

With the provision of better irrigation facilities and the adoption of improved techniques of cultivation and the implementation of land reclamation and conservation schemes, the extent of fallow land in the Territory was expected to decline. In fact the net area sown in the Territory was expected to go up from 32,617 ha. in 1961-62 to 33,695 in the year 1975-76. On the contrary, the extent of land lying fallow in the Territory seems to have doubled between 1959-60 and 69-70. However, no adequate explanation for the sharp increase in the extent of fallow land is available.

The Approach Paper to the Fifth Plan indicates that about 1,200 ha. (3,000 acres) of culturable waste and 760 ha. (1,900 acres) of current fallows will be reclaimed during the Fifth Plan period.⁶

II. Irrigation

Introductory :

Pondicherry having been almost a cradle of civilisation for not less than two thousand years, it is not surprising that in the days of the Pallavas, there were special committees known as *eri variya perumakkal* for the management of irrigation tanks like Bahur.⁷ The construction of channels for feeding and distributing water from rivers and tanks respectively and the digging of large wells for purposes of irrigation was strictly under administrative control. Even so, enough encouragement was given to private individuals to construct works of irrigation. Each *brahmadeya* and *devadana* village received not only permission to construct works of irrigation free of charge, but also necessary implements and lands to aid such undertaking. The Brahmans, according to the Kasakkudi plates, were provided with *kolkalam* and *puludi padu*-iron implements and dry lands,-for cutting out channels.

The inscriptions tell us a great deal about the care and attention bestowed on the maintenance of irrigation works during the Chola days. There is particular mention about the Bahur lake, the origin of which may be traced to the Pallava period from available evidence. The primary care of the village assemblies was to get the silt removed every year from the tanks under their control in time for them to secure the proper depth needed to store the full supply for the rest of the season before the rains set in. Often special endowments were created in relation to each tank to safeguard the irrigation interests from the neglect or

penury of village authorities. Even where, as in Bahur or Tirubhuvanai, the annual repairs were not provided for by specific endowments, a special cess, the *eri ayams*, earmarked for this purpose was collected from the ryots in the village, the rate in the instances mentioned being one *padakku* of grain per *ma* of cultivated land. The water rights attaching to particular plots of land were often enumerated on the occasion when they changed hands by sale or gift. When the natural levels were not favourable for the flow of water and it had to be lifted, picotahs and baskets were commonly employed for the purpose. In A.D. 1110, there is recorded a breach of the tank of Tirukkanji in a storm and the repairs effected to it by a local *Araiyan*, the repairs included the construction of a stone revetment to the banks (*kar padai*). Such examples bear clear evidence of the vivid realization by the people of the importance of irrigation and of their readiness to meet and solve irrigation problems in a reasonable spirit.⁸

The famous 'Ousteri', the largest irrigation lake in Villiyanur Commune, is said to have been built during the days of the Vijayanagar rulers.

Anandarangapillai is known to have spent money for the repair of tanks and canals which probably irrigated the lands that were leased out to him.

Caisses communes :

The French Administration had also realised the importance of agriculture and had provided irrigation facilities by constructing tanks, feeding channels and other diversion works in the territory. In fact many of the existing irrigation works were executed during the French period.

The *arrêté* of 18 July 1859 brought into existence the institution known as the 'Caisses communes' which helped to bring together cultivators of one or more villages to undertake irrigation works jointly for their common benefit.⁹ An annual subscription being not less than two *fanams* and not more than three *fanams* per *kany* was collected from the members in proportion to the land owned by them. The funds were utilised for the maintenance of canals and for carrying out urgent works in times of emergency. Each 'Caisse commune' was administered by a committee presided over by a representative of the Administration (normally the 'Regisseur') besides four local land-owners paying at least three 'pagodas' as tax. These four local land-owners were chosen by the 'Chef du Service des Contributions' from two lists, one furnished by the Tahsildar and the other by the proprietors. Between 1859 and 1911, 80 'common funds' were constituted in the territory.

In 1911, the Administration reorganised the common funds with a view to making the land-owners free from administrative control and vesting the agricultural organisations with more powers. The *arrêté* of 14 June 1911 replaced the four-member committee with a Council of Administration (*conseil d'administration*) consisting of seven members elected for six years by the subscribers contributing at least a sum of Rs. 5 as tax. The subscription was also increased, the minimum being four *fanams* and the maximum being Re.1 per hectare. ¹⁰ The provisions of the *arrêté* of 14 June 1911 remained almost a dead letter. The '*Caisses communes*' obtained their subscription in accordance with the provisions of the *arrêté* of 9 October 1911 and functioned till 31 March 1975.

Syndicats Agricoles :

The decree of 10 September 1911 promulgated by the *arrêté* of 9 October 1911 constituted in the territory the famous institution called "*Syndicats Agricoles*" similar to those in France, for the better maintenance of irrigation works, canals, roads and to take effective measures against floods. ¹¹ The *Syndicats* were given 'corporate status' and empowered to raise loans and participate in public auctions purely for agricultural purposes. The '*Syndicats Agricoles*' were more or less similar to the '*Caisses communes*' although the maximum rate of subscription was not fixed in the case of *Syndicats*. In fact the '*Syndicats*' could even accept payment in kind from the subscribers. Some of the '*Caisses communes*' confined to the fertile areas were replaced by '*Syndicats Agricoles*'.

The areas of the various *syndicats* were determined according to the decision of 8 & 20 November and 14 December 1911. Out of about 8,000 hectares of irrigated lands, 5,000 hectares were grouped under *Caisses communes* and 2,000 hectares under *syndicats*. Less than 1,000 hectares were not provided with any kind of set-up. The *syndicats* functioned according to the terms and conditions laid down in the *décret* of 10 September 1911.

The *Caisses communes* and the *syndicats* were created with a view to maintaining and improving the auxiliary irrigation networks in the territory. The distribution of water was not among the duties of these bodies.

The working of these bodies was not always very satisfactory. It was felt that the deterioration of the auxiliary networks of irrigation was mainly due to the defect in the administrative set-up. In fact until 1937, the *Bureau*

des Contributions exercised control over the irrigation networks, the **Caisses communes** and **Syndicats** while **Service des Travaux Publics** was in charge of irrigation works. This division of responsibility hindered the smooth functioning of the irrigation works. The **Bureau des Contributions** was not competent enough to handle irrigation works executed by these bodies. It was also found that with the help of **Surveillant d'irrigation** some land owners managed to have their lands stealthily irrigated with water from government sources. This led to large-scale pilferage of water, leading to scarcity for vast tracts of land half way through cultivation, thereby affecting agricultural production as a whole. This prompted the Administration to investigate the whole matter with a view to ensuring proper and continuous supply of water to the irrigated land and framing precisely the regulations governing the distribution of water. ¹² As per the **arrêté** of 22 December 1937 the administrative control of supplying water for irrigation purposes was placed under the Public Works Department. The territory was then divided into '**circonscriptions**' and each **circonscription** was placed in charge of a '**Surveillant d'irrigation**'. Following this arrangement, the local **arrêté** of 20 August 1938 was brought forward to be in force provisionally for a period of one year during which time, the farmers were called upon to suggest modifications which were to be examined by a commission consisting of government officials and farmers. The Presidents of **Syndicats Agricoles** are in charge of distribution of water as prescribed by the **Surveillant d'irrigation** according to the Irrigation Register. Disputes over the orders of the Commission were left to the decision of the **Conseil du Contentieux Administratif**. ¹³ This led to the codification of the law governing the distribution of water in the territory. This code specified the position of embankments, breaches and the period of irrigation at various stages of cultivation.

