak of 495,260 tonnes in 1973-74 and stood at 413,240 tonnes in 1975-76.

Paddy and pulses have shown increasing trends in production. From 379,985 tonnes in 1950-51, paddy production increased to 272,380 tonnes in 1975-76. The highest production of 55,850 tonnes was recorded in 1974-75. Pulses have shown a remarkable increase from 1,880 tonnes in 1950-51 to 4,710 tonnes in 1975-76. Pulses registered the highest production of 7,300 tonnes in 1973-74. Chillies production has been steadily on the increase.

In the case of cotton, the production trend was increasing during the period 1950-61, but it began to decline during the period 1960-61 to 1975-76. Millets production also behaved in the same manner. It should be noted that the area under these crops had also shown a negative growth rate in the latter period.

The production of onions varies from year to year, depending upon the area cropped. Groundnut production had shown an increasing trend during 1950-51 to 1959-60 and a decreasing trend during the next decade. The production as well as area of tobacco has been decreasing throughout, starting with a sudden fall in 1958-59.

Particulars of the outturn of principal crops from 1950-51 to 1975-76 are furnished in the appendix tables 15 and 16.

Yield:

A perusal of the yields per hectare, of the principal crops during the period of study, reveals a steady increase in many cases. Use of improved and high yielding seeds, application of chemical fertilisers, knowledge and use of better methods of cultivation practices, extension work and additional irrigation facilities have been responsible for the increases in yields.

Table-VII Yields of Principal Crops (in Kg. per hectare)

Crop	Yield (Kg./hectare)		
	1950-51	1960-61	1975-76
Rice	388	820	1155
Cholam	420	841	697
Cumbu	284	729	728
Chillies	938	942	1627
Cotton	119	140	68
Groundnut	879	1155	N.A.

Source: Season and Crop Reports of Tamil Nadu.

N.A.:- Not Available.

The average yield per hectare of rice had gone up from 388 Kg., in 1950-51 to 1155 Kg., in 1975-76. Rice yield in the district has always remained below the State average. This is due to the fact that a sizeable area under the crop is cultivated under rainfed conditions. This also applies to other crops like Chillies, Cholam, Cumbu, Ragi and Groundnut. Implementation of High Yielding Varieties Programme in the district in the mid sixtees, has helped to raise the yields of paddy. Crash programme for pulses and cotton package programmes have helped to increase the productivity of these crops.

A study of the yearwise yield of the district shows sudden decreases in the yields of rice, millets, pulses and cotton in the years 1952-53, 1958-59, 1968-69 and 1974-75. These low yields could be due to the significantly low rainfall in the district in those years. The yield per hectare of principal crops for the period 1950-51 to 1975-76 are made available in the appendix table-17.

Growth rates of area, production and productivity:

Compound growth rates of area, production and productivity of the principal crops of the district have been worked out separately for the periods 1950-51 to 1960-61, 1960-61 to 1975-76 and 1950-51 to 1975-76.

Area and production of all crops except cholam had shown a positive growth rate during the period 1950-51 to 1960-61. In this period, the area growth rates of rice, pulses, chillies and ground nut were high. Very high growth rates of production (exceeding 10 per cent) were recorded in the case of rice, cumbu, pulses, chillies and groundnut in the same period. Ragi, varagu and cotton had also significantly high growth rates of production. During this period, all crops except chillies had positive yield growth rates, with high figures for rice, cholam and ragi.

Between 1960-61 and 1975-76, the growth rates of area were mostly negative, with very low positive percentages for rice, pulses and chillies. Production growth rates were also on the same lines, chillies being the only crop to have a positive figure. The yield growth rates in the same period were all negative except in the case of chillies, cholam and ragi.

For the total reference period of 1950-51 to 1975-76, only rice, pulses, chillies and groundnut had positive growth rates for area, with chillies having the highest figure of 4.29 per cent. The growth rates of production were all positive except for ragi, varagu and cotton, but only chillies had a significant percentage. The yield growth rates in most of the cases were positive but low. Only cotton and groundnut were having negative growth rates for yield. Table-VIII gives the growth rates of area, production and productivity of principal crops.

Table-VIII Growth Rates (in percentages)

Crop	Area			Production			Yield		
	'50-'51 to '60-'61	'60-'61 to '75-'76	'50-'51 to '75-'76	'50-'51 to '60-'61	'60-'61 to '75-'76	'50-'51 to '75-'76	'50-'51 to '60-'61	'60-'61 to '75-'76	'50-'51 to '75-'76
Rice	6.20	0.05	2.75	11.70	-0.06	3.84	5.18	-0.10	1.05
Cholam	-3.58	-3.09	-1.43	2.85	-2.33	0.18	6.69	0.20	1.39
Cumbu	1.17	-1.06	-0.95	10.66	-3.23	0.75	9.39	-2.20	1.71
Ragi	1.96	-0.71	-1.00	5.45	-0.46	-0.84	3.42	0.24	0.16
Varagu	4.36	-2.84	-0.92	8.69	-5.21	-0.86	4.17	-2.44	0.07
Chillies	10.91	1.07	4.29	10.76	2.20	4.35	-0.14	3.53	0.06
Cotton	4.63	-1.14	-0.38	5.51	-6.64	-1.39	0.80	-3.91	-1.06
Groundnut	9.91	-0.35	2.76	11.93	-4.23	0.64	1.79	-3.79	-1.85

Decomposition of output:

In this section, the contribution of different component elements to growth of output in the district for the period 1950-51 to 1973-74 is studied. Rice, cholam, cumbu, ragi, varagu, pulses, chillies, cotton and groundnut have been considered in the analysis. With the help of a model developed by Minhas and Vaidyanathan[1] the increase in aggregate output has been decomposed into seven component elements viz., the contribution of (a) changes in area, (b) changes in per hectare yield (c) changes in cropping pattern and interaction between (d) area and yield (e) area and cropping pattern (f) yield and cropping pattern and (g) area, yield and cropping pattern.

The considered crops Ci's are assigned constant weights Wi's, being the 1960-61 price of the respective crops. Cio's and Cit's are proportions of area occupied by different crops in years '0' and 't', and

---

(1) B.S. Minhas and A. Vaidyanathan, "Growth of Crop output in India, 1951-54 to 1958-61 - An Analysis by Component Elements in Journal of Indian Society of Agricultural Statistics, Vol.XII, No.2 PP.230-252.

represent the cropping pattern. Y_{io}'s and Y_{it}'s are the yields in years 'O' and 't'. To even out annual fluctuations, three year averages have been taken for C_{io}'s, C_{it}'s, Y_{io}'s and Y_{it}'s. Also,

P_t is the gross output in year 't'

P_o is the gross output in year 'o'

A_t is the gross cropped area in year t

and Ao is the gross cropped area in year 'o'

Now $P_o = A_o \sum_i W_i \; C_{io} \; Y_{io}$

$$P_t = A_t \sum_i W_i \; C_{it} \; Y_{it}$$

$$\begin{aligned} P_t - P_o = {} & (A_t - A_o) \sum_i W_i \, C_{io} \, Y_{io} \\ & + A_o \sum_i W_i \, C_{io} \, (Y_{it} - Y_{io}) \\ & + A_o \sum_i W_i \, (C_{it} - C_{io}) \, Y_{io} \\ & + (A_t - A_o) \sum_i W_i \, (C_{it} - C_{io}) \, Y_{io} \\ & + (A_t - A_o) \sum_i W_i \, C_{io} \, (Y_{it} - Y_{io}) \\ & + (A_o \sum_i W_i \, (C_{it} - C_{io}) \, (Y_{it} - Y_{io}) \\ & + (A_t - A_o) \sum_i W_i \, (C_{it} - C_{io}) \, (Y_{it} - Y_{io}) \end{aligned}$$

The elements on the right hand side of the above equation represent the changes in the aggregate output due to (a) area (b) yield (c) cropping pattern (d) interaction between area and yield (e) interaction between area and cropping pattern (f) interaction between yield and cropping pattern and (g) interaction between area, yield and cropping pattern.

The above model has been fitted for the periods 1950-53 to 1960-63, 1960-63 to 1971-74 and 1950-53 to 1971-74. Further, similar analysis has been carried out for four individual crops, rice, cumbu, cotton and groundnut separately for the same periods. The results are shown in Table-IX.

Table-IX Decomposition of Output

Crops	Period†	PERCENTAGE INCREASE ATTRIBUTED TO						
		INDIVIDUAL EFFECTS			INTERACTION EFFECTS			
		Area (A)	Per hectare Yield (Y)	Cropping Pattern (C)	Area and per hectare yield (AxY)	Area and cropping pattern (AxC)	Cropping pattern and per hectare yield (CxY)	Area, cropping pattern and per hectare yield (AxCxY)
1. All Crops*	50-63	23.51	28.59	19.52	10.91	7.45	3.63	1.39
	60-74	20.47	54.53	11.99	3.76	0.83	7.88	0.54
	50-74	22.42	28.04	15.32	13.38	7.31	9.16	4.37
2. Rice	50-63	22.51	25.70	21.16	9.81	8.08	9.22	3.52
	60-74	10.19	60.46	16.70	4.18	1.15	6.84	0.48
	50-74	13.55	29.07	14.56	13.87	6.94	14.90	7.11
3. Cumbu	50-63	26.59	95.47	-17.86	36.43	-6.82	-24.47	-9.34
	60-74	25.89	-56.59	-72.04	-3.91	-4.97	10.87	0.75
	50-74	60.70	128.85	-50.80	61.45	-24.23	-51.44	-24.53
4. Groundnut	50-63	39.89	17.87	21.90	6.82	8.35	3.74	1.43
	60-74	41.82	-191.81	86.55	-13.24	5.97	-27.40	-1.89
	50-74	75.27	-31.53	60.33	-15.04	28.77	-12.05	-5.75
5. Cotton	50-63	44.49	21.14	16.12	8.07	6.15	2.92	1.11
	60-74	16.26	-47.64	-76.61	-3.29	-5.29	15.50	1.07
	50-74	692.24	-83.82	-337.09	-39.98	-160.78	19.45	9.28

* - All crops include Rice, Cholam, Cumbu, Ragi, Varagu, Chillies, Total Pulses, Cotton and groundnut only.

† Period of Reference: 50-63 → 1950-53 to 1960-63
60-74 → 1960-63 to 1971-74
50-74 → 1950-53 to 1971-74

In the period 1950-63, the contribution of changes in area and yield were almost equal (about 29 per cent), while yield was responsible for more than 50 per cent of the increase in aggregate output during 1960-74. The percentage contribution of changes in cropping pattern was less during 1960-74 than that during 1950-63. For the total period 1950-74, the effect of yield on the aggregate output had been higher than that of area.

Coming to individual crops, during 1950-63, the output growth was positive for all the crops considered. The effects of area as well as yield were prominent. In the case of cumbu, yield effect was higher. The interaction effects constituted a lesser percentage than the individual effects.

During 1960-74, of the four crops considered, only rice had a positive output growth. Effect of yield was the main cause for increase in the case of rice, and decreases for cotton, cumbu, and groundnut.

In the total period, 1950-74, yield was the main cause for the increase in output of rice, cumbu. Extension of area was the significant factor in the case of groundnut.

In most of the cases, it is seen that the effects of increases in area is declining in the period 1960-74 compared to that of 1950-63. Hence for achieving higher production levels in future, mere extension of area alone may not suffice.

Rainfall and yield

As rainfall is a very important factor in the agriculture of Ramanathapuram district, its influence on yield is sought to be examined in this section.

Yield is taken as the dependent variable with time trend and rainfall as independent variables. Rainfall for particular crops at particular seasons would be relevant, but such data is not readily available. Other factors like fertilisers and irrigation facilities have not been considered for lack of data. Equations of the type

$$Y_t = \alpha + \beta T + \upsilon R_t$$

were fitted for a number of crops of which only rice, cholam, groundnut and cumbu yielded significant results. The data used related to the period 1950-51 to 1975-76.

The dummy variable R_t was taken as one, when annual rainfall exceeded 797.5 m.m. (five per cent less than normal for the district) and in other cases it was taken as zero.

