CHAPTER III

FIVE YEAR PLANS AND IRRIGATION DEVELOPMENT
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In ancient times, there are several references to the practice of irrigation from wells, tanks, canals and directly from rivers. Ancient Indian civilization by and large, developed in the river valleys, which were well equipped with irrigation system. References to irrigation abound in the folklore and ancient literature of the country, Vedas refer to ‘avata’ or water wells ‘kulyo’ or canal and ‘Sarsi’ or dam indicating the fact that devices for irrigation land were known and practiced Manu mentions about ‘tataka’ or artificial storage’ Mahabharata contains indications of the practice of irrigation from wells, tanks and canals. ‘Atharva Veda’ the ancient Hindu Scripture, describes the digging of canals to take water from rivers, symbolizing a river as a cow and canal as a calf. There is historical evidence of the respective duties of king and the people in respect to irrigation works having been defined in some parts of India as early as 300BC.

As long as 4 centuries BC, Megasthenes the Greek Ambassador to the court of Emperor Chandragupta recorded that the whole country was under irrigation and was prosperous because of the double harvest, which they were able to reap each year because of irrigation. During Muslim rule (From 14th Century to 18th century A.D), the emperor Ferozshah Tughuk constructed canals from the Sutlej and Jumuna in the 14th century A.D. The canals were subsequently improved during the Mughal period. In the south the notable irrigation work in the Grand Anicut (weir) was constructed during the time Chola kings in the 10th century A.D.
The ancient literature and history is full of references to irrigation and its importance for the welfare of the people was realized by rulers of different times. It is a fact that almost all parts of India was quite familiar with different systems of irrigation before 19th century which is substantiated by the existence of old wells, tanks, etc. in different parts of the country. Irrigation works in British India started with the renovation, improvement and extension of existing works. During the first quarter of the 19th century, attempts were made to improve and revive the old irrigation works rather than to construct new irrigation projects. In India, the early efforts of British Government were directed towards the improvement of the existing indigenous work. In this connection the East India Company took up three important irrigation schemes, namely, the construction of the two Jamuna canals the western Jamuna canal in United Province and the reconstruction of the Cauvery delta system in Madras.

The First Indian Irrigation Commission appointed in 1901, recommended in 1903 that “All productive works must be regarded as essentially protective. The beginning of the 20th century was marked by a very important event in the history of irrigation in India, namely, the converging of the India Irrigation Commission in 1901 under the President ship of Colonel Sir Colin Scott Moncrieff consisting exclusively of irrigation and revenue experts who toured the entire country in 1901 and 1902. The chief function of the first Indian Irrigation Commission was to report on the desirability of the extension of irrigation as a means of protection against famines. This function was clearly mentioned in the Government Resolution convening the commission.

The First Indian Irrigation commission is considered as a landmark in the history of modern irrigation system in India. The main energies of the Commission were devoted
to the investigation of new protective projects. The systematic irrigation works in the
country started only after its positive recommendation. It suggested a number of public as
well as private works. As a result of its recommendations and their implementations the
total area irrigated by public and private works increased to 22.6 million hectares in
1920-21. In 1923, the total capital expenditure on productive as well as productive works
had doubled while the area irrigated by them had increased by over 70 percent.

**Mettur Canal Scheme**

The success of any irrigation Project is measured by comparing the actual area
brought under irrigation. One of the functions of the Indian Irrigation commission was to
report on the desirability of the extension of irrigation as a means of protection against
famine.\(^1\) In consequence of the observation of the Irrigation commission for bringing
more land under cultivation the Government of India came forwardly to sponsor and find
several irrigation Projects. The Madras Engineers at the same time investigated the
available irrigation facilities of the Madras Presidency and proposed a number of
projects. The Cauvery Mettur Project was one of them. The execution of the project
commenced in 1925 and was completed in 1934\(^2\) target of the Cauvery Mettur Project
was to irrigate 3,01,000 acres under the Grand Anicut canal and Vadavar system and
70,000 acres under the Cauvery coleroon delta. The actual areas benefited through these
canals were 2,08,763 acres and 84,932 acres respectively. The target area in the Old

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\(^1\) Central Board of Irrigation and Power, *Development of Irrigation in India*, Publication No.76, New Delhi 1965, P.51.

Cauvery-coleroon basin was exceeded by 14,932 acres\(^3\) but there was a shortfall in regard to the Grand Anicut canal and Vadavar System and the target was not fully achieved owing to lack of irrigation channels of these two systems.

At the same time, the irrigation authorities had provision for supplying water to the extent of 3,01,000 acres according to the agreement of 1924.\(^4\) Before the efforts could be made to extend irrigation to achieve this target; the ryots of Salem and Coimbatore districts agitated for utilizing\(^5\) this unused water potential. In support of it the members of the Legislative council, S.Ellapp Chettiar, L.K.Thubsiram, K.A.Nachiappa Gounder, S.A. Nanjappa Bahadur, K.Kotti Roddi and Particularly Venkataramana Ayyangar were moving resolutions from 1928 onwards in connection with the meager supply of water for irrigation to the districts of Salem Coimbatore and Trichirapalli.\(^20\) They had also argued that these three districts were entitled to the first claims, for various reasons. Mainly the ryots of these districts possessed the riparian right, as the river flows through all these districts secondly a very large extent of cultivated and uncultivated lands particularly in Salem and Coimbatore districts had been taken away on account of this project, claims were also made on the basis that the project submerged nearly twenty villages causing displacement of the villages in those districts.\(^6\) Owing to these facts and the persistent demand of the ryots the Mettur canal with a target irrigated area of 45,000 acres in Salem and Coimbatore districts was taken up.

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A scheme to irrigate 17,000 acres in Coimbatore district and 28,000 acres in Salem district by Supplying water from Mettur reservoir was taken up under the First Five Year Plan. The Mettur canal scheme provides for the excavation of a canal form the Mettur Reservoir using high level sluices in the Mettur Dam. The main canal runs along the foot of the hills for a length of four miles and two furlongs. At this point the canal bifurcates into two, one running on the right margin and the other on the left margin on the river Cauvery. The canal branching off on the left at the fourth mile crosses, the Cauvery River by means of a pressure aqueduct to irrigate lands in this district. This canal which is 39miles long irrigated 28,000 acres of wet and dry crops in Tiruchengode, Omalur and Namakkal taluks of the district. The Mettur canal scheme was sanctioned in 1949 under the post war reconstruction schemes at a cost of Rs.2,66,84,800 including direct and indirect charges. Out of 45,000 acres of dry land 17,000 acres (Bhavani taluk) in Coimbatore district and 28,000 acres (Tiruchengode, Omalur, Mettur) in Salem district was getting benefit by this scheme. The right and left bank canals were opened for irrigation on 25th July 1957 to irrigate 43,379 acres both in Coimbatore and Salem district. The entire work was completed in March 1957 and opened for irrigation.

**Lower Bhavani Project**

The river Bhavani rises in the silent valley forests of Valluvanad taluk in Kerala State. Before it enters Coimbatore District it receives the Siruvani, a perennial stream rising in the Attapadi Valley in Kerala State. Then it flows through Avinashi, Sathyamangalam and Gobichettipalayam taluks and further flows eastwards to join the

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8 Ibid.
cauvery near the town of Bhavani. Its main tributary Moyar joins with it in its course through the Sathyamangalam taluk. It is a perennial stream and affords the best means of irrigation in the district. Being fed principally by the south west monsoon, it receives its first freshest towards the end of May and its highest from June to August. The rafters it flows gradually subside though with the occasional floods during the North East Monsoon. The total length of the river from its origin to its exit from the district is about 155Km, while the same within the district is about 125 Km. The Bhavani joint the Cauvery within the Erode district. The total catchment area of the river is about 5,900sq.km, while the same within the district is about 5,450 sq.km.  

The Lower Bhavani Project is the first river valley project taken up for execution by the Madras Government, after India attained Independence. The First recorded proposal for damming the Bhavani was made by Sir Aurther Cotton in 1834. Twenty two years after Cotton’s proposal one W.Frazer a civil engineer was appointed to carry out an examination of the Cauvery and Bhavani basin. Frazer investigated several suitable sites on the upper Bhavani. He reported the site at Pallavoor as the most suitable one. Pallavoor is situated at the, junction of Bhavani and Siruvani. Though the site had the advantage for the constructing of a dam, no effort was taken for the next 13 years. Subsequently, the proposal was examined by Captain C.J.Smith (1896), Major Montgomeri (1880), Captain Romilly (1883), J.C.Larmine(1892),Hughes (1898), R.N. Arogyasamy Muthaliar (1905) all of whom suggested different designs and different sites.

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The Public Works Department then proceeded with the preparation of plans and estimates for a Lower Bhavani Project and the Government was satisfied with the scheme and were about to sanction it in 1938\textsuperscript{13}, when some members of the Coimbatore District Board and some other influential persons of the district pointed out the prevalence of famine conditions in Palladam and Dharapuram taluks of the district and urged on the Government to take up once again the Upper Bhavani Project. The Chief engineer for irrigation has examined all the proposals in detail and submitted his report to the Government with exhaustive notes on various proposals and finally concluded that proposals for Upper Bhavani Project should be dropped once for all and recommended the Lower Bhavani Project\textsuperscript{14}.

With the end of the Second World War and the attainment of Independence, the national Government which took over charge on 15\textsuperscript{th} August 1947 was faced with the serious problem of solving the acute food and cloth shortage in this country. So the necessity for carrying out a number of irrigation Projects with a view to bringing under plough as much acreage as possible in the shortest time was realized. A.R.Venkatachari, who was then the Chief Engineer for irrigation, took up the task of finalizing the proposals and preparing a new skeleton estimate for the Lower Bhavani Project for sanction by the Government\textsuperscript{15}.

His Excellency the Governor of Madras approved an expenditure of Rs.7. Crores including direct and indirect charges and omitting areas of simple interest or Rs.8.79 Crores including arrears of simple interest, on the construction of a dam across the

\textsuperscript{13} Go No.3521, Irrigation, P.W.D.Dated 19\textsuperscript{th} March 1902.

\textsuperscript{14} Ibid.

\textsuperscript{15} G.o.No.2844, Public Works, dated 19 September 1947.
Bhavani River near Satyamangalam; in the Coimbatore district together with the
connected distributaries canals\textsuperscript{16}. The Project storing about 32,000 m.cft, would benefits
2,07,000 acres in Gobichettipalayam, Bhavani, Erode and Dharapuram taluks of the then
Coimbatore district and Karur taluk of Tiruchirapalli district\textsuperscript{17}. Out of these 2,07,000 acres provision was made for raising paddy on a small extent of 10,000 acres in the low
lying lands, where it might not be possible to grow dry crops after the project area
develops. The remaining extent of 1,97,000 acres was divided equally between cotton
and millets\textsuperscript{18}.

The cropping season has been fixed as September to March. This period would
roughly correspond to the crop period for cotton, Millets would, however take only
3 month to grow. Thus it would be possible to raise one crop of cotton and two crops of
millets in any year. The object of fixing September as the commencement of the
irrigation season is with a view to meet the existing commitments before water could be
turned on to the new areas.\textsuperscript{19}

\textbf{Efforts of the Government to Localize the Ayacut Under Lower Bhavani Project}

Before undertaking a scheme of the magnitude and complexity of the Lower
Bhavani Project, these irrigable extent of 2,07,000 acres was localized by the Public
Works, Revenue and Agricultural department working in close liaison with each other. A
committee consisting of one Special Deputy Collector, on the Revenue side, an executive
Engineer on the Public Works Department side and a District Agricultural officer, on the
Agricultural side was formed for this purpose and all question relating to the localization

\textsuperscript{16} Ibid.
\textsuperscript{17} Madras Information, 1959, Vol.XIII, No.12,P.3.
of the ayacut were discussed and decided then and there during their joint inspections on this basis, the ayacut under the Lower Bhavani Project was distributed among the various taluks that is shows in the table 3.1

<table>
<thead>
<tr>
<th>District (As in 1950’s)</th>
<th>Taluk</th>
<th>Extent in acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coimbatore</td>
<td>Gobichettipalayam</td>
<td>40,500</td>
</tr>
<tr>
<td></td>
<td>Bhavani</td>
<td>17,000</td>
</tr>
<tr>
<td></td>
<td>Erode</td>
<td>1,25,000</td>
</tr>
<tr>
<td></td>
<td>Dharapuram</td>
<td>20,600</td>
</tr>
<tr>
<td>Tiruchirapalli</td>
<td>Karur</td>
<td>4,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,07,500</td>
</tr>
</tbody>
</table>

The Project, named after the River Bhavani a major tributary of the Cauvery, harnesses the water in the lower reaches of the river. It consists of (1) a dam, (2) a reservoir, (3) a main canal, and (4) distributaries.