The details of **Syndicats Agricoles** and **Caisses communes** in the territory as on 31 December 1948 are given below :

			Syndicats Agricoles	Caisses com- munes govern- ed by the arrêté of 18-7-1859	Caisses com- munes govern- ed by the arrêté of 14-6-1911
(1)			(2)	(3)	(4)
1. Saram	..	..	1	—	—
2. Ozhukarai Mettuvaykkal..	..	..	1	—	—
3. Kanakan Eri	..	..	1	—	—

	(1)		(2)	(3)	(4)
4. Kurumbettai	..	..	—	1	—
5. Arasur	..	..	—	1	—
6. Tavalapet	..	..	—	1	—
7. Kuruvappanayakkanpalaiyam					—
8. Alankuppam	..	..	—	1	—
9. Ozhukarai Pallavaikal		..	1	—	—
10. Odiyambattu	..	..	—	—	1
11. Murungappakkam	..	..	1	—	—
12. Kommapakkam	..	..	1	—	—
13. Olandai	..	..	1	—	—
14. Sannadoucal	..	..	1	—	—
15. Sendanattam—Merkuvely		..	1	—	—
16. Poraiyur—Oussude	..	..	—	1	—
17. Gudappakkam	..	..	1	—	—
18. Tondamanattam-Pillaiyarkuppam			1	—	—
19. Sedarappattu	..	..	1	—	—
20. Karasur	..	..	—	1	—
21. Tuttippattu.	..	..	1	—	—
22. Katterikuppam	..	..	1	—	—
23. Suttukanni	..	..	1	—	—
24. Kakkalippattu	..	..	—	1	—
25. Tettambakkam	..	..	—	1	—

(1)	(2)	(3)	(4)
26. Kodattur	—	1	—
27. Chettipet	—	1	—
28. Manalippattu	—	1	—
29. Kunichampattu	—	1	—
30. Mannadipattu	—	1	—
31. Tirukkanur	—	1	—
32. Sombattu	—	1	—
33. Vadanur	—	1	—
34. Sorappattu	—	—	1
35. Vambupattu	—	1	—
36. Sanyasikuppam	1	—	—
37. Tirubhuvanai	—	—	1
38. Tiruvandarkovil	—	—	1
39. Madagadippattu	—	—	1
40. Nallur	—	1	—
41. Madukkarai	1	—	—
42. Suramangalam	1	—	—
43. Kariyamanikkam	1	—	—
44. Nettappakkam	1	—	—
45. Erippakkam	1	—	—
46. Pandacholanallur	1	—	—
47. Sivarantagam	1	—	—
48. Pangur	—	1	—

	(1)	(2)	(3)	(4)
49. Arugur		—	1	—
50. Sattamangalam		1	—	—
51. Embalam		1	—	—
52. Korkkadu		1	—	—
53. Mangalam		—	—	1
54. Abhishekapakkam (Tavalakuppam)		1	—	—
55. Karkilambakkam		1	—	—
56. Perungalur		1	—	—
57. Kirumambakkam		—	—	1
58. Seliyamedu		—	—	1
59. Kudiiruppupalayam		—	—	1
60. Bahur		1	—	—
61. Manappattu-Uchchimedu	..	—	—	1
62. Kil Parikkalpattu		—	—	1
63. Mel Parikkalpattu		—	—	1
64. Irulansandi		—	—	1
65. Arachchikkuppam		1	—	—
66. Kuruvinnattam		—	—	1
67. Karaiyamputtur		1	—	—
68. Kaduvanur		—	1	—
69. Manamedu		—	1	—
70. Panayadikuppam		—	1	—
Total		32	24	14

The following **Syndicats Agricoles** were constituted in Karaikal region during 1965-1966 :

1. Akkaravattam	12. Kil Kasakkudi	23. Tirunallar
2. Oduturai	13. Varichchikudi	24. Ambagarattur
3. Niravi	14. Kottuchcheri	25. Settur
4. Vilidiyur	15. Poovam	26. Polagam
5. Kakamuli	16. Mupattankudi	27. Vanjiyur
6. Uliapattu	17. Serumavilangai	28. Melaiyur
7. Talatteruvu	18. Nallazhandur	29. Kilayur
8. Pudutturai	19. Eleankudi	30. Tiruvettakudi
9. Patchur	20. Sellur	31. Nedungadu
10. Keezhavely	21. Sorakkudi	
11. Kovilpattu	22. Takkalur	

From the year 1965-66, the minimum annual subscription for membership in **Syndicats Agricoles** and **Caisses communes** was raised from four *fanams* per ha. to Rs. 2 per ha. and the maximum rate from Rs. 2 to Rs. 5.

Following the introduction of the panchayat system of administration in the Territory, all functions connected with minor irrigation works hitherto attended to by the **Syndicats Agricoles** or **Caisses communes** were transferred to the Commune Panchayats/Municipal Councils with effect from 1 April 1975.

Organisation du Service d'irrigation par pompage :

It was realised even long ago that if *manavary* lands were assured of irrigation, agricultural production in the territory would increase manifold. As early as in 1937, it was estimated that about 2,20,00,000 cubic metres of water were required per annum for irrigation in Pondicherry region. ¹⁴ The borings undertaken between 1936-1938 in and around Nettappakkam, Tirubhuvanai, Abhishekappakkam and Bahur revealed that about 5000 hectares of *manavary* lands could be additionally brought under irrigation. But bore-wells could be popularised only in areas where the ground-water resources were in abundance. Moreover, the cost of borings was so high that it was not ultimately profitable for farmers. Further,

the farmers had to borrow money at exorbitant rates of interest. Hence the Administration itself came forward to extend loan facilities to the farmers to meet cultivation expenses. About the same time, the Administration took steps to organise an autonomous body known as '**Organisation du Service d'irrigation par pompage**' and passed the **arrêté** of 18 March 1938 for the purpose.¹⁵ Water was supplied to the farmers at cost depending upon the state and mode of cultivation. The requests of land-owners for water were scrutinised by the Chief of Public Works Department. The canals were to be constructed from the pumping station to the lands by the concerned land-owners. The distribution of water was to be regulated to each portion of land by turn.

This organisation irrigated an ayacut of approximately 45 acres. The bore-well pump house at Kalitirtakuppam was, however, constructed even before the formation of this body. The other pumping stations at Muttirapalaiyam, Ellupillaichavadi, Muttiyalupettai, Gorimedu, Bahur, Pattanik-okadai, Madukkarai, Villiyanur, Kirapalaiyam and Ariyankuppam were meant only for water supply.

Incidence of irrigation :

In 1961 the total area irrigated by all sources was placed at 24,237 ha. The area under irrigation accounted for 74 per cent of the net area sown in the Territory. It was 67 per cent for Pondicherry region and 95 per cent for Karaikal region*.

By 1965-66 the net irrigated area was expected to go up to 26,000 ha.¹⁶ The extent of area under irrigation was not expected to go up further than this, because many of the plan schemes were intended only to stabilise irrigation facilities rather than to extend them to fresh lands. The National Council for Applied Economic Research pointed out that the potential for minor irrigation was fairly high and that it deserved greater attention. The programme of irrigation suggested by the Council in 1965 envisaged the net irrigated area to increase from 24,237 ha. in 1961-62 to 29,200 ha. by 1975-76.¹⁷

* It was 41 per cent for Tamil Nadu as a whole, 38 per cent in Thanjavur District and 49 per cent in South Arcot District.

The following table shows the area irrigated by various sources and the percentage of area covered by each source for the Territory as a whole during 1970-71. 18

Sources	Net area irrigated 1970-71 (in hectares)	Percentage of area irrigated from each source to net area irrigated
Canals	11,143	42.04
Tanks	5,516	20.81
Tube-wells	9,716	36.65
Ordinary wells	—	—
Other sources	133	0.50
Total	26,508	100.00

The following table gives the sources of irrigation and area irrigated in each region during 1970-71 :

(In hectares)

Regions	Net area irrigated by					Percentage of net area irri- gated to net area sown
	Canals	Tanks	Tube wells	Other sources	Total	
Pondicherry ..	168	5,516	9,709	91	15,484	81.4
Karaikal ..	10,439	—	7	42	10,488	95.8
Mahe ..	—	—	—	—	—	—
Yanam ..	536	—	—	—	536	66.7
	11,143	5,516	9,716	133	26,508	84.1

Thus during 1970-71 the net area under different sources of irrigation was 26,508 hectares being 84.1 per cent. of the net area sown. In between 1965 and 1971, the net area irrigated in the Territory seems to have registered an increase of only 508 ha. The proportion of net area irrigated was the

highest in Karaikal region being 95.8 per cent. while in Pondicherry and Yanam it was 81.4 per cent. and 66.7 per cent. respectively. In Mahe region the sown area is entirely dependent on monsoon rain.

According to the above table, 11,143 hectares or 42.04 per cent. of the net area are irrigated by canals comprising 10,439 hectares in Karaikal region and 536 hectares in Yanam region.