The equations fitted are presented below

Rice: $Y_t = 746.75 + 7.50T + 203.25^{*} R_t$
(1.38) (2.12)

$R^2 = 0.24^{*}$

Cholam: $Y_t = 596.16 + 7.89^{*}T + 90.49^{+} R_t$
(2.61) (1.98)

$R^2 = 0.37^{*}$

Groundnut: $Y_t = 1205.61 - 15.24^{**}T - 33.81 R_t$
(3.11) (0.46)

$R^2 = 0.32^{*}$

Cumbu: $Y_t = 440.52 + 6.85^{+}T + 75.89 R_t$
(1.96) (1.45)

$R^2 = 0.24^{*}$

** - Significant at one per cent level
* - Significant at five per cent level
+ - Significant at ten per cent level
The figures in the brackets denote the 't' values.

The co-efficient 'β' for rainfall represents the difference in yield between the periods of high rain fall ($R_t = 1$) and low rain fall ($R_t = 0$). It is seen that the rain fall is significant for rice and cholam. Hence, in years of high rainfall, the rice yield is higher by more than 200 kg. and that of cholam by 90 kg. than in years of low rainfall.

Seed

A nucleus seed farm is functioning at Poorani in Srivilliputtur taluk. A horticultural development farm is located there. Three government seed farms are functioning at Devakottai, Paramakudi and Devadanam. Besides, there are also three coconut nurseries at Uchipulli, Singampunari and Devipattinam. In the State seed farms, multiplication of paddy and millet seeds are being done. During 1975-76, the distribution of seeds were as shown in Table X.

Table X
Distribution of Seeds (in Metric Tons)

Type of Seed		Quantity
Certified Paddy	...	329.56
Non-certified Paddy	...	405.99
Bulk Paddy	...	1202.91
Total Paddy	...	1938.46
Cholam Hybrid	...	4.28
Conventional Cholam	...	10.56
Hybrid cumbu	...	6.16
Ragi	...	9.03
Hybrid maize	...	0.91
Total millets	...	30.94

Source: Deputy Director of Agriculture, Madurai Region.

Fertilisers

Even though the use of chemical fertilisers is spreading in the district, the application levels remain very low. It should also be borne in mind that since agriculture is highly dependant on rainfall in the district, fertilisers consumption is indirectly associated with rainfall. Timely supply and prices are the other factors which influence the use of fertilisers by the cultivators. The fertiliser consumption details are given in Table-XI.

Table-XI

Consumption of Fertilisers

Ramanathapuram

Year	Consumption of Fertilisers (In Tonnes)				Consumption in Kg/ Hectare		
	N	P	K	Total	N	P	K
1968-69	2,864	580	192	3,636	4.58	0.93	0.31
1969-70	7,481	654	191	8,326	11.67	1.02	0.30
1970-71	7,927	1,892	1,132	10,951	12.70	3.03	1.81
1971-72	7,667	3,022	3,840	14,529	11.38	4.49	5.70
1972-73*	8,008	1,014	2,574	11,676	11.95	1.50	3.80
1973-74	7,063	1,408	2,084	10,555	10.73	2.14	3.17

* Data relates to the period 1.4.72 to 28.2.73 only

$$\text{Consumption in Kg/hectare} = \frac{\text{Consumption of fertiliser}}{\text{Total cropped area}}$$

Source: Directorate of Agriculture.

The [illegible]

Green Manures

About 551 metric tons of green manure seeds have been distributed during the Fourth Plan period. In 1975-76, 110.39 metric tons of green manure seeds were distributed and the area covered under green manures amounted to 0.57 lakh hectares.

Plant Protection

In the Fourth Plan period, an area of 5.20 lakh hectares land received plant protection benefits. During 1975-76, 2.86 lakh hectares of food crops and 1.02 lakh hectares of non-food crops were covered by pest and disease control measures and pre-treated seeds were used in 0.65 lakh hectares. The number of plant protection equipment distributed in 1975-76 was 175, including power and hand operated equipments.

Implements and Machinery

The use of improved farm machinery is not much common. Ploughs and carts are found in large numbers in the district. In 1974, there were 240,336 ploughs which included 24,466 iron ones. The number of oil engines with pumpsets for irrigation purposes increased from

227 in 1951 to 7809 in 1976. Electric pumpsets for irrigation was 30,103 in number in 1973-74 and increased to 35615 in 1976. The number of tractors in use was only 163 including 47 owned by government. The number in 1976 stood at 213. Data on agricultural implements and machinery are presented in appendix table 18.

Power

Ramanathapuram is one of the districts in the country where almost all the villages and towns have been electrified. The number of towns and villages electrified as on 31st March, 1976 was 6479. At that time the number of pumpsets energised stood at 33,800. Table XII gives the yearwise details about electrification.

Table XII
Electrification

Year	No.of villages and towns electrified as on 31st March	No.of pumpsets energised as on 31st March
1972	5109	26604
1973	6496	28738
1974	6496	30162
1975	6496	31692
1976	6479	33800

Source: Tamil Nadu Electricity Board.

Transport

The district has a well developed net work of roads, connecting the important Centres within the district as well as various commercial Centres in the neighbouring districts. The total road length of the district is about 6000 km. Only six per cent of these roads comes under National and State Highways. The rest are village and district roads. The average length per 100 sq.km. of area is nearly 48 km. and the road length per one lakh population is 210 kms.

The district has nearly 400 kms. length of railways passing through 19 of the 32 blocks. The average length of railways per 100 sq.km. of area is about 3 km. and per one lack population is 12.5 km.

The district has no important Port. Rameswaram, Pamban, Kilakarai and Tondi are all minor Ports. Mantapam, Vattanam, Periapattinam and Devipattinam are important fishing Ports. The available berthing facilities for fishing vessels are not sufficient.

Communication

The district has more than 600 post offices and 125 telegraph offices. There are nearly 5,000 telephones

and about 150 public call offices. The available telecommunications are not adequate in all parts of the district.

Financial Institutions

Ramanathapuram district is fairly well served by an adequate net work of 150 branches of commercial banks, located in 82 Centres. The population served per branch works out to 21,900. The deposits of the commercial banks have increased by 190 per cent from Rs.14.13 crores in 1973 to Rs.41.04 crores in 1976. With the opening of more branches, the commercial banks are expected to take active part in the implementation of various development programmes.

The Ramanathapuram District Co-operative Central Bank, with its head office at Madurai, has 30 branches, mostly at Panchayat Union head quarters. As on November, 1977, 440 primary agricultural co-operative credit societies were functioning in the district. Three Panchayat Unionswere having more than 20 societies each, 20 Panchayat Unions, between 11 and 20 societies each and only 9 Panchayat unions were having less than ten societies each. There are also Weaver's Co-operative Societies and other

industrial co-operative societies. Besides credit for cultivation of crops, the co-operatives have given substantial financial assistance for dairying and sheep rearing.

There are 17 primary Land Development Banks in the district with a membership of 1.30 lakhs. They provide long and medium term loans to the farmers for purposes like minor irrigation, purchase of tractors and construction of sheds and farm houses.

The Pandyan Grama Bank, the first and the only Regional Rural Bank in Tamil Nadu, was set up in March, 1977. Having its head quarters at Sattur, it has 13 branches in Ramanathapuram district. The resources of the Pandyan Grama Bank comprises of the deposits and borrowings from the Reserve Bank of India and the sponsoring bank viz. the Indian Overseas Bank. At present the bank has refinance limits of Rs.60 lakhs from the Reserve Bank of India and Rs.40 lakhs from its sponsoring bank. These credit limits are for the bank as a whole for financing in Ramanathapuram and Tirunelveli districts. The bank has immediate plans to open its branches in areas with insufficient banking facilities.

Animal Husbandry

Dairying and sheep rearing are two important subsidiary occupations followed by the cultivators and agricultural labourers in Ramanathapuram district which is endowed with a high animal population , exceeding the human population. According to the 1974 Livestock Census; the district's animal population formed 3.7 per cent of the total animal population of Tamil Nadu. Among livestock, sheep account for the major portion.

Table XIII
Animal Population (In '000's)

Year	Livestock			Poultry		
	District	State	Per cent	District	State	Per cent
1951	2341	24924	9.39	397	3306	10.30
1956	1975	23164	8.53	1069	10416	10.27
1961	1820	24638	7.39	1083	11293	9.59
1966	1848	24569	7.52	1081	11226	9.63
1974	1824	23433	7.79	1345	12978	10.36

Source: Season and Crop Reports of Tamil Nadu

The poultry population has been increasing over the years. The proportion of poultry to the total animal population has also gone up from 27.71 per cent in 1951 to 42.45 per cent in 1974. Appendix table 18 gives the livestock Census figures from 1951 to 1974.

The cow population is found in large numbers in Sivaganga, Tiruvadanai and Tiruppathur Panchayat Unions Buffaloes are concentrated in Srivilliputhur and Sattur taluks. In recent years, The Tamil Nadu Dairy Development Corporation has established a net work of milk collection centres in certain blocks. Two milk chilling plants are functioning at Srivilliputhur and Virudhunagar with a total capacity of 10,000 litres. Another plant is coming up soon at Paramakudi with a capacity of 5000 litres. There are 75 milk producers' Co-operative Societies in the district. Still, the private vendors figure prominently in the collection and distribution of milk. The milk production in the district was estimated at 44 thousand litres in 1973-74.

Besides dairy development, sheep rearing is an important occupation in the rural areas of the district. The district has a sizeable sheep population, but they are mostly of low quality in genetic potential. Further, they suffer from malnutrition on account of the poor quality of available for age and excessive pressure on grazing lands. Hence the mutton yield is low. Sheep penning is an important source of soil fertility in the district. There are about 65,000 sheep breeders' households in the district, with Aruppukkottai having the largest number. It is closely followed by Paramakudi, Thiruvadanai and Mudukalattur taluks. Large sheep population is also found in Sattur, Sivaganga and Srivilliputhur taluks.

In rearing sheep, three different practices are prevalent in the district. "Varam" method in which landless labourers take share in the female progeny is popular in Aruppukkottai area. Well to do farmers of Kamuthi area employ shepherds to look after their herds. Landless and poor shepherds in Ramanathapuram area keep their own flocks and depend entirely upon them for their livelihood.

There are twenty Sheepbreeders' Co-operative Society in the district. A sheep farmils located at Sattur. Traders in meat animals visit the farms and make the purchases. The sheep breeders rarely have to go out to sell their stock.

Poultry development has not been significant in the district. Annual production of eggs increased from 557 lakhs in 1970-71 to 612 lakhs in 1973-74.

The number of veterinary dispensaries in the district is 45. Facilities for artificial insemination are available in 22 of them. There are also about 175 sub-centres and 43 of them are having provisions for artificial insemination.

The Ramanathapuram District Livestock Farm, started in 1956, is located in an area of 640 hectares at Chettinad in Sakkottai Panchayat Union. It saves as a demonstration and training centre for scientific breeding, housing and management of cattle, maintenance of approved breeds of cattle, pasture management and fodder production and research on problems connected with animal husbandry. A poultry extension centre and a sheep unit are also attached to the livestock farm.

Fisheries

. Ramanathapuram has the longest coastal line in Tamil Nadu, stretching to a length of about 273 kms. This is nearly one fourth of the total coast line of the State. About ten per cent of the active marine fishermen in Tamil Nadu are found in the district distributed over 74 coastal villages.

This is the only district where fishing could be carried ontthroughout the year, because of the geographical location of the fishing grounds. The fishermen have only to change their base of operation. Usually, fishing is carried out in the Palk Bay from April to October and in the Gulf of Mannar from November to March. The fishermen mostly have to rely on country crafts like catamarans and canoes to do their fishing. Only about 500 mechanised boats were in use at the end of 1976.

The district's marine fish landings account for about one fifth of the State's total landings. In 1974-75, the total marine fish landings of the district was 42,265 matric tonnes. Marine fish landings from 1962-63 to 1974-75 are given in Appendix table 20. The district leads in the State's production of silver bellies, a kind

of non-edible fish, that is used in the manufacture of fish meal, an important cattle and poultry feed. The district's coast is also rich in prawns, and lobsters both of which are exported. Sardines, skater and rays, perches, Cat fish, sea fish and sabres are other important varieties found along the coast.

The establishment of the Indo-Norwegian Project at Mandapam has transformed the fishing operations in the district. The project has a Boat Building yard and a marine engineering workshop to build and supply improved types of boats to the fisherman and a 'Fisheries Training Centre' to impart training to the local fishermen. A freezing plant with a freezing capacity of ten tonnes, frozen cold storage capacity of 50 tonnes, chilled cold storage capacity of 50 tonnes and ice storage capacity of 60 tonnes are available. An ice plant with a capacity to produce 15 tonnes daily is also functioning under the project. The fish meal plant here is processing 50 tonnes of raw materials daily to manufacture fish meal.

