CHAPTER II

HISTORY OF LOWER BHAVANI PROJECT

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CHAPTER II

HISTORY OF LOWER BHAVANI PROJECT

2.1 HISTORY

Lower Bhavani project irrigates the talukas of Satyamangalam, Bhavani, Gobichettipalayam, Erode, Perandurai and Kangeyam in the Periyar district and Karur taluka of Tiruchirappalli district of Tamil Nadu. It commands an area of 83800 hectares of land in the lower Bhavani (2,07,000 acres) irrigation system and 14725 hectares of land irrigated by the old irrigation system.

Although the project was completed only in 1953, the plan for harnessing the flood waters of Bhavani dates back to 1834 when Sir Arthur Cotton, the versatile engineer who introduced modern irrigation in India, mooted the idea. Even at that time irrigation was practised, albeit on a smaller scale, in the flood plains of Bhavani. The important among them are the Kodivari Anicut with two channels - the Arakkankottai channel and Thadapalli channel and the Kalingarayan channel. The total ayacut of this system is 14,725 hectares. These old irrigation systems are even now under operation.

The idea of Sir Arthur Cotton on large scale irrigation development in the Bhavani Basin was debated on
for quite sometime and many alternative schemes were drawn up over time and again. Ultimately in 1856 it was decided to construct a storage reservoir without which extension of irrigation was not feasible.

Decision had to be taken regarding the location of the reservoir. In the early 1900 people living in the Cauvery delta were clamouring for the construction of reservoirs both in the Cauvery and the Bhavani to provide assured supply of water to Tanjore district during the dry period in between the monsoons. But their claim was strongly opposed by the people of Coimbatore who established their right over Bhavani water. Later in the year 1905, a special division under Sh. A.N. Arogyaswamy Mudaliar an Executive Engineer started investigations on possible schemes. He suggested two alternative schemes; one being a storage reservoir on the Upper Bhavani for an irrigated dry scheme and the other for a reservoir on the Lower Bhavani for a wet scheme.

The one proposed on the Upper Bhavani comprised of two reservoirs one at the junction of Siruvani river with Bhavani near Puvalur at the head of the gorge and the other about 13 kms down stream of the confluence of Kundah river with Bhavani. The main canal for the first alternative was to take off from the right flank of the Lower Bhavani River
raising dry crops on 1.6 lakhs of acres (64777 hect.) during
the first crop and 2.6 lakh acres (1052631 hectares) during
the second season besides 25000 acres (10121 hectares) of
paddy cultivation in Coimbatore, Palladam, Dharapuram and
Udumalpet talukas. The higher reservoir was just for
supplementing water to lower one in times of need.

The people of Palladam, Dharapuram and Udumalpet
taluks were clamouring for taking up the Upper Bhavani
Project while those in Gobichettipalayam, Erode and Bhavani
taluks pressed for the Lower Bhavani. The government after
examining both the alternatives ordered in 1908 that the
upper Bhavani Project may be given up in favour of the
Lower Bhavani wet scheme and also decided to proceed with
the investigation of the latter but with an increased extent
of 1,60,000 acres (64777 hectares) of wet lands against
109,200 acres (44210 hectares) proposed originally.
Subsequently in 1910 the Lower Bhavani Project was ordered
to lie down pending a decision regarding Cauvery, Mettur
Project which was also under consideration then. After the
first world war, the project was again taken up for
consideration only in 1925. Though a decision had been
taken to proceed with the Lower Bhavani Project there was
much controversy among the agricultural, revenue and
engineering departments on various points such as the
nature of crops to be raised (wet or dry) suitability of the
engineering departments on various points such as the nature of crops to be raised (wet or dry) suitability of the tract from the point of view of irrigation, water requirement etc. But the general consensus of opinion was that water should be allowed for raising only an irrigated dry crop partly for the reason that the same quantity of water will serve a much larger area than in the case of wet crops and partly due to the fact that the land proposed for irrigation was more suitable for raising dry crops. So the decision for irrigation of dry crops was ordered by the Government on 4th August 1932 and in this connection the absorption, seepage etc of the existing channels in Coimbatore Experimental farms were studied by a team at Perundurai and Modachur farms.

With the end of the Second World War and the attainment of Independence, the National Government was faced with serious problems of solving the acute food and cloth shortage in the country. Naturally the new Government of Independent India gave the highest priority to irrigation development. Lower Bhavani was one among the many taken up for construction.