It may be evident that canals are the principal sources of irrigation in Karaikal and Yanam. Tanks are important sources of irrigation in Pondicherry region where 5,516 hectares are irrigated by tanks. Ordinary wells and other sources of irrigation consisting of ponds, spring channels, etc. play a minor role as sources of irrigation. As many as 9,709 hectares are irrigated by tube-wells and bore-wells in the region. Other sources of irrigation include spring channels and ponds.

Details of area under different sources of irrigation between 1956-57 and 1975-76 are furnished in the following statement:

Sources	1956-57	1957-58	1960-61	1963-64	1965-66
Canals	.. 10,780	11,297	11,295	11,266	11,066
Tanks	.. 5,497	5,430	6,228	6,328	5,464
Tube-wells	.. —	2,974	4,494	7,697	8,249
Ordinary wells	.. 6,678*	1,948	1,280	71	21
Other sources †	.. 736	464	492	46	96
Total area irrigated	.. 23,691	22,113	23,789	25,408	24,896
Total area irrigated more than once	.. 9,495	9,742	10,940	14,179	13,995
Gross area irrigated	.. 33,186	31,855	34,729	39,587	38,891

* Includes area irrigated by tube-wells also.

† Spring channels, ponds, etc. are included in other sources

1968-69	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
10,659	11,143	11,026	11,048	10,949	10,852	10,886
2,742	5,516	5,490	4,835	5,048	1,548	2,954
11,830	9,716	9,611	10,404	10,164	13,179	11,831
7	—	1	1	1	1	—
61	133	194	218	234	236	245
25,299	26,508	26,322	26,506	26,396	25,816	25,916
11,488	13,305	15,648	14,279	14,392	14,020	14,251
36,787	39,813	41,970	40,785	40,788	39,836	40,167

The area irrigated by such sources as spring channels and ponds has steadily declined during the years to reach 46 ha. in 1963-64. The extent of area irrigated by tube-wells has increased considerably from 2,974 in 1957-58 to 11,830 in 1968-69. Since then the area irrigated by tube-wells has declined steadily. The area irrigated by ordinary wells has dramatically declined from 1948 ha. in 1957-58 to one ha. in 1971-72. The area irrigated by tanks and canals has remained almost steady. All in all, the total area provided with irrigation facilities has increased from 23,691 in 1956-57 to 26,322 ha. in 1971-72 registering an increase of less than 3,000 ha.*

Anicuts/Regulators :

Vidur anicut : The scheme for building a dam across river Gingee near Vidur in South Arcot District was taken up for execution in March 1958 under the Second Five Year Plan. The work was completed and declared open formally on 28 December 1959.¹⁹ Its water was first made available for irrigation only in 1963. Built at a total cost of Rs. 88.94 lakhs, the expenditure was shared between Pondicherry Administration and the Government of Tamil Nadu in the ratio of 5:1, the contribution amounting to Rs. 27.8 lakhs. The work which was executed by the Public Works Department of Tamil Nadu, continues to be maintained by them. The annual maintenance expenditure is also shared by both the Governments in the same ratio.

* This analysis is based on the data furnished by the Statistical Hand-books published by the Bureau of Statistics, Pondicherry.

Suttukanni anicut : This anicut is built further down along the same river in the village called Suttukanni. This is a diversion anicut built by the French Administration nearly a century ago to head-off the water flowing in the river and divert the same into the Suttukanni channel. The crest level of the anicut is 17.110 m. and its length is 398.025 m.

Pillaiyarkuppam anicut : The Pilliyarkuppam anicut constructed nearly a century ago is also located across Varaha Nadi about 3.2 km. downstream of the Suttukanni anicut. This serves as a diversion anicut diverting water into the Villiyanur channel.

Vikravandi anicut : Built across Gingee river, this anicut is situated in the Vikravandi village of South Arcot District. The anicut is, however, maintained by the Pondicherry Administration, the cost being shared between Tamil Nadu and Pondicherry in the ratio of 2:1.

Sornavur anicut : As far as Pondicherry is concerned, Ponnaiyar is the most important source of water to the Bangaru vaykkal which feeds the second biggest irrigation tank viz., the Bahur tank. The flow in the river used to be diverted into the Bangaru vaykkal by means of a *korambu*, the construction of which was governed by the Convention of 15 June 1910 entered into between the then British Government and the French Government. According to this Convention a *korambu* used to be formed across Ponnaiyar for diverting the spring flows and freshes into Bangaru vaykkal for feeding Bahur tank and supplying other tanks in the direct sluices of the vaykkal. The full supply depth in the rear of the old head sluice was fixed as 1.675 m. above the floor of vents upon the tar mark, marked in the rear wing wall during 1872. The arrangement functioned well except during high intensity of flood flows in the river. The *korambu* used to get either over topped or get breached, thereby silting up the mouth of the off take channel. After subsidence of flood the channel would be silt cleared and the *korambu* formed again to draw off supplies in the next freshes period. Thus ryots had to incur expenditure from time to time. The maintenance of the *korambu* was left to the care of the P.W.D. Matters took a turn for the worse with the construction of Krishnagiri Dam and Sathanur Reservoir in the upper reaches of the river. Due to impounding of water in Krishnagiri and Sathanur reservoirs, the flow on the downstream fell considerably in quantity and duration. Consequently the flow in the Bangaru vaykkal also dwindled. Hence, the construction of a *pucca* anicut instead of the mud *korambu* became imperative.

The Pondicherry Administration took the initiative in the matter and approached the Government of Tamil Nadu for the construction of an anicut across Ponnaiyar in Sornavur. The Government of Tamil Nadu agreed to the construction of an anicut across Pennaiyar near Sornavur above Bangaru vaykkal sluice to divert the flow into the said vaykkal.* The construction work was executed by the Tamil Nadu P.W.D., by virtue of the location of the anicut in Sornavur village which is in South Arcot District.

The Ponnaiyar is said to have a catchment area of 12,94,592 ha. (5,057 sq. miles) around the Sornavur anicut site. However, it was anticipated that by this project, irrigation to an area of about 1,875 hectares in the region will be stabilised. As much as 21 per cent. of the ayacut served by the anicut lies in Tamil Nadu. Nevertheless, the entire cost of construction of the anicut amounting to Rs. 37 lakhs was met by the Pondicherry Administration. This was insisted, because it was argued that the ryots of Tamil Nadu could draw the water by means of the *korambu*, without having a *pucca* masonry diversion work.

Kilur anicut : The Kilur anicut built across Kuduvaaiyar during the French period is located north of Kilur village. The water headed off by the anicut finds its way through the Sivarantagam feeding channel and Sattamangalam feeding channel.

Mangalam anicut : This is a diversion anicut built across Kuduvaaiyar during the French period at Kil Sathamangalam in Villiyanur Commune. The anicut consists of a masonry wall with crest shutters.

Tirukkanji anicut : Also built during the French period, this is the last diversion work across Kuduvaaiyar. This anicut does not feed any tank but its water is baled or used for irrigating about 64 ha.

Idayar anicut : This is a diversion anicut built across Malatar near Idayar village in South Arcot District.

* G.O.Ms. No. 2955 dated, 2-11-1962 and No. 2762 (P.W.D.) dated, 24-11-66.

Sellanjeri anicut : Sellanjeri anicut is built across Malatar near Thennambakkam village in Cuddalore Taluk. This anicut was damaged by flood waters in November 1964. It was then reconstructed by the Tamil Nadu, P.W.D., the cost being shared between the two Governments in the ratio of the ayacut benefited by this anicut. This anicut serves an ayacut of 389.6 ha. in Sellanjeri and Pudukkadai villages in Cuddalore Taluk and Karkilambakkam in Pondicherry region. As the anicut serves both Tamil Nadu and Pondicherry as per the convention and agreement entered into between the two Governments, the maintenance cost is met by each Government in proportion to the ayacut irrigated in each of its territory.

Kumaramangalam regulator : Kumaramangalam regulator is the third diversion work across Malatar. The regulator is built below the road bridge connecting Bahur with Villianur about 1.5 km. south of Karkilambakkam. The nine-vent arrangement at the tail reach of the channel lets out any excess flow in the channel into the Malatar.

Canal irrigation :

Pondicherry region : The rivers that flow across this region do not serve as direct sources of irrigation except to a limited extent. As such, the canal system is chiefly designed to feed the large number of irrigation tanks in the region. The tanks which are not covered by the net-work of canals are mostly rainfed.