The Central Marine Fisheries Research Institute is also located at Mandapam. The Inshore Fishing Survey Station, at Rameswaram systematically surveys the area near Ramanathapuram to locate the potential fishing grounds. There are also 50 fishermen Co-operative Societies in the district. If facilities like harbours, boat repairing and transport are made available throughout the coastal areas, marine fishing is certain to make very rapid improvements in the district.

Forestry

Even though the area of the district accounts for more than one tenths of the area of Tamil Nadu, forest area in the district is just about two per cent of the total forest area in the State. The district's forest is mostly found in Tirupattur and Srivilliputtur taluks. Nearly 85 per cent of the district's forest area is located in these taluks.

A quantity of three to five tonnes of dead sandal trees is realised and a revenue of half a lakh of rupees is obtained every year. In the eastern taluks, casuariana plantations are being raised. This not only checks sea-erosion but forms a good source of revenue. An average

annual income of rupees two lakhs has been realised from 1970 onwards from the trees planted in Rameswaram islands. From the present area of 80 hectares, it is proposed to extend the area under trees to 1600 hectares in these islands, during the perspective plan period.

Cashew plantations have been developed with the financial and technical assistance of the Department of Agriculture. Extensive cultivation of cashew in this region, the soil being ideally suited for this purpose, is expected to provide adequate raw materials for starting industries like fenny liquor extraction from cashew apples and cashew processing units.

Some quick growing species like eculyptus and soft wood trees have been planted during the Fourth Plan period. In the western taluks, tamarind, a commercial crop, has been proposed to be raised in 740 hectares during the perspective plan period. Babul trees, suitable for fuel, could be raised in both western and eastern taluks.

District income

The income of the district in 1970-71, estimated by industries of origin (at current prices) was

Rs.3723.53 lakhs. Table gives the details.

Table XIV
District Income (1970-71)
(at current prices)

(Rs. in lakhs)

Sl.No.	Industry Group	East Ramanatha-puram	West Ramanathapuram
1.1.	Agriculture	2817.00	1956.00
1.2	Animal husbandry	543.09	336.26
2	Forestry and logging	13.76	13.00
3	Fishing	152.42	5.30
4	Mining and quarrying	9.72	46.47
	Sub total: Primary	3536.79	2357.03
5.1	*Manufacturing (under Factories Act)	111.00	502.00
5.2	Manufacturing (others)	755.00	1461.71
	Grand Total:	4402.79	4320.74

*As the data for '71-72 is the one readily available, they have been used here instead of '70-71'.

Source: State Accounts Statistics, Tamil Nadu - Issued by the Department of Statistics, Government of Tamil Nadu.

Land holdings and tenure

The average size of operational holding in the district, according to the Agricultural Census of 1971, was 1.34 hectares, compared to 1.50 hectares for the State as a whole. There were about 5.9 lakh holdings covering an area of 7.9 lakh hectares. Except for a very small number, all were individual holdings. More than 61 per cent of the holdings were less than one hectare in size. Distribution of operational holdings by size of operational holdings are given in table XV.

The number of small and marginal farmer households in the district was 2.34 lakhs in 1971 and the number of agricultural labour households was 1.20 lakhs. These accounted for nearly 84 per cent of the total cultivating households.

Of the total of 588,741 holdings 570,301 holdings covering an area of 751,809 hectares, were owned and self-operated. This formed about 96.87 per cent of the total number of holdings and 95.52 per cent of the total operated area. 7930 holdings with an area of 8255 hectares were rented under one form of tenure. The types of tenancies included those for fixed money, for fixed produce and

Table XV Distribution of Number of Operational Holdings and Area Operated - By Size classes and Percentages

Ramanathapuram

Sl. No.	Size Class (Hectares)	No. of Holdings	%	Area under the holdings (Hectares)	%
1.	0 - 0.5	231,126	39.26	58,219.35	7.40
2.	0.5 - 1	131,258	22.29	94,819.97	12.05
3.	1 - 2	116,927	19.86	165,581.59	21.04
4.	2 - 3	47,867	8.13	115,858.89	14.72
5.	3 - 4	23,536	4.00	81,088.43	10.30
6.	4 - 5	13,040	2.21	58,019.84	7.37
7.	5 - 10	19,880	3.38	132,861.31	16.88
8.	10 - 20	4,321	0.73	56,362.94	7.16
9.	20 - 30	523	0.09	12,510.28	1.59
10.	30 - 40	167	0.03	5,689.03	0.72
11.	40 - 50	48	0.01	2,056.39	0.26
12.	Above 50	48	0.01	4,027.60	0.51
	Total:	588,741	100.00	787,095.62	100.00

272808

Source: World Agricultural Census - Tamil Nadu(1970-71)- Volume II

for share of produce. 10,460 holdings with an area of 27031 hectares were operated under more than one form of tenure.

Village studies conducted in Ramanathapuram district by the Agricultural Economics Research Centre, Madras, showed that crop-sharing was a very popular form of tenancy in the district. The rent paid varied between one third and half of the produce. Land revenue was paid by the owner and the tenant had to meet the other cultivation expenses. In some cases, the expenditure on fertilisers were shared by the tenant and the owner in the same proportion in which the produce was shared.

Marketing

The Ramanathapuram Market Committee runs regulated markets at thirteen Centres in the district. The notified commodities traded in the regulated markets include paddy, groundnut, gingelly, chillies, cotton, canr jaggery and cashewnuts.

Godown facilities are available with 215 agricultural credit and multipurpose societies and 12 marketing societies. The regulated markets also have godowns. Besides,

Rajapalayam and Virudhunagar have warehouses. Since the existing market yards are insufficient, it has been suggested to construct a few market yards in Virudhunagar, Rajapalayam, Sattur, Aruppukkottai, Ramanathapuram and Singampunari. Some of these are already in progress.

The Co-operative Marketing Societies arrange for the sale of produce of their members and a few also undertake to make outright purchases of the produce. Marketing of fertilisers and procurement of food grains are carried out through these Societies. A few Societies have undertaken the distribution of plant protection chemicals.

In table XVI the value of agricultural commodities and requisites handled by the co-operatives in Ramanathapuram district during 1970-73 is given.

Table XVI

Agricultural commodities and requisites handled through co-operatives (value) for Ramanathapuram district.

Year	Value of agricultural produce sold (Rs. in lakhs)	Value of agricultural requisites supplied (Rs. in lakhs)
1970-71	28.03	51.22
1971-72	72.28	89.20
1972-73	35.60	171.08

Source: An Economic Appraisal of Tamil Nadu-1975.

Prices

The farm harvest prices of principal agricultural commodities have been steadily increasing during the period 1950 to 1974. In many cases, the increase amounted to more than three to four times. In 1974-75, there was a very steep increase in the farm harvest prices, but in 1975-76, they declined considerably. The farm harvest price of paddy which was Rs.30.23 per quintal in 1953-54, rose upto Rs.83.44 per quintal in 1973-74, suddenly shot up to Rs.142.60 in 1974-75 and came down to Rs.115.72 in 1975-76. All the other principal agricultural produces also behaved in a similar manner.

The retail prices of principal food grains have been climbing up in the period 1950-51 to 1973-74. During 1974-75, the increase of retail prices over that of the previous year prices was more than two to three times. However, they came down significantly in 1975-76. The details of farm harvest prices and retail prices are given in appendix tables 21 and 22 respectively.

Wages

Wages of agricultural labour had increased by more than three times during the period between 1960-61 to 1975-76. For field operations like ploughing, sowing, transplanting, weeding, harvesting, etc. the daily wages had gone up from Rs.1.35 in 1960-61 to Rs.4.45 in 1975-76, while for females the increase was from Rs.0.97 to Rs.3.10. The wage for non-adults went up from Rs.0.75 in 1960-61 to Rs.2.41 in 1975-76. For herdsmen, the daily wages had gone up from Rs.1.05 in 1960-61 to Rs.3.93 in 1975-76 for males and for females from Re.1.00 to Rs.2.22. For other types of agricultural work, daily wages for men rose by nearly three and a half times and those for women by nearly three times.

As for skilled labour, the daily wages had increased from Rs.2.00 to Rs.6.39 for carpenters and from Rs.2.00 to Rs.5.38 for blacksmiths in the period between 1960-61 and 1973-74. Data on daily wages for agricultural labour and skilled labour are shown in the appendix table 23.

Development Programmes

1) Drought Prone Area Programme

Ramanathapuram, often harassed by severe drought, is the least developed among the districts of Tamil Nadu in agricultural and industrial growth. In order to develop this drought prone district, a Drought Prone Area Programme has been in operation from March, 1974. The main objective of the programme is to provide employment and income to small and marginal farmers and landless agricultural labourers by developing subsidiary activities like dairying and sheep rearing. Assistance is given in the ~~given~~ form of loans and subsidies. Rural artisans and palmyrah toppers are also helped by the programme. Reconditioning of 575 tanks by desilting, deepening and bunding have been carried out under the programme. A ~~proposal~~ proposal to construct 100 tube wells at a cost of one crore rupees has been submitted to Government of India.

2) High Yielding Varieties Programme

The High Yielding Varieties Programme was introduced in the district in 1966-67. The coverage of area under high yielding paddy varieties had risen from

3336 hectares in 1966-67 to 437,766 hectares in 1973-74. In the same period area under hybrid millets increased from 1504 hectares to 28,137 hectares. During the Fourth Plan period about 7000 metric tonnes of improved seeds of paddy and millets were distributed:

Table XVII
Area under High Yielding Varieties

(area in hectares)

Year	H.Y.V. Paddy	Hybrid millets
1966-67	3336	1504
1967-68	8422	3602
1968-69	8473	5739
1969-70	29942	9313
1970-71	213475	11691
1973-74	437766	28137

Source: Director of Agriculture, Tamil Nadu.

3) Others

For improving minor irrigation, a scheme is in operation for digging out 3326 wells and fit them with pumpsets, deepening of 305 wells and installation of 695 pumpsets. This scheme has a financial assistance of Rs.429 lakhs from the Agricultural Refinance and Development Corporation.

The Intensive Sugarcane Development Programme has been implemented in Thiruppuvanam and Manamadurai regions. Special programmes to increase the output of oil seeds by bringing 39,000 hectares under groundnut, 13,000 hectares under gingelly and 20,000 hectares under sun flower are already going on in the district. Intensive vegetable cultivation scheme is in operation in Tirupathur and Thiruppuvanam areas.

Schemes under "the Perspective Plan"

With a view to increase the per capita income and provide full employment, a number of schemes have been envisaged in the 'Perspective Plan' (1972-73 to 83-84) prepared by the State Planning Commission.

Agriculture

Intensive Agricultural Area Programme to increase the productivity of food grains (with special efforts for paddy) Integrated Dryland Development Scheme, Dry Farming scheme and Intensive Cotton Development schemes are some of the important ones to be carried out during the perspective plan period. Others envisaged include 'opening of farmers' training Centre', 'intensive

vegetable schemes', schemes for reclamation of acid, saline and alkaline lands, and schemes for production of good quality seeds. A number of projects to improve irrigation have also been suggested.

Animal Husbandry

Six schemes, aiming to increase the per capita consumption of milk, egg and meat and to improve the quality of cattle and cattle feed, poultry and pigs are planned to be implemented.

Forestry

Schemes envisaged under 'Forestry' give importance for increasing the forest produce, increasing of area under casuarina and cashew plantations and cultivation of quick growing species. Plans for construction of quarters for staff have also been drawn.

Fisheries

Fishing, being very important in the district's economy, emphasis has been given to its development. About ten projects have been drawn up to provide facilities like harbour, boat building and repairing, storage and transport facilities.

BIBLIOGRAPHY

Bibliography

1. Agricultural Economics Research Centre, Madras, Agricultural Development in Tamilnadu, Vol.I and II, 1976.

2. _____, Aralikottai Village, Survey and Resurvey Reports.

3. _____, Rajagambiram Village, Survey and Resurvey Reports.

4. _____, Uppathur Village, Survey and Resurvey Reports.

5. _____, Vadamalaipuram Village, Survey Report.

