CHAPTER - I

PROFILE OF THE STUDY AREA

1.1. The Region

Thanjavur district lies on the Southeastern coast of India, with its northern border about 240 kms south of Madras city and its southern border about 320 kms north of the southern tip of the subcontinent, namely, Cape Comorin. It is bounded on the north by South Arcot district. On the north, the river Coleroon separates it from Tiruchirappalli and South Arcot districts. On the west and the south, it is bounded by Tiruchirappalli and Ramanathapuram districts and on the east, it is bounded by the Bay of Bengal and Palk Straits.\(^1\) It lies on the east coast of Tamil Nadu\(^2\) and situated between 90°.50' and 110°.25' of the eastern longitude.\(^3\) Thanjavur district covered an area of 3,738 sq.miles,\(^4\) with a population of 29,82,670 in the year 1950-51,\(^5\) 32,45,882 in 1961 and 38,40,732 in 1971.\(^6\) As Tamil Nadu depends upon Thanjavur for its livelihood, this region is widely known as the Rice Bowl of Tamil Nadu.

Etymology

The district gets its name from the headquarters town, but the etymology of the word is obscure. *Thanjan*, a *Rakshasan* or giant, according to a local legend, haunted the neighbourhood of present Thanjavur and he was destroyed

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by God Vishnu. His dying request was that his name be given to the town where he died. Thanjan meant ‘City of Refuge’.7

Physical Structure

Thanjavur district is a vast plain of fertile soil with a gentle but definite slope towards the sea. Generally, this region is segregated as East Thanjavur and West Thanjavur. Further, it has been classified as the deltaic region, the upland area and the salt swamp depending upon the nature of the soil. East Thanjavur consists of the old deltaic areas of Cauvery and West Thanjavur consists of new deltaic areas in the upland region, developed under the Mettur Dam and the regions of Vedaranyam are known as the salt swamp.8

It has six major revenue divisions, namely, Kumbakonam, Mannargudi, Mayavaram, Nagapattinam, Pattukkottai and Thanjavur. It is further divided into twelve taluks, namely, Sirkali, Mayavaram, Pattukkottai, Thiruthuraipoondi, Aranthangi, Kumbakonam, Mannargudi, Nagappattinam, Thanjavur, Nannilam, Papanasam9 and Orathanad.10

This region has a wide expanse of alluvial soil with rich paddy fields interspersed by green groves of mango, coconut and other trees. No hill can be found to add to the scenic beauty.11 In the South and South-Western parts, a small plateau called the Vallam Tableland is found.12 There is also a gentle slope from north to south noticeable in Mannargudi taluk and the north-eastern portion of Arantangi taluk. In Pattukkottai taluk, the slope is from North-West to

South-East towards the Sea. The villages bordering the coast in Thiruthuraipoondi taluk are sandy.

Climate

The climate of Thanjavur is fairly healthy. The first two months of the year, January and February, form a pleasant period with warm days and cool nights. But by the close of February, the climate becomes rather sultry and during March and April, the Mercury is on the upward trend reaching its peak by the close of May or early June. It is benefited by both the monsoons. It gets more rain from the North-East Monsoon. But the South West plays a more significant role because it feeds River Cauvery, the main source of irrigation for the district. The rainy months are classified into three seasons.

- The summer rains during March, April and May.
- The South-West Monsoon period from June to September.
- The North-East Monsoon period from October to early January.

Soils

Four major groups of soils can be identified in the district as given below.

1. Alluvial
2. Regar or the Block Soil
3. Red Soil
4. Arenaceous or the Sandy soil.

Alluvial and Regar cover a large extent of the district. The alluvial soil is confined to the taluks of Thanjavur, Papanasam, Mayavaram and Nannilam and the regar occurs in all taluks except Pattukottai and Aranthangi. The percentage

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distribution of major groups of soils in the wet and dry areas of the district is given below.

**Table No – 1.1**

<table>
<thead>
<tr>
<th>Taluks</th>
<th>Wet Alluvial</th>
<th>Wet Regar</th>
<th>Wet Red</th>
<th>Wet Arenaceous</th>
<th>Dry Alluvial</th>
<th>Dry Regar</th>
<th>Dry Red</th>
<th>Dry Arenaceous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thanjavur</td>
<td>32</td>
<td>39</td>
<td>29</td>
<td>-</td>
<td>6</td>
<td>10</td>
<td>84</td>
<td>-</td>
</tr>
<tr>
<td>Papanasam</td>
<td>28</td>
<td>68</td>
<td>4</td>
<td>-</td>
<td>38</td>
<td>22</td>
<td>40</td>
<td>-</td>
</tr>
<tr>
<td>Kumbakonam</td>
<td>64</td>
<td>36</td>
<td>-</td>
<td>-</td>
<td>59</td>
<td>41</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mayavaram</td>
<td>70</td>
<td>23</td>
<td>-</td>
<td>7</td>
<td>61</td>
<td>21</td>
<td>-</td>
<td>18</td>
</tr>
<tr>
<td>Sirkali</td>
<td>-</td>
<td>76</td>
<td>-</td>
<td>24</td>
<td>-</td>
<td>53</td>
<td>-</td>
<td>47</td>
</tr>
<tr>
<td>Nannilam</td>
<td>55</td>
<td>45</td>
<td>-</td>
<td>-</td>
<td>56</td>
<td>44</td>
<td>-</td>
<td>47</td>
</tr>
<tr>
<td>Nagapattinam</td>
<td>-</td>
<td>92</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>45</td>
<td>-</td>
<td>55</td>
</tr>
<tr>
<td>Mannargudi</td>
<td>-</td>
<td>87</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>15</td>
<td>85</td>
<td>-</td>
</tr>
<tr>
<td>Thiruthuraipondi</td>
<td>-</td>
<td>93</td>
<td>10</td>
<td>6</td>
<td>-</td>
<td>61</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Pattukottai</td>
<td>-</td>
<td>-</td>
<td>99.7</td>
<td>0.3</td>
<td>-</td>
<td>-</td>
<td>99.7</td>
<td>0.3</td>
</tr>
<tr>
<td>Aranthangi</td>
<td>-</td>
<td>-</td>
<td>99</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>87</td>
<td>13</td>
</tr>
</tbody>
</table>


The alluvial soil is the best variety while the arenaceous soil is the worst. But red soil is as fertile as 'regar'. Pattukottai, Orathanad and Aranthangi taluks have red soil in which groundnut, varagu, ragi, cereals etc., could be raised without the help of irrigation. However irrigation has made it possible to raise some paddy also. The Thanjavur district has been intensely cultivated and this practice tends to make the land less fertile.16

