

**STATE, SOCIETY AND HYDROLOGY IN MEDIEVAL
TAMILAKAM
(7TH -15TH CENTURY)**

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BY

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GLOSSARY

Brahmadēya	Villages granted to Brāhmanas
Dēvadāna	Land donated to temples
Kaḍamai	Land dues which were collected directly from the land owners
Kaḷam	Grain measure
Kalañju	A weight equal in modern times to 1/6 ounce troy (approx. 5.18 gm)
Kāṇi	Hereditary right on the property with proprietary rights
Kuḍimai	Group of taxes was mostly labour levies such as vetṭi, amañji
Kuḷi	Smallest basic unit of measurement of land
Mā	0.13 ha (0.325 acres)
Nādu	Unit of administration or territorial assembly
Nāttavar	Corporate body of leading landholders in a locality
Nāyaka	Military commander who was assigned with the territory
Sabha	Assembly of brāhmin village
Ur	Corporate body of village
Veli	2.63 ha (6.61 acres)
Vellāḷa	Agricultural community

ABBREVIATIONS

<i>ARE</i>	<i>Annual Report on Epigraphy (South)</i> , ASI, New Delhi.
<i>EI</i>	<i>Epigraphia Indica</i> , ASI, New Delhi
<i>SII</i>	<i>South Indian Inscriptions</i> , ASI, New Delhi, 1890
<i>IPS</i>	<i>Inscriptions of the Pudukkottai State Arranged According to Dynasties</i> , Pudukkottai

INTRODUCTION

A Reservoir is a large, natural or artificial storage system that collects water for future use. The expansion of sedentary agriculture triggered the need to deviate water to the fields from the main water sources. This initiated the spread of efficient and advanced hydraulic technology that ensured water throughout the year. The history of control and management of water reflect the nature of settled life and the agrarian capacity of the period. The rational distribution and sustainable use of water become the prime focus of the community involved in agriculture. In the early medieval period, the management of resources was ensured from centrally and locally. The study on this control and management explicitly point towards the nature of power structure, the relation between the state and other institution in controlling water and produce, the societal response and also the engineering aspects involved in it.

The aim of this dissertation is, therefore, to analyze the nature of power relation that existed among the state and various institutions. It looks into the ways in which power was accumulated by institutions of the state through controlling the irrigation systems. The dissertation also looked into aspects of societal response to these irrigation works and their contribution to technology.

From the early seventh century to the thirteenth century, the geographical zone of Tamilakam witnessed the monarchical form of government of Pallava, Pāṇḍya, and Cōḷas. Towards the latter half of the 14th century, the political scene began to change when the Vijayanagara Empire ascended to the power. Their rule in the South had brought numerous changes in the political, social and economic fields. The study of these cumulative changes in the domain of state has been the major topic of discussion and debates over the decades. This resulted in the critical study of state and its institutions.

Historiographical study regarding the nature of the state in Tamilakam proposed different theories over the period of time. The early conventional scholars like Nilakanta Sastri (1929, 1932, 1955, 1958), C Minakshi (1938), T V Mahalingam (1940,1967) insist that the South Indian state reflect the centralized, hereditary monarchical and

bureaucratic characteristics.¹ Along with the centralization theory, T V Mahalingam insists that the medieval Vijayanagar empire exhibit the feudal nature. These scholars were critiqued by neglecting the economic and other aspects while defining the character of the state. This scenario led Burton Stein (1980) to study the nature of Cōḷa and Vijayanagara state as units of nāḍu. Concentrating his study on the Tamil “macro-region” he has challenged the old conventional historiography with the theory of “segmentary state”. He applied this theory to the state from Pallava to Vijayanagar and argue that it was divided into “pyramidal segments”² where the peasant village is linked to the complex political order in a hierarchical structure. The state witnessed centralization only in the core regions and the king remain merely as a ritual head in these areas.³