6. Department of Agriculture, Tamilnadu, Annual Production Programme, 1976-77, Madurai Region.

7. Department of Statistics, Tamilnadu, Reports on the Livestock Census, for the years 1951, 1956, 1961, 1966 and 1974.

8. _____, Season and Crop Reports for the years 1950-51 to 1975-76.

9. _____, Socio Economic Indications of Regional Development in Tamilnadu, 1978.

10. _____, State Accounts Statistics, Tamilnadu, 1976.

11. Government of India, District Census Handbook, Ramanathapuram for the years 1951, 1961 and 1971.

12. Government of Tamilnadu, An Economic Appraisal, for the years, 1972 to 1977.

13. _____, World Agricultural Census, 1970-71, Tamilnadu, Vol.I and II, 1974.

14. Indian Overseas Bank, Credit Plan for Ramanathapurm District, Tamilnadu, 1978.

15. Minhas B.S. and Vaidyanathan, A., "Growth of output in India, 1951-54 to 1958-61 - An Analysis by Component Elements", Journal of Indian Society of Agricultural Statistics, Vol.XVII No.2, 1965, pp.230-252.

16. State Planning Commission, Tamilnadu, Towards An Affluent District Economy - A perspective Plan for Ramanathapuram - East Development District, 1973.

17. _____, Towards An Affluent District Economy - A perspective Plan for Ramanathapuram - West Development District, 1973.

****

Section Two - Appendix Tables

Appendix Table 1 Average Rainfall (In M.M.)

Ramanathapuram

Year	South West Monsoon	North East Monsoon	Winter	Summer	Total
1950-51	154.94	294.64	-	259.08	708.66
51-52	213.36	396.24	-	137.16	746.76
52-53	93.98	269.24	-	195.58	558.80
53-54	238.76	441.96	127.00	213.36	1021.08
54-55	177.80	350.52	25.40	213.36	767.08
55-56	165.10	680.72	30.48	38.10	914.40
56-57	203.20	525.78	7.62	35.56	772.16
57-58	170.18	523.24	17.78	154.94	866.14
58-59	161.20	266.60	44.90	120.40	593.10
59-60	140.10	420.30	25.70	189.20	775.30
60-61	241.30	529.90	109.00	92.20	972.40
61-62	136.80	384.10	34.93	132.10	688.20
62-63	179.30	446.00	88.30	185.90	899.50
63-64	203.00	492.50	2.70	74.20	772.40
64-65	240.00	337.10	18.50	111.60	707.20
65-66	227.10	442.30	32.50	97.00	798.90
66-67	268.20	589.10	3.90	106.40	967.60
67-68	145.00	700.90	5.50	171.90	1023.30
68-69	162.50	359.20	26.00	77.00	624.70
69-70	155.70	505.40	37.50	164.30	862.90
70-71	170.10	297.60	14.60	167.60	649.90
71-72	246.60	572.30	7.80	190.20	1016.90
72-73	207.00	530.00	0.60	65.50	803.10
73-74	199.20	554.80	24.40	102.10	880.50
74-75	127.20	168.80	11.10	117.90	425.00
75-76	248.20	255.90	0.20	88.30	592.60

Appendix Table 2 Workers and Non-workers in Ruraland Urban Areas (Classification by Sex)

Ramanathapuram

Category	Year	Rural		Urban		Total	
		Males	Females	Males	Females	Males	Females
1. Cultivators	1961	340,779	256,448	12,578	5,976	353,357	262,424
	1971	296,277	61,840	11,930	1,853	308,207	63,693
2. Agricultural Labourers	1961	67,794	86,897	6,208	6,787	74,002	93,684
	71	144, 001	108,699	13,592	8,753	157,593	117,452
3. Livestock, Fishery, Forestry etc.	61	15,809	1,678	4,390	846	20,199	2,518
	71	18,779	2,523	3,981	388	22,760	2,911
4. Mining, Quarying etc.	61	(included in 3)					
	71	1,386	429	2	-	1,388	429
5. Manufacturing, Processing, etc. (Household)	61	21,955	23,828	19,429	26,595	41,384	50,423
	71	14,890	9,050	17,804	16,657	32,694	25,707
6. Manufacturing other than Household	61	12,169	5,205	27,361	6,510	39,530	11,715
	71	30,027	13,443	36,243	11,047	66,270	24,490
7. Construction	61	2,907	219	5,765	791	8,672	1,010
	71	4,676	465	6,112	727	10,788	1,192
8. Trade and Commerce	61	14,678	2,663	29,855	2,478	44,533	5,141
	71	25,328	2,189	47,974	2,816	73,302	5,005
9. Transport, Storage & Communication	61	2,415	15	7,882	129	10,297	144
	71	4,535	48	9,791	124	14,326	172
10. Other Services	61	52,770	34,515	40,137	14,915	92,907	49,430
	71	38,510	8,632	36,038	8,786	74,548	17,418
11. Non-workers	61	350,871	528,692	140017	240838	490888	769,530
	71	451,169	876,649	187790	324254	638959	1200903
12. Total Population	61	882,147	940,160	293622	305859	1175769	1246019
	71	1029,578	1083967	371257	375405	1400835	1459372

Source: Census of India - District Census Handbook.

Land Utilization

Codes used in Appendix Tables 3, 4 and 5

1. Total geographical area by village papers.
2. Forests
3. Barren and uncultivable land
4. Land put to non-agricultural uses
5. Land not available for cultivation (3 + 4)
6. Cultivable waste
7. Permanent pastures and grazing lands
8. Land under miscellaneous tree, crops and groves
9. Total (6 + 7 + 8)
10. Current fallows
11. Other fallow lands.
12. Total fallow lands (10 + 11)
13. Net area sown
14. Area sown more than once
15. Total cropped area (13 + 14)

Appendix Table 3 Land Utilisation (Area in Hectares)

Ramanathapuram

Year	1	2	3	4	5	6
1950-51	1,249,948	24,156	129,065	147,157	276,222	247,383
51-52	1,249,749	24,156	129,067	148,578	277,645	240,718
52-53	1,249,749	25,391	166,965	129,951	296,916	205,343
53-54	1,249,749	25,391	166,965	115,009	281,974	165,291
54-55	1,249,749	25,391	166,965	115,009	281,974	139,369
55-56	1,749,749	25,391	166,965	115,386	282,351	142,497
56-57	1,249,749	25,391	164,739	115,050	279,789	114,510
57-58	1,249,743	25,391	164,758	115,348	280,106	123,698
58-59	1,249,749	25,391	164,758	115,348	280,106	122,547
59-60	1,249,749	25,391	164,758	115,359	280,117	116,973
60-61	1,249,749	25,391	164,758	115,358	280,116	118,280
61-62	1,249,749	72,362	80,458	108,360	188,818	124,100
62-63	1,249,748	56,287	87,739	148,065	235,804	116,210
63-64	1,249,749	54,454	87,677	132,533	220,210	129,421
64-65	1,249,749	54,637	87,494	134,133	221,627	129,383
65-66	1,249,750	54,637	87,494	134,133	221,627	128,676
66-67	1,249,749	54,637	87,494	134,428	221,922	127,173
67-68	1,249,748	54,637	87,494	134,833	222,327	125,230
68-69	1,249,749	53,973	87,494	137,529	225,023	124,194
69-70	1,242,762	45,649	54,276	215,511	269,787	86,958
70-71	1,242,762	45,413	53,974	215,818	269,792	89,307
71-72	1,242,762	43,868	53,974	215,818	269,792	87,353
72-73	1,242,795	43,841	53,741	216,915	270,656	86,035
73-74	1,242,795	43,660	53,589	220,318	273,907	82,045
74-75	1,248,862	47,831	19,965	229,624	249,589	40,832
75-76	1,250,275	47,831	19,580	231,690	251,270	40,952

Appendix Table 3 (Contd.)
Ramanathapuram

Year	7	8	9	10	11	12
1950-51	16,864	23,507	237,754	241,995	93,399	335,394
51-52	16,864	25,131	232,713	143,409	25,120	168,529
52-53	15,448	21,210	242,001	189,713	41,654	231,367
53-54	15,448	21,212	201,951	143,409	41,654	185,063
54-55	15,448	21,229	176,046	156,093	47,566	203,659
55-56	15,448	22,320	180,265	176,661	54,998	231,659
56-57	17,273	22,068	153,851	167,840	40,363	208,203
57-58	17505	19,813	161,021	205,426	56,654	262,080
58-59	17,505	20,532	160,584	193,593	43,960	237,553
59-60	17,505	20,490	154,968	166,112	71,448	237,560
60-61	17,505	20,756	156,541	130,696	74,228	204,924
61-62	12,007	22,599	158,706	168,524	81,982	250,506
62-63	10,339	24,488	151,037	136,028	51,527	187,555
63-64	10,555	26,471	166,447	140,684	51,120	191,804
64-65	10,615	26,170	166,168	165,760	51,104	216,864
65-66	10,615	25,332	164,673	137,099	46,612	186,711
66-67	10,615	25,436	163,224	121,683	55,183	176,866
67-68	10,615	26,645	162,490	115,836	50,835	166,721
68-69	10,615	27,064	161,873	139,387	58,244	197,631
69-70	4,356	9,241	101,055	135,062	63,443	198,505
70-71	4,794	8,464	102,565	153,462	60,643	214,105
71-72	4,999	10,200	102,552	124,314	54,211	178,525
72-73	4,937	10,603	101,575	119,946	53,689	173,635
73-74	4,937	10,328	97,810	130,469	56,203	186,672
74-75	3,336	7,032	51,200	335,961	88,098	424,059
75-76	3,100	5,044	49,096	199,124	98,267	297,391

Appendix Table 3 (Contd.)
Ramanathapuram

Year	13	14	15
1950-51	326,423	19,611	346,034
51-52	496,705	34,718	531,423
52-53	454,075	28,532	482,607
53-54	555,370	52,266	607,636
54-55	562,678	21,690	584,368
55-56	530,084	21,979	552,063
56-57	582,515	30,136	612,651
57-58	521,145	28,855	550,000
58-59	546,115	43,867	589,982
59-60	551,713	45,173	596,886
60-61	582,777	47,538	630,315
61-62	579,357	34,342	613,699
62-63	619,065	15,984	635,049
63-64	616,834	26,034	642,868
64-65	590,453	15,091	605,544
65-66	622,102	14,327	636,429
66-67	633,100	25,079	658,179
67-68	643,573	28,443	672,016
68-69	611,244	14,542	625,786
69-70	627,766	13,516	641,282
70-71	610,887	13,535	624,422
71-72	648,025	25,418	673,473
72-73	653,088	23,828	676,916
73-74	640,746	17,654	658,400
74-75	476,183	14,447	490,630
75-76	604,687	13,849	618,536

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table 4: Land Utilisation Percentages
Ramanathapuram

Year	1	2	3	4	5	6	7	8
1950-51	100.0	1.9	10.3	11.8	22.1	19.3	1.3	1.9
51-52	100.0	1.9	10.3	11.9	22.2	19.8	1.4	2.0
52-53	100.0	2.0	13.4	10.4	23.8	16.4	1.2	1.7
53-54	100.0	2.0	13.4	9.2	22.6	13.2	1.2	1.7
54-55	100.0	2.0	13.4	9.2	22.6	11.2	1.2	1.7
55-56	100.0	2.0	13.4	9.2	22.6	11.4	1.2	1.9
56-57	100.0	2.0	13.2	9.2	22.4	9.2	1.4	1.8
57-58	100.0	2.0	13.2	9.2	22.4	9.9	1.4	1.6
58-59	100.0	2.0	13.2	9.2	22.4	9.8	1.4	1.7
59-60	100.0	2.0	13.2	9.2	22.4	9.4	1.4	1.6
60-61	100.0	2.0	13.2	9.2	22.4	9.5	1.4	1.7
61-62	100.00	5.8	6.4	8.7	15.1	9.9	1.0	1.8
62-63	100.0	4.5	7.0	11.9	18.9	9.3	0.8	2.0
63-64	100.0	4.4	7.0	10.6	17.6	10.4	0.8	2.1
64-65	100.0	4.4	7.0	10.7	17.7	10.4	0.8	2.1
65-66	100.0	4.4	7.0	10.7	17.7	10.3	0.8	2.0
66-67	100.0	4.4	7.0	10.8	17.8	10.2	0.8	2.0
67-68	100.0	4.4	7.0	10.8	17.8	10.0	0.8	2.1
68-69	100.0	4.3	7.0	11.0	18.0	9.9	0.8	2.2
69-70	100.0	3.8	4.4	17.2	21.6	7.0	0.4	0.7
70-71	100.0	3.7	4.3	17.3	21.6	7.2	0.4	0.7
71-72	100.0	3.5	4.3	17.4	21.7	7.0	0.4	0.8
72-73	100.0	3.5	4.3	17.6	21.9	6.9	0.4	0.9
73-74	100.0	3.5	4.3	17.7	22.0	6.6	0.4	0.9
74-75	100.0	3.8	1.6	18.5	20.1	3.2	0.3	0.6
75-76	100.0	3.8	1.6	18.5	20.1	3.3	0.2	0.4

