



THE GRAND ANICUT A HISTORICAL STUDY

C.R. Rathika

PhD Research Scholar , Department of History ,
Annamalai University , Chidambaram , Tamil Nadu.



ABSTRACT

Cauvery is one of the major rivers of the Indian Peninsula and is the most important river of Tamil Nadu State. This is held in high esteem by the people of Tamil Nadu as the nature's precious boon. This referred to as 'Dakshina Ganga' or Southern Ganges in the Vedic lore and finds mention in many a piece of literature, epic, poetry and drama that have been made in this land. The beautiful orchards that line up its banks, the fertile lands in its delta which yield heavy harvests have all been sung by poets and bards infused with religious fervor. Over centuries the people in the Cauvery Delta have been enjoying its bounty and all the fine arts flourished in its rich valley.

KEYWORDS: *Dakshina Ganga , Indian Peninsula , poetry and drama.*

INTRODUCTION :

The Cauvery has its origin in the Brahmagiri hills of the Western Ghats in the Coors district of the Karnataka State. Flowing in a south-easterly direction across the plateau where it is joined by many tributaries like the Herring, Hemavathi, Shimsha, Kabini, Suvarnavathi and so on, it takes a southerly course at the Hogenakal falls where it enters the Tamil Nadu State. Bhavani and Amaravathy are the major tributaries that join her. The river now runs east and enters the delta where it splits itself into numerous streams spread across the delta, drenches and drains this piece of land before finally merging into the Bay of Bengal.

HISTORY OF GRAND ANICUT

The grand Anicut, in its original form, was the oldest and it belonged to the Sangam Age of the early Chola kings. It is situated at the junction of the Cauvery and the Coleroon at the tail end of river Cauvery. Originally it consisted of a core of roundly dressed granite set in mud, covered with an outer facing of roughly dressed granite blocks set in lime mortar. Finally, in 1836, Arthur Cotton, an able Engineer, built at the head of the Coleroon (about 16 k. m. west of Tiruchirappalli at the first point of bifurcation from the Cauvery), a solid masonry wall called the Upper Anicut which was designed to prevent too much water from flowing down that river and to adequately fill the Cauvery. The construct of the great work overcame for the time being the difficulty of water supply to the Thanjavur district. Arthur Cotton built the Lower Anicut across the Coleroon some 107.2 kms below the Upper Anicut, to irrigate the north-eastern corner of the Thanjavur district which was inadequately supplied by the Cauvery. In 1899, the falling shutters were removed and replaced by 30 lifting shutters of 32 feet span and five feet high. In the 1909 floods, three arches were washed away, but these were restored, omitting the scouring sluices. Though the Grand Anicut

stopped the Cauvery water from running into Coleroon, it resulted in the silting up of the bed of Cauvery.¹ In 1914 the floor of the Anicut now irrigates about 24,000 acres in the Thanjavur district.

The excellent irrigation system was still further improved by the Mettur Dam. The reservoir constructed near Mettur connected the canal works constructed in the Thanjavur district. The question of improving the conditions of irrigation in the Thanjavur delta by the storage of the Cauvery water in a reservoir was considered as early as 1934 by Arthur Cotton, that indefatigable engineer to whom Thanjavur owes so much.² The water spread of Cauvery under the proposed reservoir was to reach northward beyond the confluence of Toppur with Cauvery to Hogenakkal falls, submerging the villages round Solappadi and Baddirahalli, in the Dharmapuri taluk. There were also heated arguments during a period of 60 years about the relative merits of a dam across the Cauvery and the Bhavani. This was settled when Col. Ellis submitted in 1910 a scheme to construct a reservoir of 80,000 million cubic feet capacity to irrigate an additional area of 3,28,395 acres in Pattukottai, Thanjavur and Mannargudi taluks at a cost of Rs. 3.85 crores.³ After long drawn out discussions and prolonged negotiations with Mysore and after taking into account the fact that the supplies would not be available in this state to the extent anticipated on the basis of the award ratified in 1916, the dispute with Mysore was settled. According to the settlement, Krishnarajasagar Reservoir was to be regulated without prejudice to Madras state and the new area of irrigation in this state (otherwise than by improvement) was to be limited to 3,01,000 acres, out of which 30,000 acres by (in addition to 13,000 acres by improvement) was to be irrigated by improving and extending the Vadavar.