Followed by the segmentary theory, a new approach was initiated by Noboru Karashima in analysing the nature of early medieval states through landholding patterns prevailed. Through his work (1984) he examined various inscriptional evidence to figure out how the emerging landholding patterns made the various institutions of the state authoritative. Rajan Gurukkal (1984) at the same time gave relevance to the role of agrarian relation in determining the nature of the Pāṇḍya state. The growing agrarian output bought the territory into a single head. Here the king exerts his power through small Brahmin villages.⁴ Here, the tribute or the direct control of the agrarian resource determine the nature of authority that the king held and he called this as “extra-economic bonds”.⁵ James Heitzman (1987, 1997) insists that the centralization was acquired through taxation policy of the state. Kesavan Veluthat (1993) made a further remark on the nature of the state. He critiqued centralization and segmentary theory and asserts that the early south Indian states reflect the principle of feudalism. The theories that were

¹ According to Sastri, the Cōḷa state is a centralised and hereditary monarchy similar to Byzantine monarchy. C Minakshi at the same time supported the centralised nature of Pallava kingdom draing their alligence to the hereditary notion of kingship.

² Burton Stein, *Peasant State and society in Medieval South India*, OUP, New Delhi, 1994, pp. 21-22

³ Segmentary theory of Stein was interrogated from a larger section of scholars which made him revise the work in 1995 by changing his argument that the king functioned his duty both as religious head and a political sovereign but he never tried to alter his ‘segmentary theory’.

⁴ Rajan Gurukkal, ‘Agrarian system and Socio Political Organisation under the Early Pandya’s c. AD 600-1000’, M.Phil. dissertation, Jawaharlal Nehru University, New Delhi, 1984, p. 266

⁵ Rajan Gurukkal, ‘Agrarian system and socio Political Organisation under the Early Pandya’s c. AD 600-1000’, M.Phil. dissertation, Jawaharlal Nehru University, New Delhi, 1984, pp. 208-211

formulated over decades more or less reflected the political situation of the period. Therefore, characterising the state into any particular structure seems very difficult. An examination of sources of the period showed the attempt for centralization along with the expansion of agriculture, control over land and subsequent extraction of revenue.

In the case of Tamilakam, the emergence of a centralised administration and the agrarian expansion of 7th century paved the way for the prosperity of the state. Since irrigation is connected with the development of agriculture, the management and control over such resources became necessary. The influence of the political power on such resources was aided by the supremacy on the land, intensive development of irrigation technology and also the extraction of resources and revenue from the land. Hence, along with the study of the irrigation system, the nature of landholding patterns and the revenue assessments of the state requires equal attention.

As the early historiography of Tamilakam was focussed on the political developments and the conquests of rulers, the works on irrigation and power structure as a subject has not received considerable attention. But, there were nominal attempts from the early 20th century to understand the further scope of the study. The inscriptions pertaining to the irrigation system of the Tamilakam was studied and analysed by Dr. V Venkayya in his article published in the ASI report of 1903-1904. This might have opened up a new approach in the study of agrarian economy of the 1930s.

It was from this period the scholars began to discuss irrigation system along with economic history. The work *Economic Conditions in Southern India. (1000-1500 AD)* of Arjun Appadurai in 1936 gave relevant understanding about the irrigation works through analysing epigraphic records. Similarly, the works of C. Minakshi (1938), T. V Mahalingam (1951), K. A Nilakanta Sastri (1955) also gave due importance in discussing hydraulic projects of South Indian dynasties. The article published by Burton Stein (1960, 1961), David Ludden (1979) and R. A. L. H Gunawardhana (1984) also provided their contribution to further study. Burton Stein analysed the irrigation system through the functioning of the temple of the Vijayanagara period. David Ludden (1979) at the same time discussed the nature of the political economy and water management of pre-modern Tirunelveli district. R Tirumalai (1981) in his *Studies in History of Ancient Township of Pudukkottai* gave ample reference to the hydraulic projects pertaining to the Pudukkottai region. Tirumalai insists that the merchants and ūrar of the township of Pudukkottai