Minerals

The district was originally identified with a small quantity of minerals like iron, sandstone, laterite etc. But geological investigations have proved the existence of lignite, natural gas, zircon etc. The neighbourhood of Vallam is already famous for Vallam stones. Iron ore is found to exist. Vallam and Gandarvakottai areas in Thanjavur Taluk yield laterite of fine quality near Alakudi Railway Station and in the villages of Thirumalai Samudram. On the coast near Nagapattinam and also between Adirampattanam and Mimisal, lemetite deposit is found and this titanium mineral is useful in the manufacture of steel and also high quality paint called Titanium White. Zircon is useful in the manufacture of super refractory bricks and this mineral is found to occur in the sands of Tranquebar region. The grains of sands found with this mineral are usually colourless and transparent.17

Early history of Thanjavur

It has been the seat of one of the early river valley civilizations of India. The Chola dynasty flourished in this region around 1000 B.C. It was believed that the Cholas succeeded the Nagas. Ptolemy in 130 A.D. referred to Woraiyur as the capital of the Cholas. The Pallavas subjugated the Chola territory in the sixth Century A.D. and their rule lasted upto the ninth century A.D.18 The Chalukyas and the Rashtrakutas have also held sway over this country for a brief period. The second line of Chola dynasty dawned with Vijayaditya in the second half of the ninth century. Raja Raja, Rajendra, Kulothunga were the notable Chola rulers. The Empire of the Cholas, which extended to Sri Lanka during the reign of Raja Raja, ended during Kulothunga in the twelfth century and heralded the decay of the Chola dynasty. Later, this Kingdom was subjugated by the Vijayanagar Empire in the middle of the fourteenth century.19

The Portuguese Chronicler, Nuniz, refers to Coromandel, Thanjavur and Nagapattinam as the subject countries of Vijayanagar under Achutharaya in 1537 A.D. The Saluvas and the Tuluvas held sway over this area as successor of the Vijayanagar Empire. Seveppa Nayak founded the Nayak dynasty in the Thanjavur territory in 1640 A.D. Incidentally, it was the same year the rule of Vijayanagar Empire also came to an end. The kingdom declined in the thirteenth century, and in the mid-fourteenth, it became tributary to the Hindu Telungu speaking empire of Vijayanagar. Under the Vijayanagar rulers, more land was granted to the great temples and monasteries. The Nayaks of Thanjavur became independent. But they were overpowered by the Sultan of Bijapur in 1660 A.D. The Nayak dynasty was terminated in 1673 A.D. Venkoji, a Maratha warrior, succeeded in usurping the kingdom in 1674 A.D. In mid-seventeenth century, Thanjavur's Telugu viceroy, the Nayaks, declared their independence from Vijayanagar, but were conquered by Marathi speaking armies from Bijapur in 1675. An independent Maratha kingdom of Thanjavur emerged by 1680 and the Maratha dynasty of Thanjavur continued till the British annexation in 1799. After the death of the last Maratha king, Thulasaji in 1787, his adopted son Sarfoji became the king in 1798. But within a year, he made a treaty with the British agreeing to be pensioned off. He placed the country at the disposal of the British except the property consisting of the Fort at Thanjavur.

The ruler of Thanjavur was allowed to retain the Fort of Thanjavur with limited powers in its administration until the death of the ruler in 1841. Thanjavur Fort was annexed by the British and treated as part of Madras State.

22. *Ibid*.
since there was no heir to replace the deceased king. Thanjavur remained under the British until 1947.24

Caste

Numerous castes constitute one of the most fundamental features of its social structure. In Hindu Society, caste divisions play a vital part both in actual social interactions and in the ideal scheme of values. Members of different castes are, up to a point, expected to behave differently and to have different values and ideals.25 Generally there were four varnas in society - Brahmin, Kshatriya, Vaishya and Shudra. Brahmins occupied the primary position in this system and other classes were deemed inferior to them. Shudras were subjected to a rather subordinate position.

Andre Beteille observed the castes in his research studies and classified them as detailed below.26

• Brahmins were classified as Smarthas and Ayyangars
• Non-Brahmins were classified into two broad groups. Aristocratic castes or sub castes of traditional landlords and Village Administrators, vellalars, kamma naidu, some sub-castes of kallar, maravar and moopanars.
• The second broad grouping is classified as Adi-Dravida or Scheduled Castes – parayars, pallars and chakkilivars.27

Craftsmen, Traders and other Specialists of the Town

Tamil, Telugu, Kannada and Gujarat castes of weavers, wood carvers, stone carvers, goldsmith and brass workers, Tamil melakkar, musicians and

dancers, pattu nulkarar, Tamil kaikkilars, Telugu komuti chettiar and nattukottai chettiar are grouped under this classification of technically qualified castes.

The Farming Castes
Peasant Castes – nadars, Telugu and Tulu nayakkars, vanniar, moopanar, kallar.
Fishing Castes – ambalakarar, naidus, valaiyars, karaiyars, sembadavars and pattanavars – konor (idaiyars)

Specialized Village Servants
Artisan and service workers, teachers, kaltachars, pathars, kannars (brass and copper workers) were technical segments of the society. The other service workers are vanniyars, vannars, ambattars, kusavars, pandarams and kuthadis.

Socio – Economic Setting
The density of population in 1961 was 868 persons per square mile. Majority of population were Hindus. Muslims constituted 6.26% and Christians constituted 3.74% of the population. Hindu population is divided into a number of castes and sub castes. They are generally divided on hierarchical lines in Thanjavur District. The landowners had traditionally been Brahmins, while the Non-Brahmins had been tenants and Harijans largely remained landless labourers.

The rural Thanjavur district exhibits a highly stratified population consisting mainly of landowners, tenants and landless labourers. The basic cleavage is between owners and non-owners of land. But there is a wide disparity even within the landowning groups. Most of the land was owned by a relatively small number of people. Within the landowning class, three categories can be delineated, namely, Absentee Landowners, mirasdars and

Small Landowners. In the process of agrarian development, most of the Brahmin families, as they were lured by lucrative jobs, became absentee landlords. Educational requirements, employment opportunities in government sector as well as non-farm activities forced them to settle in towns. They were unable to exercise their hereditary rights over land due to their geographic isolation and absence of effective communication system. This situation encouraged tenants' fraud which affected the interest of Brahmin landowners who already suffered much due to the increasing cost of cultivation. Moreover, due to high demands of city life and investment in education and other fields, they had to dispose their land in part or whole. Thus land entered the market, the tenant and labouring classes mostly the Kallars and Vanniars, with their capital at their disposal, could invest on land and thus became landowners.\textsuperscript{30}

