CHAPTER - VI

IRRIGATION ADMINISTRATION
The primary objective of an irrigation system is to provide water to farmers for increasing agricultural production and income from their farms. The ownership of all surface water from natural streams vests with the government and no person has any right to use such water, without authorization from the government. Localisation of lands for irrigation, as practiced in the southern states of India, authorizes such use. There is evidence from the ancient texts to prove that the people used to irrigate their crops with dug wells or inundation water from natural streams. Since then, farmers' role in irrigation administration has been very significant. Village communities managed the irrigation systems. Interference of the state with regard to maintenance and regulation of water under the irrigation works was minimal.

Most South Indian rulers, viz., Chola, Pallava and Vijayanagara Kings, followed the same principles. They built irrigation tanks at the expense of the state and the responsibility for maintaining them was assigned to private persons accountable to the village community. Such persons were granted land below the tank free or at a concessional rent to meet the cost of upkeep of the tank. The distribution of water below the

sluice of a tank and the safety of the tank bund was looked after by an employed irrigator. He was a village official. His office was hereditary. Ordinarily, one such person was employed for every 40 hectares. He convened to each man's field his share of water from the tank / canal. These irrigators were normally compensated in kind for service rendered. This system of management, though old, continues over generations.

The British, who took over the irrigation systems from the local rulers, more or less followed, the prevailing practices. They made the farmers responsible for carrying out regular repairs to the tanks and channels. In case of failure by the beneficiary farmers to repair the system, the government could intervene and recover the cost from them.

A significant event in the British period was the constitution of a special Commission by the Governor General in Council on 18th September 1901 to report on the irrigation of India as a protection against famine. It was referred to as the first Irrigation Commission of India. The Commission submitted its report after an elaborate exercise in respect of their terms of reference with 91 sittings, visits to the provinces and examination of as many as, 425 witnesses. The Commission even met the Maharajas of the Native States who expressed a wish to meet, to enquire and compare the conditions of irrigation practices in those states with those of adjacent British territory. The Commission presented its report on the 11th April 1903. For the first time a scientific assessment was made for the entire Indian sub-continent with its large variations, as a whole, of the rainfall and its variability, the soil, climate, the classes of the crop suited to the soil and

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3 Ibid., p. 3.
4 Ibid., p. 4
5 Irrigation Development in Tamil Nadu, Indian National Committee on Irrigation and Drainage, New Delhi, March 2000, p. 50.
other local conditions and a record in the form of a report was made available.  

The Commission realized that a lot of water flows down the rivers to the sea and at the same time has carefully analysed and detailed the main physical conditions which impose a limit to the use, which can be made of the surplus drainage of the country. The Commission recommended that all works on the tank restoration programme should find a place in the famine relief programme and pursued it with vigour. The provinces were given responsibility in this regard by the Monteagu Chemsford Reforms. Through these Reforms the Provincial Governments got some more powers. They were also authorized to raise loans for financing irrigation projects themselves instead of depending on the Central Government for funds when the irrigation schemes were seen to be 'productive' yielding a return of 6%, the provincial governments were emboldened to launch the schemes after getting sanctions.  

Ryotwari system was introduced. Individual ownership of land and delivery of pattas was systematized. Land owners were also required to pay the land tax and water tax wherever the land was served with irrigation. In order to arm themselves with powers 'Madras Irrigation Cess Act (No.7) of 1865' was enacted which had been modified several times. The objective of this Act was to enable the Government to levy a separate cess for the use of water supplied for irrigation purposes from any river, stream, channel and tank.

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6 Ibid., p. 51.
8 Ibid., p. 52.
9 Ibid., p. 53.
The Britishers were very much impressed on the functioning of the 'Kudimaramath'. It refers to the practice of maintaining the irrigation works periodically through free labour contribution of the beneficiaries themselves. The first attempt to bring in legislation to enforce this custom was made in 1858 by the British through the 'Madras Compulsory Labour Act of 1858'\(^\text{10}\). This Act mainly provides for forcible recruitment of labour in emergencies. If any person bound by such custom refuses to contribute labour he shall be liable to pay a sum equal to twice the value of the labour which he is bound to contribute as fine. Paragraph 5 of the Boards standing order No.86 attempted to detail the items of works to be normally attended by Kudimaramath practice. They run as below:

1. To fill up gullies or other inequalities caused by rain or the treading of cattle etc. upon the bunds of tanks and channels;
2. To check the growth on bunds of prickly pear or other similar rank and pernicious weed;\(^\text{11}\)
3. To clear away such underwood from the bunds of tanks as may be considered by the Executive Engineer to be injurious;
4. To clear out the deposits from tank sluices and from river and spring channels so as to afford a sufficient opening for the supply of water to flow to the fields;
5. To clear and repair the earth work of petty and branch channels and clear away the accumulation in all channels issuing from tanks which obstruct the flow of water to the fields;\(^\text{12}\)


\(^{11}\) Pernicious - Destructive or highly injurious.