Source: Season and Crop Reports of Tamil Nadu

Appendix Table 4 (Contd.) Land Utilisation

Ramanathapuram

Year	9	10	11	12	13	14	15
1950-51	23.0	19.4	7.5	26.9	26.1	1.6	27.7
51-52	23.2	11.0	2.0	13.0	39.7	2.8	42.5
52-53	19.3	15.2	3.3	18.5	36.4	2.3	38.7
53-54	16.1	11.5	3.3	14.8	44.5	4.1	48.6
54-55	14.1	12.5	3.8	16.3	45.0	1.7	46.7
55-56	14.5	14.1	4.4	18.5	42.4	1.8	44.2
56-57	12.4	13.4	3.2	16.6	46.6	2.4	49.0
57-58	12.9	16.5	4.5	21.0	41.7	2.3	44.0
58-59	12.9	15.5	3.5	19.0	43.7	3.5	47.2
59-60	12.4	13.3	5.7	19.0	44.2	3.6	47.7
60-61	12.6	10.5	5.9	16.4	46.6	3.8	50.4
61-62	12.7	13.5	6.5	20.0	46.4	2.7	49.1
62-63	12.1	10.9	4.1	15.0	49.5	1.3	50.8
63-64	13.3	11.3	4.1	15.4	49.3	2.1	51.4
64-65	13.3	13.3	4.1	17.4	47.2	1.2	48.6
65-66	13.1	11.0	4.0	15.0	49.8	1.1	50.9
66-67	13.0	9.7	4.4	14.1	50.7	1.0	51.7
67-68	12.9	9.3	4.1	13.4	51.5	2.3	53.8
68-69	12.9	11.2	4.7	15.9	48.9	1.2	50.1
69-70	8.1	10.9	5.1	16.0	50.5	1.1	51.8
70-71	8.3	12.3	4.9	17.2	49.2	1.0	50.2
71-72	8.2	10.0	4.4	14.4	52.2	2.0	54.2
72-73	8.2	9.6	4.3	13.9	52.5	1.9	54.4
73-74	7.9	10.5	4.5	15.0	51.6	1.4	53.0
74-75	4.1	26.9	7.0	33.9	38.1	1.2	39.3
75-76	3.9	15.9	7.9	23.8	43.4	1.1	49.5

Appendix Table 5: Land Utilisation - Index Nos. (52-53 = 100.0)

Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1950-51	100.0	95.1	77.3	113.2	93.0	120.4	109.1	110.8	118.9
51-52	100.0	95.1	77.3	114.3	93.5	117.2	109.1	118.4	116.8
52-53	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
53-54	100.0	100.0	100.0	88.5	94.9	80.4	100.0	100.0	83.4
54-55	100.0	100.0	100.0	88.5	94.9	67.8	100.0	100.0	72.7
55-56	100.0	100.0	100.0	88.7	95.0	69.3	100.0	105.2	74.4
56-57	100.0	100.0	98.6	88.5	94.2	55.7	111.8	104.0	63.5
57-58	100.0	100.0	98.6	88.7	94.3	60.2	113.3	93.4	66.5
58-59	100.0	100.0	98.6	88.7	94.3	59.6	113.3	96.8	66.3
59-60	100.0	100.0	98.6	88.7	94.3	56.9	113.3	96.6	64.0
60-61	100.0	100.0	98.6	88.7	94.3	57.6	113.3	97.8	64.6
61-62	100.0	284.9	48.1	83.3	63.5	60.4	77.7	106.5	65.5
62-63	100.0	221.6	52.5	113.9	79.4	56.5	66.9	115.4	62.4
63-64	100.0	214.4	52.5	101.9	74.1	63.0	68.3	124.8	68.7
64-65	100.0	215.1	52.4	103.2	74.6	63.0	68.7	123.3	68.6
65-66	100.0	215.1	52.4	103.2	74.6	62.6	68.7	119.6	68.9
66-67	100.0	215.1	52.4	103.4	74.7	61.9	68.7	119.9	67.4
67-68	100.0	215.1	52.4	103.7	74.8	60.9	68.7	125.6	67.1
68-69	100.0	212.5	52.4	105.8	75.7	60.4	68.7	127.6	66.8
69-70	99.4	179.7	32.5	165.8	90.8	42.3	31.4	43.5	41.7
70-71	99.4	178.8	32.3	166.0	90.8	43.4	31.0	39.9	42.3
71-72	99.4	172.7	32.3	166.0	90.8	42.5	32.3	48.0	42.3
72-73	99.4	172.6	32.1	166.9	91.1	41.8	31.9	49.9	41.9
73-74	99.4	171.9	32.0	169.5	92.2	39.9	31.9	51.0	40.4
74-75	99.9	188.4	12.0	176.7	84.1	19.9	21.6	33.2	21.2
75-76	100.0	188.4	11.7	178.3	84.6	19.9	20.1	23.8	20.3

Appendix Table 5 (Contd.)

Year	(10)	(11)	(12)	(13)	(14)	(15)
1950-51	127.5	224.2	144.9	71.8	68.7	71.7
51-52	75.5	60.3	72.8	109.3	121.6	110.1
52-53	100.0	100.0	100.0	100.0	100.0	100.0
53-54	75.5	100.0	79.9	122.3	183.1	125.9
54-55	82.2	114.1	88.0	123.9	76.0	121.0
55-56	93.1	132.0	100.1	116.7	77.0	114.3
56-57	88.4	96.9	89.9	128.2	105.6	126.9
57-58	108.2	136.0	113.2	114.7	101.1	113.9
58-59	102.0	105.5	102.6	120.2	153.7	122.2
59-60	87.5	171.5	102.6	121.5	158.3	123.6
60-61	68.8	178.2	88.5	128.3	166.6	130.6
61-62	88.8	196.8	108.2	127.5	120.3	127.1
62-63	71.7	123.7	81.0	136.3	56.0	131.5
63-64	74.1	122.7	82.9	135.8	91.2	133.2
64-65	87.3	122.6	93.7	130.0	52.3	125.4
65-66	72.2	119.1	80.6	137.0	50.2	131.8
66-67	64.1	132.4	76.4	139.4	87.8	136.3
67-68	61.0	122.0	72.0	141.7	99.6	139.2
68-69	73.4	139.8	85.4	134.6	50.9	129.6
69-70	71.1	152.3	85.7	138.2	47.3	132.8
70-71	80.8	145.5	92.5	134.5	47.4	129.3
71-72	65.5	130.1	77.1	142.7	89.0	139.5
72-73	63.2	128.8	75.0	143.8	83.5	140.2
73-74	68.7	134.9	80.6	141.1	61.8	136.4
74-75	177.1	211.5	183.3	104.9	50.6	101.7
75-76	105.0	235.9	128.5	133.2	48.5	128.2

APPENDIX TABLE -6 Intensity of Cropping

Year 1	Total Cropped Area (Hectares) 2	Net Area Sown(Hectares) 3	Intensity Col(2)/Col(3) 4
1950-51	346,034	326,423	1.06
51-52	531,423	496,705	1.07
52-53	482,607	454,075	1.06
53-54	607,636	555,370	1.09
54-55	584,368	562,678	1.04
55-56	552,063	530,084	1.04
56-57	612,651	582,515	1.05
57-58	550,000	521,145	1.06
58-59	589,982	546,115	1.08
59-60	596,886	551,713	1.08
60-61	630,315	582,777	1.08
61-62	613,699	579,359	1.06
62-63	635,049	619,065	1.03
63-64	642,868	616,834	1.04
64-65	~~595,544~~	~~520,458~~	~~1.03~~ 1.03
65-66	~~636,429~~	~~622,402~~	~~1.03~~ 1.02
66-67	658,179	633,100	1.04
67-68	672,016	643,573	1.04
68-69	625,786	611,244	1.02
69-70	641,282	627,766	1.02
70-71	624,422	610,887	1.02
71-72	673,473	648,025	1.04
72-73	676,916	653,088	1.04
73-74	658,400	640,746	1.03
74-75	490,630	476,183	1.03
75-76	618,536	604,687	1.02

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table - 7 Area Irrigated through Different Sources

(In Hectares)

Ramanathapuram

Year	Govt. Canals	Tanks	Wells (Tube Wells and sole irrigation)	Other Sources (Springs,etc)
1950-51	43	79,580	41,385	14,395
51-52	308	124,849	62,154	2,941
52-53	233	110,955	12,597	32
53-54	330	156,907	17,813	42
54-55	270	179,874	29,093	1,043
55-56	272	147,517	28,422	851
56-57	287	184,666	33,431	48
57-58	341	205,610	35,228	68
58-59	308	177,145	23,420	65
59-60	334	227,665	22,318	141
60-61	429	231,401	28,158	84
61-62	352	210,552	24,983	78
62-63	-	208,046	24,294	379
63-64	-	210,030	26,576	768
64-65	-	184,105	26,506	775
65-66	-	199,298	26,341	93
66-67	-	204,806	25,323	40
67-68	-	227,822	25,996	762
68-69	132	198,451	41,047	31
69-70	585	197,251	32,446	139
70-71	363	185,746	34,463	31
71-72	377	213,737	36,364	147
72-73	401	216,964	36,794	100
73-74	399	216,029	36,730	233
74-75	770	110,043	38,973	147
75-76	322	177,772	38,006	113

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table-7 Area Irrigated through Different Sources

(Contd.) (In Hectares)

Year	Total net area irrigated	Percentage of net area irrigated to net area sown	Area irrigated more than once
1950-51	135,903	41.6	18,142
51-52	190,252	38.3	27,743
52-53	123,817	27.3	26,640
53-54	175,092	31.5	51,855
54-55	210,280	37.4	21,690
55-56	177,062	33.4	21,979
56-57	218,432	37.5	6,815
57-58	241,247	46.3	9,750
58-59	200,938	36.8	20,194
59-60	250,458	45.4	11,108
60-61	260,072	44.6	12,812
61-62	235,965	40.7	240
62-63	232,719	37.6	10,491
63-64	237,374	38.5	12,831
64-65	211,386	35.8	13,319
65-66	225,732	36.3	14,212
66-67	230,169	36.4	20,389
67-68	254,580	39.6	13,200
68-69	239,671	39.2	5,016
69-70	230,421	36.5	13,516
70-71	220,603	36.1	11,558
71-72	250,625	38.7	22,438
72-73	254,259	38.9	20,247
73-74	253,391	39.5	15,614
74-75	149,933	31.4	14,309
75-76	216,213	35.8	18,163

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table-8 Area Irrigated Under Principal Crops

(In '000 Hectares)

Year	Paddy	Cumbu	Ragi	Total Cereals	Total Food Grains	Total Food Crops	G'nut	Cotton	Total Non-Food Crops	Total Food+Non-Food Crops
1950-51	96	5	16	134	134	142	3	7	12	154
51-52	133	15	26	192	192	202	5	10	16	218
52-53	97	4	16	133	133	137	1	10	13	150
53-54	149	5	26	201	201	210	1	12	17	227
54-55	160	4	22	206	207	217	2	9	15	232
55-56	144	4	15	175	176	186	1	11	13	199
56-57	164	2	18	199	200	212	1	11	13	225
57-58	166	2	19	213	213	229	6	11	22	251
58-59	161	3	17	189	189	205	6	9	16	221
59-60	167	7	20	213	213	232	8	20	30	262
60-61	185	4	18	225	231	253	6	11	20	273
61-62	176	2	18	203	203	224	2	8	12	236
62-63	182	2	16	207	208	228	3	10	15	243
63-64	179	1	11	198	198	223	6	17	27	250
64-65	171	1	12	191	191	212	1	10	13	225
65-66	189	1	12	209	210	228	1	10	12	240
66-67	200	1	11	219	219	239	3	8	12	251
67-68	199	2	14	223	223	248	3	14	20	268
68-69	190	2	14	212	213	233	2	8	12	245
69-70	188	2	5	212	212	235	1	5	9	244
70-71	176	2	14	197	198	223	2	6	9	232
71-72	198	2	15	222	222	251	4	15	22	273
72-73	214	2	13	233	233	258	3	11	17	275
73-74	205	2	12	222	222	250	5	10	19	269
74-75	105	3	14	126	126	147	2	10	17	164
75-76	163	3	18	191	191	216	2	6	12	228