There have been two methods of land lease. One is known as the \textit{varam}\textsuperscript{*} method where the landlord receives a fixed proportion of the harvest. The second lease method is known as the \textit{kuthagai}\textsuperscript{*} method. In this case the tenant pays a fixed quantity of the harvest for the use of land. The tenant may pay the landlord as much as 65-70 percent of the harvest.\textsuperscript{31} The \textit{kuthagai} system is basically the only one in use in Thanjavur District today.

\begin{itemize}
\item \textbf{Varam}- Land held under lease on some crop sharing basis. This is a mode of leasing agricultural land. Under this system, the tenant has to pay specified proportion of the produce to land holder. Conditions of varam vary from place to place.
\item \textbf{Kuthagai}- Lease of immovable property is a transfer of right to enjoy such property for a certain time expressed or implied or in perpetuity, in consideration of a premium or of rent which may consist of money, a share of crops or any other thing of value to be rendered periodically, or on specified occasions, to the lesser by lessee. A lease may thus be in perpetuity for life, for terms of years or from year to year.
\end{itemize}

\textsuperscript{30} Andre Beteille, \textit{op.cit.}, pp.193-197.

The above methods slowly widened the gap between the landowners and the tenants. Tension between the landlords and tenants centered around two factors. The first is the share of the produce to be received by each party and the second is the security of tenure guaranteed by contractual relationship. Stronger bargaining position between the landlord and tenant depends partly on social factors, in addition to purely economic factors.\textsuperscript{32} The landless labourer is at the bottom of the scale in this hierarchical social structure and he gets least security, and the least income in the bargain.\textsuperscript{33}

1.2. Agricultural Background

The Cauvery basin extends over an area of 87,900 sq.kms in the States of Kerala, Karnataka and Tamil Nadu and lies between the Longitude of 74°.3' and 79°.45' and North Latitudes of 10°.5' and 13°.30'.

Table No. 1.2

State wise distribution of the basin is given below

<table>
<thead>
<tr>
<th>State</th>
<th>Drainage Area (Sq.kms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerala</td>
<td>2,930</td>
</tr>
<tr>
<td>Karnataka</td>
<td>36,240</td>
</tr>
<tr>
<td>Tamil Nadu (including Pondicherry)</td>
<td>48,730</td>
</tr>
<tr>
<td>Total</td>
<td>87,900</td>
</tr>
</tbody>
</table>

Source: Short term course on Integrated River Basin Planning and Management, Irrigation Management Training Institute, Tamil Nadu, 2001.

The Cauvery Basin is bounded on the west by the Western Ghats, on the east and south by the Eastern Ghats and on the north by the ridges separating it from the Tungabhadra and the Pennar Basins. The Cauvery Basin is somewhat rectangular in shape, the maximum length and breadth being 360 kms, and 200

\textsuperscript{32} K.C.Alexander, \textit{Agrarian Tension in Thanjavur}, National Institute of Community Development, Hyderabad, 1975, p.15.

\textsuperscript{33} \textit{Ibid.}, p.17.
kms respectively. The length of the Cauvery sub-basin is 121.6 kms and the length of its branches are 1,610 kms.

Rivers

Since time immemorial, River Cauvery is the main source of irrigation to Tamil Nadu. It is the largest with the biggest Ayacut, supplying an average of 3,08,608 million cubic feet of water annually. Having its origin in the mountains of Coorg, the Cauvery traverses the Mysore state. Flowing along the northern boundary of Coimbatore district, the river skirts parts of the western and southern boundary of the Salem district and enters the Tiruchirappalli district. It splits into numerous branches and covers the whole of the delta with a vast network of irrigation channels. Thereafter the Coleroon takes a northeasterly course, passes along the entire northern boundary of taluks of Thanjavur, Papanasam, Kumbakonam, Mayavaram and Sirkali and enters the Sea at Kaveripatnam about 1.28 kms. north of Tranquebar. The main branches of the Cauvery are the Vennar, Kodamurutiyar and the Arasalar and these again branch out into smaller rivers.

The Vennar gives off two branches called Vadavar and Vettar in Thanjavur taluk. The Vadavar flows through Thanjavur, Papanasam and Mannargudi taluks and empties itself in Vadavoor eri. The Vettar flows through Papanasam, Nannilam and Nagapattinam taluks, branching into Odambokkiyar in Nannilam taluks. Still further down, the Vennar supplies two more branches namely, the Pandavayar and the Vellayar, flowing through Mannargudi and Nagapattinam taluks. Mulliyar and its branches, Adappar and Hari-Chandramathi, are distributaries of the Koraiyar flowing through Tiruchirappalli.

34. Ibid. p.19.
35. S.C. Bhatt, District Gazetteers of India, New Delhi, 1999, p.121.
36. Ibid., pp.2-4.
The Kodamuruti branch of the Cauvery gives rise to the Thirumalairajanar and Mudikondan flowing through Papanasam, Kumbakonam and Nannilam taluks. Lower down, the Kodamurutiyar bifurcates itself into two rivers and they go by the name of the Puttar and the Sholasudamaniyar. The Puttar flows through Papanasam and Nannilam taluks.

The Arasalar, the third main branch of the Cauvery, flows through Papanasam, Kumbakonam and Nannilam taluks. The Nattar and its branch, the Kirtimannar, are tributaries of Arasalar and flow through Kumbakonam and Nannilam taluks. The Veerasholavar is a tributary of Arasalar and flows through Kumbakonam and Nannilam taluks. The Veerasholavar is a distributary of the Cauvery flowing through Kumbakonam and Mayavaram taluks. The Grand Anicut Canal of the Cauvery Mettur project flows through Thanjavur, Pattukottai and Aranthangi taluks. Manniar, which was formerly a distributory from the Coleroon, has now been given direct supply from the Cauvery.

Mudalamuthuvari and Cholagampattivarri are two jungle streams in Thanjavur taluk, which discharge the flood water of their catchment areas into the Vennar. The Uppanar is a drainage river in Sirkali taluk. There is a navigation channel called the Vedaranyam Canal running almost parallel to the coast from Nagapattinam to Vedaranyam. The drainage channel, Chakkilian Vaikkal, with catchment area in Thiruthuraipoondi and Nagappatinam taluks, has been connected to the Sea to make it function properly as a drainage course. The other important streams in Pattukkottai taluk are the Kattar, the Nasavanniar, the Maharajasamudram, the Agniar, the Panaikuthiar and the Ambuliar and they serve as major drainages. The Kannanar is another drainage course in this taluk. The rivers in the Aranthangi taluk are merely jungle streams, the chief of which are the Narasinga Cauvery flowing west to east and the Vellar flowing parallel to it further south.39

39. Ibid., p.2.
The land drained by River Cauvery is roughly 3-6 lakh hectares covering of the taluks of Thanjavur (North), Papanasam, Kumbakonam, Mayavaram, Sirkali, Nannilam, Nagapattinam, Thiruthuraipoondi and eastern portions of Mannargudi. The head of this delta is at the upper Anicut, 16 kilometres west of Tiruchirappalli, where river Cauvery divides itself into two branches.\textsuperscript{40} The northern branch is Coleroon which is a flood carrier and flows along the northern boundary of Thanjavur district. The southern branch, Cauvery, is the main source of irrigation.\textsuperscript{41} Cauvery again divides itself into two near the Grand Anicut, 28 kilometres below the Upper Anicut.