28,862 feet long and 140.5 feet high over the lowest river bed spans a shallow valley has eroded between the hills of Nilgiris and Billigiris. The dam has two portions, one is stone masonry in cement and the other is earth. The original design provided for 84,000 feet of masonry dam, but the use of latest techniques in soil mechanics has helped reduce if to only 1,523 feet. The rest is an earth dam divided between the left and right flanks. Its total volume is 161.0 million cubic feet\(^{20}\). In the river portion of the masonry dam 396 foot spillway is provided to discharge a flow of 1,22,000 cusecs. This together with the river sluices will discharge 1,56,700 cusecs.

Reservoirs

Behind the dam, a semi wild valley has been converted into a 30 square mile reservoir named Bhavanisagar. Triangular in shape, it has a coastline of 78 miles; the reservoir submerged only six villages with a cultivable area of about 6000 acres. The affected villages, about 1000 families, have been rehabilitated on lands six miles below the dam.

Canal System

The main canal, with a capacity of 2,300 cusecs, takes off from the right flank of the reservoir. Its sinuous course extends to more than 120 miles with a network of branch canals and 500 miles long distributaries. They carry, irrigation water to the lands lying in four taluks, Gobichetti palayam Bhavani, Erode and Dharapuram. Being a contour canal it irrigates from only one side. Accordingly there are several natural drains intercepting those 152 drainage culverts, 25 aqueducts four syphons and one super passage. In addition there are about 100 bridges and several sluices. The entire construction of these Rs.10 crore Projects is being carried out with the help of job workers and departmental labour. No large contractors have been employed on the Project except for the supply of heavy earth moving machinery and other mechanical equipment for grouting and drilling. As the project was nearing completion with the help of thousands of labourers, it brought hope to the farmers who would soon overcome the scarcity in food grains and cloth.\(^\text{21}\)

Lower Bhavani Project Canal Opened For Irrigation

The Project Started in 1948 as a post war development scheme, the Lower Bhavani and its allied works were completed well in advance of the scheduled time. The first water were however, released in September 1952 to irrigate 10,000 acres and this

\(^{21}\) Ibid.
was gradually increased to 29,000 acres in September 1953, 1,14,600 acres in September 1954 and 1,67,400 acres in September 1955. The entire area was thrown open for irrigation in September 1956. With the advent of the canal irrigation, supply of water was assured and achieved the target for an extent of 2,07,000 acres in Gobichettipalayam, Erode, Dharapuram taluks of Coimbatore district and Karurr taluk of Trichirapalli district.

**Concessional Water Rate**

Under the Madras Act, XVI of 1933, the Government has enacted the Bhavani Irrigation Reservoir cess Act of 1933 to safeguard the Government revenue due from the lands included in the ayacut of the Scheme. This act was subsequently amended on 22nd November 1952. Based on this draft rules have been passed under the name of “Bhavani reservoir irrigation cess Rules of 1953’. This cess Rules in sit on the payment of different water rates as detailed below suit the crops raised. Further the ryot has to pay the prescribed water rates, irrespective of the fact whether he use the canal waters or not for raising crops.

<table>
<thead>
<tr>
<th>Nature of Crop As in 1950’s</th>
<th>Water rate per acre As in 1950’s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rs.</td>
</tr>
<tr>
<td>Cotton</td>
<td>20</td>
</tr>
<tr>
<td>Paddy, Chilies, Tobacco, Onions Sweet Potatoes, Tapiaco and Turmeric</td>
<td>15</td>
</tr>
<tr>
<td>Groundnuts and Ginelly</td>
<td>10</td>
</tr>
<tr>
<td>Millets, Pulses and Fodder Crops</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 3.2 shows the level of water rates for the different crops.

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Agricultural Practice before the Advent of the Lower Bhavani Project

The farmers of the Coimbatore Erode and Tiruppur districts are noted for their industry. Nearly 70 percent of arable land was cultivated dry. Their crops were mostly rain fed, dotted here and there with garden cultivation under wells. The agricultural operations commence within Adipattam in the south west monsoon i.e. about July. The main rain fed crops were millets, the variety depending on the fertility of the soil. This crop was harvested by about October. A second crop of millets then follows, taking advantage of the North-east monsoon rains during November and December. This second crop harvested about March.

The ryots, particularly, in garden land, lived on the holding itself. This was a special feature of the district. Garden cultivation under wells was intensive requiring hard labour right through the year. The practice under wells was for a ryot to grow as much food as was necessary for this domestic consumption and seed purposes and raise cash or commercial crop to meet his other expenses. A little paddy was also grown in the low-lying plots under walk on the areas irrigated chola m or cumbu, Tobacco and cotton were also grown Ragi was an early crop and tobacco and cotton are comparatively later crops. Thus, the agricultural economy of the area in the absence of irrigation was solely dependent on unfailing, regular and periodical rains, when the rainfalls, drought conditions prevailed in the district. The economic balance was badly upset. The area fell into the grip of famine and distress prevailed over large areas.\(^\text{24}\)

Cropping Pattern under the Lower Bhavani Project

In Coimbatore district, Erode and Tiruppur as elsewhere in Tamilnadu there are two major crop season Kharif and Rabi. June to September is considered as the kharif season while October to January is considered as the rabi season. But season cannot be well defined in view of the changes in the sowing period and the harvesting period of different crops which depend on the erratic rainfall. Ragi, Paddy, Cholam, Cumbu, Sugarcane, Cotton and pulses are the important crops grown in both kharif and rabi season. Cholam, cumbu and groundnut are generally irrigated in the rabi season.

Table 3.3

<table>
<thead>
<tr>
<th>District As in 1060’s</th>
<th>Crops</th>
<th>Kharif</th>
<th>Rabi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coimbatore</td>
<td>Paddy</td>
<td>115793</td>
<td>-</td>
<td>115793</td>
</tr>
<tr>
<td></td>
<td>Sugarcane</td>
<td>6990</td>
<td>-</td>
<td>6990</td>
</tr>
<tr>
<td></td>
<td>Groundnut</td>
<td>37025</td>
<td>-</td>
<td>37025</td>
</tr>
<tr>
<td></td>
<td>Cotton Millets and other</td>
<td>30361</td>
<td>-</td>
<td>30361</td>
</tr>
<tr>
<td>Tiruchirapalli</td>
<td>Paddy</td>
<td>16749</td>
<td>-</td>
<td>16749</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>206918</strong></td>
<td>-</td>
<td></td>
<td><strong>206918</strong></td>
</tr>
</tbody>
</table>

Table 3.3 shows that the level of crops produced under the Lower Bhavani Project.\(^{25}\)

The Amaravathi Reservoir Project

The inauguration of the Amaravathi Reservoir Project was another landmark in the history of Coimbatore District. Particularly of Udumalpet and Dharapuram Taluks and was the first major irrigation project to be taken up for excavation in these dry areas. Dharapuram and Udumalpet Taluks of then Coimbatore District were the taluks worst affected by famine. The necessity for an irrigation project to cover some of this area was felt for quite a considerable time. The river Amaravathi which rises in the Western Ghats near Munnar flowing in these areas is a major tributary of the Cauvery. It flows at first through the dense forests in Coimbatore district until it enters the plains near Kallapuram village in Udumalpet taluk. There are 17 anicuts and eight sand korambus in the river. 25 Irrigation channels take off above these works and irrigate about 28,000 acres of double crop wet lands, about 3,600 acres of mamool wet and 1,200 acres of registered theevaijasthi lands.

The idea of building of reservoir on the Amaravathi was a old one. The earliest preliminary, investigation of reservoir project on Amaravathi at the foot of the hills near Kallapuram was done about the year 1901. A more detailed investigation was ordered in 1902. This investigation was discontinued shortly after it was started, as it was considered that sufficient data was not available. In 1905, however Colonel Ellis.R.E., proposed a scheme for the Amaravathi Reservoir project. This project was considered by Government but it was abandoned in 1913 as it was thought that a reservoir on the

\[27 \text{ Ibid.} \]

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Amaravathi would be expensive both to heavy compensation and the necessity for providing for large surplus discharge.\(^{28}\)

Again, on the representation of the Secretary, Amaravathi Agriculturists Association, Kolinjivadi, another investigation was ordered in 1918. This scheme also was abandoned in 1921 in view of the low return. In 1940 after the famine in Palladam and Dharapuram Taluks, the necessity of conserving supplies in the river by a reservoir project and utilizing the same for stabilizing the existing supplies in the river cannels as well as for new areas was more than even keenly felt. Then the minister for public works and the Chief Engineer visited and affected areas in August 1946, as a result of which a fresh investigation was sanctioned.\(^{29}\)

This investigation was started in May 1947 and completed in December 1948 the scheme was later ordered to be revised by Government. This revision which involved another investigation was also done. The estimate as modified was sent to the Government in February 1951. The Government approved the scheme as the Planning Commissions had promised a loan for the execution of the project.\(^{30}\) The Amaravathi Project Reservoir consists of a storage reservoir across the river near the foot of the western Ghat, where the site is half a mile below the kombu forest bungalow the river drains an area of 324 sq. miles at this site.\(^{31}\) The dam was to be about 3,715 feet long, 2,475 feet being in the shape of an earth dam, the balance of 1,240 feet being in masonry. In the masonry portion there is an overflow section over the river bed 370 feet long and


\(^{29}\) Ibid.


non overflow section 870 feet at both ends of the overflow section. The storage capacity of the reservoir is about 3,000 m.c.ft. and there was sluices in the dam both for old and new irrigation.

According to earlier proposals, the total area of 15,000 acres proposed for new irrigation was made up of 10,710 acres in Udumalpet taluk and 4,290 acres in Dharapuram taluk. The total length of the main canal alignment was 34 miles 7 furlongs 200 feet. The area commanded by the scheme was bounded by the main canal on the one side and the Amaravathi River on the other side. Government ordered that the new ayacut of 15,000 acres should be equally distributed between the two taluks of Udumalpet and Dharapuram and the scheme should be modified accordingly. A conference was also held on December 1948, the ryots agreed to the proposed changes in the canal alignment so as to serve the two taluks equally. The total cost of the project was Rs.272.31 lakhs. The Project was completed in 1956. The project stabilized water supply to the existing ayacut of over 32,000 acres and also brought 15,000 acres under irrigation.32

The Araniar Project

The inauguration of the Araniar Project was a great event in the history of the than Chengalput district because this was the first large irrigation project undertaken in this district.33 Among the three important river basins of the district, the Palar, Kortailear and Araniar, the Araniar River alone had so far no reservoirs or anicuts constructed. The Project was inaugurated on 23rd July 1951 by M. Bhaktavatsalam, Minister of Public works at a function presided over by B. Gopala Reddi, Minister of Finance.34 The need for a reservoir across the Araniar was felt at the beginning of this century and investigation

33 GO.No.1374, Public works Department, dated 3.4.1951, P.7.
of a reservoir scheme was taken up as early as the year 1905. It was then proposed to form a reservoir by throwing an earthen bund across the river near Kulukundran village. So as to store water for the irrigation of about 10,000 acres with a capacity of about 3,000 million cubic feet. But in view of the prohibitively heavy cost of compensation to be paid for the submersion of the valuable lands, Zamin villages and Government villages of Nagalapuram, the proposal was dropped.35

