TANK IRRIGATION

Tanks are known as Ery in Tamil. The temple tanks of Tamil Nadu are known as Kulam. Tank irrigation in Tamil Nadu has a chequered history\(^1\). From Sangam Age onwards the Tamils paid great attention to the growth of tank irrigation. The Sangam poets advised the King to build tanks wherever the topography permitted in order to store water. The Tamil kings encouraged tank irrigation and later the British also paid significance to the already existing tank irrigation. After independence the government besides harnessing the surface water in the form of construction of dams developed the tank irrigation too\(^2\). In the absence and shortage of rain water, Tank irrigation played a vital role in the progress of agriculture.

5.1 Kinds of Tanks

The tanks are of two kinds viz., System Tanks and Non-System Tanks\(^3\). The canal fed tanks are known as System Tanks, which were

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exclusively under the management of the Public Works Department\textsuperscript{4}. The System Tanks are fed with water from rivers and run off through diversion weirs, feeder channels and surface flow\textsuperscript{5}. System Tanks are the minority of tanks that are supplied from major storage canal irrigation systems or from perennial rivers\textsuperscript{6}. They may be linked as cascades where water from upper tanks flow into the lower tanks. These tanks irrigate large tracts of agricultural areas spread over multitudes of villages which come under various government administrative zones\textsuperscript{7}. System tanks are more prominent in some districts than others. Most of the tanks in Thanjavur district are system tanks. These tanks are found to be concentrated in the Cauvery, the Palar, the Vaigai and the Tambraparani basins\textsuperscript{8}.

A system tank is formed by throwing a low bund across a shallow valley to hold the run off from its catchment above. Depending upon the configuration of the contours the size and the capacity of the tank would vary. As a simple hydraulic structure this low earthen bund has provision for spilling the surplus water on either ends and one or more

\begin{itemize}
\item \textsuperscript{4} Ibid.
\item \textsuperscript{5} Ganesh Pangare, and others, \textit{op. cit.}, p.169.
\item \textsuperscript{6} David Mosse, \textit{The Rule of Water}, New Delhi, 2003, p.32.
\item \textsuperscript{7} Ganesh Pangare, and others \textit{op. cit.}, p.169.
\item \textsuperscript{8} A. Vaidyanathan, \textit{Tanks of South India}, New Delhi, 2001, p.15.
\end{itemize}
sluices to command the lands and also those lands through a net work of channels.\(^9\)

The rainfed tanks are known as Non-System Tanks. Non-System Tanks which command area below 40 hectares are coming under the control of Panchayat Unions.\(^10\) These Non-System Tanks have a small storage capacity.\(^11\)

The chain of tanks under both systems which irrigate large areas is the proud achievement of Tamil Nadu.\(^12\) Centuries ago our forefathers constructed many tanks which harvest the monsoon rains in the gently sloping plain topography.\(^13\)

**Significance of Tank Irrigation**

Tamil Nadu lies on the leeward side of the Westernghats and therefore misses the intensive rainfall of the dependable South West monsoon. But the North-East monsoon which is mostly less dependable,

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10 Guhan, S., *op. cit.*, p.36.
11 Ganesh Pangare, and others *op. cit.*, p.169.
brings more rain over Tamil Nadu\textsuperscript{14}. The north-east monsoon is often accompanied by cyclones and pours heavily in short spell. So many tanks store water during this season. These tanks constitute a significant source for irrigation\textsuperscript{15}. Tank irrigation was exclusively practised in the Cauvery delta and Tambraparani along with innumerable tanks formed centuries ago in the State. This practice compared favourably with the contemporary irrigation practices in the Nile Valley of Egypt, Euphrates and Tigiris Valleys of Mesopotamia. The people who built these tanks were fully aware of their importance and hence made elaborate arrangements for their proper maintenance\textsuperscript{16}. The tank serves its ayacut through the distribution system consisting of the channels taking off from its sluices, their branches, water courses and field channels. Each field may have an access to the irrigation through the field channels and in some cases field to field irrigation may also be practised. Tank irrigation is of greatest importance in the State, because more acres are irrigated under tanks\textsuperscript{17}.

\textsuperscript{14} Komathinayagam, \textit{“Socio-Economic and Technological History of Irrigation in Tamil Nadu”}. Proceedings of the Indo-French Round Table at the French Institute of Pondicherry, October, 2001, p.28.


\textsuperscript{16} Ibid.

