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Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.aygrt.isrj.org

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CAUVERY AND METTUR DAM PROJECT – AN ANALYSIS

Dr. C. Nadarajan
Associate Professor, Department of History,
Annamalai University, Annamalainagar.

ABSTRACT

The Cauvery-Mettur project was taken up in July 1925 by the Right Honourable Vincent Goshen, Governor of Madras.[1] The great importance of the major scheme concentrated on the storage and the use of flood flows. The project was inaugurated on 21st August 1934 by His Excellency the Governor of Madras, Sir George Frederick Stanley and hence the reservoir formed goes by the name, Stanley Reservoir.[2]

KEYWORDS :*Mettur Dam Project, Analysis, Cauvery.*

INTRODUCTION

The river Cauvery has been the inspiration for various civilizations who have thrived on the banks of the river from its birth Talakaveri till it merges with the Bay of Bengal, a journey from Western Ghats to the deltas of Eastern coast of India, is beautifully captured by close Ami and Oriole Henry in this section. A Talakaveri, in the south west comer of Karnataka, the Cauvery, the Ganga of the South, is bom high up in the green Brahmagiri Mountain. Between October and November, depending on the calculation of local astrologers, the Cauvery bubbles up in rebirth. Thousands of pilgrims climb up past Kodagus coffee estates, to the forest covered Western Ghats to cleanse themselves of their sins in the tank built around her holy waters.

The delta area consists of what are known as the old delta and the new delta. The old delta represents the area irrigated by the river Cauvery and its tributaries.[3] This portion comprised of the whole of Kumba Konam, Mayavaram, Sirkazhi, Nannilam taluks and Parts of Thanjavur, Papanasam, Mannargudi, Tiruthuraipoondi and Nagapattinam taluks. After the island of Siva Samudram, the Cauvery narrows and falls rapidly in a series of waterfalls. This waterfall was the first in India to be

harnessed into electrical power in 1902 by engineers from the General Electric Company of the United States, The British needed to supply the Kolar Gold Mines one hundred miles away, In 1903 these were the largest lines of the high tension electric transmission in the World and Kolar is still the deepest mine in the world.

Cauvery Basin-The Temple Town of Kumbakonam and Darasuram

Everywhere, in the temple town of Kumbakonam, at the heart of the Cauvery delta, worship was noisy, and social not like the whispering of the dark, cold churches of Cauvery. Around the sacred Mahamakam tank, where every twelve years the nine sacred nestled under the shade of ancient temple carts.

The twelfth Century Airavateshvara Temple was an archaeological site with no one there at all but Cauvery and old priest bent double with age. Around the pillars watch the goddess Parvathi prepare with joy and dancing for her wedding.

'Cauvery Delta Zone (CDZ) lies in the eastern part of Tamilnadu between 10.00 - 11.30, North latitude and between 78.15 - 79.45 longitude. It is bounded by The Bay of Bengal on the east and the Palk straight on the South, Trichy District on the west, Perambalur, Ariyalur districts on the North West, Cuddalore district on the North and Pudukkottai district on the South West.

Cauvery Delta Zone (CDZ) encircles the entire revenue taluks of Thanjavur, Thriuvarur, Nagappatinam districts numbering 20, five revenue taluks of Trichy districts, two of Cuddalore and one taluk of Pudukkottai district. Thus the zone comprises of 28 revenue taluks4 of the eastern belt of state. All these taluks are benefited by the river Cauvery.

The major production constraints that are met with in the CDZ are Definite dates of opening and closing of Mettur Dam water for irrigation is not known. This reflects in planning of rice and rice based cropping system. Torrential rains during North East monsoon, hindering both Kuruvai harvest as well as Thaladi transplantings. Monocrop of rice in the delta region coupled with unfavourable weather conditions in an year lead to heavy incidence or pests/diseases. Labour shortage during peak season of harvesting or planting. Lodging of rice crop leads to fieldgermination. Lack of means to preserve Kuruvai grain, lack of adequate drainage facility in the delta region. Low light intensity prevailing in Samba season results in poor yield.