The Araniar river has its source in the Nagari Range of the Eastern Ghats, in Karvetnagar Zamindari of Chittoor district, flows through the predominantly in the area of Puthur taluk of Chittoor District and the taluks of Tiruvallur and Ponneri of the than Chengleput District and falls into the Bay of Bengal. The investigation of this Project was taken up in 1947. The site of the reservoir was fixed at pisatoor village on the western border of chingleput District.36 The Araniar has a combined catchment area of 173 sq miles at this site. Irrigation was to be carried on through two channels one on either side of the dam 5,500 acres of first crop and 3,600 acres of second crop were proposed to be irrigated from this scheme the estimated cost of the project was Rs.95.22 lakhs including direct and indirect charges. The scheme was programmed to be completed in a period of 3 ½ years. The Project was expected to add 5000 tons of rice, worth about Rs.15 lakhs annually, to the food resources of this district.37

The Project was completed in 1957 and opened for irrigation through two channels one on either side for irrigating 5,500 acres of first crop and 3.600 acres of second crop.38

35 Ibid.
36 G.O.No.2723, Public works Department, dated 29.06.1951.
The Manimuthar Project

The preliminary investigation of Manimuthar reservoir scheme was taken up in 1945. The ryots were asking for extension of the Perungal Channel into the Nanguneri Taluk from 1933 onwards, but this request could not be complied with until time was ripe for the investigation of a reservoir project. After the cessation of the World War and as a result of the Grow More Food Drive by Government to make up the acute shortage of food, particularly rice, this reservoir was taken up for investigation on 21st September 1945. The preliminary report with skeleton plans and estimates were made out in 1946. These were examined and a report was sent to Government. The Government Order the further investigation of the scheme. Accordingly a special subdivision was sanctioned by Government for further investigation of the scheme. Investigation commenced in June 1948 and completed in March 1949. The project was sanctioned in October 1950 at an estimated cost of Rs.398 lakhs. The Government had raised a loan of Rs.1.28 Crores from the interested ryots in Tirunelveli District for financing this project. It consists of a storage reservoir formed by construction a dam across the manimuthar river at a place about 3 miles above it confluence with Tambaraparani river. From the northern slopes of the Agasthiyar malai range, an easterly protrusion of the Western Ghats at an altitude of about 6,000 feet rises the river Manimuthar, a principal tributary of Thamirabarani river in Tirunelveli District of Tamilnadu. The Chief sources of irrigation in Tirunelveli District is the Thamira barani river and its tributaries. The Thamira barani river irrigated about 83,000 acres and two crops

were grown on a portion of this area.\textsuperscript{42} This project was for the construction of a reservoir across the Manimuthar river 4 miles from Kallidaikurichi in Tirunelveli district and taking a canal there from. With 11,145 feet length the dam was expected to irrigate about 20,000 acres of land through the then existing rain fed tanks. This project also provided assistance to 83,000 of the ten existing irrigation under the Tambaraparani. An extra quantity of 20,000 tons of rice was expected to be achieved by the project. The total cost of the project was estimated to be Rs.505 lakhs.\textsuperscript{43}

The Manimuthar Project was inaugurated on November 29\textsuperscript{th} 1950 by M.Bhaktavatsalam, Minister of Public works. This was the first large irrigation project taken up for execution in the District. The scheme was programmed to be completed in a period of about 4 ½ years.\textsuperscript{44}

The reservoir was formed partly by solid gravity type of masonry dam and partly by earth dam at the flanks preservation of the rich and fertile agriculture valley of the Thamira barani river was the vital role assigned to the Manimuthar reservoir secondly, about 29 ½ miles length of the main canal, taking off from the reservoir, was go to supply hundreds of rain fed tanks in the uplands of five taluks and bring the rich crops to fruition. Excavation foundation for the canal head sluice and the perungal head sluice was constructed. Masonry Dam construction was started in two blocks in the spillway section of the Earth dam at the left flank, between the first two hills.\textsuperscript{45} This project was completed by 1957-58 and the scheme was providing better irrigation facilities to existing ayacut of 79,151 acres under the Thamira barani system and to benefit 20,000 acres of

\textsuperscript{42} Ibid., Vol.I, Madras 1952, P.24.
\textsuperscript{43} M.Bhakthavatsalam, \textit{Agricultural Policy and Achievement}, P.11.
\textsuperscript{44} \textit{Madras Information 1951}, Vol.I, Madras 1951, P.24.
land now under 321 rain fed tanks in Ambasamudram, Nanguneri, Tirunelveli, Srivaikundam and Tiruchendur Taluks. The additional production of food grains anticipated from the scheme was 20,000 tons of rice annually.\textsuperscript{46}

**Krishnagiri Reservoir Project**

The First recorded proposal for the construction of a reservoir across the river Ponnaiyar in the than Salem District was made by Thomas in 1875 the then collector of Salem District.\textsuperscript{47} Subsequently in 1884 further proposals were made to irrigate roughly 3,000 acres at a cost of Rs.40 lakhs with a return of 5 percent on the capital outlay, but for the reasons of unreliable data of river discharge and want of finance the scheme was abandoned.\textsuperscript{48}

Till 1947 the Government took no effort for further investigation. Consequent on the general cry for exploring all possible irrigation schemes to argument the food production in the State, A.R.Venkatachari, Chief Engineer was appointed for active investigation. A special subdivision was formed and the investigation of the Krishnagiri reservoir project was started in October 1948. E.V.Narayanan Executive Engineer carried out the field investigation in 1949 and submitted his report in October 1949.\textsuperscript{49} The Reservoir was built across the Ponnaiyar river at a point three miles south of Krishnagiri town. The work of this project was commenced in 1954 and was completed in 1957.\textsuperscript{50} The capacity of the reservoir is 2,410, m.c.ft. the height of the dam is 375 feet. The Krishnagiri Reservoir Project constructed at a cost of about Rs.2.5 crores under the scheme of First Five Year Plan. It benefits an extent of about 9,000 acres. Two canals take off from the

\textsuperscript{46} Report on the Administration of the Madras State, 1957-58,P.
\textsuperscript{47} G.O.No.4112(MS) Public works Department, dated 23.11.1954.
\textsuperscript{49} Madras Information 1958,Vol. No.5, P.29.
\textsuperscript{50} G.O.No.4112, Public works Department, dated 23-11-1954.
reservoir on either side of the Dam the left bank canal going to a length of 11 ½ miles irrigating about 4,500 acres and the right bank canal going to a length of 9 miles irrigating 4,500 acres.  

The Project satisfied the demands of the ryots of Krishnagiri for protecting irrigation to save the lands over which crops fail on account of uncertainties of rainfall and is in keeping with the policy of the Government by utilizing all available water resources to the maximum extent.

**The Sathanur Reservoir Project**

The momentous and happy occasion of the Sathanur Reservoir Project marks a major landmark in the History of the then North Arcot District. It is the first major storage Project to be taken up for execution in the District.

North Arcot district was now situated into Vellore and Tiruvannalai districts is the one of the district of the Madras state, which cannot boast of any irrigation scheme of any appreciable magnitude, commensurate with the area and the population of the district in spite of the 3 major rivers, Viz. Palar, Cheyyar and Ponniyar have flowing through it, the only irrigation schemes that was carried in this district and worthy of mention was the anicut across Palar and Cheyyar, there being none across Ponniyar. The River Ponniyar has its source of the South eastern slopes of Chennakesava hills North West of Nandidurg in Mysore State. It flows through the Karnataka state under the name of Dakshina Pinakin and enters Tamilnadu states at a place 3 miles north east of Bagalur village of

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52 G.O.No.4112, Public Works Department, dated 23.11.1954.
Hosur Taluk, Krishnagiri District. The river enters Vellore District and flowing through south Arcot District finally enters the sea north of Cuddalore town.\(^{54}\)

In its source through the State the river has two anicuts in Salem District and two in South Arcot District which irrigates land to the extent of 4,718 and 35,012 acres respectively. There are also several open channels between Nedungal anicut in Salem and the next anicut at Tirukkoilur and below, Ellis choultry Anicut the last Anicut of South Arcot irrigating a total extent of 28,856 acres.

Several modification of this scheme were examined from time to time, but lack of reliable data on river flows and utilization, consideration of financial return, priority for more attractive scheme elsewhere in the state, all these contributed to this scheme being deferred from time to time. Government Sanction for investigation was obtained in 1947 and the investigation was completed in 1949 for the Sathanur Reservoir Project permission was accorded by the planning commission to include this project in the First Five Year Plan and accordingly Government have sanctioned the project for immediate execution.\(^{55}\) The Reservoir project, consist of a storage reservoir across the river about 4 ½ miles from sathanur village and 22 miles from Tiruvannamalai.

The dam is about 3,125 feet long, 1949 feet being of earth. And 1,176 feet being masonry. In addition to this, there is a saddle surplus with dykes on either side in the right flank saddle for a length of 1,262 feet. In the masonry portion, there is an overflow section over the river bed, 486 feet long and non overflow section, 690 feet long.\(^{56}\) As the river runs in a gorge, there is no direct irrigation form the reservoir. Water is allowed through the river sluices and picked up for irrigation, four and a half miles lower dam

\(^{54}\) Ibid.  
\(^{56}\) Ibid.
through a pick up anicut 492 feet long and 16 feet high. A canal from the left side of the pickup anicut is excavated the total length of the canal is 22 miles with several distributaries. The canal as aligned to irrigate a total extent of 20,000 acres of new ayacut besides benefitting the existing ayacut below the reservoir. This area of new irrigation comprises 3,291 acres existing wet which is given assured supplies and 16,600 acres dry land which is brought under wet. Of these 20,000 acres, of which 6,800 acres is in chengam taluk and 8,500 in Tiruvannamalai taluk and the balance of 4,700 acres in Tirukkoilur Taluk.  

**Vaigai reservoir project**

Vaigai is the legendary river of the Pandyan king for ages. Its waters were extensively used for in the Madurai and Ramanathapuram districts. The Vaigai has its source in the Western Ghats on the eastern slope at an altitude of 5,000 feet in a valley next to variavanar valley into which the waters of Periyar lake of low through the fore shore tunnel. The River Vaigai that was known as Vaiai in the ancient Sangam age. The word Vaiai found in Silappathikaram and also Kalithogai. It refers as Tennavan Vaiai, Varupunal Vaiai, Varupunal here ‘Vaiai’. However, at the beginning of nineteenth century the name Vaiagai came in the being.

**Muthu irulappa pillai’s proposal 1867**

The first recorded proposal for damming across the vaigai from diverting Periyar river water into Madurai district was given by MuthuIrulappa Pillai, the then Dewan of the ruler of Ramnad in 1867. He submitted a proposal which included an earth dam

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162 m in height and escape was to be diverted in to the vaigai by cutting through the water shed at the sill 17 below the escape, crest and maximum depth of cutting about 52, the approximate cost of the project was roughly Rs.17,49,000.\(^{60}\)

**Rao Bahadur’s Proposal**

Rao Bahadur, the then Chief Engineer for irrigation in 1943 proposed the detailed investigation of the scheme the investigation involved extensive surveying and leveling of the reservoir water spread area of about 25 sq miles and examination of the sub-soil was also found necessary by a much large number of calyx drill borings. Sound rock of sufficient depth was available for foundations.\(^{61}\)

**Rajaram’s Proposal, 1950**

In 1950, the matter was again taken up by Rajaram, a Civil Engineer. He sent in his preliminary report about the Vaigai scheme. A conference of the leading ryots of the villages affected by the above scheme was convened on 11.7.1950 at Valandur in the presence of the then collector of Madurai. The proposal was to form a reservoir across the vaigai in Madurai district about 20 miles above the Perania regulator and about 6 miles below the junction of the Surulair and Talai Vaigai.\(^{62}\)

According to this proposal, the reservoir would have a capacity of 4,000 M.c.ft in the first stage and 6,000 M.c.ft in the second stage. The dam would be of masonry with agreeing overflow section in the river portion, with earthen bound on the flanks. The main canal would be 22 \(\frac{1}{2}\) miles long and would take off on the right side of the vaigai river for irrigating a wet ayacut of 17,000 acres, comprising 1,000 acres in Nilakottai taluk and 11,000 acres in Tirumangalam taluk and 5,000 acres of hard cases in Periyar.