\textsuperscript{17} Administration Report of the Public Works Department, Madras State, 1956-1957, p.2.
Tank irrigation is regarded as a stabilising factor of agricultural production in the region where uncertainty of rainfall is pronounced\textsuperscript{18}. Tanks are an ancient source of irrigation and are found in almost all States except Punjab. Tamil Nadu contains the largest number of tanks\textsuperscript{19} and the antiquity of these sources of irrigation of the country is still greater\textsuperscript{20}. Tank irrigation in the State has been given new emphasis in the areas of unstable rainfall where tanks act as an important source of supplementary irrigation\textsuperscript{21}. In Tamil Nadu almost every village has a tank in the eastern plains\textsuperscript{22}.

Tank is actually a misnomer for the reservoir known as Ery in Tamil. Tank normally refers to a dug-out reservoir which has steps on all sides reaching down to the waters. An Ery on the other hand, is a reservoir of water contained behind earthen bunds or embankments\textsuperscript{23}. Tanks are the classic examples of common property resources which are mostly

\begin{itemize}
\item \textsuperscript{20} Kanta Prasad, \textit{Water Resources Sustainable Development}, New Delhi, 2003, p.168.
\item \textsuperscript{22} A. Mohana Krishnan, \textit{op. cit.}, p.50.
\item \textsuperscript{23} B.C. Barah, \textit{Traditional Water Harvesting System}, New Delhi, 1996, p.71.
\end{itemize}
distributed in the southern States viz., Andhra Pradesh, Karnataka and Tamil Nadu. Tamil Nadu accounts for about one third of the total irrigation area in these States\textsuperscript{24}.

An irrigation tank is a water reservoir constructed across the slope of a valley to catch and store running water for the purpose of irrigating agricultural areas\textsuperscript{25}. Basically tanks are constructed across slopes for collecting and preserving water by utilizing the advantage of local maintenance as well\textsuperscript{26}. Tanks are varying in size, from very small tanks irrigating about 3 acres to large ones irrigating 3000 acres or more. The construction of tank is a process which generally involves collective action of several persons guided by local authority\textsuperscript{27} and essentially a community oriented system\textsuperscript{28}.

One of the main functions of an Ery is irrigation of fields for cultivation. Each Ery is designed to irrigate a certain extent of agricultural land known as the ayacut of the Ery. The water reaches the fields through valves known as sluices. Sluices are termed as Madagu in Tamil. An Ery

\begin{itemize}
\item \textsuperscript{24} Kanta Prasad, \textit{op.cit.}, p.168.
\item \textsuperscript{25} Indu Singh, Sanjay Kumar, \textit{A New concept Geography}, Vol.II, New Delhi, 2010, p.308.
\item \textsuperscript{26} \texttt{http://www.indianetzon.com/tank_igation_india, htm}.
\item \textsuperscript{27} Indu Singh, Sanjay Kumar, \textit{op.cit.}, p.303.
\item \textsuperscript{28} K. Ramakrishna Reddy, \textit{Irrigation and Agricultural Development in India}, New Delhi, 1995, p.2.
\end{itemize}
has a number of sluices depending upon its size. Sluices are located normally at different levels so as to be able to supply water at different elevations\(^{29}\).

A well maintained Ery can store water to be used for more than one year. For example Mamandur Ery in North Arcot District of Tamil Nadu stored water for fifteen months\(^ {30}\). In Tamil Nadu there are about 39,000 tanks\(^ {31}\), which are expected to have existed for many generations. The fact that the old tank in the Chingleput district of Madras still irrigates a considerable area, bears witness to this truth. References about such tanks are abundantly found in the 8th and 9th century inscriptions\(^ {32}\). However the sixth decade of the twentieth century, ie., nineteen sixtees is considered as the golden period of tank irrigation in terms of area irrigated by tanks\(^ {33}\).

Tanks in Tamil Nadu are capable of irrigating land ranging from 5 to 250 hectares. In low rainfall areas the tanks held water for only few months beyond the monsoon but they still provided security to

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30 Ibid., p.74.
irrigation during the monsoon and made the water sufficient for a second crop after it\textsuperscript{34}. Thomas Munro, the famous British administrator noted that the large irrigation tanks paved the way for the excavation of ponds or Uranis. These ponds provided the principal water source for domestic purposes\textsuperscript{35}. Tanks are very common and the most important sources of irrigation in the districts of Ramanathapuram, Chingleput, Tirunelveli, North Arcot and South Arcot districts\textsuperscript{36}. Large number of tanks in Tamil Nadu provide irrigation in the predominantly dry areas and play an important role in the rural economy of the State\textsuperscript{37}. Tank irrigation is a vital protective irrigation source. Thus the tanks are described as the “Pockets of Insurance” against crop failure\textsuperscript{38}.