region showed a keen interest in renovating, constructing and managing the hydraulic works over the period. R. A. L. H Gunawardhana (1984) set a different approach to the study of hydrology by studying the technical aspects of these projects in the Pallava and Pāṇḍya territory. He tried to analyse the trajectory of technological diffusion and movement of knowledge. Gunawardhana insists that the technology in the saṅgam period was rudimentary and witnessed changes with the technological movement from Sri Lanka to Southern India in the 7th century. This was an early approach to define the technological aspect of the irrigation system in this region. In this field of study, the work of Rajan Gurukkal (1986) also provided a reference to the irrigation works of the Pāṇḍya period. T. M Srinivasan was credited with the publication of *Irrigation and Water Supply: South India, 200 B.C- 1600 A.D* in 1991. This work provides the compendium of all irrigation works of South Indian dynasties from the earliest times. He has collected and collaborated epigraphic and literary evidence to prove the development and expansion of the irrigation system in Southern India. The work also provided an idea about the political involvement, localised activities and the technical aspects of water harvesting methods. K Rajan (2008) produced another relevant work titled *Ancient Irrigation Technology: Sluice Technology in Tamil Nadu*. This provided sufficient reference to the hydraulic works of South India along with epigraphic evidence. It had also analysed the technical aspects of the sluice system of the medieval period. Apart from the major works, several minor works gave relevant inference for the irrigation system. One among them is *Gifts of Power: Lordship in an Early Indian State* by James Heitzman (1997). A portion of this book showed the expansion and development of irrigation system in the Cōḷa territory. He has also examined the various agents responsible for establishing a hydraulic system and analysed the nature of changes in technology with regard to institutional changes. These literary works, therefore, provide an idea about the characteristics of irrigation works in Tamilakam.

The scope of the present work is to get an idea about the power and management activities of the irrigation system. Since irrigation system during the medieval period was closely related to the land and tenure, the work will provide acquaintance with the agricultural, social and engineering aspects of irrigation networks in Tamilakam. The primary source of this dissertation is epigraphy and literary sources. The epigraphical sources were collected from the volumes of *South Indian Inscriptions and Epigraphia Indica*. I have also used various collections of Tamil inscriptions published by Indian

Council of Historical Research. In addition to the epigraphical records, the data collected from field visit was also considered as the main source for this dissertation. The main methodology of the work is the interpretative and analytical study of inscriptions. The work had also corroborated the literary and epigraphical evidence for better analysis. Interpretation of this study was not confined to the literature and epigraphy alone. Instead, the work had also inferred the physical structures of dams and tanks to analyse the technological aspects involved in it.

The dissertation includes four main chapters excluding the introduction and conclusion. The first chapter aims to analyse the nature of hydraulic control exerted by the state and the temple. This chapter focusses on the way in which the state and temple accumulated power over the water, the extent of irrigation works directly undertaken by state and temple and measures undertook for the effective management of water bodies.

The second chapter deals with the village assemblies and individuals in the control of water. This will also trace the trajectory of power among these two with respect to hydraulic projects. The chapter will also discuss the major role of assemblies and individuals in the construction and renovation works.

The third chapter conceptualizes the societal response and the involvement of peasantry in irrigation and agrarian development. Here, the analysis was done on the basis of revenue extraction from the peasants. The chapter will examine the exploitative nature of revenue demands for the upkeep of hydraulic projects in medieval Tamilakam.

The final chapter deals with the societal contribution in the field of technology. This chapter focus on the diffusion, change, and continuity of irrigation technology. It will also look into the medieval approach towards scientific principles and natural laws.

CHAPTER I

POWER, STATE, TEMPLE AND HYDRAULIC CONTROL

A reservoir is a depression with embankments, covering large tracts of land mainly served the purpose of harvesting and preserving water for later use, primarily for agriculture.¹ Irrigation is the relevant aspect of the agrarian economy to sustain its cultivation. Hence, from time immemorial, the influence of power over the construction and management activities was significant. The ancient text Tirukkural mentions the relevance of reservoirs as ‘lakes above and wells below, mountains well located, rivers and streams flowing from them, and strong fortress constitutes a country’.² Hence, the construction of reservoirs seems very consequential for the kingdoms of Tamilakam, where they did not possess much perennial river sources running throughout the country. The major source of water for the Pāṇḍya country was Vaigai and Tamraparni rivers, for Pallava it was Palar and for Chera and Cōḷas, Kaveri was the major source for their agricultural and basic needs.