\(^{61}\) G.O.No.3360 Irrigation, Public work Department, dated 9-12-1944.  
\(^{62}\) G.O.No.695, Irrigation, Public works Department, dated 19-2-1953.
delta. The entire area which was proposed to be benefited by this scheme was occupied by Kallars who were very poor. According to the scheme report, the water that was to be stored in the reservoir would be sufficient to irrigate 17,000 acres.\textsuperscript{63}

In 1950, the Board of Revenue recommended the Vaigai reservoir scheme, and appointed a special deputy collector for a period of three months to investigate in detail. The revenue, financial and administrative aspects of the scheme were responding to the Bowl to be studied. As regard the question of eliminating the 1000 acres of irrigation proposed for Nilakottai and adding 1784 acres of more to Tirumangalam taluk.\textsuperscript{64} The Planning Commission formulated plans for multipurpose river valley and irrigation Projects. A draft Plan of development was presented in July 1951 for the five years period from 1951-1956.\textsuperscript{65} As a result of this First Five Year Plan, the Government ordered that a detailed investigation of the Vaigai scheme to be implemented.

\textbf{Inauguration of the Vaigai Reservoir}

With the end of the Second World War and attainment of Independence the national Government which took over charge on 15\textsuperscript{th} August 1947 was faced with the serious problems of solving the acute food and cloth shortage in this country. So the necessity for carrying out a number of irrigation projects with a view to bringing under plough as much acreage as possible in the shortest time was realized. The Chief Engineer submitted a report of the Vaigai Reservoir project to the government for approval of on estimate of Rs.250 lakhs and also asked Rs.7600 for the expenditure to be incurred on the inauguration function of the Vaigai project.\textsuperscript{66}

\textsuperscript{63} Ibid.
\textsuperscript{64} G.O.No.3929, Irrigation, Public Works Department, dated 25-10-1950.
\textsuperscript{65} Second Five Year Plan, Government of India, Planning Commission, 1959, P.37.
\textsuperscript{66} GO.No.199 Irrigation, Public works Department, dated 20-01-1954.
The planning commission also intimated the decision of the government of India to assist Madras government in the execution of the scheme by the government of India by the grant of Rs.250 lakhs as loan which will be interest free for the First Five Years. Meanwhile the Madras Government was approached the Central Government for approval and inclusion of the scheme in the First Five Year Plan and also financial assistance on a scheme for a scarcity area. The modified investigation and preparation of plans and estimates was completed in the year 1954. The main object of the scheme was to divert the greater portion of the flows from the catchment of the Periyar lake that now go to waste into Arabian sea, by reducing the total surplus from the lake and passing the excess flows through the existing tunnel wherever possible to the catchment of the Vaigai river and utilize the same for irrigating a new ayacut of 12,000 acres under the proposed Thirumangalam canal 5,000 acres of existing Periyar hard cases.\textsuperscript{67} The proposals were made carefully and Vaigai project was completed in 1958 and was opened for irrigation in 1960.\textsuperscript{68}

**Second Five Year Plan**

The integrated development of the water resources of the state was of fundamental importance to our economy and programmers’ for achieving thus have been given a high priority. After the attainment of independence the tempo of activity on irrigation development schemes has increased and there has been considerable activity in building new irrigation projects both major and medium in almost every district of the state.\textsuperscript{69}

\textsuperscript{67} G.O.No.397, Irrigation, Public Works Department, dated 31-01-1953.

\textsuperscript{68} Report on Identification of Drought Prone Areas in Tamilnadu, Madurai District, P.441.

Under the Second Five Year Plan in addition to the carryover of the incomplete works of the First Plan, the following new schemes were sanctioned.

1. New Kattalai High level scheme
2. Pullambadi canal.
3. Vidur Reservoir.
4. Neyyar Project second stage.
5. Parambikulam.Aliyar Project.
6. Medium Irrigation schemes in Kanyakumari District.

The first four had already been completed. The total financial outlay on irrigation schemes in the second plan period was Rs.17.56 crores and the area benefited is 2.11 lakh acres of New Lands and 1.21 lakh acres by stabilization., other five new irrigation projects to be taken up under the second Five – Year Plan, token provisions have been made in the Budget Estimates for 1956-57 for New Kattalai High level canal scheme, Pullambadi canal scheme and Vidur Project.71

1. **New Kattalai High Level Canal Scheme**

Under the New Kattalai High canal scheme the canal takes off from a head sluice located just to the right of the off take of the leading channel of the south Bank canal above Kattalai Bed Regulator across Cauvery.72 The south bank canal and the excavation there from of a new canal of about 86 miles length. The scheme was estimated to cost about Rs.156.65 lakhs and expected to irrigate an extent of 20,622 acres. Of which 12,000 acres were under 119 existing tanks in Tiruchirapalli and Tanjore district for

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72 G.O.No.264(MS) Food and Agricultural Department dated 30-01-1957.
which additional supply to be made by the execution of the scheme and 8,622 acres by
direct irrigation from the canal.\textsuperscript{73}

The uplands of Tiruchi and Tanjore taluks lying south of Cauvery river, had no
irrigation facilities except for a small belt of land under the existing Kattalai High level
channel tail end up to Ariyar and Uyyakondan channel. The people of this area were
pressing the Government to provide irrigation facilities from the Cauvery River. Several
alternatives were considered and one of them was for taking off a channel from the right
bank of the Cauvery river at about 1 ½ miles above Kattalai Bed regulator and running it
on a higher cantor than the existing Kattalai High level channel for a length of 40 miles
down to Ariyar and 25 miles beyond it with a reservoir constructed across Ariyar.

A second alternative was to remodel the full length of 38 ½ miles of existing
New Kattalai High level channel to carry. The increased discharge required and extends
this channel for 25 miles beyond Ariyar and also constructed smaller reservoir across
Koraiyar and Kattar.\textsuperscript{74}

The Third alternative was to have the off take of the New channel just above the
head of the leading channel for the south Bank canal, above the Kattalai High Bed
Regulator and run it parallel to the existing Kattalai Level channel with a common Bank
between them down to Ariyar and to take the channel beyond Ariyar down to
Theneripattivali for a length of about 28 miles 6 furlongs for irrigating 20,650 acres in the
first stage and 38,650 acres in the second stage up to Vallam. The scheme was finally

\textsuperscript{74} Ibid., 1959, Vol.XIII, No.10, P.29.
decided upon was for providing irrigation facilities to an extent of 12,000 acres under tanks and a small area of 8,622 acres under direct Irrigation.\textsuperscript{75}

The scheme was sanctioned for execution by the Government in G.O.Ms.No.2913, Public Works Department, dated 22-06-1956 and after preliminaries the actual execution on the scheme was inaugurated at this very place on 17\textsuperscript{th} August 1957, by the Chief Minister.\textsuperscript{76}

\textbf{The Present Scheme Comprises}

The construction of a head sluice just to the right of the off take of the existing leading of the South Bank canal above the Kattalai Bed Regulator across the river Cauvery with 4 vents off feet 6 inches by 9 feet and with still at 317.45 capable of discharging about 1,170 cusecs. The excavation of a canal from the Head sluice for a length of 86 miles for irrigation a total ayacut of 20,622 acres of which 12,000 acres were under tanks and 8,622 acres were under direct irrigation, from branch channels. The canal had designed to carry 1064 cusses for both tank irrigation and direct irrigation combined.\textsuperscript{77} The canal was primarily opened for irrigation in the middle of September 1959 to irrigate an area of 4,000 acres. An expenditure of Rs.205.63 lakhs was incurred in the Second Plan.\textsuperscript{78}

\textbf{2. Pullambadi canal scheme}

Lalgudi and Udayarpalayam taluks of the than Tiruchirapalli district were without any irrigation facilities for long through a large alluvial tract suited for wet cultivation is available. Only a few rain fed tanks cater to the needs of some extends of wet cultivation.

\textsuperscript{75} Ibid.
\textsuperscript{76} G.O.No.2913, Public Works Department, dated 22-06-1957.
\textsuperscript{77} \textit{Madras Information 1959}, Vol.XIII, No.10, P.29.
\textsuperscript{78} \textit{Second Five Year Plan, Madras State}, P.31.
The Peruvalai channel started from the Cauvery River’s upper Anicut Steps dead at Vellarur village. The carrying capacity of this channel and the storage capacity of the rain fed tanks due to their limited catchment did not permit any extension of irrigation under them. A new channel therefore, was excavated to supply waters to the area; that supplement storage in tanks and to command new areas under direct irrigation.\textsuperscript{79}

The scheme was expected to benefit an area of 22,114 acres (13,283 acres under tanks and 8,831 acres direct) in Lalgudi and Udayarpalayam taluks of Tiruchirapalli District.\textsuperscript{80} A final detailed scheme was prepared, after examination of several alternatives the project as new carried out was sanctioned for execution by the Government of Madras, the total estimated cost of the scheme was Rs.142.43 Lakhs.\textsuperscript{81} The excavation of the canal in about 40 reaches in the first section of 25 miles was in progress. Fourteen cross masonry works and six bridges were in progress. In the case of cross masonry works and bridges about 70 per-cant of the total work was proposed to be completed. 70 percent of the tank formation work and 50 percent of land acquisition would also be completed.\textsuperscript{82}

8 new tanks were created to irrigate 7,667 acres and 19 existing tanks were improved to irrigate an additional extent of 5020 acres and 10 existing tanks were repaired to irrigate 596 acres. The main canal ran along side of the existing Peruvalai channel (a channel open all the year round for irrigation) and close to it for a distance of 25 miles till it reached the Nandiar River and in this section there was no irrigation. The 2\textsuperscript{nd} section below the Nandiar River was 29 miles long, in this section there would be a

\textsuperscript{79} Madras Information 1939, Vol.XIII, No.10,P.28.
\textsuperscript{80} G.O.No.3103, Public Works Department, dated 11-07-1956.
\textsuperscript{81} Ibid.
\textsuperscript{82} Madras Information 1956,Vol.XIII, No.6,P.5.
number of sluices both for direct irrigation and for filling tanks. The direct irrigation would be 8831 acres and would be served by distributaries taking off from the right side of the canal. The canal would have a section 48’ X5.5’ for tank filling and direct irrigation combined at head and 15’X 3.0’ at end. The maximum depth of cutting and height of embankment in the entire reach of the canal would be about 21ft and 16ft respectively.\textsuperscript{83} There were as many as 29 existing tanks in this area, which would receive supplies through this new canal. Out of these, 18 tanks were improved to have sufficient storage for their ayacuts with extensions proposed under some of them. Eleven tanks which were in fair conditions are proposed to be made use of as they are.\textsuperscript{84}

The cost is estimated as Rs.142.43 lakhs including direct and indirect charges. A water rate of Rs.10% per acre on existing wet lands under tanks and Rs.15% per acres on new dry lands is proposed. This would give a return of 1.70% with inclusion fee of Rs.100 per acre on existing wet lands and Rs.200 on new lands the return would be 2.91% The irrigation of the new areas would be free the surplus waters of the Cauvery, the registry of the lands would be continued under “dry”. A water rate would be charged on all lands opened for indirect irrigation under tanks in all year and only in years declared open so far as direct irrigation was concerned. The increased yield of food grain would be 9,547 tons of rice. The cost per ton of rice works out to Rs.1, 492\textsuperscript{\textdagger}.\textsuperscript{85} The canal was first opened for irrigation in the middle of September 1959 and an area of 5,000 acres in the head reach was thrown open for irrigation.\textsuperscript{86}

\textsuperscript{83} G.O.No.3103, Public works Department, dated 11-07-1956.
\textsuperscript{84} Madras Information 1959, Vol.XIII, No.10, P.28.
\textsuperscript{85} G.O.No.3103, Public Works Department, dated 11-07-1956.
3. Vidur project

Vidur Reservoir to store 550 mcft was built across varahanadhi near Vidhur in the than South Arcot district about 4 furlongs below the confluence of Varahbanadhi and Thondiar. The left side channel have 11 miles and 3 furlongs long taking off at a saddle beyond the left flank end of the dam from the rear of a head sluice. The scheme was estimated to cost about 61.37 lakhs and will irrigate an extent of 2700 acres of which 1000 acres lie in Pondicherry state. The total provision made in the Budget estimates for 1956-57 for schemes of the First Five Year Plan continued during the second plan period, the total provision made in the Budget estimates for the four new schemes of the second plan to be taken up in the budget year was only Rs.2,00,300 which included token provision of Rs.100 each for three schemes. The cost of the scheme was to be shared in the proportion of 11.5 between the Madras and the Pondicherry states. The work had just been started the following works have been programmed for the year 1958-59:

1) Forming approach road and dam site.
2) Construction of residential and non-residential building at dam site.
3) Excavation of foundation of starting works; and
4) Excavation of main channel.