The construction of Grant Anicut canal accelerated the process of extensive and intensive cultivation. Canal-fed tanks further activated the process. For the protection of crops in Arantangi taluk, Cauvery – Mettur project supply was extended through Ammanjikki Peria Eri and five other tanks. The initial area of ayacut benefited by this scheme was 81 acres and 25 cents.⁴ The first major irrigation project was formulated during the first five year plan. This was mooted as early as 1857 and had been investigated in detail and kept ready for sanction. Masonry cum earth dam, 8797 m long and 62 m high was built across Bhavani to form a reservoir with a gross capacity of 32.8 TMC to irrigate an area of 83,772 hectare (207,000 acres) in the Periyar and Tiruchirappalli districts. With a project cost of Rs. 10.34,00,000 lakhs, it was completed in 1955.⁵

The Cauvery Delta

The Cauvery delta formed by the river over millenniums is a rich alluvial tract in the shape of a triangle (delta) with its base at the coast measuring 100 km north-south and its apex at the Upper anicut about 160 km west of the coast where the river throws out its flood arm Coleroon, bordering the delta on the north. This is termed as the Granary of the State. The delta constitutes 40.8 percent of the area irrigated through canals and rivers in the whole State and contributes 25 percent of the rice production in the State, and rice is the staple food of the people. The Cauvery and Vennar are the main irrigation rivers flowing through the delta and these divide and sub-divide among themselves forming as many as 36 streams totaling to a length of 1606 km.⁶

The development of irrigation in the delta

The Cauvery is well served by the south-west monsoon in its upper catchment. Mercer in the Coors district which can be considered as a representative station, receives as much as 2700 mm of rainfall during the south-west monsoon in a normal year. The river has been carrying floods; during this season and the 18th of the Tamil month 'Adi' which corresponds to about the 2nd of August is celebrated for generation as a festive day all along the banks of this river welcoming the floods. The floods during this period, July to September, flow down the delta which will be having dry weather during the period. During the north-east monsoon, October-December, when there would be no rains in the upper catchment the delta receives rains to an extent of about 580 mm in a normal year. This, while being very useful to support the crops, sometimes causes floods in the lower part of the basin leading to heavy inundation and drainage congestion. Agriculture in the delta region has been practiced for centuries supported by the inundation during the flash

floods and the monsoon rains that closely follow. Besides the numerous rivers that traverse the area, several irrigation channels were created over a long period with wide mouths and large sections to receive as much of the flow as possible during flood times, carry them inland and spread over the large tracts of flat lands for inundation irrigation. As on date we have 1500 such main channels which, with their branches and sub-branches, run to a total length of about 24,000 km.

Thus came the Grand Anicut to be built on Cauvery at the Ullar head in the second century AD. This is believed to be the oldest hydraulic structure to attempt on a flowing river in the Indian subcontinent and the credit for the conception and execution of such a grand structure goes to the then ruler of the Chola dynasty the great Karikala Chola. The then ruler who evinced keen interest in developing agriculture in the Cauvery delta also made bold plans to harness the mighty river and raise its water-level for commanding the deltaic tract, besides making a number of canals inland to carry the waters to the farms.

The Grand Anicut

The Grand Anicut is a marvelous piece of hydraulic structure built across a mighty river in its sandy bed when the science had not developed enough to build safe structures on permeable foundations and serving to this date excellently well with a few modifications made in the nature of improvements to the structure. Judged from the recorded data, floods to an extent of about 5260 cumecs (1, 86,000 cusecs) have been discharged through this anicut with minimum or no damage. It is possible that much higher floods could have flown over in the past when there were no other structures in this river.

