

# IRRIGATION AND ECONOMIC DEVELOPMENT



*Edited by*

**Dr.S. THEENATHAYALAN**  
**Dr.P. KANNAN**



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## CHAPTER 17

# AN OVERVIEW ON PARAMBIKULAM - ALIYAR PROJECT (PAP)

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### Abstract

Highly imaginative in concept, bold in its approach, ingenious in planning and beneficial on its completion, this inter state, multi purpose, multi valley parambikulamaliyar project is truly a unique one. It successfully accomplishes the diversion and integration of 8 West flowing rivers, 6 in the Anaimalai Hills and 2 in the plains for the benefit of the drought prone areas in the Coimbatore and Erode district of Tamilnadu State and stabilizing the existing irrigation system in Chittoorpuzha of Kerala State. Dams on the 8 rivers with inter connecting tunnels have been constructed. The tunnels divert the waters impounded in the rivers to the plains of the Coimbatore District and Erode District of Tamilnadu State and Chittur area of the Kerala State. The reservoirs lie at various elevations ranging between elevation + 3800 feet and + 1050ft. and this difference of elevations has made it possible to utilize the drop between them for the development of hydro-electric power. The study aims to know the components of parambikulam- aliyar project which is implemented for irrigation in Coimbatore district.

### Introduction

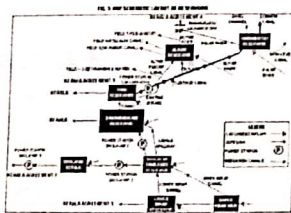
The Parambikulamaliyar project is an outcome of a hard and sustained work done by a band of enthusiastic engineers. This is situated in Anamalais range amongst its flora and fauna and on the arid and semi arid plains of the southern taluks of Coimbatore District. All the rivers, which has its source in the Anamalai range, is served by the South-West Monsoon. The Major portion of the Dams and Tunnels are located in the scenic and scene surrounding of the Anamalai range and the reservoirs are located amongst picturesque and natural surroundings in the Reserved forest areas and Tea Estates. This parambikulamaliyar project takes its name after the two important rivers (1) Parambikulam representing the series of river on the west (2) Aliyar representing the east of Western Ghats. In a sense this project is a symbol of Inter-State Co-operation of the two neighbourly State of Kerala and Tamilnadu. An agreement in this regard was signed by the two states 1969 and also in the year 1970.

This multi purpose project has got a long history. The main components of this parambikulamaliyar project comprises of 10 Dams, 4 Power Houses, 6 Main Tunnels and 7 irrigation canals.

The parambikulamaliyar project was executed by Govt of tamil Nadu during 1958 and 1966. The project has culturally command area of 1.74 lakh hectare (1.01 lakh ha original and 0.73 lakh ha under extension and four power houses with installed capacity of 185 MW.



This project is an outcome of a hard and sustained work done by a band of enthusiastic engineers. This is situated in Anaimalais range amongst its flora and fauna and on the arid and semi arid plains of the southern area of Coimbatore District. All the river, which has its source in the Anamalai range, is served by the South-West Monsoon. The Major portion of the Dams and Tunnel are located in the scenic and scene surrounding of the Anaimalai range and the reservoirs are located amongst picturesque and natural surroundings in the Reserved forest areas and Tea Estates. This project takes its name after the two important rivers (1) Parambikulam representing the series of river on the west (2) Aliyar representing the east of Western Ghats. In a sense this project is a symbol of Inter-State Co-operation of the two neighbourly State of Kerala and Tamil nadu. An agreement in this regard was signed by the two states 1969 and also in the year 1970.