The Vidur main canal, which takes off from the saddle dam beyond the left flank of Vidur through two sluices, was designed for a full supply discharge of 75 cusec. at its head. The channel is expected to feed a total ayacut of 1,280 ha. of which 400 ha. are in Pondicherry region. The entire ayacut lies north of the river. The total length of the canal is 18.382 km. of which the last 1.225 km. run across Pondicherry territory.

The Suttukanni channel takes off almost at the point where the Suttukanni anicut spans across River Gingee. The flow in the channel is regulated by means of a head sluice. This channel feeds Tondamanattam Velleri and Usteri, both in Villianur Commune.

The Villiyanur channel taking off from Pillaiyarkuppam anicut provides direct irrigation to an area of about 200 ha. in Villiyanur and Ozhukarai Communes and feeds Olandai and Murungappakkam tanks. It runs a total distance of 11 km. At Pathukannu it crosses the surplus course of Usteri tank by means of a syphon arrangement and from there it runs parallel to the Villiyanur—Gudappakkam road. The Villiyanur channel subdivides itself into three branches about two km. upstream of Olandai tank viz. (i) Marappu channel towards south, (ii) Eripatrai channel towards north and (iii) Ottakondam towards east. The Marappu and Eripatrai channels directly serve the needs of irrigation. Perumal patrai channel, which branches off from Ottakondam supply channel, feeds the Olandai tank. The surplus water from the tanks falls back into Ottakondam channel ultimately emptying into Uppar drain. The Adiceya Pillai vaykkal branches off from the Villiyanur channel at Arumattapuram and feeds the Murungappakkam tank. The surplus water of the tank flows into Ariyankuppam river.

The Vikravandy channel which takes off at the right flank of the anicut runs towards east covering a total distance of about 16 km. feeding a number of tanks in Tamil Nadu and Pondicherry. All the eight tanks fed by this channel are situated in Mannadipattu Commune.

The Sivarantagam feeding channel and Sattamangalam feeding channel take off from the southern flank of Kilur anicut. While the Sivarantagam channel feeds exclusively Sivarantagam tank, Sattamangalam channel, running parallel towards south, feeds Mel Sattamangalam tank, Kil Sattamangalam tank, Vannan eri, Vakran eri and Sitheri of Embalam and Korkkadu tanks, besides feeding one tank in Tamil Nadu.

The Kizhagaram vaykkal takes off from the northern flank of Kuduvaayar and runs parallel to Kuduvaayar feeding Tirukkanji tank and Kizhagaram tank.

The Idayar feeding channel taking off from Malatar (Idayar anicut) feeds Nettappakkam tank, Pandacholanallur tank, Madukkarai tank and Kariyamanikkam tank. The Manappanthangal of Karkilambakkam is fed by Malatar directly.

The Karkilambakkam channel feeds the Karkilambakkam tank (ayacut 62.2 ha.) and partly the Abhishekapakkam tank with water of Malatar from Sellenjeri anicut.

The Athuvaykkal takes off from the left flank of Kumaramangalam regulator and runs parallel to Malattar to feed Abhishekapakkam tank, the third largest in the region.

Bangara vaykkal taking off from the left flank of Sornavur anicut runs as a contour channel covering a distance of 13 km. The channel receives surplus water from the left side outlet of the Kuttiyankuppam channel which takes off from Ponnaiyar on its left above the Sornavur anicut. The vaykkal area also receives run-off from a catchment of 7,52,128 ha. on the left above the Sornavur anicut site. The Bangara vaykkal has an ayacut of 1,911.2 ha. in Pondicherry and 510 ha. in South Arcot District. It feeds Bahur lake, Vannan eri of Karaiyamputtur, Manamedu tank, Kaduvanur tank, Ottanthangal tank, Nirnayanpet tank, Pinnachchikkuppam tank, Pirivupalayam tank and four tanks in Tamil Nadu through seven sluices located on the right bank of the channel at different reaches.

Apart from Bangara vaykkal, there are two more channels taking off from Ponnaiyar namely (i) Kuttiankuppam channel and (ii) Sitheri Athuvaykkal. Kuttiyankuppam channel is located about 2.75 km. upstream of the Bangara vaykkal. The flow in the river is diverted into the channel through a *korambu* built across the river. There is a head sluice at the off-take point of the channel to regulate the flow into the channel. The channel feeds Panaiyadi-kuppam tank, Panaiyadikuppam Sitherithangal and Karaiyamputtur Odaperi in Pondicherry area, besides feeding other tanks in Tamil Nadu area.

Sitheri Athuvaykkal takes off from the northern flank of the Ponnaiyar about 2 km. east of Kuruvinnattam. An earthen *korambu* used to be built across the river to divert the flow of the river into the channel. This channel, besides supplying water to a small tank near Bahur called Sitheri of Bahur, supplements supply of water to Arachchikkuppam, Mel Parikkalpattu Kil Parikkalpattu, Manappattu, Uchchimedu and Kirumambakkam tanks which are also fed by Bahur tank.

Other irrigation channels worth mentioning are Chinna Chellangal which feeds Madagadippattu, Nallur, Tirubhuvanai and Tiruvandarkovil tanks, and Periya Chellangal which feeds Suramangalam and Eripakkam tanks. Chinna Chellangal also is an offspring of Ponnaiyar. It flows through Tamil Nadu area before entering Pondicherry territory.

Karaikal region : In the early days agriculturists in Karaikal region had to depend on inundation following floods in Kaveri or local rainfall. Construction of dams and regulators across Kaveri and its tributaries subsequently contributed to the system being controlled to some extent resulting in a steady increase in the area irrigated.

From the Grand Anicut site onwards, the Kaveri divides and subdivides itself into a number of distributaries which provide water for irrigation in the deltaic region. The main branches of the Kaveri below the Grand Anicut are the Kodamurutti, Arasalar, Virasolan and Vikramanar. In their tail reaches they break again into a number of distributaries and some of them flow across Karaikal region before entering the Bay of Bengal. Out of the above four branches, Arasalar and its branches flow across Karaikal. The waters of Kodamurutti and Virasolan also meet the needs of irrigation to some extent. The irrigation in Karaikal is exclusively carried out by canals.

The flow of Arasalar, which marks the dividing line between Tirunallar and Karaikal Communes in the north and Niravi Commune in the south, provides irrigation facilities for an area of 108.80 ha. in Karaikal region. The total length of the river as it runs in Karaikal region is 11.97 km.

Nular is purely an irrigation supply carrier which receives its supply from Arasalar. Its total length is 12.81 km. It irrigates an area of 3,586 ha in Karaikal region. The proposal of the Tamil Nadu Government to replace the bed-dam at Manamgudy with a regulator, it is feared, would adversely affect the irrigation facilities of Karaikal. Instead, the Pondicherry Administration had suggested the construction of a notched type weir in the place.

Vanjiar is also an irrigation-cum-drainage carrier and is fed by Arasalar. It runs a distance of 8.694 km. and irrigates an extent of 1,130 ha. in Karaikal region.

Nattar is solely an irrigation supply carrier fed by Arasalar. It traverses a distance of 11.2 km. and irrigates an area of 1,507.20 ha. in Karaikal region.

Nandalar is an irrigation-cum-drainage carrier receiving its supply from Virasolan. It covers a distance of 15.15 km. and feeds an ayacut of 1,904.80 ha. in Karaikal region before crossing over to Tamil Nadu.

Fed by Kodamurutti, the Pravadayana runs through T.R. Pattinam Commune on the south for a distance of 3.93 km. This is an irrigation-cum-drainage carrier and has a registered ayacut of 240.80 ha.

Tirumalarajanar is also an irrigation-cum-drainage carrier receiving its supply from Kodamurutti. It runs as a dividing line between Niravi and T.R. Pattinam Communes for a distance of 10.98 km. and feeds an ayacut of 2,255.20 ha. Two channels viz. T.R. Pattinam channel and Niravi channel, taking off from Manampettai regulator, serve the ayacut in T.R. Pattinam and Niravi Communes of Karaikal region. Even though these channels serve only Karaikal region, their maintenance is under the control of Tamil Nadu by virtue of the location of the channels in Tamil Nadu limit.

