POONDI RESERVOIR - A STUDY ON THE DEVELOPMENT & CHALLENGES OF WATER SUPPLY

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T. AKILANDESWARI
Government Arts College, Karur, Tamil Nadu, India

Abstract

The water supply system stared as a small unit but ultimately it developed into a well organised unit. It took many years to attain perfection in the system of course with several modification. Each and every scheme planned by the engineers contributed a lot to the enhancement of work. The further development which made a significant turning point in the history of water supply with specific reference to Poondi reservoir are vividly described.

Keywords: *water supply system, Poondi reservoir, Sathyamurthi Sagar, Cholas, water scarcity, lake capacity*

Poondi Reserviors

Poondi, a small village, is situated at a distance of about 60km, from Thiruvallur frequent buses are available from Madras and Thiruvallur to reach this place.

'Poondi' the name it is said, is derived from poondu in Tamil, the shrub which was once abundant in this place. Poondi has acquired significant important as it has a huge reservoir called "Sathyamurthi Sagar".[1]

The state of Tamil Nadu since time immemorial is noted for many irrigation facilities in 1940, Poondi reservoir was constructed in Thiruvallur District, to provide water to Chennai city[2]**.** From the ancient times, Thiruvallur has been part of many kingdoms. Upto the middle of Eight Century A.D, it was under the Great Pallava rule. However, when the Pallava region stared to decline in 760 A.D, it came under the region of Cholas for sometimes and was then absorbed by the Vijayanagar Kingdom. After a Century and a half, the Vijayanagar dynasty was over thrown by the Mohammadan Kings of the Deccan. In 1639, the English received a small site as a Jagir from the Nawab of Arcot to the East India Company. Thiruvallur District continued to be under the British rule, till India became Independence. Later in 1955, Thiruvallur became a part of Chengalpattu District Bifurcation was made in Chengalpattu and Thiruvallur was made a separate District[3].

Purpose of the Constuction of Poondi Reservoir

Poondi reservoir is located in the East while Thiruvallur District. The poondi Reservoir, situated 36 Miles from Madras was belate by named "Satyamurthi after **Satyamurthi Sagar"** the Mayor of the Indian National Congress in 1939 water scarcity in Madras city has been felt since 1938. So he laid the Foundation for the construction of Poondi Reservoir and the draft plan was shown to the British. This grand scheme of Sathyamurthi ensured a Copious and perennial supply of pure water to the Metropolis.

S.Sathyamurthi (August 19, 1887-March 28, 1943) was an Indian Politician and patriot. He was the political Mentor of Kumaraswamy Kamaraj[4]. In 1930, Sathyamurthi became the president of the Indian National Congress in Tamil Nadu. He served as the Mayor of Madras in 1939, and lead campaigns to restore public education, build lakes, parks and to improve the water supply and there by the general life of people.

When Sri.Sathyamurthi became the Mayor of Madras in 1939, World War II had begun. The city of Madras was in the grip of an acute water scarcity and it was left to him to impress upon the British Government and colonial Governor the importance of agreeing to the proposal of Madras corporation for building a reservoir in Poondi about 50km west of the city, to augment the water

supply position, especially in light of catastrophic global events namely the second world war, in those days, the tenure of Mayor ship was only for a year but due to his relentless efforts diplomacy in dealing with the British Governor and his administrative abilities laid the foundation stone for the reservoir in eight month. Though Satyamurthi was not alive to see the Commissioning of the reservoir in 1944, the completion of the work in four years is Considered even by today's standards, something that is difficult to March. Till date, the Poondi reservoir is the only reservoir built purely for the purpose of Madras water supply requirements.[5]

Sri Satyamurthi is even today remembered as the political mentor of Thiru.Kumaraswami Kamaraj who was the Chief Minister of the state between1954-1963. It was because of this strong devotion to Sri. Satyamurthi that Thiru. Kamaraj got the Poondi reservoir named after Satyamurthi.

In 1938 the city of Madras faced one of the gravest crises in its history. The server drought consequent upon two consecutive years of Failing Monsoons had exposed the Achilles heel of the city namely its water -supply which dwindled dangerously. The level of water in the Red Hills reached 29.18 feet above sea level which was its lowest even on record. Even after receiving the North –East monsoon which normally replenished the reservoir, its level came up to only 43.68 feet two feet less than the lake capacity and hence the restrictions already imposed on water supply had to be continued. Apart from causting hardship to the citizens the revenue of the corporation also excessed for eg., water charges fell from Rs.8.23 lakhs in 1938 to 5.47 lakhs in 1939. Tube-wells bore-wells and masonry wells sunk to tap additional water resource where ever available to ensure the minimum needs of sanitation.[6]