Standard price policy for the delta grown commodities especially rice, pulses, cotton, gingelly, groundnut and coconut. Regulated market facilities are to be extended. Timely input supply in kind and cash is to be assured.

Improvements in the Delta

Sand deposits formed the principal obstruction to the free flow of water in the river by 1800. In 1804, Captain Caldwell one of the Engineers in the Public Works Department warned against the possible annihilation of the Cauvery, as an irrigation systems and the consequent rain of Tanjore. Efforts were made to remove the sand by using manual labour, provision of scouring sluices was approved. But it became expensive and ineffective5 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. He proposed the construction of Upper Anaicut. The estimate for this was sanctioned on 31st July 1835 for Rs.98,383.

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. The construction of the upper and lower Anaicut resulted in

better regulation and doubled the extent of land under irrigation.

The district contains seven tanks irrigating 500 acres and more, 49 supplying 200 acres and more and 1,658 with smaller ayakats.

The new delta of the Cauvery Mettur Project area line in the taluk of Thanjavur, Papanasam, Mannargudi, Pattukottai and Aranthangi taluks. The area is served by two canals : Grand Anicut Canal and Vadavarru Extention the Canal6. The new area has been in operation since 1934. This area is governed by Madras - Mysore agreement and the extent of irrigation is restricted to 2,56,133 acres.

The largest of them is the Kandratirtham tank in the Udaiyarpalayam tank which waters 1,315 acres. Tanks filled from the Cauvery channels ordinarily receive a supply three times or more every year and the others twice or more, ordinarily tanks with an ayakats of 200 acres or more are managed by the Public Works Department and rest by the Revenue authorities.

The area protected by wells, held lies in the Musiri and Karur Taluks. Wells are rare in Tiruchirappalli and Udaiyar Palayam. Those in Thrraiyur and Perambalur have a better supply than others, owing to their proximity of the hills.

The water-life usually employed in the Kapila worked by bullocks working down as inclined plane. A new departure has recently been made by a Wealthy so wear and Tiruchirappalli who is employing centrifugal pumps to life the water from two wells on the bank of the Cauvery .

Famines in Trichirappalli District

In common with the rest of the presidency there was a general failure of crops in 1805 and the death whole followed in 1807 was partially felt in this district and employment was given to the poorest classes on public works. Later on large supplying of Government rice were sent to the district, again in 1833 large expenditure on public works was sanctioned to provide employment but there after relief works were not found necessary until 1866 when distress was felt.

The lakes and tanks are also the sources of irrigation. There are natural and perennial in the river beds of the district. In the Coleroon river perennial spring water is available in many places in the course of the river even during summer season, when there is no flow in the river9. In some river beds of the district natural spring is found. Hence Tiruchirappalli district plays prominent role in the agricultural sector in the state due to its irrigation facilities.

Cauvery Delta Zone (CDZ) continues to be predominantly an agricultural oriented one and no wonder. Therefore, it has been identified as an industrially backward area. The manufacturing of food products stands the most important industry due to a large number of rice mills operating in the district. Manufacturing of cotton textiles beverage, tobacco and tobacco products are other important industrial group worthy or mention here.

The CDZ is equally well known for its pith articles consisting of beautiful models of Hindu idols, temples, mosques, flowers, garlands, parrots and peacocks. The making of musical instruments of jack wood, like the veena, the tambura, the violin, the Mridangam, the Tabla and the Kanjara exhibit excellent taste, knowledge and workmanship. The jack wood has special quality for producing musical sounds.

India is the second largest producer of fruits and vegetables in the world. The total fruits and vegetables production in the country is around 110 million tonnes, out of which, only 1% is processed. Increased ago processing could reduce post harvest losses which are around 25-30% of the total produce. The entire production under horiculture and floriculture crops absorbed by local markets and large-scale commercial ventures are yet to take off in the Cauvery Delta Zone.

The main markets for activated carbon are the developed countries such as US, France, UK,

Australia, Japan, Taiwan and so on. Malaysia, Sri Lanka, Philippines and Indonesia are among the major producers and exporters of coconut shell - based activated carbon.

World market for activated carbon is over 600,000 tonnes per annum and is growing at a high rate since the product relates directly to promoting environmental preservation, which is supported worldwide.