Subsequent to the sanction of the project the ryots of Dharapuram taluk made strong representation to the Government to extend the benefit of the Lower Bhavani
Project Canal to their locality also, since it was frequently in the grips of famine. So the Government decided to give relief to this famine affected area by extending the main canal and affording irrigation facilities to an extent of about 25,000 acres lying on the other side of the Noyyil Valley by cutting out an equal extent of the irrigable area in the upper reaches. The feasibility of the irrigation was ordered to be examined by the Government in November, 1947.

When the investigation of extension of canal was completed for about 33 miles (53 km) i.e. up to mile 121.6 (24 km) furlongs a new problem arose. The canal reached to borders of the Karur Taluk. the net irrigable area between the length of the extension canal down to mile 121 miles 6 furlongs and the Noyyil valley came to about 20,500 acres (8299 hect.) against 25000 acres (10121 hectares) anticipated. The natural features of the country favoured aligning the canal further into Karur taluk and locating the balance of 4500 acres (1821 hectares) at the margin of the Amaravathi river. Further the area in Karur Taluk stood almost on the same footing in the matter of rainfall, famine conditions etc. Hence government ultimately decided to give irrigation facilities to Karur Taluk also.

The works in the canal section of the project were
taken up for execution only in January 1949 and major portion of the work was completed well in advance of the scheduled time. In September 1952 irrigation was given for an extent of about 5,000 acres (2,024 hectares) and it was increased to 2,900 acres (1,174 hectares) in September 1953, 1,14,600 acres in September 1954 and 1,67,400 acres (64,773 hectares) in September 1955, and the entire area was brought under irrigation in September, 1956.

The Lower Bhavani Project can be divided into three parts. They are:-

I. The old irrigation system which works independent of the command area project,
II. The Lower Bhavanisagar dam, and
III. The Lower Bhavani Project Canal Network.

2.2 The Old Irrigation System

The old irrigation system in the Lower Bhavani tract is of great interest and importance with reference to the command areas since a stabilized irrigation is seen around this region and consequently in the agricultural development also.

In general the old Irrigation system consists of an anicut namely the Kodiveri anicut located 19 miles (31 kms) below Bhavanisagar dam. The anicut was constructed
during the reign of the Hindu Kings of Mysore in the 17th Century. It was built on a solid rock structure having a length of 496 feet.

Two channels take off on either side of the anicut. The left side channel is the "Arakkankottai channel" and the right side is the "Thadapalli channel". The channels were excavated at the same time when the anicut was built during the 17th Century.

Arakkankottai channel when it was constructed had a length of 19 miles 6 furlongs (30.6 km) and during the 19th Century the channel was extended up to 20.0.628 miles (32.18 km). It has got two branches namely Vaniputhur branch channel on its left bank which has an ayacut of 223 hectares (550 acres) and Perumugaiathani on its right side which is very recently excavated having an ayacut of 730 hectares (1800 acres).

The catchment area of the river above the anicut is 1900 sq miles (4921 sq km) and the maximum discharge is 1,22,066 cusecs. Thadapalli, channel runs for a length of 48.1.410 miles (77.23 km) and finally empties into Ananthasagaram tank. There are five branch channels and three surplus channels. The total ayacut under this channel is 7492.50 hectares including the branch channels and the tank ayacut.
The following table gives the irrigation particulars of the existing old irrigation system.

Table 2.1

<table>
<thead>
<tr>
<th>* Kodivari Anicut System</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hectares</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Thadapalli Channel - total ayacut</td>
<td>7149</td>
</tr>
<tr>
<td>II. Arakkankottai channel total ayacut</td>
<td>2773</td>
</tr>
</tbody>
</table>