The total area irrigated by these rivers is 10,692.80 ha. out of which 6,317.6 ha. fall under the first crop and 4,375.2 ha. under the second crop. Except for the main rivers and channels, the other irrigation works in the region are maintained by municipalities and **Syndicats Agricoles**. The irrigation system in the region is reported to be not properly maintained due to paucity of funds. It must further be noted that the irrigation in the region was designed for conditions when the Mettur Dam was not in existence. These factors have contributed to scarcity of water required for irrigation. The Administration has formulated a scheme for modernising the irrigation system in Karaikal region at an estimated cost of Rs. 66.00 lakhs.

Mahe region : There are no irrigation works in Mahe region. The extent of wet land is only 120 hectares, which is entirely rainfed.

Recently, however, the Kerala Government had decided to build an anicut at Pazhassi about 39 km. to the east of Mahe. The Pondicherry Administration requested the Kerala Government to extend the irrigation facilities to Chalakara area as well. The Administration proposed to meet a portion of the construction cost. Chalakara area in Mahe region, at present, does not have any irrigation facilities.

Yanam region : Irrigation facilities are much less in Yanam compared to Pondicherry and Karaikal. Initially irrigation facilities were provided for 226 ha. for the first crop and about 80 ha. for the second crop. Water for these lands was supplied from Gautami Godavari river by means of a channel

called French Kaluva built under an agreement entered in 1949 between the then French Government and the Government of India. After merger steps were taken to provide irrigation facilities for about 560 ha. of dry land in Yanam by providing a new irrigation channel.

The new Adivipolam channel was designed to take off from the tail end of Tallarevu south channel and at the starting point of Nilapalli channel on the right side and to run in a south-westerly direction. After running for a distance of 800 m. it was to join the new flood tank of Gautami Godavari river at a distance of about 400 m. and then to run for another 5.63 km. along the north side of the flood tank. The total length of the channel is estimated to be 6.44 km. The work was taken up for execution by the Andhra Pradesh P.W.D. as a deposit work in 1964 and was completed in 1966. Water was let into the channel in June 1966.

Well irrigation :

Wells owned by individual cultivators form an important source of irrigation, especially in Pondicherry region. Irrigation from wells used to be carried out mostly manually. After merger as a matter of policy, ordinary wells were sought to be converted into tube-wells or fitted with pump sets. As electricity became easily available it was pointed out that it should be taken advantage of for energising the wells. Moreover, with the growing popularity of pump sets, there was demand for more wells. The question of deepening the wells also assumed some importance as water level showed signs of receding due to lignite mining in Neyveli.

In 1965 the National Council for Applied Economic Research suggested that the area under well irrigation in the Territory could be substantially increased, if the Government undertook to do the boring work on payment basis or provided loans to cultivators for buying pump sets. The Council also suggested the installation of a few filter point tube-wells in Karaikal. It was pointed out that by these measures the area under well irrigation could be increased to 11,000 ha. by 1975 i.e. the maximum limit to which the area could be expanded. It was also pointed out that it would require an investment of the order of Rs. 75 lakhs over a 10-year period. The Council further stressed the need for carrying out a survey of underground water resources before finalising the details of the programme. 20

Until 1965, the Government had not taken any direct interest in increasing the area under well irrigation. Although no precise estimate has so far been made, the potential for well irrigation seems to be substantial. In 1957 as many as 1948 ha. of land were irrigated by ordinary wells and 2,974 ha. by tube-wells. Since then, there had been a gradual decline in the area irrigated by ordinary wells which reached the point of zero in 1970. Simultaneously the area under tube-well irrigation had increased from 2,974 ha. in 1957 to 11,830 ha. in 1969. The area under well irrigation in the Territory has shown a declining tendency since then.

It may also be recalled that during 1968-69, under the Drought Relief Programme, 12 bore-wells and 21 open wells were sunk at the following places to provide additional water for irrigation and drinking purposes.²¹

Open wells

Place		No.		Place		No.	
1.	Anandapuram	..	1	11.	Samipillaithottam	..	1
2.	Sivarantagam	..	1	12.	Puduppettai	..	1
3.	Kuruvappanayakkanpalaiyam	1		13.	Kanakachettikulam	..	1
4.	Athuvaykkalpet	..	1	14.	Periya Calapet	..	2
5.	Tattanchavadi	..	1	15.	Puduppettai	..	1
6.	Konerikuppam	..	1	16.	Karuvadikkuppam	..	1
7.	Kil Agaram	..	1	17.	Commandanmedu	..	1
8.	Pudukkuppam	..	1	18.	Pudukkuppam	..	1
9.	Abhishekapakkam	..	1	19.	Pillaiyarkuppam	..	1
10.	Thimmanayakenpalayam	..	1	20.	Vinayagampet	..	1

Bore-wells

1. Uruvaiyar	..	1	7. Madagadippattu	..	1
2. Sendanattam	..	1	8. Andipalayam (Kalithirthalkuppam)	..	1
3. Sultanpettai	..	1	9. Madagadippattupalayam	..	1
4. Mannadipattu	..	1	10. Lingareddipalayam	..	1
5. Sanjeevirayanpet	..	1	11. Kudiirupupalayam	..	1
6. Delasupet	..	1	12. Ranganathampet	..	1

Cultivators themselves have sunk tube-wells and bore-wells for irrigation purposes and such private wells numbered about 4,000 in March 1974.

Under the Bore-well Scheme operated by the Directorate of Agriculture, power drills, air compressors and a few hand bore sets are hired out to the ryots for testing and sinking bore-wells. One of the hand bore sets is permanently stationed at Karaikal to serve the needs of Karaikal region.

Tank irrigation :

Pondicherry region : Next to wells, tanks form the most important source of irrigation in the territory. The total extent of fresh water in the territory is estimated at 1,347 ha. The two major water bodies of Usteri and Bahur Eri alone cover an area of 8.30 ha. The remaining area is distributed among 87 irrigation tanks and 612 spring ponds.²² Many more spring ponds are said to be under the control of municipalities.

Usteri is the biggest irrigation tank in Pondicherry region which probably was built during the Vijayanagar days.²³ The lake receives the greatest part of its water from River Gingee through the Suttukanni channel which takes off from the Suttukanni anicut across Varaha Nadi nearly 11.27 km. away from the lake. The tank also has a free catchment area of 1,024 ha. (4 sq. miles) and an intercepted catchment area of 512 ha. (2 sq. miles).

The lake, situated near the village bearing the same name, lies about 12 km. from Pondicherry towards west. The eastern and northern portions of the tank *poramboke* lie in Tamil Nadu. The fore-shore of the tank lies in Kadapperikuppam, Kondimedu and Poothurai villages of South Arcot District. The western side is well protected by a bund of rough stone packings. On the eastern side is a high ground protected with revetments to almost the entire length. There are no bunds on the northern side of the fore-shore. The distance around the outer periphery of the lake is nearly 12 km. The inlet arrangement for letting in water into the tank consists of a 10 vented inlet regulator of size 1.52 m. x 15.33 m. (5'0" x 50'3") each with sill level at 10.754 m. The tank bund on the southern side carries the Valudavur road.

The total registered ayacut of the tank is 1,549.20 ha. under the first crop and 1,465.20 ha. under the second crop. Gudappakkam, Sendanattam, Villianur, Poraiyur, Oussudu, Odiyambattu and Ozhukarai in Pondicherry region and Perambai village in South Arcot District are benefited by this lake. The water is supplied through seven sluices situated along the southern bund of the tank.

The surplus arrangements of the tank consist of a 15 vented surplus regulator just above the inlet regulator. The sill level of the surplus regulator is 12 m. (39.19 ft.) and the size of vent is 1.45 m. x 2.06 m. (4'9" x 6'9") each. The lake had a nine vented surplus escape in the southern bund which was closed. In addition to the above arrangements, there are two more regulators situated along the Suttukanni channel itself viz. (i) Valudavur four vented regulator and (ii) Thopple Madai, both of which are to be operated only when the water level in the channel goes above the danger mark.

The proposal to increase the capacity of the tank from its present 540 Mcft. by an additional 107 Mcft. to benefit an additional area of 599.2 ha. under third crop estimated to cost Rs. 18.66 lakhs was cleared and the work was started on 5 February 1971. An extent of 114 ha. of culturable land in the fore-shore area of the tank in Poothurai and Kadapperikuppam village (Tamil Nadu) will be submerged by more than 0.32 m. (1'01"). It is proposed to raise the fore-shore land level by 0.305 m. (1'00") thereby maintain the *status quo*. Some of the fore-shore land owners are agreeable to this proposal in principle although they want their lands to be raised by 0.61 m. to 0.91 m. (2' to 3'). Some ryots in Poothurai village are not agreeable to this proposal. This will also require the concurrence of the Tamil Nadu Government.