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table: 9 Percentage of Area Irrigated Under Principal Crops to total Area Irrigated

Ramanathapuram

Year	Paddy	Cumbu	Ragi	Total Cereals	Total Food Grains
1950-51	62.09	3.35	10.68	87.03	87.27
51-52	60.96	6.77	11.84	88.08	88.20
52-53	64.22	2.86	11.23	88.14	88.16
53-54	65.82	2.28	11.39	88.43	88.70
54-55	69.07	1.65	9.69	88.70	89.35
55-56	72.44	1.77	7.68	88.11	88.52
56-57	72.94	0.91	8.08	88.47	88.92
57-58	66.01	0.72	7.65	84.70	84.86
58-59	72.81	1.53	7.52	85.56	85.67
59-60	63.77	2.56	7.55	81.33	81.58
60-61	67.71	1.43	6.78	82.31	84.59
61-62	74.69	0.84	7.49	85.99	86.13
62-63	74.69	0.63	6.70	85.08	85.67
63-64	71.66	0.41	4.54	79.09	79.34
64-65	75.95	0.53	5.50	84.90	85.08
65-66	78.79	0.47	4.90	87.24	87.37
66-67	79.92	0.53	4.44	87.24	87.31
67-68	74.23	0.85	5-24	83.20	83.25
68-69	77.72	0.96	5.56	86.77	86.87
69-70	77.11	0.99	2.15	86.70	86.75
70-71	75.91	0.91	6.19	85.04	85.15
71-72	72.45	0.80	5.36	81.21	81.27
72-73	77.98	0.69	4.78	84.75	84.84
73-74	76.35	0.71	4-35	82.61	82.67
74-75	63.79	1.86	8.41	76.60	77.00
75-76	71.46	1.45	7.92	83.45	83.63

Appendix Table-9 (Contd.)

Year	Total Food Crops	Groundnut	Cotton	Total Non-food crops
1950-51	87.93	1.84	4.57	12.07
51-52	92.66	2.23	4.56	7.34
52-53	91.12	0.85	6.72	8.88
53-54	92.51	0.56	5.40	7.49
54-55	93.54	1.03	4.02	6.46
55-56	93.40	0.52	5.56	6.60
56-57	93.99	0.44	4.94	6.01
57-58	91.24	2.24	4.31	8.76
58-59	92.63	2.53	4.06	7.37
59-60	88.68	3.12	7.61	11,32
60-61	92.69	2.34	4.11	7.31
61-62	94.71	0.77	3.59	5.29
62-63	93.61	1.30	3.94	6.39
63-64	89.36	2.27	6.74	10.64
64-65	94.41	0.51	4.45	5.59
65-66	94.94	0.58	3.97	5.06
66-67	95.20	1.06	3.18	4.80
67-68	92.52	1.29	5.07	7.48
68-69	95.35	0.70	3.39	4.65
69-70	96.15	0.42	2.07	3.85
70-71	96.23	0.68	2.46	3.77
71-72	91.92	1.36	5.45	8.08
72-73	93.86	0.95	4.05	6.14
73-74	92.97	1.93	3.58	7.03
74-75	89.40	1.47	6.00	10.60
75-76	94.58	0.67	2.43	5.42

Appendix Table: 10 Percentage of Area Irrigated Under Principal Crops to the Area cultivated under that Crop

Ramanathapuram

Year	Paddy	Cumbu	Ragi	Total Cereals	Total Food Grains	Total Food Crops
1950-51	97.65	16.73	76.90	63.41	60.80	57.65
51-52	85.93	21.97	64.51	52.67	51.20	51.23
52-53	71.53	5.47	57.69	37.59	37.15	36.25
53-54	82.57	6.62	54.62	48.16	46.69	46.37
54-55	92.04	6.10	56.68	52.59	51.11	50.72
55-56	91.17	6.16	43.50	49.90	48.19	48.23
56-57	80.82	3.49	52.83	49.83	47.59	46.25
57-58	91.84	3.38	62.70	60.69	57.59	57.95
58-59	84.20	6.14	43.43	51.25	48.92	49.33
59-60	82.91	10.92	52.78	55.41	53.57	54.37
60-61	78.82	6.44	51.34	55.07	54.07	55.14
61-62	77.45	3.29	54.39	50.18	47.92	48.99
62-63	68.75	2.81	54.14	47.91	46.14	46.55
63-64	71.46	2.06	41.71	48.59	46.69	47.88
64-65	70.97	2.26	51.44	47.71	45.59	46.36
65-66	73.46	3.08	40.51	49.57	47.39	47.70
66-67	73.06	2.72	41.95	48.66	46.80	47.23
67-68	73.65	4.06	44.75	49.85	47.71	48.64
68-69	72.17	4.29	47.06	49.99	47.97	48.53
69-70	71.22	4.26	16.39	48.80	46.07	47.10
70-71	69.07	4.18	50.35	48.20	46.26	47.30
71-72	71-14	4.29	48.87	51.09	48.91	49.83
72-73	72.17	3.63	44.83	52.54	50.02	50.26
73-74	71.10	3.88	50.48	52.97	49.99	50.43
74-75	58.26	7.67	57.56	42.30	40.31	41.36
75-76	69.17	6.64	52.17	45.61	43.70	44.22

Appendix Table - 10 (Contd.)

Year	Groundnut	Cotton	Total Non-Food crops	Total Food and Non-food Crops
1950-51	12.53	13.76	16.67	44.46
51-52	27.73	12.88	11.66	41.02
52-53	6.52	23.02	12.79	31.18
53-54	14.19	20.48	10.98	37.35
54-55	8.59	11.96	9.58	39.70
55-56	4.18	13.57	7.88	36.05
56-57	3.32	14.31	8.74	36.77
57-58	17.60	14.09	14.20	45.64
58-59	15.12	11.69	9.33	37.48
59-60	22.04	24.84	17.39	43.82
60-61	15.78	12.88	11.63	43.29
61-62	5.82	10.06	7.92	38.49
62-63	9.37	12.74	10.64	38.30
63-64	13.04	19.59	15.13	38.92
64-65	3.39	12.53	8.49	37.11
65-66	4.00	13.08	7.64	37.70
66-67	7.22	11.69	7.86	38.07
67-68	8.44	18.05	12.31	39.85
68-69	4.85	12.15	7.84	39.10
69-70	2.95	8.27	6.55	38.04
70-71	4.49	8.91	5.75	37.18
71-72	7.89	20.99	13.00	40.55
72-73	6.14	17.40	10.26	40.55
73-74	13.46	15.19	11.63	40.86
74-75	7.70	18.04	12.84	33.48
75-76	5.61	11.11	9.51	36.92

Appendix Table 11: Crop Seasons

Ramanathapuram

	Crop	Irrigated or Rainfed	Sowing Period	Harvest Period
1.	Paddy	Irrigated	Aug - Septr.	Janry-February
			Sept- Octbr.	Febry-March
		Rainfed	Aug - Septr.	Janry-February
			Sept- Octbr.	Febry-March
		H.Y.V.	Aug - Septr.	Janry-February
			Sept- Octbr.	Febry-March
			Febry-March	May - June
2.	Chillies	Rainfed	Octbr-Novr.	April-May
		Irrigated	Aug - Septr.	Febry-March
3.	Groundnut	Irrigated	Jany-Febry.	May-June
			May - June	Octbr-November
		Rainfed	Aug - Septr.	Novr-Decr.
4.	Gingelly	Irrigated	Jany-Febry.	March-April
			Aug - Septr.	Octbr-November
		Rainfed	Aug - Septr.	Octbr-November
5.	Cotton	Irrigated	Aug - Septr.	Nov-December
			Feb - March	Septr-October
		Rainfed	Septr-Octbr.	April-May
		H.Y.V.	Aug - Septr.	Febry-March
6.	Cholam	Irrigated	May - June	Aug - Sept.
			Jany- Febry.	April-May
		Rainfed	Augt- Septr.	Novr-Decr.
		H.Y.V.	Febry-March	May-June
7.	Cumbu	Irrigated	May - June	Aug-Septr.
			Jany-Febry.	April-May
		Rainfed	Augt-Septr.	Novr-Decr.
		H.Y.V.	Jany-Febry.	April-May
			May - June	Septr-October
8.	Ragi	Irrigated	Jany-Febry.	April-May
			May - June	Augt-Septr.
		Rainfed	Augt-Septr.	Novr-Decr.
		H.Y.V.	Febry-March	May- June
9.	Blackgram, Redgram, horsegram		Septr-Octbr.	Decr-January
10.	Coriander		Septr-Octbr.	Decr-January

Source: Credit Plan for Ramanathapuram District, Tamil Nadu-Lead Bank Cell, Indian Overseas Bank.

Appendix Table-12 Area Under Principal Food and Non-Food Crops

(In '000 hectares)

Ramanathapuram

Year	Paddy	Cho-lam	Cum-bu	Ragi	Vara-gu	Sa-mai	Total Cere-als	Total Pul-ses	Total food-grains	Chillies
1950-51	98	14	31	21	21	3	211	10	221	7
51-52	155	22	67	40	24	4	365	11	376	9
52-53	135	19	79	29	35	14	353	11	364	6
53-54	181	19	78	47	55	15	417	14	431	9
54-55	175	18	63	40	60	3	391	14	405	11
55-56	158	15	57	35	50	5	351	14	366	10
56-57	203	14	59	35	49	7	400	21	421	12
57-58	180	16	53	31	39	5	350	20	370	15
58-59	191	15	55	38	37	5	369	18	387	14
59-60	201	13	63	37	41	5	384	14	398	16
60-61	234	12	61	36	42	4	408	19	427	20
61-62	228	17	60	33	39	4	405	20	425	16
62-63	264	21	55	30	33	4	432	20	452	19
63-64	251	15	49	27	40	3	407	18	425	24
64-65	240	19	53	24	41	4	400	19	419	18
65-66	257	21	37	29	47	6	422	20	442	15
66-67	274	21	49	27	48	4	449	18	467	19
67-68	270	19	56	31	41	4	447	20	467	21
68-69	264	13	55	29	33	5	425	18	443	13
69-70	264	14	57	32	37	5	440	19	459	16
70-71	255	12	51	29	34	4	410	18	427	23
71-72	278	14	51	30	34	3	434	19	454	26
72-73	297	10	52	29	27	3	443	23	466	19
73-74	289	11	49	23	23	3	420	25	445	23
74-75	180	10	40	24	21	3	297	16	314	16
75-76	236	15	50	35	41	3	418	19	437	24

/-Contd....

Appendix Table-12 (Contd.)

Ramanathapurm

Year	Total condiments and spices	Total Sugar crops	Total Fresh fruits	Total dry fruits	Total Vegetables	Total Food Crops	Cotton
1950-51	7	2	1	1	3	235	51
51-52	9	4	1	1	1	394	77
52-53	9	1	2	-	2	378	44
53-54	12	2	3	-	5	453	60
54-55	13	4	2	@	2	428	78
55-56	13	3	2	@	2	386	82
56-57	15	3	2	@	2	458	77
57-58	17	4	2	-	2	395	76
58-59	18	5	2	-	2	415	77
59-60	20	3	2	-	2	427	80
60-61	23	5	2	-	2	459	87
61-62	23	4	3	@	2	457	84
62-63	25	4	3	2	3	489	75
63-64	29	5	3	2	2	467	86
64-65	24	6	3	2	3	458	80
65-66	22	5	3	2	3	477	73
66-67	24	5	3	2	3	505	68
67-68	26	5	3	2	3	509	75
68-69	19	9	2	4	3	481	68
69-70	21	8	2	4	3	498	61
70-71	29	6	2	5	3	472	64
71-72	33	6	3	5	3	504	71
72-73	28	7	3	5	4	513	64
73-74	31	11	3	2	3	496	63
74-75	21	10	3	5	2	355	55
75-76	32	10	2	4	3	489	50

@ - Area less than 200 hectares.