The climate of Tamil Nadu is tropical in nature which receives rain from the South west monsoon (414.6 mm) and North East monsoon (394 mm) approximately at present.³ The geographic and climatic limitations of Tamilakam necessitated the people to depend on the artificial water systems towards a large extent from the historical time onwards.⁴

We have reference to this man-made reservoir system in the early saṅgam works which show systematic and skilled irrigation techniques suiting its diverse landscape. Most of the areas of Tamilakam in the saṅgam poems was picturized as fertile and

¹Rajan Gurukkal, *Social Formations of Early South India*, OUP, New Delhi, 2012, p. 155. Hereafter cited as Gurukkal, *Social Formations*.

² *Thirukkural*, verse 737, from <https://thirukkural133.wordpress.com/> Data retrieved on 12-03-2019, 21:05 PM

³ Data retrieved from the Customised Rainfall Information System, Indian Metrological Department, [http://hydro.imd.gov.in/hydrometweb/\(S\(muvjveq0az24bhf4nizklj45\)\)/landing.aspx#](http://hydro.imd.gov.in/hydrometweb/(S(muvjveq0az24bhf4nizklj45))/landing.aspx#), on 24-03-2019, 11:15 AM

⁴ Through geographical limitation I meant the scarcity of perennial sources. So the country completely depends on the rain water and the major river Kaveri and Tamraparni to charge their tanks and reservoirs.

prosperous through means of extensive water networks constructed by the rulers and through the availability of rain. For example, the Maduraikānchi gives reference to the prosperity of the Kaveri valley due to its innumerable water sources in the country.⁵ Poruṇaraṇṇupatai, one among the earliest saṅgam work, described the fertility and prosperity of the Kaveri valley during the reign of Karikāla Cōḷa mainly due to the existence of *ēri* (tank) that surrounded the field.⁶ Similarly, the poem Pattinipalai described the prosperity of the Cōḷa land under Karikāla where the city was surrounded by long ponds, cooling tanks for bullocks, lofty banks, and mud-walled wells.⁷ Narinai refers to the tank constructed in the name of the ruler Cheliyan.⁸ Similarly, Manimekhalai gives reference to the water resources like *kiṇaru*, *kēṇi*, *aruvi nīr* all belong to the king Msāraṇkiḷi.⁹

The understanding of the geographical extent of Tamilakam is relevant for the study of the political scenario. According to Tolkappium, ‘the Tamil land lies between the north of Venkadam and South of Kumari’. Tamilakam was said to have derived not because of the dynastic legacy but from the Tamil language. Thus, Tolkappium says Tamil Nadu is ‘*Tamil Kurru Nallulakam*’ (good part of the world where Tamil is spoken).¹⁰ While Silappadikaram defines the Tamilakam as “The Tamil region extends from the hills of Vishnu (Tirupati) in the north to the oceans at the cape in the south. In this region of cool waters were the four great cities of Madurai with its towers; Uraiyur which was famous; tumultuous Kanchi and Puhar with the roaring waters (of the Kaveri and the ocean)”.¹¹

⁵ J V Chellaiah, ‘Maduraikānchi’ in *Pattupattu: Ten Tamil Idylls*, Tamil University, Tanjavur, 1985, lines 102-103, p. 239. Hereafter cited Chellaiah, *Pattupattu*

⁶ K Rajan, *Ancient Irrigation Technology: Sluice Technology In Tamil Nadu*, Heritage India Trust, 2008, p. 85, (Hereafter cited Rajan, *Irrigation Technology*) and Chellaiah, Pattinipalai, in *Pattupattu*, line 5-7

⁷ Chellaiah, ‘Pattinipalai’ in *Pattupattu*, lines 37, 57 and 83. pp. 31-35

⁸ Rajan, *Irrigation Technology*, p. 85

⁹ Dr. Prema Nandakumar, *Manimekhalai*, chapter 19, Tamil University Tanjavur, 1989, Lines 102-03, p. 97. It describes the situation is when the king seems to be playing with his queen around these water bodies. The epic said to be composed during 9th century.