4. Neyyar project-second stage

The Neyyar river in Kerala State the First stage of the Neyyar Project consists of the construction of a solid Gravity Dam across the river and excavation of the right side

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89 Ibid.
channel to irrigate about 15,000 acres wholly in the Kerala state. The right side channel was been completed by the Kerala state during the First Five Year Plan.\(^90\) The Neyyar project comprises the construction of a gravity masonry dam across the Neyyar river in the Kerala State at a place called Chempilamodu about 19 miles South East of Trivandram. The water thus impounded would be utilized for irrigation of 34,100 acres by means of two channels one on either side. The right side channel 21 miles long would irrigate an area of 15,000 across lying entirely in the Kerala state. The left side channel 24 miles long would irrigate 19,100 acres lying partly in Kerala and partly in Madras State limit.\(^91\)

The First stage of the project involving the construction of the dam and the right side channel was completed at an estimated cost of Rs.143 lakhs. The second stage comprising the construction of the left side channel system at a cost of Rs.105 lakhs is programmed to be taken up during the second Five Year Plan Period. This channel up to the 24\(^{th}\) mile runs in the Kerala State and thereafter, in the Madras State. The actual area that would benefited in the Madras State is about 10,000 acres in Vilavancode taluk of Kanyakumari District.\(^92\) The channels and the distribution system lying in each state would be excavated by the respective state. Including proportionate cost of the dam and headwork’s provided by the Kerala State, the Madras State of cost of irrigating the 10,000 acres in their limits is about Rs.92.28 lakhs. A sum of Rs.27.07 lakhs was provided in the plan towards the cost of the scheme. The channel in the Madras State

\(^{91}\) Census of India, 1991, Tamilnadu series 23, District Census HandBook, Kanyakumari, P.73.
were being realigned and redesigned to suit the boundary limits and the revision of designs made by the Kerala state and the work would be taken up shortly for execution.\textsuperscript{93}

5. **Kanyakumari Canal**

The canal, which served areas in the Madras State was known as the ‘Kanyakumari canal” and it took off from 24 miles of Neyyar left Bank canal The Kerala State had agreed to maintain to supply of 150 cusecs of water into this canal near the place at Kaliyakkavilai where the left Bank canal enters Madras state. They also agreed that the excavation of the first 24 miles of the left Bank canal common to both states will be done by the Kerala State and that of Kanyakumari canal might be taken up by the Madras State.\textsuperscript{94} There were six branches in this system to cover up the ayacut the total length of the main canal is 13 miles 2 furlongs and 200 feet, and the total length of branches 28 miles 1 furlong and 480 feet. Direct sluices were constructed at suitable places to feed the ayacut.\textsuperscript{95} The Neyyar Irrigation project was intended for raising two crops of paddy in a year. The scheme besides stabilizing the existing west ayacut to an extent of 2000 acres, envisaged the conversion of 7,200 acres from dry to wet the cost of Kanyakumari Branch canal was Rs.90.3 lakhs. The scheme was a boon to Kanyakumari district, especially to the people of Vilavancode taluk.\textsuperscript{96}

6. **Parambikulam Aliyar project**

The Parambikulam project was fourth and the most important major multipurpose scheme included in the second plan. This project contemplated harnessing the water of Parambikulam River. The river rises in the Anamalais in Coimbatore district and flows

\begin{footnotesize}
\begin{enumerate}
\item Ibid.
\item Madras information 1959, vol.xvii, no.ii, p.425.
\item Ibid
\end{enumerate}
\end{footnotesize}
within the Madras State and enters the Kerala through Cochin and finally falls into the Arabian Sea under the name Chalakudi. This ambitious project, contemplated the harnessing the seven west flowing rivers, namely the Nirar, the Sholayar, the Parambikulam, the Tunakadavu, the Peruvaripallam, the Aliyar and the Palar. The Aliyar and Palar flow to the west of the Ghats. When constructing dams across these rivers connecting one to other through tunnels it was proposed to divert all their waters to the east, so as to irrigate 97,130 hectares in the Coimbatore district. The project had also benefited about 10,000 hectares in the Chittar district of Kerala. The project was estimated at Rs.24.87 lakhs had been incurred.

This project was a mammoth project, compared to those taken up so far in Madras State as it envisaged construction of 7 reservoirs-5 in Anamalais, 2 in the plains, 12 ½ miles of Inter connecting tunnels, two major weirs, one across Nirar and the other across Aliyar, 30 miles of contour canal in a difficult terrain and 128 miles of lined main canals and several miles of distributaries. The project was expected to cost about 31.03 crores including 10 percent direct and indirect charges and yields an annual return of 4.6 per cent on the sum at charge or 5-64 taking into consideration betterment fee contribution from the ryots. The estimated cost of rice, millets and cotton produced in the area is in the order of 5.34 crores per year. Works was scheduled to be completed in Five Years.

Another special feature of this project was its feasibility for development in stages, each stage benefiting a substantial portion of the ultimate ayacut unlike other big projects, it was not necessary to wait till the completion of the whole project. As soon as Aliyar Reservoir was completed, it may be irrigated about 20,000 acres. Starting with the

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98 Ibid., Vol:X, No:7, 1956,P.45
lowest reservoir, viz., Aliyar, it was hoped build storages higher up. Correspondingly, increasing the areas under the canals by proper planning and timing, it might be possible to achieve full project. However, the gigantic work was not all plain sailing. Several hurdles, such as clearance from the planning commission and Kerala Government, release of foreign exchange for the purchase of machinery, posting of adequate construction staff and provision adequate funds were still there to overcome. There was no doubt that all these hurdles would be overcome one by one in all courses and the project would be a fait accomplie in the course of next Five Year.\(^{100}\)

The most important of this project was that the main canal and the distributaries and the minors down to 20 hectare limit had been lined. Another noteworthy feature was that the field channels were extended down to the 10 hectare limit, beyond which the field channels had to be constructed by the cultivators.\(^{101}\)

**Medium irrigation system in Kanya Kumari District**

The scheme envisaged re modeling four channels, taking off from the Kodayar Dam viz, left Bank channel, Thovala Channel, Alusuda channel, at a cost of about Rs.13 lakhs Besides renovation desalting of major tanks in Thovala Agasteeswaram and Kalkulam taluks was undertaken at a cost of Rs.22 lakhs in the second Five Year Plan.\(^{102}\)

The target of achievement of Irrigation from both the continuation and the new schemes during the second Plan is about 2.92 lakh acres. The pace of development of Ayacut during the First Three years of the plan period is given below the table 3.4.

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100 Ibid.
102 Madras State, Second Five Year Plan, Finance Planning and Development, Department Review of second Five Year Plan, p.32.
Table 3.4

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<thead>
<tr>
<th>First Three Years</th>
<th>ACS in Lakhs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-57</td>
<td>0.16</td>
</tr>
<tr>
<td>1957-58</td>
<td>1.56</td>
</tr>
<tr>
<td>1958-59</td>
<td>0.38</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2.10</strong></td>
</tr>
</tbody>
</table>

Another 0.41 lakh acres would be brought under irrigation during 1956-60. Thus the total anticipated achievement for the four years would be 2.52 lakh acres. This represented nearly 87 percent of the target. The target proposed for 1960-61 is 0.40 lakh acres with this the target fixed for the second Plan was achieved in full.\(^{103}\)

**Third five year plan**

In the third plan, the total provision for major irrigation was Rs.27.42 crores. The bulk of the provision was intended for the Parambikulam Aliyar Project. Nine Medium irrigation schemes with a total cost of Rs.17.39 crores have also been taken up.

**Sathanur project second stage**

The Sathanur Reservoir Project II stage was administratively approved for 6000 lakhs. The work was taken up during October 1961 and all the main items of work have been completed by August 1965. The residual works were in progress during 1968-69.\(^{104}\) Sathanur Reservoir supplied for raising an additional crop in an extent of 12,000 acres were given from 16\(^{th}\) June 1967 to 31\(^{st}\) October 1967 supplied for raising short term paddy crop on the entire extent were allowed from 15\(^{th}\) January 1968. Under the II stage


\(^{104}\) Govt. of Tamilnadu, Administrative Report for the Year 1968-69, 1979, p.10.
of the reservoir supplies were allowed for raising a second crop under Tirukoilur Anicut on an extent 7,100 acres against the normal extent of 5000 acres. An expenditure of Rs.44.83 lakhs was expected to be incurred. The work would be completed before the end of the Third Plan.

**Chittar-Pattanamkal scheme**

Under the scheme two reservoirs across Chittars I and II would be constructed. The scheme would cost Rs.6.80 crores and would benefit 47,000 acres -17,000 acres of dry lands in Radhapuram area of Tirunelveli district and 30,000 acres in Kanyakumari district. Water required for irrigating 10,000 acres in Kanyakumari district was drawn from the above Kothayar left Bank channel at mile 6/4 through a new Pattanamkal Channel. This channel would be excavated to a length of 27.5 miles and would have five branch channels. Water required for irrigating the areas in Tirunelveli district would be allowed along the existing Kothayar system up to Nilaparai and distributed through a new Radhapuram channel which would be excavated to a total length of 20 miles and 4 furlongs the existing Kothayar system; channels would be improved to take up the additional supplies intended for the “Radhapuram channel and “Pattanamkal channel”.

**Chittar dam-I**

The Chittar River I has its source in the mountains of Kamala reserve forest near Ettukani and Vanipatkan at an altitude of over 2000 feet about sea level in Vilavancode taluk. It is 7 miles long and joins the Kothayar 3 miles below the Pachiparai dam. The

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dam site was located about a mile upstream of the confluence of the river with Kodayar. The work has been completed.

**Chittar dam-II**

The Chittar River II has its source in the Kamala reserve forest at an elevation of about 2300 feet above sea level in Neyyattinkara taluk of Kerala state. The estimated cost of the two Chittar dam is Rs.189.49 lakhs. This has been excavated to connect the two reservoirs Chittar I and II. The canal is 3,300 feet long with a bed width of 30 feet.

**Pattanamkal main canals**

The Pattanamkal main canal takes off from Kodayar left bank channel. The water regulation in the Pattanamkal system was being carried out by constructing a head sluice at the off take point and by putting a regulator in the Kodayar left bank channel of about 100 feet downstream forms the off take point. The main canal runs for about 26 miles. Kalkulam taluk is benefited by this canal.\(^{109}\)

Ponnaappa Nadar, a member of the State Assembly expressed his grateful thanks to the government for taking up the execution of Chittar Pattanamkal scheme which was the district cherished dream and ambition. According to Ponnaappa Nadar about 47,000 acres of land were to be benefited by the scheme. The scheme covered 17,000 acres in Tirunelveli district. Yet Ponnaappa Nadar complained that while the Radhapuram canal scheme was being speedily executed, the chittar Pattanamkal scheme was not receiving attention it deserved.\(^{110}\)

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\(^{109}\) *Tamil Arasu* 1972, No.3, p.29.