Artificial Irrigation is impossible and cultivation is then entirely dependent upon the local rainfall, which rarely exceeds 40 inches in the year and is liable to fail both irregularly and at recurrent intervals. The Malabar coast is the only part where the natural rainfall, brought by the South West monsoon, may be trusted both for its amount and its regularity. Other districts, Such as Bellary are also dependent upon this monsoon. But in their case, the rain clouds have spent themselves in passing over the barriers of the Western Ghauts, and cultivation is to a certain extent a matter of chance.

The first rains generally falls at the end of May; allow of cultivation is being begun and it is continued until after the North-East monsoon rains have ceased in December. The Deltas of the three great rivers, the Godavery, the Krishna and the Cauvery are only tracts along the eastern coast which artificial irrigation puts beyond the reach of periodic scarcity.

According to the official principle of classification, the cultivated area is divided into “dry” and “wet” lands. Dry lands are solely dependent upon local rainfall cover about 80 percent of the total wet lands which are those irrigated from river channels or tanks by the natural flow of the water about 15 percent; about 2 percent of the dry lands are gardens irrigated by water artificially raised from wells.

The soils derived from the rocks of the first mentioned system gneiss mica, quartz which prevail the most widely are very inferior, especially in many parts of Southern India, they occur as sedentary soils, that is to say, when they rest on the rock from which they occur as sedentary formed the extensive ranges of mountains known as the pulneys, Anamallays and Neilgherries are composed of granitic rocks the decomposition of which especially where the felspar occurs as orthoclase affords a productive soil in the situations where the rainfall is not excessive.

The minor ranges or hills of which there are many Scattered over the presidency, consist chiefly of syenite and quartz rocks; the former yields on decomposition a productive soils but the soils derived from the latter are always inferrior and sometimes perfectly sterile. The area of sedentary soils derived from inferior rocks is very considerable, but it fortunately happens that owing to the gigantic scale on which the forces of nature have operated in Southern India. There is a wide extent of transported soils formed of the disintegrated portions of the rocks of other formations.

Mettur Dam

S.No.	Type of soil	Area in Hectare
1.	Red Sand	3,07,565
2.	Red Loams	3,05,171
3.	Black Loams	2,07,080
4.	Black Clay	1,30,787
5.	Black Sand	43,595
6.	Arenaceous Sand	21,797
7.	Arenaceous Loams	10,898

History of Mettur Dam

The Cauvery river, the largest in Southern India, rises in Mercara in Coorg Siastrict at 4400 ft. MSL and considerable area of eastern slopes of Western Ghats. This area is subject to heavy rainfall during south-west which extends from June to September and it is during this period that the Cauvery

discharges by far the great annual supply. The highest floods usually occur during July and August.

Some twelve miles to the north-west of Mysore city, the river is now intercepted by Krishanaraja Sagar Dam Karnataka Government. Before reaching Sivasamudram, it is joined from the another important tributary, the Kabini river. Hogenakkal falls from the northern limit of the Mettur Reservoir runs in a gorge for some 15 miles below the falls before reaching the more open country. The chief aim of the Cauvery Mettur System is to stories the water of the surplus floods in the south-west monsoon and distribute evenly during the irrigation period.

Before the River Cauvery reaches Tiruchirappalli District, it becomes wide with a sandy bed and flows in the eastern direction. In the, Upper Anicut, the river divided into two branches. The northern branch is called Colernoon, and other the branch retains the name Cauvery.

Some ten miles below Trichy, the two rivers again join to form the Srirangam Island. The Cauvery becomes one of regulated streams and ultimately discharge into Bay of Bengal some 8 miles north of Tharagambadi as an in stream, the whole of its water having been utilized for irrigation.

A new canal - the Grand anicut canal, with a capacity of 4,200 cusecs, was also excavated to supply an extent of acres of new irrigation. The total cultivation in the delta was 10,82,000 acres of single crop and 2,70,000acres of double crop. The reservoir is expected to supply the requirements of this area of 13,52,000 acres.