5.3. Administration of Tanks

Tanks of Tamil Nadu in the early history were owned, operated and managed by the community as small irrigation systems, either under formal or informal institutional arrangements. The social input of

\textsuperscript{34} Winnipereina, \textit{Tending the Earth}, Bombay, 1993, p.173.
\textsuperscript{35} David Mosse, \textit{op.cit.}, pp.31-32.
\textsuperscript{36} Census Report of India, Madras State, 1961, p.446.
\textsuperscript{38} Madras Information, Vol.II, November 1948, p.23.
technical, financial and other supporting services were responsible for their efficient management\textsuperscript{39}.

From the Sangam Age onwards the Tamils paid much attention not only to irrigation but also to its administration. From the beginning the State followed a neutral attitude in the matter of sharing the stored water among all ryots to maintain equality and avert partiality on the part of the administration. Separate persons were appointed to take care of proper protection and distribution of water\textsuperscript{40}. Tank irrigation being the traditional source of irrigation, unlike the other surface sources of irrigation, is a low cost source of irrigation and also predominantly managed by farmers themselves\textsuperscript{41}.

Historically tanks were managed and controlled by rich Zamindars or landlords. Regulated rules for water distribution were maintained in a recorded form. The village community participated in the maintenance of tanks\textsuperscript{42}. Inscriptions quoted that Ery construction was looked upon as one of the seven meritorious acts which a human being ought to perform during one’s lifetime. Generally the maintenance work

\textsuperscript{41} \url{http://www.highbeam.com/doc.htm}.
\textsuperscript{42} Ganesh Pangare, and others, \textit{op.cit.}, p.171.
was done by the local governing body known as the Committee for supervision of Ery known as ‘Ery Variyam’\textsuperscript{43}.

The famous Uttiramerur inscription in Chengleput district gives an elaborate description of the rules regarding the composition of the tank maintenance committee. The body consisted of six members who held office for 360 days and then retired. If any one member of the committee was guilty of any offence he was removed at once. This committee was concerned about raising of resources and their utilization for the maintenance of irrigation works. Inscriptional evidences show that grant of land called manyam was made for the construction and maintenance of irrigation works such as Erys. These Manyams were termed as ‘Dasabanda Manyam’\textsuperscript{44}.

Tank construction and maintenance was sponsored by local rulers, dominant groups, zamindars, priests as well as villagers in co-operation\textsuperscript{45}. Traditionally farmers used the silt from tanks to enrich their fields there by restoring any soil lost by erosion\textsuperscript{46}. Another source of funds to the local bodies for maintenance work was the income from the Ery itself. This income was in the nature of rents for the right of fishing in the

\textsuperscript{43} B.C. Barah, \textit{op.cit.}, p.77.
\textsuperscript{44} Ibid.
\textsuperscript{45} Winin Pereina, \textit{op. cit.}, p.173.
\textsuperscript{46} Ibid., p.174.
Ery. These funds were utilized for deepening of the Ery\textsuperscript{47}. The tanks were managed by the system in Tamil Nadu known as the Mirasi system\textsuperscript{48}. Under this system maintenance of tanks was one of the Community activities for which a part of the produce of the village was earmarked. There were well defined rules regarding repairs and water allocations and the Mirasidars had the authority to ensure that these were enforced. The Mirasi system was replaced by the Ryotwari system\textsuperscript{49}.

With the advent of British rule the management of tank irrigation system was taken over from the community and vested with the government. The rulers considered tanks only as a means to collect revenue from the ruled and paid no attention to their maintenance. Consequently the involvement of community in managing the irrigation system disappeared\textsuperscript{50} and the tanks became government property under the Ryotwari system\textsuperscript{51}. According to the Ryotwari system, tanks with an ayacut of 40 hectare and above were brought under the control of the

\begin{itemize}
\item \textsuperscript{47} B.C. Barah, \textit{op.cit.}, p.77.
\item \textsuperscript{48} Mirasi rights were one of the most important aspects of the revenue system of South India. It was originally a hereditary right to land and its produce which gradually became transferable to others by sale mortgage or gift. It is a complex of rights which enables its possessor to lead a privileged life as a landlord in a village. This system was prevalent in Thanjavur, Tiruchirapalli and Madurai districts.
\item \textsuperscript{49} A. Vaidyanathan, \textit{op. cit.}, p.5.
\item \textsuperscript{50} \textit{Ibid}.
\item \textsuperscript{51} Ganesh Pangare, and others, \textit{op.cit.}, p.171.
\end{itemize}
Public Works Department and smaller tanks were under the administrative control of local bodies or vested with the villagers themselves\textsuperscript{52}.