Bahur Eri in Bahur Commune is the second largest and perhaps the oldest irrigation lake in the region. The lake must have been in existence even before the Chola period. There are some others who believe that it must have been built only during the Chola period. In any case, we are certain that the bed of the lake was deepened and the level banks were raised during the Chola days. Three of the inscriptions of Kannaradeva, the Rashtrakuta king (X century), in Bahur temple, mention the lake as '*Kadambu Eri*' or '*Peria Eri*'. Peria Eri means 'the big lake' which naturally must have come to apply because of its size. The lake is said to be called '*Kadambu Eri*' because of the presence of Kadambu trees in the river bed. An inscription of Rajaraja tells us that a tax in the form of paddy was collected for the maintenance of the lake. There was also a Council of Elders known as '*Eri Varya Perumakkal*' whose responsibility was to look after the maintenance of the lake and the proper distribution of its water.²⁴

The tank is fed by the feeding channel called Bangara vaykkal which takes off from Sornavur anicut about 16.8 km. from the tank. Surrounded by bunds on all sides, the tank has no independent catchment except the water spread area. It has a surplus escape of the calingulah type. A portion of the tank, including the bund and fore-shore, lies in Tamil Nadu.

The present capacity of the tank is 193.47 Mcft. It serves an ayacut of 1,740 ha. (1,664 ha. in Pondicherry and 76 ha. in Tamil Nadu). Actually the ayacut registered under Bahur tank is only 384 ha. but the tank feeds twelve other tanks whose ayacut also may indirectly be treated as under Bahur tank. Water from the tank is supplied by means of eight sluices situated around the periphery of the tank bund. In Bahur, work for strengthening the tank bund and improvement to L.F. calingulah was taken up. The works for strengthening and raising the banks for the revised F.T.L. condition was completed during the IV plan period. Regarding reclamation of fore-shore lands in Tamil Nadu, the Tamil Nadu P.W.D. has made a request to this Administration to wait for 5 years to watch the performance of the new regime of the Bangara vaykkal on the plea that the Sornavur anicut had been recently constructed. The actual F.T.L. conditions are expected to be achieved as soon as concurrence from Tamil Nadu Government is received.

There was a proposal to increase the capacity of the tank to 245.45 Mcft. and thereby bring an additional area of 249.6 ha. under irrigation. The Government of Tamil Nadu had suggested that the performance of the newly constructed Sornavur anicut across Ponnaiyar should be studied for five years before embarking on any new scheme. As for carrying out improvement to the Bangara vaykkal, it must be noted that while the right bank lies in this Territory the left bank lies in Tamil Nadu. The channel feeds ayacuts both in Tamil Nadu and Pondicherry. Hence the cost of improvement is to be shared between the two Governments in the ratio of ayacuts benefited.

During 1969-70 an investigation of 70 tanks was conducted following which improvements were carried out to 23 tanks in the region. The details of tanks improved are furnished below :

- | | |
|----------------------------|-----------------------------|
| 1. Alankuppam tank | 13. Kirumambakkam tank |
| 2. Sedarappattu sitheri | 14. Kaduvanur tank |
| 3. Sedarappattu periya eri | 15. Manamedu tank |
| 4. Karasur tank | 16. Karaiyamputtur tank |
| 5. Kanakan eri | 17. Panaiyadikuppam tank |
| 6. Olandai tank | 18. Panaiyadikuppam sitheri |
| 7. Murungappakkam tank | 19. Nettappakkam tank |
| 8. Kunichampattu tank | 20. Madukkarai tank |
| 9. Tirukkanur periya eri | 21. Suramangalam tank |
| 10. Tirukkanur chinna eri. | 22. Nallur tank |
| 11. Perungalur chinneri | 23. Kil Sattamangalam tank |
| 12. Korkkadu tank | |

The details of the irrigation networks are furnished below :

Rivers	Anicuts	Canals	Ayacut fed by canals	Tanks fed by canals	Ayacut fed by tanks	Villages benefited
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gingee	(i) Vidur anicut	Vidur Main canal	400 ha. in Pondicherry			Pudukkuppam Suttukanni Kattarikuppam Tettambakkam
	(ii) Suttukanni anicut	Suttukanni channel		1. Tondamanattam Velleri 2. Usteri 3. Puduppalaivayam tank (fed by Palla vaykkal of Usteri)	50.8 ha. 1,549.2 ha. 22.4 ha.	Tondamanattam Gudappakkam Sendanattam Oussudu Villiyannur Poraiyur Sultanpettai Odiyambattu Ozhukarai in Pondicherry. Perambai in Tamil Nadu.
	(iii.) Pillayar-kuppam anicut	Villiyannur channel Adiceya Pillai vaykkal Perumal patrai channel	200 ha.	4. Murungapakkam 5. Olandai tank	157.2 ha. 71.6 ha.	Villiyannur Odiyambattu Manaveli Olandai Murungapakkam Arumattapuram

(1)	(2)	(3)	(4)	(5)	(6)	(7)
(iv)	Vikravandi anicut	Vikravandi channel		6. Kunichampattu pudu eri	75.2 ha.	Kunichampattu
				7. Kunichampattu pazaya eri	30.8 ha.	Kunichampattu
				8. Tirukkanur periya eri	62.4 ha.	Tirukkanur
				9. Tirukkanur chinna eri	26.0 ha.	Tirukkanur
				10. Chettipet tank	36.0 ha.	Chettipet
				11. Kodattur tank	28.4 ha.	Kodattur
				12. Kakalipattu tank	10.0 ha.	Kakalipattu
				13. Vadanur tank	54.0 ha.	
		Pambai Ar (tributary)				
Ponnaiyar (i)	Kilayur anicut	Sivaramtagam feeding channel Sattamangalam feeding channel		14. Sivaramtagam tank	58.0 ha.	Sivaramtagam
				15. Mel Sattamangalam tank	3.6 ha.	Mel Sattamangalam
				16. Kil Sattamangalam tank	82.4 ha.	Kil Sattamangalam
				17. Korkkadu tank	194.0 ha.	Korkkadu
				18. Embalam Vannan eri	48.0 ha.	Embalam
				19. Embalam Vakran eri	84.8 ha.	Pudukkuppam
				20. Embalam sitheri	48.0 ha.	Nattamedu

(1)	(2)	(3)	(4)	(5)	(6)	(7)
(ii)	Mangalam anicut	Kil Agaram vaykkal		21. Tirukkanji tank 22. Kil Agaram tank	78.0 ha. 36.0 ha.	Tirukkanji Kil Agaram
(iii)	Tirukkanji anicut		64 ha.	Direct irrigation		Tirukkanji
(iv)	Idayar anicut	Idayar channel		23. Nettappakkam tank 24. Pandacholanallur tank 25. Madukkarai tank 26. Kariyamanikkam tank	60.0 ha. 138.0 ha. 93.2 ha. 46.0 ha.	Nettappakkam Pandacholanallur Madukkarai Kariyamanikkam
(v)	Sellenjeri anicut	Karkilambakkam channel		27. Karkilambakkam tank 28. Abhishekapakkam tank (partly)	63.2 ha.	Karkilambakkam Abhishekapakkam Tavalakuppm Thimmanayaken- palayam
(vi)	Kumara- mangalam regulator	Athuvaykkal feed- ing channel		Abhishekapakkam tank (partly)	165.2 ha.	Abhishekapakkam Thimmanayaken- palayam Tavalakuppm