From the Grand Anicut, a canal was excavated under the Cauvery - Mettur project in 1933. This was intended for irrigating the upland tracts of Thanjavur, Mannargudi and entire Pattukottai taluks. This is the Grand Anicut Canal which irrigates roughly an area of 1.2 lakh hectares (3 lakh acres) known as New Delta. There are altogether 36 main rivers covering a distance of 1600 kilometers. There are 29,881 channels, totaling 24,000 kilometers in length, serving the delta below the Grand Anicut.\textsuperscript{42}

The Cauvery Mettur Project

The sequence of rainfall in the area drained by the Cauvery during the South-West and North-East Monsoons results in a fairly high flow during the irrigation season from June to January except for a break between the monsoons. Before the construction of the Mettur Dam, all the water of the river was not utilised for irrigation purpose, and it ran unproductively into the sea. At other times, the supply was far below the requirements. While the South-West Monsoon supply was copious and dependable, the North-East Monsoon supply was irregular and it often failed to bring rains. In other words, irrigation in the delta had to depend upon a monsoon which was often unreliable. It alternatively

\textsuperscript{40} Census Hand Book 1951, Thanjavur District, \textit{op.cit.}, P.7.
\textsuperscript{41} \textit{Ibid.}
\textsuperscript{42} \textit{Ibid.}, pp. 40-42.
caused damage by high floods or by drought. In order to protect the delta from the fluctuating supplies the Cauvery-Mettur project was designed to store the water from surplus floods during the South-West Monsoon and distributing the same evenly in the succeeding period.\textsuperscript{43}

The need for storage and improving the conditions of irrigation in the existing delta was first recognised in 1834 by Arthur Cotton who was an engineer in the British period. His solution was to put up a dam across the Cauvery at a suitable site to store up the excess water running to waste and let them down later when required for irrigation.\textsuperscript{44} In 1856, Major Law Ford submitted proposals for the construction of a reservoir on the Cauvery near Nerrioripet. But the proposal was not implemented.

A scheme, known as the Cauvery- Project, for damming the river just above Mettur opposite Panamarattupatti in Tiruchengode taluk where the Palamalai and the Sitamalai Hills converge 56 kms above Erode and 38.4 kms above the confluence of the Bhavani and Cauvery, was proposed. According to this proposal, a reservoir to hold 80,000 million cubic feet of water was planned.\textsuperscript{45}

An extension scheme was proposed to provide supply to 24 tanks with ayacut of 2,838 acres. Out of these 24 tanks, six with an ayacut of 684 acres were government tanks and the remaining were inam and zamin tanks. Subsequently the superintending engineer forwarded to the Collector a modified and temporary proposal to be taken up for immediate execution under Grow More Food Scheme. The proposal provided for extension of CMP water supply to 458 acres of dry land at the cost of Rs. 8,000. The engineer had suggested to the collector that the project might be taken up provided the ayacutdars would

\textsuperscript{43} C.G. Barber, \textit{History of the Cauvery - Mettur Project}, Government Press, Madras, 1940, p.3.

\textsuperscript{44} Ibid., p.8.

\textsuperscript{45} C.G. Barber, op.cit., pp. 3-5.
give a written guarantee of taking CMP water and deposit water cess in advance. It was hoped that this would give an inducement to ryots to take up the bigger scheme by a practical demonstration of the advantages of CMP water supply. The supply was proposed for Ammanjikki and five other tanks below it, where the ryots were already keen to accept the project. The Ammanjikki scheme tanks and ayacut were contiguous to the area that would be benefited by the extension of CMP irrigation beyond Narasinga Cauvery. The area, which came under the scheme, was 15,000 acres. At the outset, this Ammanjikki scheme was proposed as a temporary measure, anticipating decision on a bigger scheme. The ayacut under this scheme was not included in the Narasinga-Cauvery scheme. After experimenting for three years, the government was fully satisfied and consequently made the scheme a permanent one.

**History of Grand Anicut**

The Grand Anicut, in its original form, was the oldest and it belonged to the Sangam Age of the early Chola kings. It is situated at the junction of the Cauvery and the Coleroon at the tail end of River Cauvery. Originally it consisted of a core of roughly dressed granite set in mud, covered with an outer facing of roughly dressed granite blocks set in lime mortar. Finally, in 1836, Arthur Cotton, an able Engineer, built at the head of the Coleroon (about 16 k.m west of Tiruchirappalli at the first point of bifurcation from the Cauvery), a solid masonry wall called the Upper Anicut which was designed to prevent too much water from flowing down that river and to adequately fill the Cauvery.

The construction of the great work overcame for the time being the difficulty of water supply to the Thanjavur district. Arthur Cotton built the Lower Anicut across the Coleroon some 107.2 kms below the Upper Anicut, to irrigate the north-eastern corner of the Thanjavur district which was inadequately supplied by the Cauvery.

In 1899, the falling shutters were removed and replaced by 30 lifting shutters of 32 feet span and five feet high. In the 1909 floods, three arches were washed away, but these were restored, omitting the scouring sluices. Though the Grand Anicut stopped the Cauvery water from running into Coleroon, it resulted in the silting up of the bed of Cauvery. In 1914, the floor of the Anicut was raised and strengthened. The channels at the Lower Anicut now irrigate about 24,000 acres in the Thanjavur district.

The excellent irrigation system was still further improved by the Mettur Dam. The reservoir constructed near Mettur connected the canal works constructed in the Thanjavur district. The question of improving the conditions of irrigation in the Thanjavur delta by the storage of the Cauvery water in a reservoir was considered as early as 1834 by Arthur Cotton, that indefatigable engineer to whom Thanjavur owes so much. The water spread of Cauvery under the proposed reservoir was to reach northwards beyond the confluence of Toppur with Cauvery to Hogenakkal falls, submerging the villages round Solappadi and Baddirahalli, in the Dharmapuri taluk. There were also heated arguments during a period of 60 years about the relative merits of a dam across the Cauvery and the Bhavani. This was settled when Col. Ellis submitted in 1910 a scheme to construct a reservoir of 80,000 million cubic feet capacity to irrigate an additional area of 3,28,395 acres in Pattukottai, Thanjavur and Mannargudi taluks at a cost of Rs. 3.85 crores. After long drawn out discussions and prolonged negotiations with Mysore and after taking into account the fact that the supplies would not be available in this state to the extent anticipated on the basis of the award ratified in 1916, the dispute with Mysore was settled. According to the settlement, Krishnarajasagar Reservoir was to be regulated without prejudice to Madras state and the new area of irrigation in this

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49. G.O. No. 2661, Public Works and Labour, (Irrigation), dated on 4th December 1934.
state (otherwise than by improvement) was to be limited to 3,01,000 acres, out of which 30,000 acres (in addition to 13,000 acres by improvement) was to be irrigated by improving and extending the Vadavar.