### I. Thadapalli Channel

<table>
<thead>
<tr>
<th>Branches</th>
<th>Ayacuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Thadapalli main channels</td>
<td>4087</td>
</tr>
<tr>
<td>(b) Bodichinnampalayam surplus channel</td>
<td>348</td>
</tr>
<tr>
<td>(c) Nanjaipuliyampatti branch channel</td>
<td>228</td>
</tr>
<tr>
<td>(d) Sivagiri branch channel</td>
<td>260</td>
</tr>
<tr>
<td>(e) Side channel</td>
<td>302</td>
</tr>
<tr>
<td>(f) Agrahara Surplus channel</td>
<td>189</td>
</tr>
<tr>
<td>(g) Kugalur Branch channels</td>
<td>1432</td>
</tr>
<tr>
<td>(h) Perundaliyul Surplus channel</td>
<td>181</td>
</tr>
<tr>
<td>(i) Ananthasagaram tank</td>
<td>123</td>
</tr>
</tbody>
</table>

| Total | 7149 |

* "A note on Old Irrigation System" Public Works Department, Coimbatore - Nilgiri Circle.
Kalingarayan Channel:

This is a channel which takes off from the right side of the Kalingarayan anicut which is situated just above the confluence point of river Bhavani with river Cauvery. It is one of the oldest source under Bhavani having length of 90.1 km and with a capacity of 580 cusecs. It has got 3 main branches and has an ayacut of 4803.30 hectares.

2.3 Merits and Demerits of the Construction of Lower Bhavani Project For the Old Irrigation System:

Before the construction of the Bhavani dam there was no flood control and due to the floods and scarcity of supplies have occurred too often in the past. But after the construction of the reservoir it is possible to regulate the water supplies according to needs from time to time.

The most and the important change that has occurred after the construction of the Lower Bhavani Project is that the irrigated area under the Old Irrigation System has increased to a considerable extent. Before the construction of the Lower Bhavani reservoir raising of double crop in the entire old irrigation system was not possible due to large variations of flow in the river. For example in Thadapalli channel in the past double crop was raised only in 3,645 hectares and after the construction it was raised to 6,480 hectares because of larger water availability. Similarly in
Arakkankottai Channel single crop was raised only in about 2,389.50 hectares and the double crop was raised only is about 384.75 hectares but after the construction the whole ayacut itself has changed into double crop lands.

With reference to Kalingarayan channel it is found that during the operation of the project the channel will receive field to field water supply and hence the irrigation water requirement will become less from the reservoir.

The demerits due to the construction of the Lower Bhavani Project for the old irrigation system are also existing. The first and the foremost is that these systems were constructed without much planning since technology was not advanced in the past. It did not cater much to the needs of the farmers of this region. Further the ryots have also done a lot of modifications and extensions according to their individual interests and this has resulted in an adverse effect of making few farmers enjoy the water to the fullest possible extent and the other to suffer. For example in the case of Kalingarayan channel before the construction of the reservoir large number of pumpsets were used in the upper reaches which they continue to use even after the construction of the project and has made the tailend cultivators to face the scarcity of water in the lower reaches.
The above problem which is an acute one and at the same time creates a serious havoc in creating disparities in every aspect and problems of agriculture can be solved only by remodelling the old irrigation system, whatever may be the cost involved. At the sametime it should be kept in mind that the remodelling should cater to the majority of the farmers of that area and it is always appreciated if it is done in consultations with the ryots of the area who can be the better judges rather than the administrators or the engineers.

In general increase in the water availability of the area under the old Irrigation system, is noticed after the construction of the project. It is really unfortunate to note that it has never been felt either by the farmers of the area or by the authorities about how far this excess water from the project is utilized and what are all the measures that have been taken up in dealing with the water management of the area.

2.4 The Lower Bhavani Dam:

The Lower Bhavani dam is located on the Bhavani river just below the confluence of River Moyar, 16.09 km west of Sathyamangalam and about 37.00 km North-East of Mettupalayam in Coimbatore District.
The project was sanctioned for execution in September 1947 and the construction was started in January 1948, and ended in 1953. The ayacut received water from 1956-57.

2.5 Features of the Main Dam:

The Bhavanisagar dam has got two portions (1) a masonry dam and (2) an Earthen dam.

The masonry dam consists of a central portion in the river course for a length of 464.21 metres consist of 120.70 meters of overflow section.

The earthen dam is having a length of 4.827 km on the left flank and about 3.62 km on the right flank. The total length of the dam is 5.5 miles including the masonry portion. The important and the striking aspects of this earthen dam is that this is the first dam in India where an earthen dam of this magnitude is constructed.

The catchment area of the reservoir is 3610 sq. km. and has got a waterspread of 78 sq. km. The dead storage in the reservoir is 745 million cubic feet and live storage is 32055 m cft in the reservoir.