The design of the dam provides for its height being raised by 10 feet at later date to compensate for the silting reservoir bed by providing for extra capacity of 17,500 M.cft.

Canals

Area of new irrigation in Tanjore District	301000 Acres
Total Length of Main Canals	106 miles
Total Length of Branches	694 miles
Total Length of Minor Distributaries	1904 miles

Mettur power station which is located at the foot of the Mettur Dam was completed in 1937. It has four hydro-gas with 1000 KW capacity each. Each Generator is run by two turbines 8000 HP capacity. The power generated in the power houses are transmitted through 110 KV lines to Erode on one side and Singarapet on the other. This power plant of 200 MW capacity is the biggest hydro-station so far Constructed in Tamilnadu.

After the construction of the Mettur Dam, fresh water less was levied. The mode of regulation and turns to be adopted are decided by the Executive Engineer in consultation with the Collector. The concerned section officer is in direct charge of the regulation. The agent of the Prince of Arcot claimed exemption under the provisions of the endowment. But the Government insisted upon fresh water.

Irrigation and power are the two key factors for the development of this district and fortunately there.is adequate water wealth, building large reservoirs wherever feasible for the management of the available water resources is an imperative need which cannot brook any delay. No attempt should be made to halt these projects in the guise of saving the environment. There are enough methods to save the environment and still have the large reservoirs and the engineers and planners are capable of adopting such methods.

The Cauvery-Mettur project has certainly improved the ecological conditions in the delta by saving the same from monsoon floods besides improving the agricultural prospects. There was no problem of rehabilitation since the water spread was mostly forest area and there was no good road

communication to the site either with the existence of this reservoir. The downship has now grown largely with many industrial establishments using its water and power. The old environment has certainly improved, hence the Cauvery-Mettur Reservoir is considered to be the Engineer's pride.

For this purpose, certain gauge levels at Katalai Bed Regulator are fixed for each month and above which the supply can be diverted to fill up tanks, to its full capacity of 1064 Cusecs.14 After the examination of possibilities and several alternatives, the government sanctioned a scheme for excavation of 54 mile long contour canal from Upper Anicut to utilize occasional surplus flows in the river Cauvery (on the days available) to feat tanks in the area as well as some direct ayacut. In April 1937, the British Government introduced through the government of India Act 1935 another set of administrative reforms of far reaching consequences in declaring provincial autonomy.

The Mettur Canal, the New Kattalai high level canal and the Pullampadi 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.

Cauvery-Mettur Project, a new extent of irrigation in 121813 hectares (3,01,000 acres) under the Cauvery Mettur Project with no water allowance, but from the consenation of the flood waters, this dam could facilities 103602 hectares,16 (2,56,000 acres) were localized adjacent and to the South of the Cauvery Delta for which a new canal called the Grant anicut canal and its distributory network was laid out.17 45000 acres were localized under the dam to be served by the Mettur canal taking off from the dam.

The two other projects assured by the Planning Commission on the assurance of the Madras Government that these projects would utilize only surplus waters and waters saved by economy and would not entail the creation of any prescriptive rights. Their rules and operations framed accordingly.

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 district and 0.35 lakh acres in the Bhavani and Amaravathy sub-basins. 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 regulations.

Since irrigation demand was most of the time much higher than the i maximum power discharge in this power house, another power house with a generating capacity of 200 MW was added in 1966 by tunneling through the left flank hill to connect to the reservoir. Thus this dam and reservoir has now a power potential of 240 MW.18 The Cauvery-Mettur dam project has certainly improved the ecological conditions in the delta by saving the same from monsoon floods besides improving the agricultural prospects. There was no problem of rehabilitation since the water spread was mostly forest area and there was no good road communication to the site either with the existence of this reservoir, the township has now grown largely with many industrial establishments using its water and power. The Irrigation water is obtained from a river, where storage has been created by construction an obstruction across the river, like a dam. This ensures that even when there is no inflow into the river from the catchments, there is enough stored water which can continue to irrigate fields through a system of canals. The flood flows were largely diminished and the surplus in these storages could be drawn when ever possible for use by the system below Mettur to supplement the flow from Mettur.

END NOTES

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