The anicut as seen consists of a core of rough stones in clay converted with a facing of rough stone in mortar. A portion of the crest was built with a curved top and the rest with a series of steps, the foot of the solid dam being protected by a rough stone apron. The anicut is 329 m (1080 ft) long, 12.20 to 18.30m (40 to 60 ft) in width and 4.57 to 5.49 m (15 to 18 ft) high. The main function of this anicut was to retain the supply in Cauvery and its branches and pass on the surplus into Coleroon through the Ullar River.⁷

Improvements Done to the Grand Anicut

Several modifications and improvements were made to the Grand Anicut at different stages over the past two centuries all the time keeping the base structure intact and adopting the then available technology to solve the problems that arose. In 1839 Sir Arthur Cotton built ten crests. The foundations of the under sluices consisted of about 2ft of dry rubble masonry on the sand. They were thus practically founded on the old dry rubble anicut which was itself founded on sand. Simultaneously, in 1839, a bridge consisting of 30 spans of 9.14 m (32 ft) each was built over the anicut for ease in operation during floods. By the construction of the piers and due to the dam stones the effective length of the anicut got reduced to 224.0m (735 ft). In 1886 the dam stones were removed, piers and abutments raised by 5 ft and automatic falling shutters 0.86 m (2 ft 10 in) high were fitted on the crest to increase the water way for floods. Four shutters were fitted in each span of the bridge. 27 ½ spans held these falling shutters while the rest 2 ½ spans were occupied by the ten scour vents. Thirteen years later in 1899, the falling shutters were removed and replaced by lift shutters of 9.75 m x 1.52m (32 ft x 5 ft) size designed by Col. Smarts and fabricated in the Public Works Workshops, Madras.⁸

Anicut development 1934 – 74

The anicut development in this period was much more rapid and significant. The initial pre-Mettur extent of 14.4 lakh acres of irrigation was to augment Mettur to an extent of 3.2 lakh acres of an equal extent by project are Lower Bhavani Project (covering 2.07 lakh acres) and the Mettur Canal Project (covering 0.45 lakh acre). The three, Second Plan Projects are Amaravathy, the new Kattalai high level canal and the Pullambadi canal add about 0.2 lakh acres each.⁹ The Mettur Canal, the New Kattalai high level canal and the Pullambadi projects were objected by Mysore on the ground that they were not permissible under the 1924 agreement. Madras took the stand that irrigating the Mettur canal was within the limit for the Cauvery-Mettur project.¹⁰ The two other projects were assured by the Planning Commission on the assurance of the

Madras Government that these projects would utilize only surplus waters and or waters saved by economy and would not entail the creation of any prescriptive rights. Their rules and operations were framed accordingly.

Altogether, the Mettur and other (1934 – 1972) projects added 6.4 lakh acres to the pre-Mettur extent of 14.4 lakh acres. In addition, the area under a second crop was increased to a total extent of 4 lakh acres. Of this, 2.5 lakh acres was located in the old Cauvery delta, 0.8 lakh acres in Coleroon system, 0.8 lakh acres under canals in Salem and Tiruchirappalli districts and 0.35 lakh acres under in the Bhavani and Amaravathy sub-basins.¹¹ Madras did not seek any extra waters on account of extensions to irrigation beyond what had been assured to it under the 1924 rules of regulation. After 1972, Tamil Nadu argues that the anicut and utilization envisaged under them are far in excess of the allowances made in the 1924 agreement for new irrigation in Karnataka, that irrigation and impounding under the new projects will cause material diminution of supplies assured to Tamil Nadu through limit flows from KRS.¹² The 1924 Agreement covers storages in non-scheduled rivers only if they do not affect Tamil Nadu prescriptive right. In the light of Tamil Nadu objections, these projects were not cleared by the central water commission or by the Union Planning Commission for inclusion as plan schemes in Karnataka, and expenditure on them has been met from non-plan allocations. Karnataka argues that this has resulted in the loss of central assistance, inadequate funding, and delayed execution.

In Tamil Nadu, post 1972 developments have been confined to a number of small schemes in sub-tributaries in the dry areas of Dharmapur, Salem, Periyar, Dindigul and Tiruchirappalli districts. Thirteen such schemes have a total ayacut of 50000 acres and a total estimated utilization of about 7 TMC ft.¹³ Tamil Nadu had also proposed a project for the rehabilitation and modernization of irrigation and drainage in nearly 6 lakh acres of the delta. Although the proposal was appraised in 1970 for funding by the World Bank and would have resulted in economy and efficiency in water use, the Government of India's (GOI) approval for the project has been withheld in view of the dispute. The total requirement for the existing major irrigation schemes in Tamil Nadu adds up to 501.5 ft. In addition, the CFFC (Cauvery Fact Finding Committee) has indicated utilization of 58 TMC ft for minor irrigation and 5 TMC ft for water supply.¹⁴ The overall requirement will, therefore, be 564.5 TMC ft.