¹⁰ S Ilakuvānar, *Tolkappium in English with critical Studies*, Educational Publishers, Madras, 1994 (first edition in 1963) pp. 469- 470

¹¹ Kanakalatha Mukund, *The World of the Merchants: Pioneers of International Trade*, Penguin, UK, 2015, p. 27

During the saṅgam period, three kings or ‘muvendar’ (Pandyas in Madurai, Cholas in Uraiyu and Cheras in Vanji) ruled Tamilakam. After the Kalabhra interregnum (300-550 CE), the Tamil region witnessed a revival in the political sphere with the coming of Pallavas in the north. In the south, Pandya’s gained prominence gradually. The arrival of Cōḷas in 7th century surpasses Pallavas and Pāṇḍyas from almost all spheres of political activities. By the 12th century, the invasion of Madurai by Malik Kafur led to the short span of Muslim rule in Tamilakam. The Vijayanagara Empire of south India surpassed the Madurai Sultans. Marathas and Europeans then succeeded in the political rule of Tamilakam.¹²

The evolution of the state mechanism in Tamilakam with a more centralized core and the subsequent development of social formation during the 7th century paved the base for the development of the institutions like the temple. In this political structure, the overall base of power revolved around the prosperity of the economy. This new social formation had brought authority into the hands of certain sections of society.¹³ The foremost player in this act was the state itself and others tend to gather power from the centre.

A kind of reciprocity of power existed between the state and the temple in the application of the authority. Here, the sovereignty of the state was legitimized by the temple in one hand and on the other, the state directed peasantry and the lower section of the society to accept religious authority. Whereby the temples were accepted as an ideological hegemony.¹⁴ This close affinity of the state and the temple was thus evident in all social, economic and political activities. One such field of control was the agrarian economy especially in the control over water sources. In the case of India, Wittfogel insisted that in an agro-managerial state, the temple or religious bodies was integrated

¹² Burton Stein, *History of India* (second edition), part 3, Wiley Blackwell, UK, 2010

¹³ Gurukkal, *Social Formations*, p 292. He argue that the new social formation brought specialisation of occupation and increase in Brahmin settlement in the wet land areas where these areas were surrounded by the temples.

¹⁴ Kesavan Veluthat, *The Early Medieval in South India*, OUP, New Delhi, 2009, p. 65

into the state sphere as a quasi-hierocratic¹⁵ and after the priest, the royal authority had control over such water reservoirs. Thus, it became a revered space where the common people were kept isolated from its utilization.

It is widely believed that the construction and maintenance of hydraulic projects by the government increased the virtue and prosperity of the state. Hence, the state took the effort in increasing the number of reservoirs and tanks to maintain the availability of water throughout the year as well as to attain the prosperity of the economy. The earliest reference to the construction of artificial irrigation system in the Pallava territory is evident from the Gunapadeya plate of queen Cārudēvi in the latter half of 4th century CE. The record gave reference to the tank *paniyakupa* and *Rājatatāka*, which seems to denote a well and a king's tank.¹⁶ The amount of work done directly by the Pallava rulers is worth mentioning. The Kāśakuḍi plate of Pallava Nandivarman gave reference to the construction of *Tiraiyanēri*.¹⁷ The Pallava ruler Mahendravarman was credited with the construction of *Mahendra-tatāka*¹⁸ and the *Chitramegha tatāka*¹⁹. The Kuṟṟam plates of Paramēśvaravarman I refers to the grant of land to the village of Paramēśvaramanagam for digging a tank (*Paramēśvara tatāka*) for the worship, bathing of the idol, flowers, and for the daily supply of water.²⁰ Similarly, the *Vayiramēgha tatāka* and *Vāli-ēri*²¹, *Māripidugu ēri*, *Māpidugu perñkinaru*, *Svamikumara kuttam*, *Malliyan-kārani*, *Perunkōttur ēri*, *Tirumullai vāyilēri*²² were constructed during the regnal year of Dantivarman.

¹⁵ Karl A Wittfogel, *Oriental Despotism: A comparative Study of Total Power*, Yale University Press, 1967, p. 98. By quasihierocratic he means the priestly rule as government. They advised the king in all matters of administration.