\(^{12}\) A. Mohanakrishnan, *op. cit.*, p. 141.
6. To keep in order the supply channels of tanks to such extent as is sanctioned by local custom;

7. To watch the bunds of all tanks during rainy weather, to turf the parts, acted on by the waves, which appear leaky; to open and close the Calingulahs and generally to perform minor duties of this nature in order to prevent breaches and other accidents;

8. To construct ring bunds at breaches and where necessary to temporarily strengthen the bunds of tanks during the season of cultivation.\(^\text{13}\)

9. And in general all works requiring constant care and attention which the residents on the spot can alone exercise to preserve the works of irrigation in which they and the government have a common interest from those small injuries, which, if unchecked, may lead to serious loss and expenses.

Though several checks during inspection both by the engineering officials and the Revenue Officials have been prescribed and in spite of the act legalizing penalties for failure to attend to Kudimaramath work, in actual practice, there has been a steady decline in interest in attending to these works.\(^\text{14}\) Over the times, the irrigation works throughout the state got into serious despair by long time neglect and could not function effectively in the diversion and storage of waters for irrigation. Just before the independence it may be said that the Kudimaramath system had practically failed. Perhaps the main causes for such a failure could be stated as:

1. Want of cooperation between the ryots,
2. Serious erosion in the authority of the leadership in the village,
3. Factions in the village,


\(^{14}\) *Proceedings of Board of Revenue*, G. O. No. 510, dated 12th May 1954, p. 5.
4. Increase in the number of absentee landlords,
5. Procedural difficulty in enforcing the Madras Compulsory Labour Act of 1858 and so on.

In April 1937, the British Government introduced through the Government of India Act 1935 another set of administrative reforms of far reaching consequences in declaring provincial autonomy.\(^{15}\) Irrigation became a transferred subject and the provincial governments got full power-over irrigation works and development. Many provisions in this Act provided a base on which the Indian Constitution has been framed. The 1935 Act in general helped in planning the development of irrigation in the provinces, the native states and the country as whole.

Water and its administration received the necessary attention from the constitution makers. After due consideration water was brought in the state list backed by suitable legislative measures.\(^{16}\)

**Article 246(3)** of the constitution and Entry 17 of List II of the seventh schedule is that every state government has powers to legislate in respect of water.\(^{17}\) It can undertake irrigation works, construct canals, drainages and embankments.\(^{18}\) It can store water and generate water, power - all these subject to the provision of Entry 56 of List I. Under **Article 245(1)** this can be exercised for the whole or any part of the state. Under **Article 162**, 'the executive power of a state shall extend to the matters with respect to which the legislature of the state has power to make laws'. Seventh Schedule under Article 246: Entry 56 under List I, Union List,

\(^{15}\) *Proceedings of Board of Revenue*, G. O. No. 781, dated 14th July 1952, p. 3.
"Regulation and development of inter-state rivers and river valleys to the extent to which such regulation and development under the control of the union is declared by Parliament by law to be expedient in the public interest."

**Article 262:**

Adjudication of disputes relating to waters of inter-state rivers or river valley.

1. Parliament, may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of or in any interstate river or river valley.\(^{19}\)

2. Not withstanding anything in this constitution, parliament may by law provide that neither the Supreme Court nor other court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in Clause (1).

It may be mentioned that Entry 56 of List I does not take away from the states any of the powers to which they are entitled under Entry 17 of List II. The authority of the state over water of such inter state rivers is to be exercised within such limitations as may be imposed by law by parliament in respect of their 'regulation and development' only. The union government by virtue of Entry 56 cannot acquire the right of user or of constructing canals, drainages and embankments of storing water or generating water power, these rights vest only with the state government.\(^{20}\)

With the launching of Five Year Plans several large irrigation and power projects which involved inter state rivers and spread the benefits in

\(^{19}\) Ibid., p. 69.