\(^{110}\) PMLA, Vol.XXI, 1\(^{st}\) August 1965, p.784.
Gomukhinadhi project

A dam has been constructed across Gomukhinadhi in Kachirapalayam village of Kallakurichi taluk in the than South Arcot district just above the existing Vadakkanandal Anicut to store 560 M.cft. of water.\textsuperscript{111} It is the important channel with Six miles long taking off from the dam to irrigate 5000 acres. The estimated cost of the project was Rs.121.60 lakhs.\textsuperscript{112} The project was taken up for execution in April 1963 and completion in 1965. The expenditure on the project was 114.88 lakhs and the return during the year was (-) 0.45 per-cent on the capital invested.\textsuperscript{113}

Improvements to Palar anicut channels

Under Palar Anicut System there was an ayacut irrigating 80,000 acres in the then chengalpattu and North Arcot districts served by four main channels. Due to the sitting up of riverbed at the anicut and also of the supplying channels the carrying capacity of the channels had been reduced.\textsuperscript{114} under the third Plan Rs.48.10 lakhs was proposed to carry out improvements to the anicut such as silt exclusion, devices like divide walls on the upstream of the anicut and lowering of scour vents. The channels taking off from the anicut was also proposed to be improved by providing two lined sections up to the first tank continuing convectional section to carry the required discharge. A major proportion of the work at the anicut and supply channels had been completed. In the remaining two years of the plan, investigations as well as execution of improvements to the tanks under the system were carried out.\textsuperscript{114}

\textsuperscript{111} Govt. of TamilNadu, Administrative Report for the year 1968-69, PWD, 1979, p.8.
\textsuperscript{113} Govt. of Tamilnud, Administrative Report for the year 1968-69, PWD,1979, p.8.
\textsuperscript{114} Government of Madras, Third Five Year Plan: Mid Term Review, 1964, pp.46-47.
**Parambikulam Aliyar Project**

Parambikulam Aliyar Project was started in the second plan period, with plans to construct seven dam. The work on Parambikulam dam was taken up in 1960. Excavation was completed and masonry work started in the year May 1961. In the third Plan, the total provision for major irrigation was Rs.27.42 crores. The bulk of the provision is intended for the Parambikulam Aliyar Project. The Project aimed at integration of seven west flowing river by constructing reservoirs and diversion works across them and inter-connecting them by means of tunnels. These tunnels would divert the waters impounded in the reservoirs to the east for the irrigation of lands in Coimbatore district and Chittoor area of Kerala state. These river lie at various elevation ranging from +3760 to +1050, which enables utilizing the drops between the rivers to develop hydro-power.\(^{115}\)

The estimated cost of the scheme was Rs.48.00 crores. During 1963-64 water was let from Aliyar Dam for irrigating extent by 17,500 acres. The progress of works during 1963-64 was as follows.

a) **Sholiyar Dam**

The work involved 1,50,000 units of masonry and 57,000 units of each work out of this 26,426 units of masonry was completed.

b) **Sholayar Power Tunnel**

Out of a total length of 8,819Rft, of this unlined tunnel 3,082Rft, of mining was completed.

c) **Parambikulam Dam**

Out of a total quantity of 70,000 units of masonry and 14,900 units of earthwork, 62,323 units of masonry and 10,488 units of earth work was completed.

d) Parambikulam Tunnel

The mining of the tunnel was completed in December 1963. The construction of control tower in the tunnel entry was in progress.\textsuperscript{116}

The Parambikulam Dam, which has the largest storage in this project was substantially completed. Water was also being impounded in the reservoir from the commencement of 1965 for diversion the reservoirs below. But sufficient storage could not be built up due to the failure of the south west monsoon and the partial failure of the North east monsoon the water level then in the reservoir was just at the diversion level. The tunnel connecting this reservoir to the next lower valley viz., Tunacadavu dam and the Sarkarapathy Tunnel, the contour canal, Aliyar Dam, Navamalai Tunnel and the Thirumurthi Dam ; had been completed.\textsuperscript{117} The Thirumurthi Dam was taken up towards the end of 1959. The earth dam involved 1.25 lakhs units of earthwork and about 56,875 units were over by the end of December 1963. The Pollachi and vettaikaranpudur canals were substantially completed and water had been released for 10,000 acres. The work was also taken up in 1960 in the Parambikulam Main canal and Aliyar Feeder canal and Sethumadai canal. These works had been completed in 1967-68. The work on contour canal in difficult terrain on the slopes of the hills covering a distance of about 33 miles was taken up in 1960 and about 80 percent of the excavation had been completed.\textsuperscript{118}

The Parambikulam Aliyar Project was the major project and a large sum of money was required during the Third Five Year Plan period. However, these were heavy loss incurred by the agriculturists of area. It was reflected the State Legislative Assembly. Answering to the question of Mathialagan, the Minister of Co-operative Department,

\textsuperscript{116} Madras Administrative Report-1964.
\textsuperscript{117} Administrative Report of Public Works Department 1966-67,p.5.
\textsuperscript{118} Third Five Year Plan. Mid Term Review Government of Madras 1964,p.40.
Nallasenapati Sarkarai Manradiar said, the Government proposed to give financial aid for land reclamation to the agriculturists in the areas irrigated by Parambikulam Aliyar Project in the taluks of Pollachi, Udumalpettai, Palladam and Dharapuram. Under this scheme Rs.6000 per acre were given to the agriculturists. About Rs.10,800,000 had been spent as loans to the agriculturists. By it, there were 1.80 lakhs acres benefited.  

**Sathanaur Project-Second Stage**

The Sathanur reservoir project II stage was administratively approved for Rs.60.00 lakhs. The works in taken up during October 1961 and all the main items of works had been completed by August 1965. The residual works were in progress during 1968-69. The reservoir was across the river Ponniar near Sathanur Village in the then North Arcot district and has a capacity of 4,600 M.c.ft with provision for increasing it to 8,100 m.c.ft. Under this project the capacity of the Sathanur Reservoir would be increased and with the extra storage a second crop area of 5000 acres under the Tirukoilur Anicut system of the then South Arcot district would be stabilized. An expenditure of Rs.44.83 lakhs was expected to be incurred. The work had been completed before the end of Third Plan.

**Manjalar scheme**

This scheme included a dam 3,430 feet long across the river Manjalar to store 386 million cubic feet of water and excavation of a new canal about four and a half miles long for irrigating a new area of 1,200 acres. The Project was to stabilize an ayacut of 3,136

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120 G.O.No.1667, Public works department, dated 16-10-1962.
acres under the river. The total cost of the scheme was Rs.65.80 lakhs. Madurai district was benefited by this scheme.\textsuperscript{123}

**Manimukthanathi Scheme**

The Manimukthanadhi scheme provides for the construction of a reservoir of 728 m.cft. capacity, across the Manimukthanadhi, a tributary of Velar in Kallakurich taluk. The reservoir was to be located about half a mile above the existing Palagacheri Anicut. The irrigation under the reservoir will be carried out by a canal 7 ½ miles long taking off at the right flunk with a discharge of 80 cusecs. Under the Project, 4000 acres of existing dry lands will be converted into wet; besides assured supplies being provided to 250 acres of existing rain fed wet lands in 10 villages in Kallakurichi taluk. The scheme is estimated to cost Rs.91.00 lakhs. It is proposed to levy a water rate of Rs.20/- per acre for dry lands converted into wet and a rate of Rs.15% per acre on wet lands stabilized by the Project. This scheme has been included in the third plan.\textsuperscript{124}

**FORTH FIVE YEAR PLAN**

Under the Fourth Five Year Plan in addition to the carryover of the incomplete works of the third Plan the following new schemes were sanctioned.

1. Ramanadhi Scheme.
2. Gatananadhi Scheme.
3. Modernising vaigai channel.
5. Parambikulam Aliyar Project II stage.


\textsuperscript{124} *G.O.No.2703, Public Works Department, dated 15-11-1966.*
Ramanadhi Scheme

The scheme was cleared by the Planning Commission in March 1966 and the Government had accorded sanction to the scheme in G.O.No.2703, dated 15th November 1966. The scheme was technically sanctioned for Rs.95.70 lakhs in December 1966. This is one of the schemes included in the Third, Five Year Plan and which could not be sanctioned then and hence this is one of the spillover schemes for the Fourth Plan. The planning commission has conveyed technical clearance was agreed to its implementation as a Forth Plan scheme.  

The Ramanadhi scheme has envisage the formation of a Reservoir on the Ramanadhi a sub-tributary of the Thamira barani River and the excavation of a new canal. The scheme mainly aims at providing assured water supply to about 30% of the existing ayacut of 4,179 acres served by the river which is reported to suffer for want of a wetting at crucial periods to reap a good harvest. The area expected to be benefited is 1,254 acres (30/100X4179) Plus 245 acres of water rate lands raising double crop paddy or 1499 acres in all. Besides benefiting this 1499 acres of double crop land, a new area of 500 acres in Ambasamudram Taluk was also proposed to be brought under Irrigation during one crop season extending from October to February. Thus the overall area expected to be benefited by the scheme, in terms of gross area, will be 3,498 acres made up of 1499 acres of double crop land and 500 acres of new area. (1499+1499+500 acres).

The following villages derived benefited from the project when completed.

a) Kilakadayam.

b) Mela kadayam.

c) Therkukadayam.

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125 G.O.No.2703, Public Work-Department, dated 15-11-66.
d) Govindaperi.

e) Ravanasamudram.

f) Veerasamudram.

g) Pottalpudur.

h) Alwarkurichi.

i) Pappanakulam.

j) Thippakudi.

The principal sources of irrigation in the villages were tanks and channels. The aggregate net area irrigated by these two main sources of irrigation is of the orders of 9549 acres.

The cost of the scheme is Rs.96.73 lakhs. A total extent of 7403.46 acres including a new ayacut of 1039.10 acres would be benefitted by the scheme. The food value was 2404 tons. An additional annual revenue of Rs.36,149/- and a betterment level of Rs.2,44,691/- can be expected from the scheme. The scheme was feasible from all aspects.126

**Gatana Scheme**

The Gatana Reservoir scheme comprises the formation of a Reservoir on the Gatana Nadhi at about two miles from Sambankulam village and 1 ½ miles above the confluence of Illupayar with Gadanadhi. The scheme on completion will provide assured supply to the existing ayacut of 7,112 acres of double crop and 242 acres of single crop served by the river, a bulk of which is reported to suffer for want of a wetting or two at the crucial periods. Besides this, the scheme will bring under irrigation an additional

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126 Ibid.
1000 acres in two seasons. The cost of the scheme was Rs.158 lakhs. The names of village to be benefitted by the scheme are given the table 3.5

<table>
<thead>
<tr>
<th>Sivasilam</th>
<th>Zamin Thiruvalswarm</th>
<th>Illuppaikurichi</th>
<th>Pappakudy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mela Ambur</td>
<td>Mannarkoil</td>
<td>Adaichani</td>
<td>Mukkudal</td>
</tr>
<tr>
<td>Alwar Kurichi</td>
<td>Brammbadesam</td>
<td>Kabalipparai</td>
<td>Vadakku Ariyanayakipuram</td>
</tr>
<tr>
<td>Keezha Ambur</td>
<td>Pallakal</td>
<td>Renga Samudram</td>
<td></td>
</tr>
<tr>
<td>Ayan Thiruvaliswarm</td>
<td>Pananjadi</td>
<td></td>
<td>Jdaikal</td>
</tr>
</tbody>
</table>

The principal sources of irrigation in the village are channels. The aggregate gross area irrigated was of the order of 20,745 acres.\textsuperscript{127}

This scheme provides for forming a reservoir across the river Gadana in Ambasamudram taluk of Tirunelveli district to store the surplus of the river. The capacity of the reservoir was 350 M.cft. the scheme is estimated to cost Rs.89 lakhs and is intended to stabilize the existing ayacut of 7355 acres besides irrigating an additional ayacut of 73 acres of single crop land and 432 acres of double crop land. The return anticipated from the scheme would be 0.30% excluding interest on betterment levy. The additional food production would be 1388 tons. The scheme was one of the schemes considered and ordered by the Government to be included in the Third Five Year Plan, but the Planning Commission has not yet approved its inclusion.\textsuperscript{128}

**Manimukthanadhi Scheme**

This scheme has been included in Third Five Year Plan of the state and was treated as a continuing scheme of the IV Five Year Plan.\textsuperscript{129} This scheme envisages the formation of a reservoir of 728 M.cft capacity across the Manimukhandhi a tributary of

\textsuperscript{127} G.O.No.1, Public Works Department, dated 01.01.67.  
\textsuperscript{128} Ibid.  
\textsuperscript{129} G.O.No.2703, Public works Department, dated 15-11-1966.
Velar, Just above the existing Pallagacheri anicut in Kallakurichi taluk of South Arcot district and excavation of anew channel 7 miles long and three distributaries by implementation of this scheme it is expected that 4000 acres of dry lands would be converted as wet lands and 150 acres would get stabilization.\textsuperscript{130}

**Eamanadhi Scheme**

The scheme envisages formation of a reservoir of 1500f capacity on the Eamanadhi a sub tributary of Thamira barani River in Tirunelveli District and excavation of a new channel at a cost of Rs.87.00 lakhs during the IV Five Year Plan.\textsuperscript{131}

**Parambikulam Aliyar Project II Stage**

The spillover expenditure of about Rs.7 crores into the Fourth Plan on this Project was expected to be completed in 1968. During the Fourth Plan, the second stage of Parambikulam Aliyar Project was contemplated which would enlarge the scope of the project. This was possible if the Kerala Government would agree to share the Anamalaiar waters and to the construction of a reservoir at a lower site across Nirar instead of a weir as at present agreed to. A Joint investigation was launched by both the Governments of Kerala and Madras and as soon as the results were made available, the second stage of the project can be settled. It is proposed to utilize an additional 9600 M.cft. with which an additional extent of 80,000 acres can be brought under irrigation at an estimated cost of Rs.13 crores.\textsuperscript{132}

\textsuperscript{130} Government of Tamilnadu, Administrative Report for the year 1968-69 Public works Department 1979,p.10.
\textsuperscript{131} Ibid.
Modernising Vaigai Channels

This scheme was sanctioned by Government of Rs.3.94 crores there are more than 100 channels taking off from Vaigai River feeding 414 tanks with an ayacut of about 1.32 lakhs acres. Most of these channels are not having head sluices resulting uncontrolled flow. This scheme envisages modernisation of these channels and provides by the construction of two regulators at Virahanallur and Parthibanur across Vaigai and the canal would be excavated on either side of these regulators. It would bridge a gap of 13,900 acres and stabilize 95,882 acres of existing irrigation in Ramanathapuram district.