The corporation authorities were hell-bent on the water hunt but a best solution was found only in 1940 with the leadership of Mayor Sathymurthi. He proposed the construction of a dam across River kortalayar and the formation of a reservoir at Poondi about 12 miles from Tamarappakkam and this was the first of the several improvement carried by the Corporation to meet needs of the growing citys water supply.[7]

When the matter was first taken to Government, they wanted the corporation to take the entire burden of findncing the scheme. Sathyamurthi solved the thormy problem of raicing the necessary funds by persuading the government to finance the scheme by one-third grant and two-thirds loan. Despite the fact that the Government agred to sanction only a third of the grant solicited, Sathyamurthi boldly resolved to transform his dream into reality. The Government ultimately waived some of its claims enabling the corporation to meet the estimated cost of Rs.65 lakhs by taking loan from the Government to the tune of Rs.39.42 the balance being paid by the government as a free grant to the corporation.

In the year 1940 Government also deputed F.M. Dowty the chief engineer, to find out the best made to safeguard the water supply of the city which had become a matter of very serious importance. It would be of inerest to note here at the request of Sathyamurthi, Dowly readily came down from Ootacamund to Madras to address the Members of the Council on the proposed scheme. He informed that the examined the whole matter thoroughly to the extent of perusing certain records of Kortaliya River Dating back to half a century or more and Found that the by building a reservoir at Poondi, they could ensure a per capita consumpation of 35gallons for a Million people.[8]

The designed capacity of the reservoir was 2573 Million cubic feet which approximately equalled the combined storage capacity of the Red Hills and the Cholavaram Tanks. The maximum flood discharge would be 1,05,000 cusecs[9]. In view of the growing population in the city. Dowly suggested raising the reservoir to an extra 21/2 feet which would flush up the storage to 3,500 million cubic feet. The building of the reservoir was expected to meet the increasing needs of the city water supply for another 25 years to come. An abundant water supply was also needed to improve the general standard of health, as it would encourage the establishment and

development of industries and thereby increase economic prosperity of the city. On 8th August 1940, the foundation of the Poondi Reservoir was laid by the Government of Madras sir author hope. On 28th May 1948, poondi Reservoir got the name of its creator, Sathyamurthi Sagar Reservoir.[10]

Administrative system of Poondi Reservoir

The reservoir projects are under the control and administration on the Chief engineer of public works Depertment at the state level. The superintending engineer is the head of the Regional Projects Administration. The executive engineer heads a particular reservoir project like, the Poondi reservoir project. In order to assist him there are several assistants and junior engineers. There are superintendent assistants, Junior assistants, typists, office assistants and other categerior of staff the office who function as the Administrators.[11]

Functions of various Departments

Generally many departments are involved in the implementation of the reservation Project. The following departments are involves in implementation of the Poondi Reservoir Project.

1. **Public Works Department:** It has the primary responsibilities for the construction and implementation of reservoir project in the state level. As already stated, the Executive Engineer is the administrative head and he is assistant by the assistant and Junior Engineer for the project implementation. Hence, this department tries to have mutual cooperation of other departments involved in the reservoir project.
2. **Revenue department:** It played an important role in the Poondi reservoir project. It conducted the land survey and collected the water rates from the farmers who are the water users problems in the lands by this department.
3. **Development Department in the Department of Rural Development:** It also has the primary involvement in the project or catchment areas. It introduced and implemented some agricultural development programs for the welfare and development of the village people.
4. **Electricity Department:** It is also involved in project implementation. The agriculturalists are in need of electrical power for agricultural activities and domestic purposes.
5. **Fishery Department:** It plays a predominant role in the reservoir project. The people of rural areas can get fishes from the project areas with the help of fisherman. Hence, the fishery department earns a lot by the reservoir project.[12]

Storage Capacity of the Poondi Reservoir

The needs of storage reservoir in the Poondi Reservoir are as follows. With few decades after the Poondi reservoir started beginning. It was not found that the Poondi dam could not store the entire run off from the river Korartatiyar catchment. Still a good amount of water was getting over the dam down to the sea. The total capacity of Poondi Reservoir was 2750 MC Ft and the effective capacity up to sea level of the Poondi head sluice at the entry of the irrigation tunnel was 105.00 Mcft. At last the Government of Madras approved and sanctioned 65.00 lakhs for the construction of a reservoir with a capacity of 2521 MCft across Thiruvallur Districts. Poondi Reservoir project was included in the First Five Year Plan by the planning commission.[13]

Execution of the project

Due to the extraordinary situation that prevailed in the area, it was decided to start the preliminary works unconstentatiouly without any ceremony and publicity formal inauguration of the Poondi reservoir was held on 8.8.1940.