Since the local bodies did not mention the duties of ayacutdars, the farmers themselves had taken up maintenance work known as Kudimaramathu. But later the Kudimaramathu works slowly declined. Tanks were silted up and supply and distribution through channels got choked. So in order to maintain the tanks the compulsory Labour Act of 1858 known as Kudimaramath Act was passed. This Act was passed with a view to legalising compulsory labour for certain aspects of maintenance and also to penalize the non-performance of Kudimaramath labour. The entire administration of the act of levying and collection of fines was left to the Panchayats\textsuperscript{53}. The Famine Commission of 1878 brought to light quite forcefully the deteriorating conditions of tanks and advocated a systematic policy of maintenance\textsuperscript{54}. Yet the performance of these tanks is poor due to inadequate operation and maintenance\textsuperscript{55}.

After Independence the responsibility of the government has been to supply life giving water to the toiling peasantry\textsuperscript{56}. Hence the tanks are managed by various government authorities based on their size and

\textsuperscript{52} Madras Information, Vol. II, November 1948, p.23.
\textsuperscript{53} http://www.nourin.tsukuba.ac.jp/india.pdf.
\textsuperscript{54} Ibid.
\textsuperscript{55} Kanta Prasad, \textit{op.cit.}, p.169.
\textsuperscript{56} Madras Information, Vol.II, November 1948, p.23.
command area. The irrigation wing of the Public Works Department is responsible for management and maintenance of all System and Non-System Tanks with more than 40 ha. command area\textsuperscript{57}.

The Central Government provided much of the financial support for irrigation development\textsuperscript{58}. There are three agencies responsible for maintenance of different tanks viz., the State Government, Panchayat Raj Institutions and Individuals\textsuperscript{59}.

In Tamil Nadu there exists a new system of routine inspection of tanks called Circle System. Under this system each Tahsil was divided into a number of Circles and engineers made a detailed inspection of each tank in the circle by rotation at a frequency of once in five to six years and carried out the necessary repairs. It would be better to introduce a system of this type in all the States which have fairly large tank irrigation\textsuperscript{60}.

The small tanks with area less than 40 hectare are taken care of by the Panchayats. The beneficiaries of these tanks are responsible for the maintenance of inlet channels, tank bed, tank bund, surplus weirs, sluices and associated structures\textsuperscript{61}. After the reorganization of the

\textsuperscript{57} Ganesh Pangare, and others, \textit{op.cit.}, p.171.
\textsuperscript{58} B.C. Barah, \textit{op.cit.}, p.85.
\textsuperscript{59} Report of the National Commission on Agriculture, 1976, p.56.
\textsuperscript{60} Ibid.
\textsuperscript{61} Ganesh Pangare, and others, \textit{op.cit.}, p.171.
Panchayat system in 1958, groups of up to twenty village Panchayats were united into Panchayat Unions. The Block Development Officer was assigned administrative and technical personnel, employed by the State, including an extension supervisor-cum-junior engineer, who would be responsible for Ery maintenance.\textsuperscript{62}

The Madras Panchayat Act 1958 empowered the Collectors to transfer the minor irrigation tanks to the Panchayat Unions and bring them under the control of the Revenue Department for protection and maintenance. For the purposes of maintenance of tanks the Panchayat Unions will be paid a local irrigation grant. The amount should be fixed by the Collector for each Block on the basis of the actual expenditure on the sources during the five years ending 1959-1960 and subject to a maximum of Rs.250 and a minimum of Rs.150 per acre irrigated from the source.\textsuperscript{63}

The Revenue Department is in charge of collecting land revenue and any extra watercress charges. The Revenue Department is responsible for water regulation in erys with a command area of 40 hectares and above. At the same time the responsibility of regulation of water in erys of less than 40 hectares of command area came under the purview of the village panchayats. However, water regulation from the

\begin{footnotesize}
\begin{enumerate}
\item B.C. Barah, \textit{op.cit.}, p.85.
\item G.O. Ms. No.711, Local Administration Department, April 19, 1960.
\end{enumerate}
\end{footnotesize}
erys is generally left to the farmers themselves without any official interference\textsuperscript{64}. The Revenue Department and the Public Works Department obtain an annual allotment for proper maintenance of tank irrigation sources\textsuperscript{65}. All the categories of tanks are maintained to the utmost benefit of the society and there are separate schemes for the maintenance of the tanks.