Special minor irrigation programme

The integrated developments of the water resources of the state of fundamental importance to our economy and programmes for achieving thus have been give a high priority. After the attainment of independence, the tempo of activity on irrigation development schemes has increased and there was considerable activity in building new irrigation projects both major and medium in almost every district of this state. There are natural limits to the harnessing of river water resources of irrigation and these limits have almost been reached so far as Madras state in concerned as would be such from the development of major and medium irrigation in the state the state has therefore, inevitably to concentrate on minor irrigation to meet the increasing irrigation needs in future. This means more intensive utilization of minor sources through improvement of existing. Tanks, channels, etc. to maintain full supply levels and construction of new

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133 Government of Tamilnadu, Administrative Report for the year 1968-69 Public works Department, 1979, p.11.
works wherever possible and expansion of schemes designed to provide water locally by lift irrigation for individual farmers and tapping the ground water as much as possible for the purpose.\textsuperscript{136}

Many of the minor irrigation sources, particularly those in the ex-Zamin areas, had been in need of repairs and restoration with a some implementation of new irrigation sources, a special minor irrigation programme was being implemented since 1952-53.\textsuperscript{137} During the period of First Five Year Plan 2,458 works were completed through out of the state with Rs.382.60 lakhs benefiting 4,30,000 acres of land.\textsuperscript{138} Development of Minor Irrigation which received special attention from the early forties under the Grow more food campaign (GM7) was given a compact area approach in the First Plan in which installation of tube wells figured prominently the exploratory Tube wells organization (ETO) was set up in 1954 to intensity the efforts at deep strata exploration A substantial part of the Central assistance to the states was allocated to minor irrigation works.\textsuperscript{139}

\begin{table}
\centering
\begin{tabular}{|l|c|}
\hline
Source of irrigation & Percentage of area of irrigation to total net area irrigated. \\
\hline
Tanks & 37.8 \\
Government canals & 35.9 \\
Wells & 24.5 \\
Other sources such as spril channels, etc. & 1.7 \\
Private canals & 0.1 \\
\hline
\end{tabular}
\caption{Table 3.6}
\end{table}

Table 3.6 shows that the tanks form an important source of irrigation in the Madras state

\textsuperscript{136} Report of the Committee on Agricultural Production, Madras, April 1966, p.33.
\textsuperscript{137} Ibid.
\textsuperscript{138} Ibid.
There are about 35,000 tanks in the state which are either Revenue department of public work Department Sources\textsuperscript{140}. The following statement gives the district wise distribution of the tanks that shows in the table 3.7.

<table>
<thead>
<tr>
<th>District</th>
<th>Number of Tanks As in 1960’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chingleput</td>
<td>3,197</td>
</tr>
<tr>
<td>South Arcot</td>
<td>2,900</td>
</tr>
<tr>
<td>North Arcot</td>
<td>3,189</td>
</tr>
<tr>
<td>Salem</td>
<td>2,590</td>
</tr>
<tr>
<td>Coimbatore</td>
<td>113</td>
</tr>
<tr>
<td>Tiruchirapalli</td>
<td>7,856</td>
</tr>
<tr>
<td>Tanjavur</td>
<td>605</td>
</tr>
<tr>
<td>Madurai</td>
<td>4,197</td>
</tr>
<tr>
<td>Ramanatha Puram</td>
<td>4,654</td>
</tr>
<tr>
<td>Tirunelveli</td>
<td>2,772</td>
</tr>
<tr>
<td>Thee Nilgiris</td>
<td>Nil</td>
</tr>
<tr>
<td>Kanyakumari</td>
<td>2,850</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34,923</td>
</tr>
</tbody>
</table>

Filter point wells

The filter point scheme was first introduced in Thanjavur district in 1951 to encourage the ryots to expand paddy cultivation in the Kuruvai season and to enable cultivation of cotton or groundnut in the off season and 102 wells were sunk in the

\textsuperscript{140} Report of the Committee on Agricultural production, Madras, April 1966, pp.33-34.
district during the First Five Year Plan, 2671 filter point wells were sunk. The filter point
wells scheme had a special significance for Thanjavur district in the context of the
current thinking in favor of sinking of wells in the district for supplemental irrigation in
tracts irrigated by canals. The government sanctioned the sinking of 2000 filter point
wells in this district.  

**Artesian wells**

Under the scheme, artesian wells are sunk by the Agricultural Department and
handed over to the Revenue department for maintenance as government source of
irrigation. The Agricultural department decided on the site for sinking of the wells, taking
into account the suitability of the area and other factors, in consultation with the revenue
department the scheme was first implemented in the State in 1948 and twenty wells were
sunk in Cuddalore and virudhachalam taluks in the south Arcot district. Considering the
great potentiality of the scheme for augmenting irrigation facilities it was included in the
First Five Year Plan. During the First Plan 101 artesian wells were sunk each well is
expected to irrigate fifty acres and the additional production is estimated at half a tone of
rice per acre.  

**Well Irrigation**

Wells have been the traditional sources of irrigation in the state of late there has
been increasing reliance on this source mainly due to the extension of electric power to
the villages. Thus the water was drawn from the wells by using electric power for the
irrigation facilities. For the left irrigation the government distributed oil engines and
electric motors. Under the hire purchase scheme, the Government distributed 800 oil

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141 Ibid.
142 Ibid.
engines and 650 electric motors of Rs.10.68 lakhs to the farmers.\textsuperscript{144} Several filter points were sunk for the development of agriculture and the government of India sanctioned a loan of Rs.20 lakhs for this scheme. There were 676 filter points sunk by spending a sum of Rs.11,36,923. The required amount was sanctioned as loan for sinking the filter points to the farmers due to this filter point scheme, the rice production increased by 500 tons every year.\textsuperscript{145}

\textbf{River Plumbing Scheme}

Irrigation facilities from river through big pumping units were provided to farmers in possible areas. The Pinayur and Nelvoy River pumping scheme in Chengalpattu district was in operation. A new river pumping scheme in Kilathur village in Kumbakonam taluk of Tanjavur district was started in 1953. This provided irrigation water for 45 acres. The implementation of the river pumping scheme became problematic, as the farmers were not agreeable to pay high water rates. The farmers insisted on subsidy yet in the second Five Year Plan high priority was given for the river pumping scheme.\textsuperscript{146}

\textbf{Irrigation Bill of 1953}

After assuming power, the Central government prepared an irrigation bill, which bought to declare that water the property of the state, and the state had the right to control irrigation works under both Zamindari and Ryotwari systems. Though the bill was not passed, there were some special acts subsequently passed relating to irrigation.\textsuperscript{147} They

\textsuperscript{144} Madras State, Administration Report of the Agricultural Department, 1955-56, p.21.
\textsuperscript{145} Madras Information, January 1955, P.50.
\textsuperscript{146} Ibid.
were Malabar Irrigation works, (Construction and levy of cess Act, 1947, Madras Estates (Abolition and Conversion into Ryot wari) followed by the act of 1948 the irrigation Tank improvement Act of 1947. The Irrigation Bill of 1953 was met to amend the law relating to irrigation and revise the levy of water cess, but the bill was never passed due to the strong opposition of the members of the legislative assembly.148

**Tamilnadu Irrigation Levy Betterment Contribution Act 1955**

This Act provided for the capital cost recovery of the project from beneficiaries accordingly the cost incurred by the improvements was to be collected over a period of time.149 However, the operation of that act was quit unsatisfactory as the state was not interested in the collection of capital costs of such improvements for political reasons.150

**Second Five Year Plan’s**

**Special Minor Irrigation Programme**

This programme launched in the First Five Year Plan period included schemes for construction of new irrigation works and also repairs to existing irrigation sources. Such as anicut, dams, regulators, tanks, supply of channels etc. A Sum of Rs.330.83 lakhs had been provided for the plan period. In the year 1956-57 a sum of Rs.53.7 lakhs was provided for execution of these schemes.151 Against this expenditure of Rs.32.66 lakhs was incurred up to the end of January 1957, on both ongoing and new works.152

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148 Ibid.
150 PMLA, 31 July 1952, p.792.
151 G.O.No.3935(M.S) Food and Agriculture Department, dated 16.11.1961.
152 PMLA, 10 March 1960.
In the SMIP which included also Tank improvement schemes for fasli year 1956-57 (i.e., July 1956 to June 1957) it was proposed to include 960 “Continuation works and new schemes costing on the aggregate nearly Rs.297 laksh. A provision of Rs.114.61 lakhs had been made in the Estimates for 1956-57 for all those works. A novel and economic scheme called Desalting –cum-reclamation scheme had been proposed for restoring the old tanks to full utility. Under this proposal, about half the lost capacity would be restored by raising the Full Tank Legel (F.T.L) of the tank and the other half by removal of the silt from the bed. The desalted earth will be partly utilized to reclaim the foreshore lands and bring them under cultivation in cases where they were not hitherto cultivated. A separate provision of Rs.8 lakhs had been made in the Budget Estimates for 1956-1957 for Desalting cum-reclamation of Irrigation tanks. Adequate provision was made in the Revised Estimates for 1955-56 and Budget estimates for 1956-57 for the execution of repairs to irrigation sources damaged by the recent cyclone for the speedy execution of which a separate P.W.D circle had beard formed.153

Open Wells

Wells have been a highly popular source of irrigation in the state. Ryots are going in for these wells in increasing numbers, particularly in areas where irrigation from river

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water resources is not available or is limited. There were nearly 9 ½ lakhs of wells used solely for irrigation purpose in the State as detailed below and they account for about one fourth of the total irrigate area in the State.\textsuperscript{154}

Table 3.9

<table>
<thead>
<tr>
<th>Wells Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government wells</td>
<td>7486</td>
</tr>
<tr>
<td>Private wells masonry</td>
<td>7,82,599</td>
</tr>
<tr>
<td>Do not masonry</td>
<td>1,56,030</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9,46,115</strong></td>
</tr>
</tbody>
</table>

The ryots to sink their own wells, well subsidy schemes were being implemented in the state from 1946. The scheme was discontinued for some years, but with a view to give a fillip to the food production efforts, it was revived in 1958-59 as the new well subsidy scheme with a loan – cum subsidy of Rs.1,000 for each new well and a subsidy of 25 percent of the cost subject to a maximum of Rs.250. The target and achievements during the Second Five Year Plan was the total number of wells 6000 but the achievement number of wells was 3,468.\textsuperscript{155}