\(^{20}\) Ibid., p. 71.
more than one state were taken up. This necessitated the parliament enacting two important acts of regulation and development of Interstate rivers and river basins.\(^\text{21}\)

**River Boards Act 1956**

The only other significant legislation the Union Government has passed making use of the Entry 56 in the union list is the River Boards Act 1956 which has remained unutilized to this day. This Act provides only for an advisory body to be constituted in an inter-state river basin for planning the water use in the basin for realizing maximum benefits. Such an advisory body can be created only with the concurrence of the respective states which as can be expected does not happen. State identities are too strong and the political compulsions are too many to allow even planning across boundaries for optimum use of the available waters in a basin with the result no River Board could function so far.

**Inter state Water Disputes Act 1956**

The Inter State Water Disputes Act 1956, on the other hand is an instrument which has been utilized for the adjudication of disputes between party states in the use of water in a river basin.\(^\text{22}\) The Act provides for any state government to request the Central Government to refer the Water Dispute that had arisen or apprehended to arise. When such a request is received and

"when the Central Government is of opinion that the Water Dispute cannot be settled by negotiation, the Central


Government shall by notification in the official Gazette constitute a Water Disputes Tribunal for adjudication of the water dispute.\(^{23}\)

**Irrigation acts and water courses**

The Irrigation Acts of the states provide for the construction of water courses and field channels which are to be laid on ground as the last limbs of the conveyance system for distribution of irrigation waters. They are essential units in the system to be properly executed and maintained. Confusion exists in certain areas in defining water courses and field bothies.\(^ {24}\) The Union Planning Commission in their letter No. NR-6(1)/69 dated 19th May 1959 to all the states has clarified this as under:

"A water course is a channel, built at government expense to carry water from an outlet to a hundred acre block or as may be prescribed. A field channel is a channel built by cultivators beyond the water course to serve the various fields within the block."

In course of time the 40 hectares block has been shrunk to 10 hectares in the interest of faster development of irrigation utilization.\(^ {25}\)

In Tamil Nadu, the Madras irrigation works (construction of Field Bothies) Act No.25 of 1959 provides for the construction and maintenance of the field bothies under the Act the Collector (Revenue Divisional Officer) can ask owners of land to construct field bothies and in case of their failure to do so, get them constructed and the cost recovered as arrears of land

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\(^{24}\) Irrigation Development in Tamil Nadu, *op. cit.*, p. 80.

revenue from the beneficiaries. Also anyone interfering with water flowing in a field bothy can be punished with six month imprisonment or fine extending up to Rs. 1000 or both. The Act also bars shifts against the government in respect of matters relating to field bothies. What is lacking in this Act is a categorical statement that the beneficiaries are responsible for the maintenance of the field bothies and water courses.

This is perhaps because, traditionally the ryots have been maintaining the irrigation channels under the tanks and the water courses and field bothies under the canal systems under the Kudimaramath. There is as yet no comprehensive water law of Tamil Nadu. At present some 20 laws relating to water reflect a piecemeal approach. Many of the existing laws are outdated and inadequate to deal with all aspects of water resources management. Also there are a number of agencies directly or indirectly connected with water administration which do not have the necessary coordination in their functioning.

It may be seen that most of the Acts now in force relate to levy of cess and revenue collection for irrigation services and none of them relate to management aspects and devolution of powers on the water managers to enforce discipline in the water use.

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26 Bothies - Barely furnished but especially shared by farm servants or fishermen.
29 Ibid., p. 25.
The Second Irrigation Commission (1972)


The Commission after extensive studies and discussion presented its report in 1972 in four volumes. They have given a detailed review of the progress in irrigation statewise and also river basin wise, suggested a few policy decision for future development, discussed on the special considerations to be given to the drought affected areas, water logged and flood affected areas, stressed on the economics and financing irrigation works, the need for enacting Irrigation Laws and Codes, organizing research and training and maintenance of reliable statistics.

The Commission also mentions that having practically exhausted the available surface water resources the only hope is in diverting waters through the western ghats from Kerala where undoubtedly large proportion of waters of west flowing river was going to waste. The Commission suggests that the state of Tamil Nadu may have to take this issue with the State of Kerala.

The Commission also suggests adequate powers being vested with irrigation engineers to prevent unauthorized irrigation and calls for hiking the water rates to reduce excessive use of water for crops and lead to better management. The Government of India prepared and circulated a model Irrigation Bill (1976) on the recommendations of the Second Irrigation Commission (1972).