¹⁶ Amol Sagar, 'Irrigation under the Pallavas', *Social Scientist*, Vol. 43, No. 5/6, May-June 2015, p. 4

¹⁷ T.V Mahalingam, *The Inscriptions of the Pallavas*, ICHR, Agam Prakashan, New Delhi, 1988, no 77, p. 254. Hereafter cited Mahalingam, *Inscriptions of the Pallavas*

¹⁸ *Epigraphia Indica*, Vol IV, no 19, p 152-153. Hereafter cited as EI

¹⁹ C Minakshi, *Administration and political life under the Pallavas*, University of Madras, Madras, 1938, p. 97

²⁰ *South Indian Inscriptions*, Vol I, no 151. p. 154-155. Hereafter cited as SII

²¹ SII Vol XII, no 41, p. 17. The tank was constructed by Vāli vadugan

²² T M Srinivasan, *Irrigation and Water Supply: South India, 200 B.C- 1600 A.D*, New Era Publications, Madras, 1991, p. 22. Hereafter cited Srinivasan, *Irrigation*

The keen interest in the construction of reservoirs was more visible in the Cōḷa period. Gandarāditya was remembered for the reservoir Gandarādityaperēri, Uttama Cōḷa constructed two big tanks at Madurantakam and Tribhuvani. Parantaka II constructed two tanks named *Sundaracōḷaperēri* and *Kundavai-perēri*. Rājarāja was credited for the construction of three tanks namely *Kavirkulam*, *Bāhur* and *Arikesarimangalam Tank*.²³ Rajendra Cōḷa for the *Viranam-ēri*.²⁴ Kulōttuṅga I for *Rajendrasōḷaperēri* and *Madurāntakaperēri* and Rājarāja III for *Sembarambakkam* tank. In the later Pāṇḍya period, the direct royal interference was in the construction of *Śrivallabhappērari*.²⁵

Vijayanagara rule in Tamilakam also showed the direct evidence of the royal intervention in the construction activities. In the Kāñjipuram inscription of Kampana-uḍaiyar (1374), the queen Irāmatēvi Avvaiyār had donated certain land to the temple after constructing a reservoir (*jalapāṣaṇa*) in it with the permission of the king.²⁶ The Portuguese account of the travellers like Domingo Paes and Father Nuniz also stressed the relevance of irrigation works in the Vijayanagara country by the ruler Krishnadeva Raya. The country witnessed the construction of artificial tanks and dams in large number under his reign. The king employed all the prisoners for its construction and granted land free of tax until the land was improved with proper irrigation.²⁷

Along with the construction of reservoirs and tanks, the state was also involved in constructing networks like channels and sluices to connect fields. The earliest reference to this sort was from the Vaigai bed inscription of Cētan Arikēsari's fiftieth year (c 720 CE) It refers to the construction of *madagu* (sluice) and the excavation of a *kāl* (channel)

²³ Srinivasan, *Irrigation*, p. 27

²⁴ W Francis, *Madras District Gazetteers: South Arcot*, Addison and Company, Madras, 1906, p. 132

²⁵ SII Vol 14, no 224

²⁶ Y Subbarayalu and S. Rajavelu (ed.,) *Inscriptions of the Vijayanagara Rulers*, volume V, Part 1, ICHR, Primus books, 2014, no 70, pp. 53-54. Hereafter cited as *Subbarayalu, Inscriptions of the Vijayanagara Rulers*

²⁷ Robert Sewell, *A Forgotten Empire: Vijayanagar Contribution to the History of India*, Swan Sonnenschein, London, pp. 244, 364-365 and *The Vijayanagar Empire: Chronicles of Paes and Nuniz*, Asian Educational Services, New Delhi, 1991, pp. 244-245. The above said tank was constructed under the supervision of Jao-de-La Ponde.

from the Vaigai river of Pāṇḍya territory.²⁸ The Pāṇḍyas under Śrīvallabha showed the evidence of constructions of channels and sluice under the private initiative.²⁹ During the Pallava period, the irrigation was carried mostly through inundation channels like *vellakkāl*. An inscription dated during the period of Nandivarman permitted the donee to cut inundation channel.³⁰ The Pallava inscription from Tandalam says that the king of Kāḍavasa Pallavamārāyaṇ (probably the local chief) built sluice composed of stone for the water tank at Tandalam.³¹ Along with big scale irrigation projects, the Cōḷa rulers were also interested in constructing and renovating new channels and canals. Parāntaka I and Kulōttuṅga III made a considerable number of feeder channels in the country.³² These inscriptions do imply the relevance to increase the virtue and prosperity of the state by means of constructing or renovating irrigation sources. One such example was the Tiruvilangādu copper plate of Rajendra Chola I, issued in the 6th regnal year, (c. 1020 CE). In the inscription, it was mentioned that “in the Kali age, the king from the family of Perunaṭkiḷḷi were the lords of the earth and their virtues were increased by the construction of the embankment of the Kaveri river by the king”.³³