5.4. Tank Maintenance Schemes

Tank irrigation is one of the oldest sources of irrigation in India and is particularly important in South India. In Tamil Nadu it accounts for about one-third of the total irrigated area. The performance of these tanks is poor due to inadequate operation and maintenance of large scale development of ground water sources, disintegration of traditional irrigation institutions, heavy siltation, encroachment etc. The neglect of tanks meant that most farmers receive inadequate quantities of water from tanks. In order to encourage the farmers, tank maintenance schemes were introduced\textsuperscript{66}.

The Public Works Department is in charge of the maintenance of system tanks and non-system tanks with an ayacut of more

\textsuperscript{64} B.C. Barah, \textit{op.cit.}, p.85.
\textsuperscript{66} Kanta Prasad, \textit{op.cit.}, p.169.
than 200 acres. The Revenue Department is responsible for maintenance of irrigation tanks with an ayacut of below 200 acres\textsuperscript{67}.

5.4.1. The Special Minor Irrigation Programme

The Special Minor Irrigation Programme is being implemented in the Madras State since 1952-53. The object of this programme is to increase the food production potential by proper repair and renovation of the irrigation sources such as anicuts, tanks, supply channels etc. as well as the construction of such new sources. The programme aims at bringing under irrigation areas which are not covered by the irrigation sources at present in the State\textsuperscript{68}. This scheme also envisages the formation of new tanks, percolation ponds and excavation of link channels and restoration of abandoned tanks\textsuperscript{69}. The special minor Irrigation programme aims at improvements of existing irrigation sources and the construction of new sources with a view to step up food production\textsuperscript{70}. The Board of Revenue (Food Production) also gave proposal to the government for the taking up of tank works under the special Minor Irrigation Programme in Coimbatore and Salem districts\textsuperscript{71}.

\textsuperscript{67} Report on Minor Irrigation Works in Madras State, November, 1959, p.10.
\textsuperscript{69} A. Vaidyanathan, \textit{op.cit.}, p.26.
\textsuperscript{70} Report of the Madras State Administration, 1965, p.145.
\textsuperscript{71} G.O. Ms. No.3345, Food and Agriculture Department, October 4, 1960.
The following types of works were undertaken under the special Minor Irrigation Programme.

i) Restoration of breached or abandoned tanks.

ii) Raising Full Tank Level of tanks to make good the lost capacity in part or in full and also re-forming the bunds to standards and repairs to sluices.

iii) Rejuvenating flood channels taking off from rivers by removing silt.

iv) Provide diversion devices across minor drainage courses or anicut across rivers to augment supply to irrigation tanks.

v) Reclaiming swampy lands near sea coast affected by backwater by providing suitable irrigation devices and

vi) Formation of new anicuts and tanks

The responsibility of scrutinising and sanctioning a special Minor Irrigation Scheme has to be shared by the Executive Engineer and the Collector. The Collector is the main channel through whom the general public can approach the Government for the implementation of

new schemes. The engineer is responsible for the investigation of all suggestions passed on to him and also for giving a definite opinion whether the scheme is technically feasible or not\textsuperscript{73}. In the meantime the Special Minor Irrigation Programme is undoubtedly one of the most important of the development programmes for the rural areas. Hence it is quite necessary that the Panchayat should have a say in the formation of the programme. It should also be aware of the manner in which programme is implemented\textsuperscript{74}.

During the First Five Year Plan, 2,458 works were completed at a cost of Rs.290 lakhs benefiting an area of 4,30,000 acres of existing and 32,000 acres of new ayacut area. In the Second Five Year Plan, 2,250 works were completed at a cost of Rs.439 lakhs benefiting a total area of 1,87,600 acres. The Third Five Year Plan envisaged the completion of 3,415 works at a cost of Rs.8 crores benefiting an existing area of 4,53,000 acres and a new area of 47,000 acres\textsuperscript{75}.

The special Minor Irrigation Programme received grant from Central Government in 1956. Subsequently, the circle was reorganized as Food Production Circle and also took over restoration works from Revenue

\textsuperscript{74} Ibid.
\textsuperscript{75} Report of the Committee on Agricultural Production, Madras, April 1966, pp.37-38.
Department. The Food Production Circle is under the administration control of the Commissioner for Food Production assisted by a Superintending Engineer and also the Chief Engineer, Public Works Department. The grant from the Central Government is considered as a gift to the agriculturists\textsuperscript{76}.