## Dams

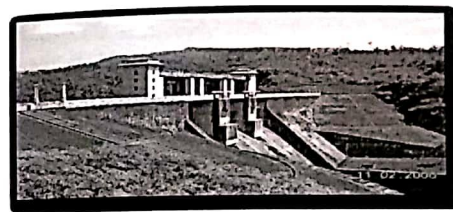
### Upper Nirar Weir

The Nirar River takes its source from the Kattamalai Hills, and takes the name of Kallar subsequently after its confluence with some of the streams. It runs in a South Westerly Direction and falls into Edamalar, the major tributary of Periyar river. The first work done in the highest elevation in Tamilnadu is the Upper Nirar Weir with a catchment area of 29 square miles (75.2sqm). The F.R.L. is EL+3800 ft. Water will be diverted from this weir through the Upper Nirar Tunnel to the adjacent Sholayar Basin.



### Lower Nirar Dam

A dam across Nirar River at a lower site, about 8 km, below the Upper Nirar weir has been constructed. This dam will serve to conduct the diverted waters of Anaimaliyar Basin (yet to begin) to the Sholayar valley through the un-lined lower Tunnel taking off from the dam site. In addition to this, the yield of the catchment between the Upper Nirar Weir and the Dam will also be diverted to the Sholayar Basin.



### Sholayar Reservoir

Sholayar River is one of the main tributaries of Chalakudi river. It has its source in Valparai Estate and runs in a westerly direction for about 30 miles before it joins the Parambikulam River. The total catchment area of this river upto its in-fall into Parambikulam river is 100 sq miles of which 55 sq miles is in the TamilNadu State and the rest in Kerala. The Upper catchment of this river is situated at an elevation from 3000 to 8000 ft. This influenced by the South West Monsoon.

The Sholayar dam constructed (maximum height 345 ft) across the river Sholayar has a capacity of 5392 Mcft. Incidentally this is the highest Dam in Tamil Nadu. This reservoir, after meeting the requirements of the Kerala State, will divert about 2,500 mcf to the Parambikulam Aliyar Project system through the Sholayar Tunnel-1. In Addition to this, the waters received from the Nirar and Anamalar Valleys will also be diverted to the adjacent Parambikulam valley through the tunnel. The water thus diverted passes through Power House No.-1 and it is utilised for power generation. The water that is supplied to the Kerala Sholayar Reservoir is also utilised for Power Generation through Power House No-2. The installed power generation in Power House No.1 is 70 M.W. and Power House No.II is 25 M.W.

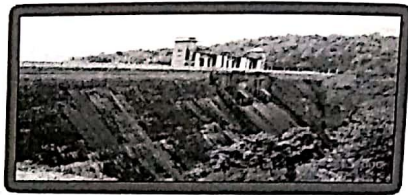


#### Anamalayar Diversion Work

Under this proposal a diversion of 2,500 Mcft. each year from Anamalayar for use in the ParambikulamAliyar Project system has been agreed by the Kerala Government and the scheme proposals are awaiting clearance from Kerala Government. This work will be taken up after it is cleared by the Kerala Government and a supplemental agreement is concluded on this aspect.

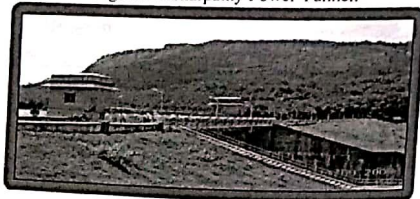
#### Parambikulam Reservoir

Parambikulam River has its origin in Ramakrishna Malai with the name of Periyar at an elevation of 4,000 to 5,000 ft in Coimbatore District. Three tributaries join this Parambikulam River along its run. Parambikulam Reservoir is the largest Reservoir of the Project with a gross storage capacity of about 17,820 Mcft. At F.R.L. + 1825 ft. Water from this reservoir is diverted to the adjacent Thunacadavu Reservoir a Balancing Reservoir through the Parambikulam Tunnel which is 8186 ft. in length. the dam is located in Kerala territory.



#### Thunacadavu Reservoir

This is a small balancing Reservoir constructed across Thunacadavu River, which is a tributary of Parambikulam River. It's gross capacity is 557 Mcft. The water that is received from Parambikulam Reservoir and from the Peruvuripallam Reservoir, as well as from its own catchment, is diverted to the Sarkarpathy Power House through the Sarkarpathy Power Tunnel.