After the involvement of the state, the next important player in this field was the temples. The direct evidence to the construction work undertaken by the temple was from the Kuruvittuṇai inscription which said to be ‘issued by the god’ himself. Here the god (Śārṅgin of Chakratīrtham) himself issued the grant to construct a new channel with the name of *Śrīvallabhappēraṇu* is mentioned to have been dug to irrigate some lands.³⁴

The state and the temple shared a common method in the control and maintenance activities of these projects. By asserting control over the water, these institutions gain more power and voice in the country. For the state, this control over the resources seems

²⁸ Rajan Gurukkal, ‘Aspects of Reservoir System of Irrigation in Early Pandya State’, *Studies in History*, Vol 2, SAGE Publications, New Delhi, 1986, pp. 155-156

²⁹ SII Vol XIV, no 43, 44, pp 33-34

³⁰ Srinivasan, *Irrigation*, p. 22

³¹ Mahalingam, *Inscriptions of the Pallavas*, no 261

³² Srinivasan, *Irrigation*, pp. 27-28

³³ SII Vol III, part 3, no 205, verse 42, pp. 383-439

³⁴ SII Vol XIV, no 224, p. 128. Inscription of the similar kind is evident from Mahalingam, *Inscriptions of the Pallavas*, no 261. This is an interesting inscription, which describes the construction of a tank done by both the goddess as well as the king.

to be customary and obligatory. While for the temple, the control was asserted through means of devotion and fear.

The state involved authority was in the form of proposing rules for the tank, settling disputes over the water and granting endowments to other institutions of the state. By proposing rules, it tends to show an indirect but authoritarian influence over water resources. For example, the Pullūr plate of Nandivarman II (764-65 CE) records that the donee was granted the existing water rights and it was mentioned that transgressor found misusing the irrigation water were liable to be punished by the king.³⁵ Those who violate the rules prescribed will be punished directly by the ruler himself. This is seen as an attempt to codify and follow a specific rule in the territory.

A shift in the focus of the state for these water sources was evident in the latter half of the 7th century. By the time, the state became the de facto power over these sources. This means, though the state involvement was not directly, the ruler's words were final. For instance, the Kuruvitturai inscription of Śrīvallabha which issued in his 16th regnal year (c.831 CE) alludes that the ruler settled the dispute over tank between a man named Sarvakartukkal and sabhaiyar of Sōḷantaka-caturvēdimāṅgalam by issuing an order which made the land exempted from the payment of *antarāyam* for two years.³⁶ As the major bestower of land to the temple institutions, the state did possess certain control over the resources in certain circumstances. This could be visible when there was a breach in the agreement regarding the distribution of agrarian products and water. In the 8th regnal year of Sundara Pāṇḍya (1224 CE) a royal order was issued addressing the authorities of the temple in Ponnāmārapati-ppārru restricting them from using the water in Iḍaṅgamikāman.³⁷ This is one of the clear evidence of the interference of the state over the right of water even though the land and allied reservoir system come under the jurisdiction of the temple.

³⁵ Mahalingam, *Inscriptions of the Pallavas*, no 81, 271

³⁶ SII Vol XIV, no 236, p 141. *Antarāyam* means the dues to the temple. An inscription of the same kind is evident that dates back to the eighth regnal year of Sundara Pāṇḍya also suggest the settlement of issue arise between the temple and the owner of the land. King finally decides that ‘.... after irrigating specified field, one half of the income from fishing in the river should be made over to the temple authorities, while the other half to be retained by another party to the dispute...’, in Nilakanta Sastri, *The Pandyan Kingdom: From the Earliest Times to Sixteenth Century*, Luzac &Co., London, 1929, p. 223.