### 5.4.2. Tank Restoration Scheme

The Tank Restoration Scheme was implemented in the year 1883 by the British Government. The scheme was introduced based on the recommendations of the Famine Commission of 1878-1800. This scheme was introduced with a view to surveying the tanks, laying down the standards for bunds, sluices, surplus weirs and other structures to which each tank should conform and for taking steps to see that the tanks were brought up to the specific standards\textsuperscript{77}.

The Tank Restoration Scheme resulted in the preparation of a ‘Tank Memoir’. In this the capacity of the tanks, standard levels etc. were recorded. Incidentally, this Tank Memoir forms a major record, which even to this day is the only record the Public Works Department possesses, regarding most of the Erys under its jurisdiction\textsuperscript{78}. Later the technical

\textsuperscript{76} Report on Minor irrigation Works in Madras State, November, 1959, p.9.
\textsuperscript{77} A. Vaidyanathan, \textit{op.cit.}, p.5.
\textsuperscript{78} B.C. Barah, \textit{op.cit.}, p.81.
details of the tanks covered by the survey have been published in a series called Tank Memoirs. The Tank Memoirs is a district advantage for planning programmes of restoration works.\(^{79}\)

The Irrigation Commission of 1901-1903 recommended that the work on the Tank Restoration Scheme to be vigorously pursued and completed in order to prevent serious loss of revenue.\(^ {80}\) The Five Year Plan also gave significance to Tank Restoration Scheme. In the year 1950-51, two hundred and twenty seven works were undertaken. They benefitted an area of 7,975 acres and yielding 5,334 tons of food grains\(^ {81}\). In the year 1952-53, twenty five new schemes were sanctioned at an estimated cost of Rs.1.38 lakhs\(^ {82}\) and 571 tanks were repaired exclusively for the purpose of intensive cultivation in 1954\(^ {83}\).

The Government ordered to introduce the ‘Circle System’ with a view to systematic inspection of tanks. Under the circle system, of inspection, each taluks is divided into a number of convenient circles. The tanks in these circles are inspected by rotation. With this system an accurate record of the conditions of the tanks was ascertained. Under the circle system in Madurai district it was noticed that there are 4,326 tanks

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80 B.C. Barah, *op.cit.*, pp.81-82.
under the Revenue Department, which are maintained by two irrigation supervisors assisted by seventeen overseers; each overseer has a section comprising six circles. Each circle contains 30 to 40 tanks except in Dindigul taluk which has as many as 60 tanks. The inspection of these tanks is carried out in rotation so that each tank has its turn for repairs, once in six years\(^{84}\).

5.4.3. Desilting-Cum Reclamation Scheme

Desilting-Cum Reclamation is an important option for improving tank irrigation system\(^{85}\). This scheme was included under the Second Five Year Plan\(^{86}\). The Desilting Cum Reclamation, as the name suggests, aims at removing accumulated silt in the tank bed, clearing foreshore encroachment and bringing the tanks to their actual capacity\(^{87}\). The process of desilting is done by means of heavy earth moving machinery. The silt removed from the tank bed will be deposited on the submergible lands on the foreshore of the tanks which will thus be reclaimed and brought under cultivation. The newly cultivable areas became more productive. Trees grown on the tank bunds are a source of small timber and domestic fuel. Raising the Full Tank Level (F.T.L.) of

\(^{84}\) Report on Minor Irrigation Works in Madras State, November, 1959, p.11.
\(^{86}\) The Second Plan Madras State, Review of Progress for 1956-59, p.15.
the tank and reclaiming the foreshore land by spreading the soil from the tank to the extent necessary to meet the rise in water level is a viable and better solution which has been adopted in many tanks\textsuperscript{88}.

During the Second Five Year Plan period, 47 tanks were reclaimed at a total cost of Rs.36.44 lakhs. In the third plan a sum of Rs.80 lakhs has been set apart for the scheme\textsuperscript{89}. With the help of this scheme extra irrigation was provided and as a result production of food grains was increased\textsuperscript{90}.

The Desilting cum- Reclamation Scheme met with certain defects. The major reasons are:

i) Only a few tanks lend themselves to desilting-cum reclamation work. To decide upon the suitability of tanks, a lot of preliminary investigation including collection of statistics and ascertaining the willingness of the foreshore ryots to have their lands raised or reclaimed has to be undertaken involving considerable time.

ii) The time available for execution of the work is short. The tanks should be dry to permit the landing of heavy earth moving machinery.