31 Ibid., p. 67.
The Irrigation Administration in Tiruchirappalli district was under the Control of Public Works Department. The general supervision of the public works in the district is vested in the District Engineer. The district is divided into three ranges. They are:

Range No. I : Comprising Tiruchirappalli and Kulithalai Taluks

Range No. II : Comprising Musiri and Perambalur Taluks

Range No. III : Comprising Udaiyarpalayam Taluk.

The district Engineer has an establishment consisting of a Head clerk, Accountant, Writer, Draughtsman and Estimator. The Range No. I was in charge of an Executive Engineer whose, head quarters is in Tiruchirappalli. This range consisted of an Accountant, clerk, Draughtsman and Estimator. The Range No. II is under an Assistant Engineer with head quarters at Musiri. It Consists of an Accountant, a Draughtsman and Estimator. The Range No. III comes under the charge of Sub-Engineer, whose head quarters is at Udaiyarpalayam. It consists of an Accountant only. Regarding irrigation administration in Tiruchirappalli district, the Public Works Department established various divisions such as River Conservancy Division, Cauvery Modernization Division, Tank Modernization Division and surface water Research Division. The main objectives of these divisions were to develop major and minor irrigation systems in Tiruchirappalli district. This district is benefited by 17 canals from the Cauvery river basin and these canals are regulated by Public Works Department of Thanjavur circle under the control of Tiruchirappalli River Conservancy (RC) Division. Except the New

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33 Draughtsman - one skilled in drawing.
Kattalai High Level canal and Pullambadi canal, all the other canals are open for irrigation for 11 months in a year. It is closed for only one month, in order to regulate the flow of water in these canals. The New Kattalai High Level Canal and Pullambadi canal is open for irrigation on basis of water level in Mettur Reservoir. The Tiruchirappalli R.C. Division manage these works.

Regarding the Kattalai Scheme, the Sub-divisional officer of Kulithalai who is in-charge of Kattalai bed regulator is the controlling officer for the regulation of supplies in the South Bank Canal head sluice and regulator at 0/5 of South Bank Canal. The Sub-divisional Officer, Musiri, is in-charge of regulation of supplies in North bank Canal head sluice. These canals supply water during the crop period. The crop period for the various channels is given below:

2. Kattalai High Level Canal upto mile 19/3 - 1st July to 31st May.
3. Kattalai High Level Canal below mile 19/3 - 1st July to 14th February.
4. Uyyakondan Channel upto mile 27/4 - 1st July to 31st May.
5. Uyyakondan Channel below mile 27/4 - 1st July to 14th February.

The scouring sluices in Kattalai Bed Regulator are to be kept fully opened, when the discharge in the Cauvery river is above 15,000 cusecs. When it falls below 15,000 cusecs the scouring sluices are closed to head up the front water level. During the crop period, for the purpose of scouring the silt accumulated in front of scouring sluices, the scouring vents are kept open for 6 hours (i.e.) from 12 noon to 6 p.m. on every Saturday. Before

opening the scouring sluice, the South Bank Canal head sluice may be kept closed. During the rainy or flood period, the scouring sluices are kept open clear. In operation of scouring sluices shutters are raised clear and on no account partially made. Normally the falling shutters are not to be raised when Mettur Reservoir is opened for irrigation and the discharge in the Cauvery river is above 15,000 cusecs. When the discharge falls below 15,000 cusecs, the falling shutters can be raised and heading of water in front can be done to aid full supply drawls in channels.

The dates of opening of South Bank canal, Kattalai High Level canal, Uyyakondan channel and North Bank canal in each year is fixed by the Executive Engineer of River conservancy Division of Tiruchirappalli, in consultation with the Collector of Tiruchirappalli District. This is done, taking into account of the closure period and the opening date of the Mettur reservoir for irrigation. The day-to-day requirements of supply for the ayacut under Kattalai scheme is fixed by the Executive Engineer, River Conservancy Division taking into account of releases made from the Mettur reservoir, the requirements of crops in the ayacut area and also the rainfall. This is intimated to the controlling officer by the Executive Engineer for regulating the supplies in the channels accordingly. The full supply discharge of south Bank Canal is 13890 Cusecs. For this, a gauge reading of 5.6 feet in Front and 5.5 feet in rear is to be maintained. The supply is distributed at the regulator at mile 0/5 of South Bank Canal. A discharge of 969 Cusecs is to be allowed below the regulator for the ayacut under South Bank canal and Uyyakondan Channel. To allow such a discharge a reading

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38 Ibid., p. 13.
of 5.5 feet in front and 4 feet in rear is to be maintained at the regulator. The balance discharge of 411 cusecs is to be sent through Kattalai High level canal head sluice for which a reading of 4 feet is to be maintained in rear of the head sluice. A supply of 260 cusecs is to be allowed through the head sluice of North Bank canal for the ayacut under it. The full sluice level depth of 4 feet is to be maintained for drawing full supply.