(1)	(2)	(3)	(4)	(5)	(6)	(7)
(vii)	Sornavur anicut	<i>Bangara vaykkal</i>				
			29. Karaiyamputtur Vannan eri		32.0 ha.	Karaiyamputtur
			30. Manamedu tank		70.4 ha.	Manamedu
			31. Kaduvanur tank		28.8 ha.	Kaduvanur
			32. Bahur tank		384.0 ha.	Irulansandi, Kuruvi- nattam and Bahur
			33. Ottanthal tank			
			34. Nirayanpet tank			
			35. Pinnachchikkuppam tank			
			36. Pivupalaiyam tank			
			Tanks fed by Bahur eri			
			37. Irulansandi tank		133.6 ha.	Irulansandi
			38. Kuruvinnattam tank		73.2 ha.	Kuruvinnattam
			39. Arachchikkuppam tank		30.0 ha.	Arachchikkuppam
			40. Mel Parikkal- pattu tank		47.2 ha.	Mel Parikkalpattu
			41. Kil Parikkalpattu tank		89.2 ha.	Kil Parikkalpattu
			42. Manappattu tank		144.0 ha.	Manappattu
			43. Uchchimedu tank		73.2 ha.	Uchchimedu
			44. Kirumambakkam tank		312.0 ha.	Kirumambakkam

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				45. Aranganur tank	125.2 ha.	Aranganur
				46. Seliyamedu tank	128.0 ha.	Seliyamedu
				47. Adingapattu tank	50.0 ha.	Adingapattu
				48. Kudiirupupalayam tank	45.2 ha.	Kudiirupupalayam
	<i>Kuttiyankuppam channel</i>			49. Panaiyadikuppam periya eri	76.4 ha.	Panaiyadikuppam
				50. Panaiyadikuppam sitheri	12.0 ha.	Panaiyadikuppam
				51. Karaiyamputtur odaperi	92.4 ha.	Karaiyamputtur
						Bahur
	<i>Sitheri Athuvaykkal</i>					
				Supplements		
				39. Arachchikkuppam tank		Arachchikkuppam
				40. Mel Parikkalpattu tank		Mel Parikkalpattu
				41. Kil Parikkalpattu tank		Kil Parikkalpattu
				42. Manappattu tank		Manappattu
				43. Uchchimedu tank		Kannikoil
						Uchchimedu
				44. Kirumambakkam tank		Koravali (medu)
						Kirumambakkam and Pillayar-kuppam.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Chinna Chellangal</i>					
	52. Madagadippattu tank				62.0 ha.	Madagadippattu
	53. Nallur tank				52.0 ha.	Nallur
	54. Tiruvandarkovil tank				78.0 ha.	Tiruvandarkovil
	55. Tirubhuvanai tank					Tirubhuvanai
	<i>Periya Chellangal</i>					
	56. Suramangalam tank				10.0 ha.	Suramangalam
	57. Eripakkam tank				23.2 ha.	Eripakkam
	<i>Malattar</i> (distributary)					
	58. Manapanthangal of Karkilambakkam				8.0 ha.	
	Rainfed tanks					
	1. Karasur tank				23.6 ha.	Karasur
	2. Alankuppam tank				22.0 ha.	Alankuppam
	3. Kanakan eri				78.0 ha.	Ozhukarai
	4. Sorappattu pudu eri				10.0 ha.	Sorappattu, Vinayagampet
	5. Sanyasikuppam tank				9.2 ha.	Sanyasikuppam

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				6. Pidarikuppam tank	3.6 ha.	Pidarikuppam
				7. Vambupattu tank	38.0 ha.	Vambupattu
				8. Pangur tank	30.8 ha.	Pangur
				9. Arugur tank	20.0 ha.	Arugur
				10. Perungalur periya eri	14.4 ha.	Perungalur, Tanatha-medu
				11. Mangalam tank	30.8 ha.	Mangalam
				12. Sombattu tank	28.8 ha.	Sombattu
				13. Manalippattu tank	7.6 ha.	Manalippattu
				14. Suttukanni periya eri	68.0 ha.	Suttukanni Pudukkuppam
				15. Suttukanni otteri	52.4 ha.	Suttukkanni
				16. Tettambakkam tank	11.2 ha.	Tettambakkam
				17. Katterikuppam tank	72.4 ha.	Katteri and Kuppam
				18. Katteri pazhaya thangal	14.8 ha.	Katteri

(1)	(2)	(3)	(4)	(5)	(6)	(7)
				19. Katteri puthu thangal	26.4 ha.	Katteri
				20. Sedarappattu periya eri	29.6 ha.	Sedarappattu
				21. Sedarappattu sitheri	15.6 ha.	Sedarappattu
				22. Tuttipattu tank	20.0 ha.	Tuttipattu
				23. Sorappattu periya eri	110.0 ha.	
				24. Perungalur sinneri	14.2 ha.	
				25. Uruvaiyar tank	34.0 ha.	
				26. Mannadipattu tank	12.0 ha.	
				27. Kilur tank	5.6 ha.	
				28. Kadapperi of Tondamanattam	27.2 ha.	
				29. Kuppam tank	111.2 ha.	
(Karaikal)						
				Pravadayanar	2,255.2 ha.	
				Arasalar	108.8 ha.	
				Nular	3586.0 ha.	
				Vanjiar	1,130.0 ha.	
				Nandalar	1,904.8 ha.	

Problems of irrigation :

There are several agencies attending to the problems of irrigation in the Territory without any clear-cut demarcation of the spheres of action. The 'Irrigation Wing' of the P.W.D. is the oldest agency looking after the subject. The 'Syndicats Agricoles' and the 'Caisses Communes' functioned under its auspices until they were abolished in March 1975. Until then, except for the distribution channels which were maintained by the 'Syndicats Agricoles', the other irrigation works were maintained by the Irrigation Wing of the Public Works Department. These functions have now been taken over by the concerned Municipal Councils and Commune Panchayat Councils. A large number of spring ponds are said to be under the control of the Municipalities. After merger, the Directorate of Agriculture also entered the field. The Municipalities, Commune Panchayats and the Community Development Blocks are the other agencies which undertake minor irrigation works in areas under their respective jurisdiction.

It may be relevant to mention here that a proposal was mooted by the Local Administration Department to transfer all irrigation works having an ayacut of less than 80 ha. (200 acres) to the local bodies as in Tamil Nadu. In the meanwhile the Tamil Nadu Government reduced the ayacut limit of such irrigation works from 80 ha. (200 acres) to 10 ha. (25 acres). This proposal was, however, not accepted by the Government and the P.W.D. continues to be responsible for all irrigation works in the Territory.

Moreover, no single agency is exclusively placed in charge of the exploitation of sub-soil water in the Territory. This has resulted in indiscriminate digging of tube-wells, which appears to restrict the balanced flow of sub-soil water.

Most of the irrigation tanks and ponds in Pondicherry region are fed by rivers and irrigation channels. The other tanks depend on the monsoon for their water. Naturally the water area decreases considerably during summer. Moreover, the tanks gather silt and unless the silt is removed from time to time the tank capacity gets diminished. The fact that emerges is that the expansion of irrigation facilities in the Territory should be mainly through tube-wells and by desilting the large number of tanks.

In 1965 the N.C.A.E.R., which found many of the wells silted, felt that it was very necessary to undertake desilting operations on a 10-year phased programme, primarily to stabilise irrigation and also to increase the irrigated area for a second and a third crop. It was felt that while desilting work of small tanks and ponds could be done manually, earth moving equipments will be necessary for such operations in the larger tanks.

The problem in Karaikal is different. It has an ayacut of mainly 27,000 ha. Being situated at the tail end of the Kaveri deltaic region, there is always the difficulty to meet the full requirements of irrigation in the region. Moreover, the canal system of Karaikal was designed for conditions when the Mettur Dam was not in existence. These factors have led to scarcity of water in Karaikal region. The water released from the Mettur Dam by June or July reaches Karaikal after a week. Normally water becomes available by the middle of July. With the help of this water, a short term paddy crop (kuruvai) of three months' duration is taken up.

As for Karaikal, the Council pointed out that the area under crops could be doubled if water were made available by the beginning of June to enable seedlings to be raised for 20 days. Crops on a larger area could then be grown as soon as water from the canal was released. To achieve this, the Council suggested that a few filter point tube-wells could be installed to help raise seedlings in the region. Irrigation by such wells was favoured because the requisite quantity of water would be available at the required time. The Council also recommended cheap credit facilities to ryots for taking up the construction of tube-wells. The N.C.A.E.R. suggested that there was also the possibility of lift irrigation by pumping water from Pravadayananar to a main pumping channel from where water could be supplied for irrigation. This, it was pointed out, would convert nearly 200 ha. of dry land into wet land. The Council also pointed out that there was the possibility of having another lift irrigation scheme in Kottuchcheri Commune.