\textsuperscript{88} The Second Plan, Madras State, Review of Progress for 1956-1959, p.15.
\textsuperscript{89} Madras Information, Vol. XV, March 1961, p.5.
\textsuperscript{90} Report on Minor Irrigation Works in Madras State, November 1959, p.7.
iii) The foreshore lands should be free from cultivation.

iv) Purchase of new machinery required for the scheme involves foreign exchange and there has been difficulty in obtaining foreign exchange\textsuperscript{91}.

5.5. Important Tanks

The ancient Chola, Pandya and Pallava rulers paid much attention for tank irrigation. Karikal Chola built a number of irrigation tanks\textsuperscript{92}. The Gangai Konda Chola Tank, 15 k.m. from Tirunelveli, was built by Rajendra Chola in the beginning of the 4th Century A.D. It has a long embankment of nearly 26 km and even today a large area is irrigated by this tank\textsuperscript{93}. The Pandya Kings contributed much for the tank irrigation in the southern parts of Tamil Nadu\textsuperscript{94}.

The Pallavas were the pioneers in the field of tank irrigation. The Pallava King Mahendravarman I paid much interest for the improvement of tank irrigation in the Tamil country. Inscriptions of Nandivarman refer to water level in these tanks\textsuperscript{95}. The Pallavas paid adequate attention to improve tank irrigation. The members of the village

\textsuperscript{91} Report of the Committee on Agricultural Production, Madras, April 1966, p.42.
\textsuperscript{92} Winin Pereina, \textit{op.cit.}, p.172.
\textsuperscript{93} A.L. Rao, \textit{India's Water Wealth}, New Delhi, 1979, p.126.
\textsuperscript{94} Komathinayakam, \textit{op.cit.}, p.28.
\textsuperscript{95} M.S. Randhawa, \textit{op.cit.}, p.459.
committees or the Erivariya Perumakkal controlled and regularised the
supply of water in the tanks. The village assembly known as the Sabha
took necessary steps to change the uncultivable lands into cultivable
lands.  

Tanks are the main source of irrigation in the Chingleput
district. About 450,000 acres are irrigated by as many as 653 tanks found
throughout the district. Though rainfall is generally favourable in the
locality, the district is peculiarly suited to tank irrigation and topography of
the district favours this method of irrigation. According to the statistical
atlas of Chingleput district almost every village has atleast one tank.
Some of the irrigation tanks in the area are only useful to a single village
and some are extremely large to irrigate the land of many villages. For
example Chembarambakkam tank in northern part of Sriperambadur tank
which waters 37 villages, irrigating about 13,000 acres or more, deserves
special mention in the study.

p.130.
97 Administration Report of the Public Works Department, Madras State, 1956-
98 John P. Mencher, *Agriculture and Social Structure in Tamil Nadu*, Bombay,
5.5.1. Chembarambakkam Tank

The Chembarambakkam tank is the biggest tank in Chingleput district. It is an ancient tank formed long before the days of the British rule. The bund is about 5 ½ miles long and the tank has the capacity of 3,120 m.cu. ft. The water spread at full tank level is about 9 ½ square miles. In addition to the rainfall on its own catchment the tank also receives supplies from the Palar and Cooum rivers\textsuperscript{100}.

The supply from Palar river to the Chembarambakkam tank is through Chowdarykal Channel and supply from Cooum is through New Bangaru Channel taking off from Korattur Anicut\textsuperscript{101}. It is interesting to know that the Palar basin is the most tank intensive basin in Tamil Nadu\textsuperscript{102}.

North Arcot district has no important system of canal irrigation and the district thus depends upon water stored in the tanks. Most tanks have storage capacities between three to six months. The great tanks at Kaveripakkam and Mamandur in the east of North Arcot, have the capacity to water for more than twelve months\textsuperscript{103}.

\textsuperscript{100} Madras Information, Vol.III, December 1949, p.5.
\textsuperscript{101} Ibid.
\textsuperscript{103} John Harris, Capitalism and Peasant Farming, New Delhi, 1982, p.64.
The Palar River which rises in the Mysore State is the main source of supply for North Arcot district. Water is diverted through a series of canals and channels at the Palar anicut, 15 miles from Vellore to irrigate over 82,700 acres\textsuperscript{104}. The Poiny anicut system and Cheyyar anicut irrigate 23,800 acres and 23,600 acres respectively in the North Arcot district\textsuperscript{105}.

5.5.2. Kaveripakkam Tank

The Kaveripakkam tank in North Arcot district is one of the biggest tanks. It has a storage capacity of 42 million cubic metres. It has ten sluices which release water to 2,225 hectares of land spread over 14 villages\textsuperscript{106}.