Appendix Table-12 (Contd.)

Ramanathapuram

Year	Ground-nut	Total oil seeds	Fodder	Total Non-Food Crops	Total Food and Non-Food Crops
1950-51	23	30	29	111	346
51-52	18	29	28	137	531
52-53	20	27	28	105	483
53-54	9	18	10	155	608
54-55	28	36	34	156	584
55-56	25	32	50	166	552
56-57	30	35	28	155	613
57-58	32	41	23	155	550
58-59	37	45	32	175	590
59-60	37	45	35	170	597
60-61	40	51	29	171	630
61-62	31	42	26	157	614
62-63	34	43	17	146	635
63-64	44	56	21	176	643
64-65	34	45	17	148	606
65-66	35	48	29	159	636
66-67	37	51	28	153	658
67-68	41	57	19	163	672
68-69	35	49	14	145	626
69-70	35	49	22	143	641
70-71	35	52	32	152	624
71-72	47	66	30	170	674
72-73	42	63	35	164	677
73-74	39	64	31	162	658
74-75	31	51	27	136	491
75-76	27	51	26	130	619

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table: 13 Percentage of Area under Principal Crops to total Area Sown

Ramanathapuram

Year	Paddy	Cumbu	Ragi	Total Cereals	Total Food grains
1950-51	28.2	8.9	6.2	61.0	63.8
51-52	29.1	12.6	7.5	68.6	70.7
52-53	28.0	16.3	6.1	73.1	75.3
53-54	29.8	12.3	7.8	68.6	71.0
54-55	29.8	10.7	6.8	66.9	69.4
55-56	28.6	10.3	6.4	63.7	66.2
56-57	33.2	9.6	5.6	67.9	68.7
57-58	32.8	9.7	5.6	63.7	67.3
58-59	32.4	9.4	6.5	62.6	65.6
59-60	33.7	10.6	6.3	64.3	66.7
60-61	37.2	9.6	5.7	64.7	67.7
61-62	37.1	9.8	5.3	66.0	69.2
62-63	41.6	8.7	4.7	68.0	71.1
63-64	39.0	7.7	4.2	63.4	66.1
64-65	39.7	8.7	4.0	66.0	69.3
65-66	40.4	5.8	4.6	66.4	69.5
66-67	41.6	7.4	4.0	68.3	71.0
67-68	40.2	8.3	4.7	66.5	69.5
68-69	42.2	8.7	4.6	68.0	70.8
69-70	41.2	8.8	5.0	68.6	71.6
70-71	40.9	8.1	4.6	65.6	68.4
71-72	41.3	7.6	4.4	64.5	67.4
72-73	43.8	7.7	4.3	65.4	68.8
73-74	43.9	7.4	3.5	63.7	67.6
74-75	36.7	8.1	4.9	60.6	63.9
75-76	38.1	8.0	5.6	67.6	70.7

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table-13 (Contd.)

Ramanathapuram

Year	Total Food crops	Groundnut	Cotton	Total non-food crops
1950-51	67.8	6.5	14.8	32.2
51-52	74.2	3.3	14.5	25.8
52-53	78.4	4.1	9.1	21.6
53-54	74.5	1.5	9.8	25.5
54-55	73.2	4.8	13.3	26.8
55-56	69.8	4.5	14.8	30.2
56-57	74.7	4.9	12.6	25.3
57-58	71.9	5.8	13.9	28.1
58-59	70.4	6.2	13.0	29.6
59-60	71.5	6.2	13.4	28.5
60-61	72.8	6.4	13.8	27.2
61-62	74.4	5.1	13.7	25.6
62-63	77.0	5.3	16.2	23.0
63-64	72.6	6.8	13.4	27.4
64-65	75.6	55.5	13.2	24.4
65-66	75.0	5.5	11.4	25.0
66-67	76.7	5.6	10.3	23.3
67-68	75.8	6.1	11.2	24.2
68-69	77.0	5.7	11.0	23.0
69-70	77.7	5.4	9.5	22.3
70-71	75.6	5.6	10.3	24.4
71-72	74.8	7.0	10.5	25.2
72-73	75.7	6.3	9.4	24.3
73-74	75.3	5.9	9.6	24.7
74-75	72.4	6.4	11.1	27.6
75-76	79.0	4.4	8.1	21.0

Source: Season and Crop Reports of Tamil Nadu.

APPENDIX TABLE-14 Cropping Pattern of Principal Crops
(Area in Hectares)

RAMANATHAPURAM

CROPS	1950-51	%	1960-61	%	1970-71	%	1975-76	%
Paddy	97,825	28.2	234,409	37.2	255,171	40.9	235,930	38.1
Cumbu	30,776	8.9	60,777	9.6	50,687	8.1	49,746	8.0
Ragi	21,359	6.2	36,022	5.7	28,535	4.6	34,670	5.6
Varagu	21,355	6.2	41,589	6.6	34,094	5.5	41,389	6.7
Total Cereals	211,170	61.0	407,857	64.7	409,574	65.6	417,831	67.6
Pulses	9,657	2.8	19,026	3.0	17,729	2.8	19,200	3.1
Total Food grains	220,828	63.8	426,883	67.7	427,303	68.4	437,031	70.7
Total Food crops	234,663	67.8	458,736	72.8	472,325	75.6	488,453	79.0
Cotton	51,037	14.8	87,079	13.8	64,114	10.3	49,958	8.1
Ground-nut	22,641	6.5	40,402	6.4	35,058	5.6	27,410	4.4
Total Non-food crops	111,371	32.2	171,579	27.2	152,097	24.4	130,083	21.0
Total cropped area	346,034	100.0	630,315	100.0	624,422	100.0	618,536	100.0

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table No.15 Total out-turn of Principal Crops

Ramanathapuram (in tonnes)

Year	Rice	Cholam	Cumbu	Ragi	Varagu	Total Cereals
	1	2	3	4	5	6
1950-51	37085	5700	8738	16521	12924	N.A.
51-52	99464	11644	22231	33174	16887	N.A.
52-53	81193	9185	20443	19427	21245	N.A.
53-54	216512	13381	37024	51259	55374	N.A.
54-55	218540	12457	28154	41617	60820	N.A.
55-56	114630	11756	28480	28988	38457	N.A.
56-57	230804	8403	36740	39006	47366	N.A.
57-58	188740	13523	35957	30898	35155	N.A.
58-59	159490	11880	26770	37750	31700	N.A.
59-60	174730	11150	36770	42370	38770	N.A.
60-61	192390	10120	44280	36330	41120	N.A.
61-62	184820	13630	41750	29150	37430	322520
62-63	276820	16320	35730	25260	32160	408330
63-64	248860	12390	35870	22880	37990	371550
64-65	207190	15200	37170	19400	38930	330310
65-66	249170	14080	23810	23850	44760	372170
66-67	299710	15710	32720	29760	45570	440050
67-68	287300	14070	36470	31380	37730	423630
68-69	181110	7970	24570	23710	30820	284350
69-70	247570	10200	33900	33970	35750	381050
70-71	274310	8090	29150	22960	33060	383530
71-72	333770	10030	27130	30520	33190	444970
72-73	370660	9140	27250	26560	25790	474130
73-74	383010	11610	34720	23140	22340	487960
74-75	55850	11110	13140	19450	6310	109730
75-76	272330	10560	36220	33230	35530	408530

N.A. Not available.

Appendix Table 15 (Contd.)

Ramanathapuram

Year	Total Pulses	Total Food-grains	Sugar-cane	Chillies	Cotton*	Ground-nut	Gingelly
	7	8	9	10	11	12	13
1950-51	1880	N.A.	36171	6330	34140	19731	1341
51-52	1951	N.A.	51716	8179	60490	18736	2236
52-53	2124	N.A.	20116	5873	25850	21002	1331
53-54	3455	N.A.	46494	10709	47240	11176	2134
54-55	4379	N.A.	80125	11958	45450	31375	1545
55-56	3546	N.A.	48160	11491	47490	23491	1057
56-57	6230	N.A.	67526	13747	62620	35947	1158
57-58	6279	N.A.	85551	13605	43380	38142	1390
58-59	5619	N.A.	70220	14020	54920	42440	1230
59-60	4389	N.A.	80050	16020	60450	43700	1680
60-61	5520	N.A.	236320	18360	68630	46660	2190
61-62	5920	328440	165640	14100	71230	36470	1990
62-63	5840	409670	123100	20210	59750	40760	1670
63-64	5010	376560	160010	22970	55660	50330	1050
64-65	5770	336080	220100	17600	65790	32040	1360
65-66	5710	377880	277890	14050	73960	30870	1780
66-67	5270	445320	169550	17200	52060	36720	2000
67-68	5610	429240	288870	19400	75490	29490	2580
68-69	4780	289130	551080	12180	37280	25230	1550
69-70	5660	386710	448920	16750	30660	24490	1830
70-71	5310	388840	300600	23710	24420	32580	2150
71-72	6190	451160	375870	27800	34110	49160	2920
72-73	6290	480420	396530	20610	35590	26410	3300
73-74	7300	495260	567680	24380	55050	28410	3690
74-75	3950	113680	458120	11040	29810	14330	2840
75-76	4710	413240	371040	39830	19950	25040	2130

* The figure of cotton production are in terms of bales. From 1963-64 1 Bale = 180 kg. prior to it upto 1962-63, 1 Bale = 177.8 kg. (392 lbs.)

N.A. Not Available

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table: 16 Index Number of Production of Principal Crops: Base - 1952-53 = 100

Ramanathapuram

Year	Rice	Cumbu	Ragi	Cotton	Groundnut
1950-51	46.67	42.74	85.04	132.07	93.95
51-52	122.50	108.75	170.76	234.01	89.21
52-53	100.00	100.00	100.00	100.00	100.00
53-54	266.66	181.11	263.85	182.75	53.21
54-55	269.16	137.72	214.22	175.82	149.39
55-56	141.18	139.31	149.22	183.67	111.85
56-57	284.27	179.72	200.78	242.24	171.16
57-58	232.46	175.89	159.05	167.82	181.61
58-59	196.43	130.96	194.32	212.46	202.08
59-60	215.26	179.87	218.10	233.85	208.08
60-61	236.95	216.60	187.01	265.50	222.17
61-62	227.63	204.23	150.05	275.55	173.65
62-63	340.94	175.02	130.03	231.14	194.08
63-64	306.50	175.46	117.77	217.96	239.64
64-65	255.18	181.82	99.86	257.63	152.56
65-66	306.89	116.47	122.77	289.62	146.99
66-67	369.13	160.05	153.19	203.86	174.84
67-68	354.46	178.40	161.53	295.61	140.42
68-69	223.14	120.19	122.05	145.98	120.37
69-70	304.92	165.83	174.86	120.06	116.61
70-71	337.85	142.59	118.19	95.63	155.13
71-72	411.08	132.71	157.10	133.57	234.07
72-73	456.52	133.30	136.72	139.37	125.75
73-74	471.73	169.84	119.11	215.57	135.27
74-75	68.79	64.28	100.12	116.73	68.23
75-76	335.47	177.18	171.05	68.23	119.23

Appendix Table-17 Yield in Kg. per Hectare of Principal Crops

Ramanathapuram:

Year	Rice	Cholam	Cumbu	Ragi	Varagu	Chillies	Onion
1950-51	388	420	284	773	605	938	-
51-52	643	525	331	829	706	962	5044
52-53	601	490	260	664	605	925	5380
53-54	1197	699	473	1083	1009	1208	6725
54-55	1255	677	449	1050	1009	1110	6591
55-56	724	789	499	825	757	1134	5380
56-57	1135	600	624	1132	989	1159	6591
57-58	1046	841	672	1009	908	937	6659
58-59	834	785	484	986	857	986	6053
59-60	869	863	583	1132	958	906	6322
60-61	820	841	729	1009	989	942	6187
61-62	811	785	695	897	958	897	6591
62-63	1048	772	650	840	979	1054	6389
63-64	992	818	729	841	958	953	6322
64-65	861	807	706	807	960	952	6259
65-66	968	676	650	822	949	918	6124
66-67	1093	746	674	1122	960	918	6259
67-68	1066	750	651	1000	929	930	6326
68-69	687	600	450	820	929	918	6124
69-70	937	750	600	1064	970	1030	6461
70-71	1075	700	575	805	970	1053	6528
71-72	1200	726	533	1019	980	1053	6528
72-73	1250	908	520	908	960	1065	6394
73-74	1326	1084	708	998	978	1065	6394
74-75	311	803	330	807	303	2361	10109
75-76	1155	697	728	959	859	1627	12902

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table-17 (Contd.)