2.6 The Lower Bhavani Canal

The main Lower Bhavani Project Canal with its full
supply capacity of 2300 cusecs was originally proposed to irrigate up to 148.00 kilometers. In course of time due to the frequent famine conditions occurring in the dry tracts of Dharapuram taluk and Karur taluk, a representation was made by the ryots of the area and it was decided by the Govt. to extend the canal upto Noyyil river i.e. upto 199.51 km thereby including an ayacut of 10,125 hectares of the tract in the command area.

This being a contour canal, the entire ayacut lies only on its left side and the height factor forms an impediment in irrigating the other side of the canal area.

The following table gives the talukwise ayacut area of the project:

Table: 2.2
Ayacut area of the Lower Bhavani Canal

<table>
<thead>
<tr>
<th>Ayacut</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Periyar District:</td>
</tr>
<tr>
<td>1. Gobichettipalyam taluk</td>
</tr>
<tr>
<td>37,391 acres (15143 hact.)</td>
</tr>
<tr>
<td>2. Bhavani Taluk</td>
</tr>
<tr>
<td>14,617 acres (5920 hact.)</td>
</tr>
<tr>
<td>3. Erode Taluk</td>
</tr>
<tr>
<td>1,11,182 acres (45029 hact.)</td>
</tr>
<tr>
<td>4. Dharampapuram taluk</td>
</tr>
<tr>
<td>20,266 acres (8202 hact.)</td>
</tr>
<tr>
<td>(2) Trichy District:</td>
</tr>
<tr>
<td>Karur Taluk</td>
</tr>
<tr>
<td>2,491 acres (1009 hact.)</td>
</tr>
</tbody>
</table>
The canal has got three major distributaries taking off at 83.27 km, 101.36 km, and 119.06 km. respectively and 196 minor distributaries and direct sluices. Though the main canal is a contour canal, the off take channels however run on ridges and irrigate on both sides.

2.7 Irrigation Charges:

The assessment of irrigation charges for the lands irrigated under the project is mainly based on the nature of the crops raised which have been grouped into four categories.

1) Cotton, castor, plantains, Coconuts, yam, fruit trees Rs. 20 per acre

2) Tobacco, onion, chilly, sweet, Potatos, Turmaric, Paddy, Vegetables Rs. 15 per acre

3) Groundnut, Gingelly, Millets Rs. 10 per acre

4) Pulichi, fodder crops, including surcharge Rs.750 per acre

2.8 Seeds and fertilisers requirements

Improved paddy seeds to cover an area of 7% is supplied through agricultural department and the balance is covered by exchange among the ryots. Sufficient quantities
of fertiliser to meet the demand of the farmers are stocked in all the retail points (i.e.) in each village, agricultural bank. There are 664 private dealers and 90 coopertive stores doing fertilizer business in the command area.

2.9 Finanacial facilities for the farmers in the command area

There are net work of branches of State Banks and co-operative primary land development banks are giving loans for implements such as tractors etc.

The crop loans are repayable immediately after the crop is harvested 75% to 80% of cost of cultivation is given as crop loans. Loans for implements are repayable over a period of years. This programme is being undertaken from the year 1968 onwards. The rate of interest is 11.5 to 14% and every year the number of villages taking loans under this programme is increasing.

In course of the operation of the project many changes have been brought in the distribution of water. In recent years, the scarcity of water and the necessity for providing assured water supply made the modernization of the project, a necessity. These aspects are dealt with in detail in later chapters.
Conclusion:

Lower Bhavani Project is one of the first major irrigation projects completed in Tamil Nadu after independence. The lower Bhavani dam impounds water in the Bhavani Sagar near Mettupalayam, in Periyar district and though a net work of canals provide irrigation for about 83,800 hectares land in the Gopichettipalayam, Bhavani, Erode and Dharapuram Taluks in Periyar district and Karur taluk in Tiruchi district. Many alternative schemes were considered for more than 100 years before finalising the dam. The people of the region, recognising the importance of irrigation wanted more area to be brought under irrigation. In order to satisfy the genuine demands of the people the command area has been increased in number of times during the planning and execution of the project. Unfortunately sufficient water is not available to irrigate all the area. This has resulted in great difficulties in distributing the water. However, the lower Bhavani project canal and the old irrigation systems of Kodiveri and Kalingarayan systems have served the people of this region from the recurrence of famine and scarcity conditions.