Improvements in the Delta

Sand deposits formed the principal obstruction to the free flow of water in the river by 1800. In 1804 one Captain Caldwell of the Engineers in the public works department warned against the possible annihilation of the Cauvery as an irrigation system and the consequent ruin of Tanjore. Efforts were made to remove the sand by using manual labour provision of scouring sluices was approved. But they proved expensive and ineffective.¹⁵ In 1828, Sir Arthur Cotton was deputed by the East India Company to inquire into the state of rivers and the irrigation system for the purpose of ensuring proper irrigation.¹⁶ He proposed the Conon of Upper Anicut. The estimate for this was sanctioned on 31st July 1835 for Rs. 98,383.

The Upper Anicut was extended to avert the silting of the Coleroon bed due to the entire supply being diverted into the Cauvery. After the construction, the inflow into the Cauvery became smooth and regular and at the same time there was no objectionable silt at the head of the Coleroon. Total expenditure of Coleroon dam and Cauvery dam was Rs. 2, 41, 000.¹⁷ The construction of the Upper and the Lower Anicut resulted in better regulation and doubled the extent of land under irrigation.

CONCLUSION

Tamil Nadu has quite a good record of achievements in irrigation. The old kings of Chola, Pandya and Pallava dynasties have built large number of irrigation works. The Grand Anicut in Cauvery is a monument to the skill and industry of the ancient engineers. Whole Delta districts benefitted from grand anicut. Delta peoples using for agriculture and drinking water supply from grand anicut and Cauvery River. The main function of the anicut is to provide the necessary head to draw the supply required for the Delta and pass down the surplus into Coleroon.

REFERENCE

1. B. S. Baliga, Tanjore District Hand Book, *Op.cit.* p. 172.
2. G.O. No. 2661, Public Works and Labour, (Irrigation), dated on 4th December 1934.
3. B. S. Baliga, Tanjore District Hand Book, *Op.cit.* p. 60.
4. G.O. No. 1960, (Revenue), dated 19th August 1947, p.1.
5. Mohanakrishnan, a., ***Challenges faced by Irrigation Engineers of Tamil Nadu in the Past Five Decades after Independence***, Platinum Jubilee Celebration of the Institution of Engineers (India), Tamil Nadu State Centre, Chennai, 20th December 1997, pp. 79.
6. S. Srinivasa Raghavaiyengar, Memorandum on the progress of the Madras Presidency during the last forty years of British Administration., New Delhi, 1988, p. 103.
7. S. Srinivasa Raghavaiyengar, Memorandum on the progress of the Madras Presidency during the last forty years of British Administration., New Delhi, 1988,104.
8. S. Srinivasa Raghavaiyengar, Memorandum on the progress of the Madras Presidency during the last forty years of British Administration., New Delhi, 1988,106.
9. S. Guhan, ***The Cauvery river dispute towards conciliation***, 1993, Madras, p. 29
10. S. Guhan, ***The Cauvery river dispute towards conciliation***, 1993, Madras, p.30.
11. S. Guhan, ***The Cauvery river dispute towards conciliation***, 1993, Madras, p.32.
12. S. Guhan, ***The Cauvery river dispute towards conciliation***, 1993, Madras, p.35.
13. Central Board of Irrigation and Power (1975), ***Water for Human Needs***, Proceedings of the Second World Congress on Water Resource, IV, New Delhi, p. 25.
14. Central Board of Irrigation and Power (1975), ***Water for Human Needs***, Proceedings of the Second World Congress on Water Resource, IV, New Delhi, p. 28.
15. C. Ramachandran, ***East India Company and South Indian Economy***, (Madras, 1980), p. 79.
16. ***Report of the Irrigation Commission***, Vol. I, (New Delhi, 1972), pp.5 & 62.
17. Descriptive Booklet on the Important Irrigation Projects in Madras State. *Op. cit.*, p.30.