The flood regulation rules already approved by the Executive Engineer may be followed depending on the condition of floods.\(^{39}\) In addition to this the Executive Engineer, R.C. Division can make any deviation in the rules considered necessary in the interest of irrigation. All regulation details are entered daily in the register and extract from the register is sent to all concerned officers daily.

The regulation of water for the New Kattalai High Level canal is under the control of the Executive Engineer, upper River conservancy Division of Tiruchirappalli. Due to seasonal conditions if the level and storage in the Mettur Reservoir falls below 94.0 cusecs, then the supply to the direct ayacut is postponed by the Executive Engineer in Tiruchirappalli and Thanjavur district with the consultation of the Collectors.\(^{40}\) The supply to the direct ayacut is at the following rates for each period mentioned hereunder.

\(^{39}\) Ibid., p. 13.

\(^{40}\) Chief Engineer (Irrigation) Memo No. C-I /85084, 84-CP, dated 18th October 1984, p.10.
The total requirements have been taken as 60 inches and the useful rainfall during the period as 13 inches. Transmission of loss assumed is 15 per cent.

<table>
<thead>
<tr>
<th>Months</th>
<th>Period</th>
<th>Limit (cusecs)</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>I half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>I half</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>I half</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>I half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I half</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>I half</td>
<td>110</td>
<td></td>
</tr>
</tbody>
</table>

If quantities more than above are found necessary, the Executive Engineer may draw them subject to the approval of the superintending Engineer, Thanjavur Circle. The superintending Engineer, Thanjavur Circle should intimate the same to the Chief Engineer of Irrigation in Tiruchirappalli. The order of priority of filling up the tanks should be from the tail end and hence supply in the canal is to be maintained till all the tanks under the canal get filled up, subject to the availability of surplus water. If at any time the Executive Engineer considers that the storage in Mettur Reservoir would not cover the entire area, then the main canal is divided into four zones and the supplies allowed in the zone is in a rotational order.⁴¹

The four zones are as follows

I Zone upto Distributory No.2 : 2224 acres (Distributory 1 and 2)
II Zone upto Distributory No.6 : 1852 acres (Distributory 3 to 6)
III Zone upto Distributory No.15 : 2204 acres (Distributory) (8, 10, 11, 14 & 15)
IV Zone upto Distributory No.18 : 1692 acres (Distributory 16,17 & 18)

The extent under each zone is as per the localization made. The Executive Engineer decides the zone to which supply is made first and thereafter follow the rotational order referred to above. But any zone not supplied in the previous year has the priority of supply at the commencement of the next year. While allowing such releases the Executive Engineer satisfies himself that there is enough water in the reservoir to meet the needs of the particular zone to be supplied. Before allowing such supplies the area to which supply is proposed is notified to ryots in advance. Whenever there is scarcity of supply in respect of indirect ayacut the available surplus is utilized by regulating the tank supply sluices by turn system. The mode of regulation and the turns to be adopted are decided by the Executive Engineer in consultation with the collector. The concerned section officer is in direct charge of the regulation. The regulation of water for Pullambadi canal is also under the control of the Executive Engineer, upper River conservancy Division of Tiruchirappalli. The supply to the direct ayacut is at the following rates for each period mentioned hereunder:

<table>
<thead>
<tr>
<th>Months</th>
<th>Period</th>
<th>Limit (cusecs)</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>I half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>I half</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>220</td>
<td>The total requirements have been taken as 60 inches and the useful rainfall during the period as 15 inches. Transmission loss assumed is 15%.</td>
</tr>
<tr>
<td>October</td>
<td>I half</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>I half</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>II half</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>I half</td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

When there is availability of surplus water, the order of priority of filling up the tanks is from the tail end and hence supply in the canal is to be maintained till all the tanks under the canal gets filled. On these occasions the inlet and outlet regulators at Manodai, Andiodai and Vettakudi and the drop-cum-regulator at mile 51/4 are kept opened. It is closed as soon as the lower down tanks get filled up, except for allowing the discharge required for the direct ayacut situated.