Another aspect to be kept in view was that the irrigation schemes should be so designed as to make available water for multiple cropping. Several schemes which provide for the construction of bed-dams, raising of bunds and revetments of rivers and channels, construction of culverts, etc. could be implemented with a view to preventing wastage of water and improving the efficiency of the irrigation system.

N.C.A.E.R. or the word 'Council' stands for the 'National Council for Applied Economic Research'.

Yet another problem is that most of the rivers flowing in the Territory are inter-state rivers and as such any improvement works to these rivers at the upstream level in the neighbouring states affect the irrigation potentials of this region considerably. Although Inter-State Rules and Regulations have been framed to regulate the release of such water, these rules may call for periodic review to protect the riparian rights of this Territory.

Examining the problem of irrigation in the Territory, the National Council for Applied Economic Research pointed out as early as 1965 that as elsewhere, in irrigation too, the planning work in this Territory was hindered by lack of survey of technical schemes. The Council, therefore, suggested that such a survey should be completed as early as possible.²⁵

In any case, a full-fledged Irrigation Division was formed in April 1973, in order to take up detailed scientific surveys and investigations for formulation and planning major irrigation, flood control and soil conservation projects in the Territory. The Division has been called upon to carry out hydrological surveys accompanied by studies on gauging, model tests, etc. as part of a comprehensive study of the Territory's irrigation system.

There are no special problems as far as Mahe is concerned. In respect of Yanam, however, the irrigation system there can be improved by stabilising the existing ayacut and extending irrigation facilities to the high level lands.

Progress under Plans :

It is to be noted that under 'Plan' there are separate provisions for irrigation under two different sectors viz. under 'Agriculture' and 'Power and Irrigation'.

Details of plan provisions and expenditure under the 'Power and Irrigation' sector which is operated by the Irrigation Wing of the P.W.D. are furnished below:

(Rs. in lakhs)				
Plan period			Outlay	Expenditure
II Plan	..	..	22.50	25.31
III Plan	..	..	10.35	12.74
Annual Plans (66-69)	..	..	30.00	17.93
IV Plan	..	..	45.00	44.37

Under minor irrigation * the construction of a regulator-cum-bridge across Bahur tank surplus course at Pannittittu and a bund around Thengathittu was taken up under the II Plan. This, however, spilled over to the III Plan. Besides this, the Adivipolam Channel Scheme for Yanam was also included in the III Plan. The Vanjiyur Lift Irrigation Scheme, the first of its kind in the Territory, was taken up for implementation in 1965 and completed in 1969. Under the scheme, water is lifted to a height of 2.44 m. (8') from Pravadayamar and pumped into a main channel, 1.101 km. (3,610 ft.) long with branch channels. The water thus obtained is utilised for the irrigation of about 134.80 ha. (337 acres) in Vanjiyur village located at a higher level.

Under medium irrigation, the Vidur Anicut Scheme was the only scheme included in the II Plan. It was taken up as a joint venture, the Pondicherry Administration sharing an expenditure of Rs. 25.31 lakhs. The construction was taken up by the Tamil Nadu Government and completed in January 1960. The share of this Administration by then increased to Rs. 27.79 lakhs. The scheme was expected to stabilise irrigation on an additional ayacut of 410 ha. (1,000 acres). Subsequently anyway, it transpired that only 312 ha. (780 acres) could be stabilised.

Outlay under irrigation in the III Plan was less than in the first two plans. An allocation of Rs. 10.35 lakhs was made in the III Plan for medium irrigation schemes. The actual expenditure amounted to Rs. 12.74 lakhs. The construction of the Sornavur Anicut which was expected to stabilise irrigation in about 2,084 ha. was also taken up. The construction of the Sornavur Anicut at a cost of Rs. 37.00 lakhs was completed in 1968. Schemes were also formulated for the desilting of Usteri and Bahur Eri in the Territory.

The scheme for tapping sub-soil water for summer irrigation and for raising a third crop in Karaikal was taken up in 1965-66 and under the scheme, ten filter points were sunk. These were intended to facilitate early raising of kharif crop.

* Works costing less than Rs. 10 lakhs are taken as minor irrigation works and works costing more than Rs. 10 lakhs are called medium irrigation works. Such works as silt clearance, repairs to sluices, improvements to canals, construction of regulators, dividing walls, protection works with revetment blocks, desilting-cum- reclamation come under minor irrigation.

Under the V Plan, it was proposed to construct an anicut across Ponnaiyar just below the off take of Sitheri Athuvaykkal. This was expected to stabilise an ayacut measuring 2,064 hectares commanded by 23 tanks. Some improvements to the Vidur scheme were also to be taken up during the V Plan.

The Public Works Department has also formulated a scheme for modernising the irrigation system in Karaikal region at an estimated cost of Rs. 66.00 lakhs during the V Plan. The total V Plan outlay for irrigation works to be executed by the P.W.D. amounted to Rs. 126.50 lakhs.

A perusal of the plan documents reveals that under 'agricultural programmes' the following provisions have been made for minor irrigation under the different plans :

(Rs. in lakhs)

Plan period	Outlay	Expenditure
II Plan	18.38	4.66
III Plan	12.18	12.15
Annual Plans (66-69)	25.28	26.16
IV Plan	53.00	68.11

Out of Rs. 18.38 lakhs allotted originally for the II Plan only Rs. 4.66 lakhs could be spent. In all, an ayacut of about 22,000 ha. (55,000 acres) is reported to have been stabilised by improving the existing tanks, channels, wells, etc.

As against the III Plan outlay of Rs. 12.18 lakhs for minor irrigation, a sum of Rs. 12.15 lakhs or 99.75 per cent. was spent. Schemes such as improvement of canals, construction of regulators, dividing walls, revetments, desilting of tanks, etc. were taken up. 26

During the Annual Plan period (1966-69) one power drill (1966-67) and one air-compressor (1967-68) were purchased under the Bore-Well Scheme to help ryots sink deep tube-wells.

During the IV Plan period, more power drills, hand bore sets and air compressors were acquired to help the ryots. Loans were advanced for sinking wells and installing pump sets. Although such assistance was originally made available to ryots for raising all crops, later it was confined only to those raising cash crops like sugar-cane, cotton, etc. in Pondicherry region and all crops in Karaikal region.

The V Plan outlay for irrigation works under the agricultural sector amounted to Rs. 28.00 lakhs.

Ground Water Unit :

The question of setting up a Ground Water Unit in this Territory under the aegis of the Directorate of Agriculture was mooted in 1971. Details of a scheme were forwarded to the Government of India for approval shortly thereafter. The Planning Commission, however, suggested that preliminary investigations in the various regions could be carried out by the Central Ground Water Board itself.²⁷ Accordingly, since May 1972, the Central Ground Water Board sunk deep bore-wells in Pondicherry and Karaikal regions as an experimental measure to assess the scope for the exploitation of ground water. Exploratory bore-wells were dug at Mulakkulam, Manappattu, Karasur, Madagadippattu and Agaram. The Ground Water Board was successful in locating copious amount of water in the wells drilled at all these places. More wells were dug at Madukkarai and Kalapet.

The Ground Water Unit (State) set up in the last year of the IV Plan carried out hydrological investigations in order to study ground water potentialities in Pondicherry region so as to advise ryots on spacing their wells, etc.

Irrigation cess :

As on date, no water rate, betterment levy or irrigation cess is being collected from farmers in the Territory. In 1973 the Administration introduced the Pondicherry Irrigation (Levy of Betterment Contribution) Bill, 1973 with a view to recovering betterment contributions from land-owners whose lands stood benefited either by the construction or expansion of irrigation or drainage works. The Pondicherry Irrigation Cess Bill, 1972 which sought to empower Government to levy irrigation cess for water used or supplied from Government sources for irrigation of lands other than wet lands was also introduced the same year. Both the bills, which stood referred to the Select Committee, lapsed with the dissolution of the Assembly in 1974. In the meanwhile, the *Syndicats Agricoles* and *Caisses Communes* continued to collect a betterment levy which was utilised for the maintenance of field bothies and for payment to the *kambakarans*.

Irrigation Development Board:

A 15-member Irrigation Development Board was constituted in 1974 to advise the P.W.D. on all matters relating to irrigation works in the Territory. The Board which is expected to meet once in two or three months is also vested with supervisory powers.²⁸ The Director of Agriculture, however, is not represented in the Board.