**Sinking of tube wells**

A scheme for sinking 300 tube wells with a provision of Rs.45.93 lakhs was made available during the plan period.\textsuperscript{156} The wells were to be sunk by the agriculture department and equipped with necessary water lifting machinery for irrigation and maintained as government sources the water rate being recovered from the beneficiaries. The scheme was not, however, taken up for implementation pending the results of the

\textsuperscript{154} Report of the Committee on Agricultural Production, Madras, 1966, p.43.
\textsuperscript{155} Ibid.
\textsuperscript{156} Second Five Year Plan, Programme for 1957-58, Madras, 1957, p.17.
wells sunk by the exploratory tube wells organization of the government of India under their first ground water exploration project. Out of forty one tube wells sunk in the state under the project during 1957-58, twenty eight wells proved successful having a good yield and these were taken over by the state government.157

Filter Point Scheme

In order to provide supplementary sources of irrigation for cultivation during off season on for raising additional crops it was proposed 600 filter points during 1956-57 in the various districts of the state.158 During the Second Five Year Plan, 2763 filter point wells were sunk. The filter wells provided an independent source of irrigation like the open wells, for raising a second crop or a supplementary source for preparation of land or for raising nurseries.159

Bore wells

This scheme provided for the utilization of underground water by sinking bore wells on these lands of the ryots and supply of pumping machinery on hire purchase basis. The scheme was first started in 1959 and 271 wells were sunk during the second plan period against a target of 500 wells.160

River pumping scheme

Irrigation was provided under the scheme for localized compact areas of ryots holdings by pumping out water from wells sunk near rivers or on river beds, with the

159 Report of the Committee on Agricultural Production, Madras, April 1966,p.57.
160 Ibid.
assistance of high powered oil engine or electric motor pump sets. During the Second Plan only three units were actually installed as against a target of thirty units.\textsuperscript{161}

**THIRD FIVE YEAR PLAN**

There were nearly 33,000 minor irrigation sources in the state out of which 27,000 were tanks and 6000 are spring cannels. Many of these sources particularly those in ex-zamindari areas were through long neglect in need of repair and restorations.\textsuperscript{162} A special prrogramme to provide better irrigation facilities in districts like Salem and Coimbatore, where the Peasants depended mostly on wells, was formulated to include formation of ponds and construction of check dams across jungle streams with a view to increasing the water table in the areas around irrigation ponds. A major policy decision taken in respect of minor irrigation during the third plan was the decision to hand over the then maintenance form the revenue department to the new panchayat administration.\textsuperscript{163}

**Desilting-Cum-Reclamation of Irrigation Tanks**

The Third Plan Provided for execution of 100 works at a cost of Rs.80 lakhs covering 16,000 acres by reclamation of foreshore lands and 4,000 acres by bridging the gap and creation new areas.

\textsuperscript{161} Ibid.
\textsuperscript{163} A Note Book of Agricultural Facts and Figures, Madras; the department of agriculture, 1970, pp.240-248.
Table 3.10

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of works</th>
<th>Reclamation of fore shore lands</th>
<th>Gap bridged and new areas</th>
<th>No. of Works</th>
<th>Reclamation of fore shore lands</th>
<th>Gap bridged and new areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>20</td>
<td>(Not fixed)</td>
<td>8</td>
<td>54</td>
<td>453</td>
<td></td>
</tr>
<tr>
<td>1962-63</td>
<td>21</td>
<td>240</td>
<td>3</td>
<td>-</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>1963-64</td>
<td>14</td>
<td>210</td>
<td>23</td>
<td>709</td>
<td>956</td>
<td></td>
</tr>
<tr>
<td>1964-65</td>
<td>12</td>
<td>170</td>
<td>4 430</td>
<td>58</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>1965-66</td>
<td>13</td>
<td>180</td>
<td>4 420</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.10 shows that the targets and achievements during the plan period.

The scheme was implemented in the Chingleput, South Arcot, North Arcot, Ramanathapuram, and Tiruchirappalli districts.\(^{164}\)

**Open Wells**

Wells have been one of the traditional sources of irrigation in the State. There were nearly 9 ½ lakhs wells used solely for irrigation purposes in the state of which Government wells. In the Third Plan, about 4,000 private tube wells were sunk and pump machinery supplied on a loan-Cum-Subsidy basis under the Hire Purchase scheme. Provision had been made for about 8,000 private tube wells and artesian wells in the plan.\(^{165}\) There was also provision for the sinking of 50 state tube wells in suitable poramboke acquired lands and for their transfer to panchayats or Co-Operatives for utilization for irrigation.\(^{166}\)

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\(^{165}\) C. R. Rao, op. cit., p. 149.

\(^{166}\) World Agriculture census; Tamilnadu Report and Analysis, Madras, 1970-71, p. 18.
Pump sets on Hire Purchase System

The progress of the scheme was satisfactory except during 1963-1964. The plan target had already been exceeded in the case of oil engine Pump set. Due to a special drive instituted by the Board of Revenue, there was a phenomenal increase in the distribution of electric motor pump sets during 1964-65 and the tempo well be maintained in 1965-66. Power lift irrigation becoming increasingly popular with the extension of electric supply in the rural areas and the scheme has, therefore, considerable potentiality for expansion.167

Filter Point Scheme

The filter point scheme aimed at pumping out water from sandy substrata for agricultural purposes. The work was executed in the field of agriculturists. Over 2,300 filter points were estimated to have been sunk in the Third Plan at a cost of Rs.52.11 lakhs. A special development scheme for sinking 2000 filter point was also in operation in Thanjavur district at an estimated cost of Rs.374.34 lakhs with a view to enabling the farmers to raise an additional crop during summer and to solve, the problem of water logging. About 1,200 filter points were completed by the end of 1965-66.168

River Pumping Scheme

The scheme did not make much headway during the Third Plan also the plan provided for the establishment of 30 pumping units at the rate of 6 units per year. One unit was installed in 1961-62 two units each in 1962-63 and 1963-64 and none in 1964-65.169

169 Ibid.
**Fourth five year plan**

In the Fourth Plan, a provision of Rs.9.6 crores for the programme was made, the intension being to step up the provision, as in the Third Plan, with reference to the pace of expenditure and it was expected that an extent of 2.34 lakhs acres will be stabilized and irrigation extended to a new area of 77000 acres. As almost all economic schemes were taken up and completed in the earlier years, the sources to be taken up hereafter will be mostly of a margined character and the cost in terms of acreage benefited will therefore, become progressively higher.\(^{170}\)

**Minor irrigation projects**

In Tamilnadu, Minor Irrigation schemes were placed under three heads, namely, Tube wells and Filter Point wells schemes, Special Minor Irrigation Projects and Drought Prone Area Programme.\(^{171}\)

**Tube wells and filter point wells**

In augmenting supply of water through irrigation schemes, ground water resources were utilized by sinking deep bore wells, shallow tube wells or open wells.\(^{172}\) In Tamilnadu out of 6,347,545 hectares of net area sown, the area, irrigated was only 2,709,676 hectares which constituted about 42% of the net area sown in the year 1971-72.\(^{173}\) Again out of the 2,709,676 hectares of irrigated area, about 69% was irrigated by canals and tanks, and the rest was irrigated by ground water. It was roughly computed that there were one million wells which extracted 3,800 million cubic meter of water.\(^ {174}\)

\(^{170}\) Ibid.


\(^{172}\) Tamilnadu Economy,PP.180.

\(^{173}\) Season and Crop Report of Tamil Nadu for 1971-72,p.4.

deepening of wells scheme, filter point tube wells scheme and community wells scheme were undertaken by the Agricultural Engineering Department.\textsuperscript{175}

The Agricultural Department was sinking tube wells (bore wells) in ryots lands with the help of power drills underground water for irrigating crops. Extensive cultivation and also the receding underground water level, resulted in an increase in demand for sinking bore wells for helping the ryots boring sets of the department were supplied on hire basis, and loans were granted on easy installments by the Land Development Banks and Nationalized Banks.\textsuperscript{176} Till the end of March 1975, 23,411 tube wells were sunk by the department. It was anticipated that the tube wells available in the state would irrigate an area of about 5.54 lakh acres During the Fifth Five Year Plan period it was proposed to sink 12,500 wells loan assistance was provided by the Land Development Banks and commercial Bank for meeting costs of sinking etc. This scheme was started as a separate scheme from 01.04.1966 and up to the end of March 1975; as many as 7,851 wells were sunk. It was proposed to sink 4,000 bores in open wells during the Fifth Five Year Plan.\textsuperscript{177}

**Deepening of Well Schemes**

Deepening of wells was taken up in rocky areas by blasting the rock bed of 20’to 40’ thickness. Such blasting increased the storage capacity of wells. This scheme was in operation from 1964-65 and till the end of March 1975 as many as 10,636 wells were deepened.\textsuperscript{178} Non-availability of explosives retarded the progress of this scheme. Hence, the Agricultural Department constructed explosive magazines at the than South Arcot,

\textsuperscript{175} Tamil Nadu State Administration Report for 1972-73,p.226.
\textsuperscript{176} Tamil Arasu, Vol.VI.December 1975, Issue 6, Madras, p.35.
\textsuperscript{177} Ibid.
\textsuperscript{178} Ibid.
Trichy, Dharmapuri, Salem, Coimbatore, Ramanathapuram, Tirunelveli and Madurai Districts. The explosives were purchased and supplied to the needy ryots who engaged departmental rock blasting unit constructions of similar magazines in the district of North Arcot for this purposes was in progress. It was proposed to deepen 10,050 wells during the Fifth Five Year Plan Period.\(^1\)

In order to utilize the equipment to maximum advantage and to reduce the cost of removal of debris the department had designed a suitable debris remover (crane). The department had programmed to supply debris remover also on hire along with rock blasting unit. Loan assistance was provided by the land Development Banks and Commercial Banks for meeting the cost of deepening the wells.\(^2\) The filter point was a device for pumping out water from sandy water bearing strata found within 25 to 40 feet. During the last year of the Third Five Year Plan a crash programme for filter points was initiated in Thanjavur District in order to sink a large number of wells in a shorter period to tap ground water supplement the canal water during the lean periods. To get maximum yield and to during more area under second crop, it was programmed to sink a large number of filter point tube wells and tube wells with the assistance of the World Bank.\(^3\)

Up to March 1975, 29,299 filter point tube wells had been sunk. A filter point was expected to irrigate an area of 10 acres (gross) it was proposed to sink 10,000 wells during the Fifth Year Plan Period.\(^4\)

\(^1\) Ibid.
\(^2\) Ibid.
\(^3\) Ibid.
\(^4\) Ibid.
Lift irrigation

During the year 1971 an intensive study was carried out on lift irrigation in the village North Elandaikulam of Tirunelveli District and it was concluded that lift irrigation by an electric motor was cheaper than an oil engine. In order to enable the farmers, who owned one or two hectares of land, to reap the benefit of the Minor irrigation schemes fully and borrow enough capital to sink wells and install pump sets, lift irrigation co-operative societies were established. As many as 502 societies executing schemes involving a total outlay of Rs.17.23 crores were set up. There was also a federation of lift irrigation societies to co-ordinate and assist the activities of lift irrigation societies.

Special minor irrigation programme

Irrigation schemes costing less than Rs.15 lakhs were considered as Special Minor Irrigation schemes. During the year 1971-72, 936 such works were completed and, 696 works were completed during 1974-75 at a cost of Rs.356.37 lakhs. Under the Minor Irrigation programme the tanks to be repaired were classified into three categories, viz., tanks having ayacut of more than 100 acres, tanks having ayacut of less than 100 acres and ex-zamin tanks.

Drought prone area programme

Under the Drought Prone Area Programme, in Dharmapuri district, 108 new works costing Rs.21.45 lakhs were taken up for execution and by 1975, 25 works had

187 Tamil Nadu State Administration Report for 1974-75, p.245.
188 Ibid.
been completed benefiting 2280 acres. During 1974-75, in Ramanathapuram District, 116 Spill over works with a value of Rs.26.71 lakhs and 264 now works costing Rs.123-82 lakhs were taken up for execution. By the end of March 1975, out of the above said works 120 works had been completed benefiting 13,672 acres.\textsuperscript{189}

\textsuperscript{189} Ibid.