The water level obtaining in each tank, wherein canal water is let in and taken through outlets are ensured at the time of closing of inlet, vents with a view to maintain the status quo as per conditions prior to letting in of canal water. Whenever there is inflow into the major tanks Manodai, Andiodai, Vettakudi and Sukraneri, due to rain in their catchments are the water to be stored nearer to the Full Tank level of the tank.

Then the surpluses as well as the supply from the main canal, if any, is allowed to the lower down tanks before allowing the tanks to be surplused. Like New Kattalai High Level Canal, the Pullambadi canal is also divided into four zones and supplies are allowed zone after zone in a rotational order. They are:

<table>
<thead>
<tr>
<th>Zone</th>
<th>Distributory</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Zone</td>
<td>Distributory 1 and 3</td>
<td>2161</td>
</tr>
<tr>
<td>II Zone</td>
<td>Distributory 2 and direct sluice</td>
<td>2243</td>
</tr>
<tr>
<td>III Zone</td>
<td>Distributory 4 and 5</td>
<td>2374</td>
</tr>
<tr>
<td>IV Zone</td>
<td>Distributory 6 to 9, 11, 16 to 19 and 21 to 23</td>
<td>2053</td>
</tr>
</tbody>
</table>

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**General Rules for the New Kattalai High Level Canal and Pullambadi Canal**

1. The New Kattalai High level canal regulators at mile 5/2 and 31/1 provided below the sites of Flush intents and outlets are kept clear always. Unless there is flow in the variyars requiring operation of these shutters to divert the variyars flows. After 15th December, the regulators are kept closed.\(^{45}\)

2. The Pullambadi outlet regulators provided at upper Anicuts crossing are operated only in times of emergency when there is danger of canal banks getting breached.\(^{46}\) During the irrigation season, whenever there is rain in the catchment area of the Ayyar basin and consequent inflows at upper Anicut. The available surplus at upper Anicut are allowed into the Pullambadi canal.

3. Wherever vented outlets are provided the shutters on the downstream side, are operated to let out the vari run off.

4. Whenever there is rainfall over the irrigated area, the Executive Engineer reduces the supplies.

5. Whenever there is demand for the ayacut under the canal even after the closure, for crops which might otherwise die and if such supply could be spared without affecting other legitimate interest. The collector sends a report in consultation with the Executive Engineer; three weeks in advance to the chief Engineer (irrigation) and the Board of Revenue for getting the orders of Government to allow such supplies (Table 1).\(^{47}\)

6. Pumping from the canal is strictly prohibited.


7. The regulation is normally done twice a day at 6 a.m. and 6 p.m. During the floods or other occasions, when necessity arises the Executive Engineer regulates the supplies even at the intermediate hours.

8. Details of regulation both normal and flood Regulation are promptly recorded and reported in the water report forms already prescribed.

9. Not withstanding the above rules the chief Engineer of irrigation may order any regulation considered necessary.

In Tiruchirappalli district the Karur, Musiri, Kulithalai and Lalgudi taluks are mostly benefited by the 17 canals. The channel section of these canals absorb more water and they cannot reach the tail end of the canal. So the Cauvery modernization Division is established with the main objectives of.

1. To reduce the water loss.

2. Irrigation water passes through till the tail end of the canal and

3. Linking is made to canals, to increase the flow of water.
Table 1

Statement showing the details of channels with their closure period etc.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of material</th>
<th>Closure period to be observed as per GO MS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1751, dt. 4-7-1964, 2809, dt. 30-11-1966 &amp; 1354, dt. 6-7-1970</td>
</tr>
</tbody>
</table>

**Left Side Channels**

1. Rajakumarapalayam
   - Closure occurs in March after ryots conference to be convened by the Namakkal Collector
2. Mahanur
3. Kattuputhur
4. Main Ayyan Channel
5. Peruvlalai Channel
6. Srirangam Nattu Voikal
7. North Bank Canal
8. Pullambadi Canal
   - 16th December to 31st July (G.O. 2865/13-1063)