The construction of Grant Anicut canal accelerated the process of extensive and intensive cultivation. Canal-fed tanks further activated the process. For the protection of crops in Arantangi taluk, Cauvery – Mettur project supply was extended through Ammanjikki Peria Eri and five other tanks. The initial area of ayacut benefited by this scheme was 81 acres and 25 cents.  

The first major irrigation project was formulated during the first five year plan. This was mooted as early as 1857 and had been investigated in detail and kept ready for sanction. A masonry cum earth dam, 8797 m long and 62 m high was built across Bhavani to form a reservoir with a gross capacity of 32.8 TMC to irrigate an area of 83,772 hectare (2,07,000 acres) in the Periyar and Tiruchirappalli districts. With a project cost of Rs. 10,34,00,000 lakhs, it was completed in 1955.

The Cauvery Dispute

Three comprehensive agreements on the sharing of the Cauvery waters were signed in the years 1892, 1924, and 1972 under the sovereignty of the British. They were modeled on the agreements signed by Egypt, Ethiopia and Sudan in the years 1891, 1914, 1919, 1920 and 1925 over the sharing of Nile waters. All these inter-state river water disputes were settled only by upholding and accepting the priority of the lower riparian areas over the rights of the upper riparian state. The rights of the lower riparian state over the river waters are thus deemed to be natural, traditional and historical. These rights cannot be and have

52. Mohanakrishnan, A., Challenges faced by Irrigation Engineers of Tamil Nadu in the Past Five Decades after Independence, Platinum Jubilee Celebration of the Institution of Engineers (India), Tamil Nadu State Centre, Chennai, 20th December 1997, pp.79.
53. G.O.No. 2766, (Public Works), dated on 15th December 1934.
not been altered anywhere in the world. The people of Tamil Nadu also declare that they will not allow their traditional rights to be usurped by upper riparian force.\textsuperscript{54}

The conflict between Tamil Nadu and Karnataka compounds a century old dispute over the vital interests of farmers of Tamil Nadu and Karnataka.\textsuperscript{55} Tamil Nadu relies on the Cauvery river to sustain its agricultural needs because Tamil Nadu has very few resources to maintain its water supply beyond the Cauvery waters. Cauvery is the sole saviour of Tamil Nadu’s agriculture which is the source of livelihood for the majority in Tamil Nadu. Tamil Nadu asserts that water sharing is a national issue and it is mandatory for Karnataka to abide by the decisions of the Supreme Court.\textsuperscript{56}

After the lapse of the 50-year-old agreement, the Cauvery river continues to be a source of conflict for the two states. In April 1991, the Supreme Court of India caused the creation of a Tribunal to settle the dispute as mandated in the Inter-State River Water Disputes Act. The Tribunal heard arguments from both states and reached the decision that Karnataka must release 205 TMC of water from the Cauvery reservoirs to Tamil Nadu on a monthly basis.\textsuperscript{57} The share of water received by Tamil Nadu over the years is given in (Appendix – I).\textsuperscript{58}

\textsuperscript{54} T.T. Shanmugavadival, \textit{The Roles of the Centre and Karnataka & Apprehensions of the Tamils, brought out by Committee for Protection of Cauvery}, Essaar Graphics, Karur, 2001, pp.9-14

\textsuperscript{55} M.Neelamalar. & D.Viswanathan, \textit{War Over Water - The Strategy of Media}, Department of Media Sciences, Annamalai University, Platinum Jubilee Department of Indian History, University of Madras, Souvenir and Proceedings of the International Seminar on “Water Resources Development and Management in India through the Ages”, 26\textsuperscript{th} – 28\textsuperscript{th}, Chennai, March 2003.


\textsuperscript{57} \textit{Indian Express}, Unshared waters, Bombay, 18\textsuperscript{th} July 1997.

\textsuperscript{58} T.T. Shanmugavadival, \textit{loc.cit.}
1.3. Irrigation Development and Management Act

The State of Tamil Nadu has several statutes covering different aspects of irrigation development and management. They have all been drafted and enacted to serve a particular purpose in a particular area as the major and medium projects have been taken up under the Five Year Plans.\textsuperscript{59} A few relevant irrigation laws are given below.\textsuperscript{60}

- Madras Compulsory Labour Act 1858.
- The Madras Irrigation Cess Act 1865 (Act VII of 1865) since amended as Act VI of 1940.
- The Madras Irrigation works (repairs, construction, improvements) Act 1943 (Madras Act XVIII of 1943).
- Madras Additional Assessment and Additional Water Cess Act, No.8 of 1963.

The Second Irrigation Commission (1972)

The Ministry of Irrigation and Power, Government of India, set up the Second Irrigation Commission\textsuperscript{61} in 1969 under the Chairmanship of Ajit Prasad Jain, Member of Parliament, with Irrigation Engineers, Commissioner of


\textsuperscript{61} \textit{Ibid.}, p.171.
Agriculture among the five members and an Officer on Special Duty in the Ministry as Secretary. Tamil Nadu had the pleasure of having one of its retired irrigation chief engineers nominated as one of the members.

Recording the fast development of irrigation in the country since the First Irrigation Commission submitted its report in 1903, the Government thought it necessary to appoint another commission to project irrigation expansion in future and outlined the terms of reference as follows.62

(i) To review the development of irrigation in India since 1903 when the last irrigation commission submitted its recommendations and report on the contribution made by irrigation to increasing the productivity of land and in providing insurance against the vagaries of rainfall.

(ii) To examine in detail the irrigation facilities available in chronically drought affected and flood free areas and suggest essential and minimum irrigation works to be undertaken promptly in such areas.

(iii) In respect of Tamil Nadu state, the report admits that agriculture is the predominant occupation in the state and rice is the principal crop. The yield is seen to be higher than the country’s average in respect of principal crops.

Cauvery is credited to be one of the best regulated and fully exploited one in India and the usefulness of the storage at Mettur for delta irrigation and the existence of the 2000 year old Grand Anicut are matters of marvel in the eyes of the world.