Yield in Kg. Per Hectare of Principal Crops

Ramanathapuram

Year	Cotton	Gingelly	Groundnut
1950-51	119	251	879
51-52	139	251	1067
52-53	106	235	1067
53-54	140	314	1255
54-55	104	298	1130
55-56	103	235	942
56-57	144	307	1193
57-58	101	311	1193
58-59	127	282	1154
59-60	134	310	1180
60-61	140	305	1155
61-62	150	298	1168
62-63	141	298	1205
63-64	116	295	1154
64-65	149	291	955
65-66	183	297	887
66-67	138	291	1002
67-68	181	295	720
68-69	98	295	1283
69-70	90	295	701
70-71	69	301	-
71-72	87	301	1044
72-73	100	298	623
73-74	156	238	744
74-75	98	330	456
75-76	68	158	914

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table 10 Agricultural Implements

Ramanathapuram

Implements	1951	1956	1961	1966	1974
1. Ploughs	220,017	213,332	247,169	223,747	240,386
(a) Wooden	N.A.	N.A.	N.A.	204,463	215,920
(b) Iron	N.A.	N.A.	N.A.	19,284	24,466
2. Carts	53,921	43,822	60,304	43,260	45,758
3. Sugarcane Crushers	278	285	176	153	188
(a) Worked by Power	N.A.	N.A.	N.A.	35	56
(b) Worked by Bullocks	N.A.	N.A.	N.A.	118	132
4. Ghanis	1,621	2,661	753	547	69
5. Oil Engines (with Pumpsets)	227	566	929	1,230	4,373
6. Electric Pumpsets	803	1,452	3,569	6,458	30,103
7. Tractors	20	30	10	29	163
Government	N.A.	N.A.	N.A.	8	47
Private	N.A.	N.A.	N.A.	21	116

N.A. Not Available

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table 19 Livestock Census

Animals	1951	1956	1961	1966	1974
Cattle .	736,619	590,636	668,549	624,370	631,444
Buffaloes	157,075	103,945	128,052	128,812	143,982
Sheep	1,022,736	924,225	771,811	777,082	689,861
Goat	386,702	310,301	214,952	289,280	321,351
Other Livestock	37,816	45,443	36,261	28,553	37,144
Total Livestock	2,340,948	1,974,550	1,819,625	1,848,097	1,823,782
Total Poultry	897,167	1,068,856	1,083,365	1,080,684	1,345,109
Total Animal Population (Poultry + Livestock)	3,238,115	3,043,406	2,902,989	2,928,781	3,168,891

Source: Season and Crop Reports of Tamil Nadu.

APPENDIX TABLE 20 **Marine Fish Landings** (Weight in Tonnes)

Year	Ramnad District	State	Rank of the District in Production	% of District to State	Productivity per k.m. of coastal line
1962-63	15,592	134,035	IV	11.63	57
63-64	45,172	153,606	I	29.41	165
64-65	45.672	160,219	I	28.51	167
65-66	40,450	165,396	I	24.46	148
66-67	40,964	175,067	I	23.40	150
67-68	47,532	204,916	I	23.20	174
68-69	49,890	212,005	I	23.54	183
69-70	52,395	201,481	I	26.00	192
70-71	46,816	209,985	I	22.29	172
71-72	38,908	212,937	II	18.27	143
73-74	36,522	224.083	II	16.30	134
74-75	42,265	192,338	I	21.97	155

Source: Department of Fisheries, Tamil Nadu

Note: Data regarding 72-73 is not available.

Appendix Table 21: Farm Harvest Prices of Certain commodities in Rupees Per Quintal (= 100 kg.)

Ramanathapuram

Year	Paddy 1	Rice 2	Cholam 3	Cumbu 4	Ragi 5	Varagu 6	Cane Jaggery 7
1950-51	..	36.13	21.71	22.51	..	..	..
51-52	..	36.13	21.71	22.51	20.37	..	45.33
52-53	..	36.13	21.71	21.51	20.37	..	56.59
53-54	30.28	48.79	24.92	25.59	25.59	..	..
54-55	28.54	48.22	24.92	25.59	25.59	..	..
55-56	28.94	50.92	26.26	27.60	27.37	18.22	54.97
56-57	26.00	..	..	..	24.12	13.93	38.59
57-58	22.93	45.09	..	29.98	25.13	16.02	34.83
58-59	29.77	45.09	..	37.21	37.16	27.68	32.95
59-60	35.50	59.67	34.40	38.74	32.31	27.68	28.13
60-61	36.37	..	..	26.62	34.12	22.20	40.03
61-62	39.15	..	..	37.62	35.01	23.12	37.25
62-63	32.70	..	36.06	38.00	37.19	19.95	..
63-64	37.55	..	33.40	34.62	31.38	27.19	69.33
64-65	43.00	..	46.10	54.40	53.75	32.32	57.75
65-66	42.86	67.33	52.71	60.44	51.04	35.80	70.94
66-67	45.00	..	50.00	50.00	50.00	50.00	104.66
67-68	45.00	73.31	50.00	50.00	50.00	50.00	154.16
68-69	45.00	73.66	60.77	69.70	66.85	45.71	120.00
69-70	64.10	103.29	68.44	67.38	67.03	54.93	..
70-71	61.56	96.37	69.49	67.33	66.23	44.42	97.02
71-72	57.82	95.34	68.47	61.10	63.22	42.63	99.44
72-73	55.41	96.87	68.65	63.02	60.73	44.15	130.91
73-74	83.44	125.65	114.30	87.04	87.60	63.42	120.48
74-75	142.60	164.38	155.38	161.71	121.87	124.68	..
75-76	115.72	..	114.33	103.35	83.74	..	..

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table 21 (Contd.)
Ramanathapuram

Year	Gingelly 8	Groundnut 9	Cotton 10	Horse-gram 11	Chillies 12
1950-51	..	..	..	..	..
51-52	99.43	..	..	..	..
52-53	80.40	35.91	..	..	..
53-54	46.91	45.02	48.49	..	..
54-55	52.31	45.56	48.49	..	..
55-56	56.05	31.62	69.73	48.22	..
56-57	..	..	65.66	23.58	..
57-58	63.18	..	..	23.47	141.73
58-59	101.57	42.87	..	33.38	179.45
59-60	82.04	43.19	..	34.83	225.05
60-61	84.25	56.62	90.75	30.62	175.00
61-62	86.01	58.13	95.87	31.03	180.00
62-63	70.66	59.78	123.40	28.75	206.87
63-64	70.66	63.57	112.66	31.45	184.93
64-65	127.75	63.60	125.00	44.75	184.05
65-66	163.35	101.34	118.68	51.04	234.77
66-67	176.83	128.30	168.50	64.92	325.07
67-68	159.37	111.95	139.12	68.31	209.18
68-69	168.73	109.04	151.85	59.16	234.51
69-70	191.46	135.21	166.91	67.00	428.40
70-71	191.21	132.88	204.17	52.65	386.98
71-72	197.78	114.93	165.98	71.50	285.85
72-73	268.99	157.89	165.98	73.47	328.86
73-74	311.12	211.00	279.34	90.81	419.14
74-75	340.60	335.78	..	206.83	577.57
75-76	270.00	211.88	261.38	..	496.25

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table-22

Annual Average Retail Prices of Principal Food Grains - Cost Per Quintal (In Rupees)

Year	Paddy I Sort	Paddy II Sort	Rice I Sort	Rice II Sort	Cholam
1950-51	30.02	31.62	..	51.73	33.23
51-52	34.30	35.11	..	54.70	36.44
52-53	36.44	36.44	..	51.60	34.30
53-54	43.40	35.91	..	52.73	40.19
54-55	30.55	28.14	..	53.89	33.23
55-56	29.48	27.87	..	42.86	25.73
56-57	33.50	32.83	..	53.08	43.67
57-58	34.30	31.22	..	60.67	33.77
58-59	39.97	35.61	..	64.14	38.96
59-60	44.02	39.46	..	62.34	40.94
60-61	44.53	38.05	..	62.08	38.02
61-62	45.50	38.05	..	64.04	41.46
62-63	41.00	36.17	..	61.38	39.96
63-64	45.40	40.36	..	68.00	43.05
64-65	47.45	42.66	..	69.59	53.11
65-66	43.83	40.21	77.25	70.95	53.63
66-67	46.92	42.15	91.37	81.20	60.79
67-68	67.28	66.06	85.00	78.00	75.35
68-69	71.68	66.88	110.68	103.11	74.24
69-70	81.93	72.05	119.55	108.88	74.15
70-71	69.60	63.36	109.75	103.26	63.71
71-72	74.75	68.59	128.55	117.82	67.90
72-73	71.15	65.62	125.12	116.45	69.18
73-74	92.96	87.22	155.40	145.83	89.42
74-75	..	..	375.33	340.75	202.88
75-76	..	..	264.00	243.00	147.00

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table-22 (Contd.)

Annual Average Retail Prices of Principal Food Grains - Cost Per Quintal (In Rupees)

Year	Cumbu	Ragi	Varagu	Horsegram
1950-51	26.00	30.55	..	46.64
51-52	..	..	..	43.94
52-53	..	..	..	40.73
53-54	..	..	..	35.11
54-55	27.07	25.73	..	23.85
55-56	26.53	24.39	..	29.48
56-57	36.18	33.50	..	35.10
57-58	33.77	32.16	..	31.09
58-59	34.75	32.82	..	30.41
59-60	39.38	37.83	..	36.30
60-61	39.50	37.79	..	38.55
61-62	40.74	41.69	..	41.49
62-63	39.64	36.54	..	42.09
63-64	40.21	37.66	22.48	36.00
64-65	54.60	54.02	29.30	46.99
65-66	54.73	55.12	44.57	51.12
66-67	61.58	63.62	47.74	53.61
67-68	72.61	72.53	56.55	65.90
68-69	71.62	71.73	53.14	68.75
69-70	70.71	72.87	51.02	67.90
70-71	61.45	62.29	37.33	58.77
71-72	70.84	70.10	57.85	73.77
72-73	71.15	67.08	59.23	77.80
73-74	90.48	89.16	79.03	102.68
74-75	203.47	187.87	..	..
75-76	143.00	123.00	..	..

Source: Season and Crop Reports of Tamil Nadu.

Appendix Table 23: Wages of Agricultural Labour and Skilled Labour

(in Rs. and nP)

Ramanathapuram

Year	Field Labourers*			Herdsmen		
	Men	Women	Non-Adults	Men	Women	Non - Adults
1960-61	1.35	0.97	0.75	1.05	1.00	0.69
1970-71	2.14	1.21	1.00	2.13	1.50	1.42
1971-72	2.40	1.35	1.00	1.94	-	1.50
1972-73	2.72	1.50	0.90	2.00	-	1.50
1973-74	3.19	1.82	2.50	2.49	-	1.83
1974-75	4.32	2.92	2.36	2.69	2.21	2.08
1975-76	4.45	3.18	2.41	3.93	2.22	2.12

* Field labourers include Ploughmen, Sowers, Transplanters, Weeders, Reapers and Harvesters.

Source: Season and Crop Reports of Tamil Nadu

Appendix Table 23 (Contd.)
Ramanathapuram

Year	Other Agricultural Labourers		Skilled Labourers			
	Men	Women	Non-Adult	Carpenter	Blacksmith	Cobbler
1960-61	1.32	1.00	-	2.00	2.00	0.75
70-71	2.13	1.24	-	5.00	5.00	-
71-72	2.00	1.13	-	5.00	5.00	-
72-73	2.21	1.29	-	5.00	5.09	-
73-74	2.50	1.54	-	6.39	5.38	2.00
74-75	4.37	2.69	2.56	N.A.	N.A.	N.A.
75-76	4.84	2.39	2.23	N.A.	N.A.	N.A.

N.A. Not Available.