**Right Side Channels**

9. Pugalur channel
10. Vangal channel
11. Nerur channel
12. Ramavathalai channel
13. Puduvathalai channel
15. South Bank canal
16. KHLC Om to 19/3
17. KHLC below m 19/3
18. Uyyancondan upto M 27/4
19. Uyyancondan below M 27/4
20. New Ayyan channel
21. NKHLC
22. Pullambadi
   - 16th December to 31st July

**Note:**

If any of the date of closure period is to be postponed or preponed, based on the representation from the Agriculturist Association of that particular channel. It can be done after getting the concurrence of the Collector concerned by sending necessary proposals to the Collector in advance.
The Cauvery Modernization Division is under the control of Executive Engineer of Tiruchirappalli district. In order to standardise Tanks, the Government of Tamil Nadu established "Tank Modernization Scheme Division" in 1968. It had its head quarters in four places, such as Dindivam, Tiruchirappalli, Karaikudi and Madurai. The main work of this division is to undertake research on Hydrology of each tank, it is known as Tank Research survey (T.R.S) The Tank Research Survey works in Tiruchirappalli circle is given in Map-1.

Out of this 13 river Basin 11 have completed its research fully. The reports are authorized and published as a magazine. The Tank modernization scheme is considered to be a backbone of irrigation development in Tiruchirappalli district.

In order to utilize surface water for irrigation the surface water Research Division is established and various works are undertaken by this Division. They are as follows:

1. Surface water extension programme.
2. Suggestion work to dig wells in wealthy ground water area.
3. Tube wells are made in particular places during drought
4. Research is under taken in industries and drainage to control pollution.
5. Deep-hole wells are made for drinking water facilities. There are 216 Deep holes wells in Tiruchirappalli district.

48 *Tiruchirappalli Mavatta Passana Karutharangu*, Special Issue, PWD of Tiruchirappalli, 1990. p.11
6. Hydrological research is conducted in order to find out the hydrological flow of ground water.

7. Usage of ground water and surface water.

8. Calculate the surface water level.

The works are successfully done by surface water Research Division of Tiruchirappalli district. Hence in Tiruchirappalli district various efforts are taken by PWD for the maintenance and the development of major and minor irrigation systems.

God made man and endowed in him the faculty to observe the physical laws of nature governing the universe and to learn to make laws for himself to live in peace among his fellow men. Laws are made, amended and altered to keep pace with the times and to reflect the objectives and the goals of the nation and the people. Governance with minimum laws, simple to interpret, is ideal. But life is becoming more and more complicated with time. Legislative measures are required to control and channelise the activities in every field of social living.

Legislative measures for utilization and management of water resources is now available which need revision, expansion and periodical review in the context of the increasing use of waters for multifarious purposes by the over growing population.
Map 1
T. R. S. Works in Tiruchirappalli Circle

<table>
<thead>
<tr>
<th>RIVER BASIN DETAILS</th>
<th>TOTAL SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 CAUVERY BASIN</td>
<td></td>
</tr>
<tr>
<td>2 MINOR BASIN 74</td>
<td>3</td>
</tr>
<tr>
<td>3 MINOR BASIN 75</td>
<td>52</td>
</tr>
<tr>
<td>4 MINOR BASIN 82</td>
<td>2</td>
</tr>
<tr>
<td>5 MUSIRI MINOR BASIN</td>
<td>626</td>
</tr>
<tr>
<td>6 UPPAR NANDIAR MINOR BASIN</td>
<td>255</td>
</tr>
<tr>
<td>7 MARUDHAYAR MINOR BASIN</td>
<td>326</td>
</tr>
<tr>
<td>8 UDAYARPALAYAM MINOR BASIN</td>
<td>255</td>
</tr>
<tr>
<td>9 KULITHALAI MINOR BASIN</td>
<td>1998</td>
</tr>
<tr>
<td>10 TRICHI BASIN</td>
<td></td>
</tr>
<tr>
<td>11 AGNIYAR BASIN</td>
<td></td>
</tr>
<tr>
<td>12 UPPER AGNIYAR BASIN</td>
<td>919</td>
</tr>
<tr>
<td>13 UPPER NAHARAJA SAMUDRAM MINOR BASIN</td>
<td>170</td>
</tr>
<tr>
<td>14 AMBALIAR BASIN</td>
<td>116</td>
</tr>
<tr>
<td>15 UPPER VELLAR BASIN</td>
<td>2078</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7099</strong></td>
</tr>
</tbody>
</table>

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- ANDRAH STATE
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