Poondi Reservoir and Telugu Ganga canal

There are no big rivers near Madras and thus, as far back as the late nineteeth century, there was a water problem. In 1964, British engineer named fraser gave thought for the first time for an organized water supply system for the city of Madras. At that time, Greater Madras had a population of about 4.7.lakhs fraser suggested that a small dam be built across a river flowing near by. This river is mostly dry but gets water during the north East monsoon[14]. A dam was built, and water from it was taken through can also two Reservoirs named Cholavaram and Red Hills. At that time, this water was used not only for providing drinking water to Madras but also for cultivation. The water to the city was taken to a filtration plant in a region of Madras city Kilpauk, before distribution the public.

Some years later, the supply of water for irrigation was stopped, and the stored water was used exclusively for drinking purposes. Inspite of this, the Reservoirs were inadequate since the city demand kept on increasing. One more reservoir was built, this time at Poondi, but once again the demand soon out stripped supply.[15]

In the early sixties of the twentieth century, the Government at the centre recognized the problem of Madras and announced that steps would be taken to bring water from the Krishna River in the neighbouring state of Ahdhra Pradesh to the city, A formal agreement to this effect was signed in 1968, where by the riparian states of Maharashtra, Karnataka and Andhra Pradesh each agreed to release annually. Form their share of Krishna water, 5tmc, means thousand million cubic feet. Of water from the River Krishna for city of Madras thus, Madras was to get annually 15tmc of Krishna water, but how to bring that water over such a long distance?. That scheme would, require a lot of money which then was not in sight. Krishna water for Madras remained a concept.

Basically, the water of Krishna River stored at the srisailam dam in Andhra Pradesh was to be brought by a canal first to a reservoir called Kandaleru reservoir in Andhra pradesh, and from there by another canal about 150 km long to the Tamil Nadu border Continuing into Tamil Nadu, the canal was supposed to take the water to the Poondi Reservoir in Madras.

Actually, the then chief Minister of Ahdhra Pradesh had agrand idea of a scheme for using Krishna water for irrigation all over Ahdhra Pradesh and the request of Tamil Nadu gave him the opening he was looking for it money, he could use that money to build a canel from Kandeluru reservoir upto the state border. This way, Tamil Nadu would get water and Ahdhar Pradesh could use the canal to supply water for irrigation in the southern region. The chief Minister further named the Minister further named the Kandeluru Poondi canal called as Telgu Ganga.[16]

The Krishna river canal project was formally launched in 1983 during the tenuse of Indira Gandhias the Prime Minister tenuse of at a formal function in Madras and the agreement was signed at Huderabad between N.T.Rama Rao and Shri. M.G.Ramachandran who were the Chief Minister of Andhra Pradesh and Tamil Nadu respectively people in Andhra spent about Rs.2000 crores (1crore=10million) on the entire project covering large parts of the state while Tamil Nadu gave about Rs.500 crores for the Krishna river canal or Telugu Ganga project as it was called. And the project was completed in the years 1996. But, to the dismay of the residents Chennai, of the planned 15 TMC of water a mere 0.5 TMC of water was all that reached Poondi Reservoir. The reasons were manifold- evaporation, seepage and erosion of the canal walls all contributed to the reduced flow and after a few years the canal had fallen into a state of disrepair. To the despair Millions of Chennai it seemed there was no solution in sight to their problem[17].

Hydraulic Particulars of Poondi Reservoir

1.	Catchment area of the Kosasthalaiyar River at Poondi Regulators site	:	760 Sq.Miles (1968 Sq.Km.)
2.	Maximum Computed flood Discharge River at Poondi Regulators site	:	1,20,000 Cusecs. (3396 Cumecs)

3.	Bed level of the river of the site	:	+ 105.00 (32.00 m)
4.	Full Reservoir Level	:	140.00 ft. (42.67 m)
5.	Water spread area at F.R.L.	:	13.51 Sq miles. (34.58 Sq.km.)
6.	Capacity at F.R.L.	:	3231 Mcft.
7.	Length of Masonry Regulator	:	770'00" (234.70 m)
8.	Length of Right flank bund	:	8.12 Km.
9.	No. of vents in the Regulator	:	16 Nos. 14 Nos. of size 40'x15'
10.	Sand vent scour vent sill	:	2 Nos. of size 20'x10'
11.	Dead storage level	:	112'00" (34.14m)
12.	Capacity of Dead Storage	:	10.27 Mcft.
13.	Length of the baby channel (From Intake	:	15.65 Km. Well to Thamaraipakkam Anicut)
14.	Sill level of link canal Regulator	:	+ 122.21 ft.(37.250m)
15.	Length of Link Canal	:	25.754 Km. (Upto Chembarambakkam)
16.	Length of Feeder canal (Upto Redhills)	:	21.500 Km.

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