The irrigation commission has adopted ‘hectare’ in the place of ‘acre’ and the details are exhibited in the Table below.

Table No. 1.3
Irrigated Crops in the Basin in 1967-68
(as given by the Irrigation Commission)

<table>
<thead>
<tr>
<th>Name of the Crops</th>
<th>Whole Cauvery Basin</th>
<th>Cauvery Basin in Tamil Nadu</th>
<th>% col.4 to col.2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area</td>
<td>% to the Total</td>
<td>Area</td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Rice</td>
<td>2712.06</td>
<td>69.8</td>
<td>2203.24</td>
</tr>
<tr>
<td>Jowar</td>
<td>182.78</td>
<td>4.7</td>
<td>172.90</td>
</tr>
<tr>
<td>Ragi</td>
<td>195.13</td>
<td>5.0</td>
<td>103.74</td>
</tr>
<tr>
<td>Total food grains</td>
<td>3215.94</td>
<td>82.8</td>
<td>2595.97</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>160.55</td>
<td>4.1</td>
<td>106.21</td>
</tr>
<tr>
<td>Other food crops</td>
<td>175.37</td>
<td>4.5</td>
<td>158.08</td>
</tr>
<tr>
<td>Total food crops</td>
<td>3554.33</td>
<td>91.4</td>
<td>2860.26</td>
</tr>
<tr>
<td>Non food crops</td>
<td>333.45</td>
<td>8.6</td>
<td>306.28</td>
</tr>
<tr>
<td>Total cropped area</td>
<td>3887.78</td>
<td>100.0</td>
<td>3166.54</td>
</tr>
</tbody>
</table>


In the total of 38.38 lakh acres of irrigated cropped area in Cauvery Basin, the Cauvery Basin in Tamil Nadu accounted for 31.67 lakh acres (81.5%). In the total irrigated cropped area, 91.4% and 80.5% in the whole Cauvery basin and the Cauvery Basin in Tamil Nadu respectively were under food crops indicating by and large the dominance of food crops among the irrigated crops in the Basin. Only about 9.10% of the total irrigated cropped area was under non-food crops. Irrigated rice crop area accounted for about 70% in the basin as a whole. (1967 -68).

Turning to the situation that obtained in 1967 – 68 in the Cauvery Basin in Tamil Nadu, it may be seen from the table above that in the total irrigated area of 31.67 lakh acres, the food crops accounted for 90.3% and the balance 9.7% by non food crops. Going by crop wise distribution in the total irrigated cropped...
area coverage in 1967-68, the area under rice (paddy) was 22.03 lakh acres (69.6%), Jowar 1.73 lakh acres (5.5%), ragi 1.04 lakh acres (3.3%) and sugarcane 1.06 lakh acres (3.4%). The inferences that could be drawn from the Table are

1. Rice is the principal crop in the Cauvery Basin.
2. About 81% of the total irrigated rice cropped area in the Cauvery Basin is in the Tamil Nadu Basin.
3. The other important irrigated crops cultivated like jowar, ragi, sugarcane are confined to 4-5% each in the total irrigated cropped area in the Cauvery Basin.

Table No. 1.4

<table>
<thead>
<tr>
<th>(i)</th>
<th>Total geographical area</th>
<th>23,92,974 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii)</td>
<td>Total cropped area</td>
<td>18,77,592 acres</td>
</tr>
<tr>
<td>(iii)</td>
<td>Net area sown</td>
<td>14,53,009 acres</td>
</tr>
<tr>
<td>(iv)</td>
<td>Land put to Non - Agricultural uses</td>
<td>4,83,146 acres</td>
</tr>
<tr>
<td>(v)</td>
<td>Cultivable waste</td>
<td>96,126 acres</td>
</tr>
<tr>
<td>(vi)</td>
<td>Barren and uncultivable land</td>
<td>78,532 acres</td>
</tr>
<tr>
<td>(vii)</td>
<td>Permanent pastures and other grazing lands</td>
<td>15,693 acres</td>
</tr>
<tr>
<td>(viii)</td>
<td>Forests</td>
<td>31,766 acres</td>
</tr>
<tr>
<td>(ix)</td>
<td>Land under miscellaneous tree crops and groves not included in the net area sown</td>
<td>93,756 acres</td>
</tr>
</tbody>
</table>

Source: Subramanian (Union Minister for food), Three day Agricultural Seminar at Thanjavur, Scope for Multiple Cropping in Thanjavur district, Madras Information, Vol.XIX, November 1965, No.11.

Cropping Pattern

There are two main cropping patterns in this region, namely, single cropping and double cropping (Figure-1). When the single crop of paddy or samba is grown, the nursery is usually raised in July, transplanted and harvested in September and in February respectively. The double cropping pattern begins with the Kuruvai because Kuruvai is a short duration crop. It can be followed by a second paddy crop called Thaladi. The nursery is usually raised in September and October, transplanted in November and harvested in February. Single crop
or double cropping patterns is used depending on the early availability of irrigation water. Traditionally about 3,00,000 acres have been double-cropped with paddy.

**Cropping pattern of paddy production**

**Figure 1.1**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Double</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Kuruvai</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Single</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Thaladi</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Samba</strong></td>
</tr>
</tbody>
</table>


**Area Cultivated with Food and Commercial Crops**

Paddy is the chief food crop of the district and it is raised extensively throughout the district. Cholam, Cumbu, Ragi, Varagu and Maize are cultivated in limited areas. Greengram, Redgram and Blackgram are the pulses cultivated in the district. Chillies, Gingelly, Groundnut, Cotton and Tobacco are raised in limited areas and Coconut and Plantain are the main garden crops grown in backyards and riverside.

Among commercial crops, the most important are the oil seeds which are produced in fairly large quantities in the dry soil tracts of the delta. These are raised mostly in Pattukottai and Thanjavur taluks. Apart from coconut, the other important oil seed, groundnut, is raised as a dry crop mostly in Pattukottai and Thanjavur taluks. The Agricultural Research Station at Pattukottai has evolved improved strains of groundnut and these new strains of seeds are found

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to yield 10 to 15 per cent above the usual varieties. The new strains called AH 25 and AH 32 are noteworthy. Though coconut is included among oil seeds, it is largely raised in the deltaic regions and in wet soil tracts. Perhaps next to Paddy, this is the principal wet crop in Thanjavur.\(^{64}\)

Most of Thanjavur District is made up of the delta of the Cauvery and therefore agriculture constituted the most important source of livelihood for the people of the district. Thanjavur is in fact the Granary of South India because other regions depend on Thanjavur.\(^{65}\) The paddy-cropped areas are detailed in Table No.1.5 and the table documents the status of Thanjavur as the Granary.