#### Peruvuripallam Reservoir

This Reservoir is formed by an earthen Dam 1535 feet in length and has a gross capacity of 620 Mcft. This is connected to the Thunacadavu Reservoir by an open cut channel. The combined catchment area of Thunacadavu River Peruvuripallam is 22.80 sq miles at the Dam Site.



#### Aliyar Reservoir

The Aliyar River has its source in the Anamalai Hills. It flows in a northwesterly direction for about 14 miles before it enters the plains. It is joined by Uppar on its left and Palar River on its right. This river has got an old Ayacut of 2505 ha of wetlands, through a system of 5 anicuts. The last anicut in the series is Vadakaluranicut and below it there are 4 major anicut in Kerala State irrigating an area of 8058 ha. The catchment area of this river at the last Anicut in Kerala State is 419 sq miles of which 366 sq.miles is in Tamil Nadu State.

A Reservoir has been formed by construction of a dam across the River Aliyar and it has a gross capacity of 3,864 Mcft. Two irrigation canal i.e., Vettaikaranpudur and Pollachi canal take off from this Reservoir. This reservoir is also intended to meet the requirements of the existing command area in Tamil Nadu State and Kerala State. The catchments area at Aliyar Dam site is 76 sq.miles.



#### Thirumurthy Reservoir

This reservoir has been constructed across the River Palar, which has got its origin at the northern slopes of Anamalai Hills. It is a tributary of Aliyar. About 5 miles below the origin of Palar there exists an Old Anicut called Dhalianicut which has got open head channels and irrigated about 1120 ha of which 70 ha are under direct irrigation and rest is through a system of 7 tanks. This reservoir has got its name of Thirumurthy Reservoir because of the existence of waterfall and a Temple nearby the Dam site by that name. This reservoir across the River Palar has a gross capacity of 1,935 Mcft. Apart from its own catchment it receives the diverted water from the Uppar Reservoir in the Anamalai Range, through the Sarkarpathy tunnel and the Contour Canal. An irrigation Canal called, the Parambikulam, Main Canal takes off from this Reservoir and it branches into two.



- a) A 125 km Long Parambikulam Main Canal and
- b) A 30.4 km long Udumalpet Canal

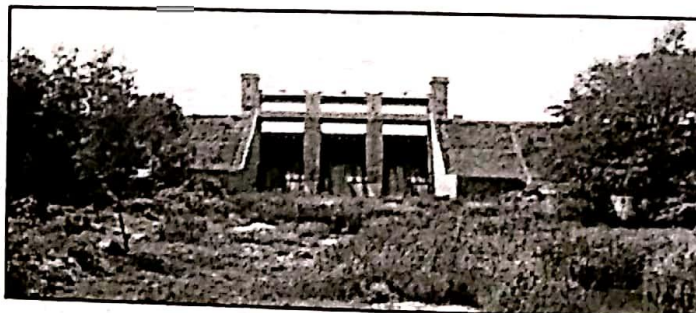
The Parambikulam main Canal is the biggest and longest irrigation canal under this project with an ayacut of. This reservoir also stabilizes irrigation for the Old Ayacut of about 1050 ha under Dhali system of Palar. A High-level canal to feed 1002 ha also takes off from Reservoirs.

#### Upper Aliyar Reservoir

A 235 feet high dam across Aliyar called the Upper Aliyar Dam has been constructed just above the Aliyar Dam and is mainly intended for generation of power through a Power House situated in the foreshore of the Aliyar Reservoir.

#### Uppar Dam

In addition to above works, a dam at Uppar in the plains at Daharapuram taluk has also been constructed to catch the return flow estimated at about 10% of the discharges in the Parambikulam main canal to irrigate 2426 hectare.



#### Conclusion

The Parambikulam -Aliyar project is really a gift of our nation. This project is called as eighth wonder of the world.