5.5.3. Barur Tank System

The largest irrigation scheme in Salem district is the Barur tank system. An anicut across the Ponniar diverts water to the Barur tank which irrigates over 7,000 acres. The supply channel also feeds a number of small tanks. The Barur tank was constructed as a famine relief work. It

\textsuperscript{104} Administration Report of the Public Works Department, Madras State, 1957-58, p.1.

\textsuperscript{105} Ibid.

\textsuperscript{106} Ganesh Pangare and others, \textit{op.cit.}, p.171.
started in 1877\(^{107}\) and the work was completed in 1899 at a capital cost of about Rs.4.57 lakhs. The system yields a return of 3.53 percent\(^{108}\). Since the date of completion several improvements have been made from time to time\(^{109}\).

### 5.5.4. Periyakulam Tank

The Periyakulam tank is located in Mullipadi village of Dindugal taluk in the Madurai district. The supply channel to Periyakulam tank takes off from the anicut across the Santhana Varthini river on its left margin in Kovilur village limits in Dindugal taluk\(^{110}\). In 1949 Rs.23,680 was sanctioned for the repair work of this tank\(^{111}\).

Tanks form a major portion of the minor irrigation category in Kanyakumari District. In ancient times the local chieftains with the active co-operation of the beneficiaries constructed many tanks. Both

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\(^{111}\) Ibid., p.8.
system and non-system tanks are found in this district\textsuperscript{112}. About 2748 tanks are there in this district. Most of the tanks are very small i.e. extending to less than 0.05 acres and having ayacut of less than 1000 acres\textsuperscript{113}.

Kalkulam taluk of Kanyakumari district got more number of irrigation tanks which command the highest percentage of the total irrigated area. Pootiary, Parakai, Suchindram and Erraioor are the largest among all tanks in Agasteeswaram taluk\textsuperscript{114}. Thazhakudi, Thovalai and Cherrumadam are the largest tanks in Thovalai taluk. Attoor, Perrinjavella and Keygoody are the largest tanks in Kalkulam taluk. But there are no large irrigation tanks in Vilavancode taluk\textsuperscript{115}.

The total numbers of tanks in this district is getting reduced year by year. The major reasons for the fall of number of tanks are the disposal of tanks to private owners, accumulation of silt, encroachment and

\begin{itemize}
\item \textsuperscript{112} \textit{Kanyakumari Agricultural Economy and Performance and Issues, Post Graduate and Research Department of Economics, (U.G.C. Project), Scott Christian College, Nagercoil, October 1990 to March 1992, p.45.}
\item \textsuperscript{113} Report of Irrigation Systems in Tirunelveli and Kanyakumari District, 1974, p.5.
\item \textsuperscript{114} \textit{Kanyakumari Agricultural Economy and Performance and Issues, Post Graduate and Research Department of Economics, (U.G.C. Project), op.cit., p.48.}
\item \textsuperscript{115} \textit{Ibid.}
\end{itemize}
allotment of tanks for cultivation and non-cultivation purposes. Also the tanks are being converted as bus stands, stadium, theatres and grounds for public meetings\textsuperscript{116}.

In short Irrigation is the artificial application of water to soil for the purpose of crop production. There are many irrigation systems in our country. One among them is tank irrigation. It plays an important role in the history of irrigation in Tamil Nadu from time immemorial. Tank irrigation helps a lot by storing rain water, and the dam water released at stipulated times. Almost all surface sources are harnessed during the three plan periods. Both the canal fed and rain fed tanks play a key role in the wellbeing of the people. With the help of tank irrigation ground water recharge is also increased\textsuperscript{117}.

Tank irrigation in the early Tamil country received the encouragement of the kings. It got the consideration of the British later, and due patronage in the Independent India. Edmond Burke rightly pointed out that, “Tanks are the monuments of real kings, fathers of their people. These are the grand sepulchers built by the ambition of unstable benevolence, which not contented with the dispensation of happiness during the contracted term of human life, had strained to extend the dominion of their bounty beyond the limits of nature and to perpetuate

\textsuperscript{116} Ibid., p.46.
\textsuperscript{117} A. Vaidyanathan, \textit{op.cit.}, pp. 28-30.
themselves, through generations of generation, the nourishment of mankind” 118. The State takes adequate care in the proper protection and distribution of the tanks and the water stored by them. The contribution of the individuals, Panchayat Raj Institutions and the State is significant and indispensable in the maintenance of the tanks as it helps to increase their ability in the society at different levels.

118 A. Mohana Krishnan, op. cit., p.184.