**Table No. 1.5**

Percentage of Gross Cropped Area under Paddy

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of District</th>
<th>Gross Cropped Area Under Paddy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chingleput</td>
<td>74.9</td>
</tr>
<tr>
<td>2</td>
<td>North Arcot</td>
<td>31.5</td>
</tr>
<tr>
<td>3</td>
<td>South Arcot</td>
<td>31.1</td>
</tr>
<tr>
<td>4</td>
<td>Salem</td>
<td>10.7</td>
</tr>
<tr>
<td>5</td>
<td>Madurai</td>
<td>12.1</td>
</tr>
<tr>
<td>6</td>
<td>Coimbatore</td>
<td>6.7</td>
</tr>
<tr>
<td>7</td>
<td>Nilgries</td>
<td>23.4</td>
</tr>
<tr>
<td>8</td>
<td>Tiruchirappalli</td>
<td>26.3</td>
</tr>
<tr>
<td>9</td>
<td>Thanjavur</td>
<td>78.2</td>
</tr>
<tr>
<td>10</td>
<td>Ramanathapuram</td>
<td>33.7</td>
</tr>
<tr>
<td>11</td>
<td>Tirunelveli</td>
<td>25.4</td>
</tr>
<tr>
<td>12</td>
<td>Kanniyakumari</td>
<td>54.3</td>
</tr>
</tbody>
</table>

*Source: Schemes in the Cauvery Basin in Tamil Nadu, Public Works Department, Government of Tamil Nadu, Madras 1991, p.11.*

Sowing and Harvesting Seasons of Principal Crops

<table>
<thead>
<tr>
<th>S.No</th>
<th>Crops</th>
<th>Sowing Season</th>
<th>Harvesting Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rice-I</td>
<td>June to July</td>
<td>October to November</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August to October</td>
<td>January to February</td>
</tr>
<tr>
<td>2</td>
<td>Rice-II</td>
<td>September to November</td>
<td>January to March</td>
</tr>
<tr>
<td>3</td>
<td>Blackgram</td>
<td>January to February</td>
<td>April</td>
</tr>
<tr>
<td>4</td>
<td>Greengram</td>
<td>January to February</td>
<td>April to May</td>
</tr>
<tr>
<td>5</td>
<td>Sugarcane</td>
<td>February to March</td>
<td>March to May</td>
</tr>
<tr>
<td>6</td>
<td>Groundnut(I)</td>
<td>December to January</td>
<td>April to May</td>
</tr>
<tr>
<td>7</td>
<td>Groundnut(R)</td>
<td>July to August</td>
<td>October to December</td>
</tr>
<tr>
<td>8</td>
<td>Gingelly (R)</td>
<td>February to March</td>
<td>April, May to June</td>
</tr>
<tr>
<td>9</td>
<td>Tobacco</td>
<td>August</td>
<td>February to March</td>
</tr>
</tbody>
</table>


1.4. Problems of Irrigation in Thanjavur District

In Thanjavur district, assured irrigation from Mettur Dam is only for the period from June to January, that too depending upon the storage position. Sowing the first crop of paddy (Kuruvai) depends upon this supply. In normal years, the water is released in early June. If it is delayed, sowings are also delayed particularly in the tail end of cauvery system. Late sowings will lead to late transplantation of Kuruvai. Normally, Kuruvai harvest comes off in September which coincides with the North East Monsoon rains. Heavy rains damage the matured crop both in quantity and quality. The second crop of paddy (Thaladi) is also delayed if transplanted in November and the seedlings are damaged in heavy rains and the whole area is flooded for long time due to lack of drainage, particularly at the tail end regions. Further, in the months of January and February, the crop suffers from lack of water at the maturity stage. The sum total is poor yields. The third problem is saving of summer crops in
rice. If water release is delayed, the planting of paddy also gets delayed by a few months. If the crops are raised, the harvesting will be affected due to rains in June.

The crops suffer from drought and yields are reduced considerably. To avoid these adverse conditions, farmers prefer to go in for Samba (long duration paddy), followed by any one of the pulses or gingelly or green manure. Sometimes, the lands are kept fallow. Thus, farmers avoid risk by converting double crop paddy lands into single crop lands. This tells upon the total paddy production of the district. Hence the problem can be solved by digging filter point, tube wells in places where there is sufficient underground water. These tube wells can supplement the canal irrigation, thereby enabling the farmer to carry out his seasonal operations in time without waiting for the canal water. Kuruvai can be harvested in August – September - October before the heavy rains of north-eastern monsoon. There will be no shortage of water towards the maturity stage. Summer crops can be sown in time. Thus, production can be considerably increased. The output of food grains did show a rise thanks to new technology since the mid-sixties, and early seventies. This is evident from the fact that while prior to 1965-66, the increase in food grains production in 15 years since 1950-51 was only 21.52 million tonnes, it was more than 36 million tonnes during the five year period from 1965-66 to 1970-71. After this spurt in production till 1974-75, it decreased to 108.42 million tonnes in 1970-71. It rose since then to 121.03 million tonnes in 1975-76, 111.7 million tonnes in 1976-77 and 126.41 million tonnes in 1977-78 and 131.37 million tonnes in 1978-79 and 109.70 million tonnes in 1979-80.

Declining trend in the arable area-result of failure to renew agreement after 1974

The ‘irrigable’ area coverage in the Tamil Nadu Cauvery Basin is dependent on the water release in the river Cauvery as 85 per cent of the normal

66.  Ibid., p.208.
cultivable land is fed by ‘Government and Private Canals’. Any interference in
the flow of the river is bound to have an adverse effect on the ‘irrigable land’ in
the Cauvery Basin of Tamil Nadu. Going by the data furnished to the Cauvery
Water Disputes Tribunal, the gross irrigated area in the Cauvery Basin of Tamil
Nadu was 19.53 lakh acres in 1989-90, registering a reduction of nearly 35 per
cent of gross irrigated area from the level in 1971-72. The rapid declining trend
in the ‘Net area irrigated’ and ‘Gross area irrigated’ in the Cauvery Basin of
Tamil Nadu is causing concern to the agriculturalists and the Government.

Table No. 1.6

Area irrigated in Cauvery Basin

<table>
<thead>
<tr>
<th>Year</th>
<th>Area in Lakh acres</th>
<th>Irrigation Intensity %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Net</td>
<td>Gross</td>
</tr>
<tr>
<td>1971-72</td>
<td>22.34</td>
<td>30.08</td>
</tr>
<tr>
<td>1974-75</td>
<td>18.79</td>
<td>26.25</td>
</tr>
<tr>
<td>1984-85</td>
<td>17.54</td>
<td>22.56</td>
</tr>
<tr>
<td>1989-90</td>
<td>17.25</td>
<td>19.53</td>
</tr>
</tbody>
</table>

Between 1971-72 and 1989-90, the gross area irrigated in Tamil Nadu declined by 16.425 lakh acres out of which 10.55 lakh acres are in Cauvery Basin, accounting for 64.2 per cent reduction. As a result of unauthorized impounding of Cauvery waters upstream, the ‘irrigation intensity’ also received a set back, declining from 134.6 per cent to 113.2 per cent in the Cauvery Basin.67

Huge Reduction in Rice Production After 1974

Till 1973-74, the food crops were grown nearly in 90 per cent of the gross irrigated area in the Cauvery Basin of Tamil Nadu. The non-food crops accounted for the balance. In other words, the structure of the cropping has not

changed significantly between 1965-66 to 1973-74 and only from 1974-75 onwards, some distortions could be seen. Paddy is the predominant crop grown in nearly 60-70 per cent of the gross irrigated area and all other food crops occupied less than 10 per cent of the gross irrigated area. Denial of Cauvery waters by the upper riparian state, i.e. Karnataka, has resulted in not only a recurring reduction in the irrigable area in the Cauvery Basin of Tamil Nadu but also huge production losses in rice crop. The average annual rice production loss in all these systems depending on Mettur in 1980s has doubled over the corresponding level in 1970s as it could be seen from the table below.\textsuperscript{68} Average Production Loss in the Systems Depending on Mettur in Tamil Nadu after 1974:

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
\textbf{Period} & \textbf{In Thanjavur District alone} & \textbf{In all the Systems Depending on Mettur} & \textbf{Percentage} \\
\hline
1974-75 to 1980-81 & 1.24 & 1.68 & 73.8\% \\
1981-82 to 1989-90 & 4.05 & 5.52 & 73.6\% \\
1974-75 to 1989-90 & 2.82 & 3.84 & 73.4\% \\
\hline
\end{tabular}
\caption{Average annual production loss in rice}
\end{table}

In Thanjavur district alone, an average loss of about 2.82 lakh tonnes of rice production is being sustained annually and the overall average for the systems depending on Mettur is 3.84 lakh tonnes of rice. The rice production loss is increasing from 1980-81 onwards in Thanjavur district, the Rice Bowl of Tamil Nadu.

The total production loss in the Cauvery Basin in Tamil Nadu would run into several lakhs of tonnes. When the country is facing huge shortage of rice, the loss of production in a potential area like Tamil Nadu due to impounding of Cauvery waters upstream is pure tragedy. Paddy is the staple food crop for the people in Tamil Nadu. Rice crop requires frequent irrigation. During the period

\textsuperscript{68} Ibid., p.83.
of water shortages, the first casualty in the area coverage would be rice. Karnataka’s denial of Cauvery water to Tamil Nadu Basin has resulted in the reduction of rice crop area year after year.\footnote{A Statistical Atlas of the Madras State, Fasli 1360, 1950-51, Government of Madras, 1965, p.12.}

**Loss of Mandays and Wages Loss - Ergonomic Study**

The consequential effects of cropped area reduction in the Cauvery Basin in Tamil Nadu on the agrarian economy as a whole is much more alarming, especially its adverse impact on the employment of agricultural labourers and wage loss to agricultural labourers. The estimated loss details for select districts are presented below.\footnote{Papers from the Cauvery Technical Cell (CTC), \textit{op.cit.}, p.73.}

**Table No. 1.8**

Average Mandays Loss and Wages

Loss to Agricultural Labourers per annum

<table>
<thead>
<tr>
<th>Name of the Districts</th>
<th>Period of the year</th>
<th>Mandays loss to Agricultural Labourers in Cauvery Basin (in lakhs)</th>
<th>Remuneration loss at Rs.15/- per manday (Rs. in Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periyar</td>
<td>1985-86 to 1988-89</td>
<td>9.59</td>
<td>1.44</td>
</tr>
<tr>
<td>Thanjavur</td>
<td>1985-86 to 1989-90</td>
<td>201.70</td>
<td>30.26</td>
</tr>
<tr>
<td>Tiruchirappalli</td>
<td>1985-86 to 1989-90</td>
<td>60.95</td>
<td>9.17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>272.24</strong></td>
<td><strong>40.87</strong></td>
</tr>
</tbody>
</table>

In the total of 272.24 lakh mandays lost, Thanjavur district alone accounts for the loss of 201.70 lakh mandays. The average annual remuneration loss of Rs.30.26 crores by the farmers in Thanjavur district in the total of Rs.40.87 crores works out to be 74 per cent. It is evident from the above that Thanjavur District has been the worst sufferer. While in the case of Tiruchirappalli and Thanjavur districts, the mandays lost relate to area reduction mainly in the rice
crop, in the case of Periyar district in addition to rice crop, the loss of mandays has occurred due to sugarcane area loss also.

Water is an essential resource which is needed to make other inputs like seeds, fertilizer and land to be more productive. In the fertile Cauvery Basin in Tamil Nadu, the water impounded by upper riparian State affects the maximization of productivity and the economy of Tamil Nadu and the nation as well. The Cauvery delta in Tamil Nadu has been regarded as ‘Granary of South India’ in view of its food production potential inherent in the tract on account of prevailing fertile soil, conducive climate, efficient inputs supply mechanism, appropriate research and extension support and above all, high levels of adoption of proven technologies in farming by the ryots. All these infrastructures are of no use, if water, the important resource needed for rice cultivation, is not made available for cultivation at the appropriate season.
CHAPTER – II

AGRA RIAN LAND REFORM

Generally, land reforms have been considered as an important tool of socio-economic changes. No wonder sociologists, economists, political leaders and administrators have all played their due role in evolving appropriate legislation for implementing land reforms as our economy depends on agriculture. The agrarian social structure prevailing in India is related to the land or land structure.¹ The present agrarian property structure, based on exploitation of one section by another, is an obstacle to the development of agrarian society. This structure is not helpful for increasing agricultural production as this leads to inefficient use of land. It is essential to change the present property structure with a view to providing opportunities for growth to all sections of producers as this alone can provide an environment needed for growth.² Changing the present agrarian structure involves breaking up large holdings for re-distributing land amongst landless and appropriate tenurial reform to transfer land from absentee landlords to tillers of the land.³

Definition

There is no agreement on what constitutes land reforms. According to the Encyclopaedia Britannica, land reform means:

A specific integrated action programme has to bring about more effective control and use of land for the direct benefit of the agricultural population and

² Laxminarayan, S.S.Tyagi, Changes in Agrarian Structure in India, Agricole Publishing Academy, New Delhi, 1982, p.16.