³⁷ SII Vol XXVI, no 14, p. 10

The political scene of the Tamilakam began to show a shift with the coming of imperial Cōlas particularly under Rājarāja I (985-1014 CE). The state at this time showed a more centralized character with a powerful monarchy at its head. The new agrarian order emerged with the shift from the communal landholding in the early Cōla period to the individual landholding patterns during the reign of Rājarāja and Rājendra I. This change had brought an increase in the agrarian production with the improved irrigation technology.³⁸ The period also witnessed the emergence of the temple as a major economic and political entity. Kesavan Veluthat, therefore argue that the Brāhman settlements, the agrarian-corporation, and the temple, is therefore synonymous in their activities. Each of these organizations is interconnected to understand the pattern of patronage and reciprocity of power that worked in society.³⁹

Being the controller of the whole land⁴⁰, the first step towards the building up of the agrarian prosperity was through the gifts and endowments granted to various bodies like the temple, sabha, nāḍu and to influential individuals. Since the royal support was indirect in several ways, these institutions and private individuals were given responsibility to construct, renovate and maintain the irrigation system. The state keeps a watch on their activities in this sphere.

The role of the temple could not be analyzed as a mere religious head, that it had several commercial and cultural implications to be considered. Scholars like Champakalakshmi, Kesavan Veluthat, Burton Stein, James Heitzman, George W Spencer, and others have analyzed its role as a hub of a distributive and redistributive agency⁴¹, the centre of agrarian-corporation that decide the functioning of the whole agrarian economy and also as a revenue collector. Professor R Champakalakshmi

³⁸ Noboru Karashima, *South India History and Society: Studies from Inscriptions (850-1800 CE)*, OUP, New Delhi, 1984, p. 20. Hereafter cited *Karashima, Studies from Inscription*

³⁹ Kesavan Veluthat, *The Early Medieval in South India*, OUP, New Delhi, 2009, pp. 62-63

⁴⁰ Aparajita Bhattacharya, 'Dynamics of Economic Changes in the Agrarian System of South India between 8th to 13 Centuries CE', *The International Journal Of Humanities & Social Studies*, Vol 2 Issue 6, June, 2014, p. 256. The author says that in the oriental context, all land belong to the king's realm.

⁴¹ Burton Stein, 'The state, The temple and Agricultural development: A study in Medieval South India', *The Economics weekly Annually*, Feb 4, 1961, p. 185, and Geeta Vasudevan, *The Royal The temple of Rajaraja: An Instrument of Imperial Cola Power*, Abhinav Publication, Delhi, 2003, p. 80,

remarked about the function of the temples as 'superordinate redistributive instrument'.⁴² She has also studied their role as the nucleus of the rural-urban continuum that functioned as an instrument of integration in the society. This means that the local landed intermediaries, the leaseholders, as well as the actual tillers of the soil, were integrated together into the agrarian economy through means of subordination.⁴³ Temples have also been held as 'hinterland headquarter' of agrarian control supervising different functions.⁴⁴

Spencer's view of the temple is explained as a 'complex, multifunctional institution'⁴⁵ that performs the various role as a religious, economic and political entity. Rajan Gurukkal has quoted Karl Polanyi to insist that this sophisticated system of distribution and redistribution with rights to the temple had made them as a nucleus of an economy.⁴⁶ Heitzman gave his attention to the growing political control of the temple in a more centralized manner around fertile river valleys to support the superior non-agricultural and agricultural groups.⁴⁷ According to Morrison, the religious patronage was seen as the indirect strategy of the imperial centre. He identified the temple as 'social storage' and 'development agency of agricultural production'.⁴⁸

Historiography of the nature and function of early medieval South Indian temples, therefore, gives us a picture of assimilation of political and transcendent power in the

⁴² R. Champakalakshmi, *Trade Ideology and Urbanisation*, OUP, Delhi, 1996, p. 59, she also insist the temple as an ideological apparatus for the collection, assessment of revenue.

⁴³ *Ibid.*, p. 18

⁴⁴ Aparajitha Bhattacharya, 'Dynamics of Economic Changes in the Agrarian System of South India between 8th to 13 Centuries CE', *The International Journal Of Humanities & Social Studies*, Vol 2 Issue 6, June, 2014, p. 255

⁴⁵ Geeta Vasudevan, *The Royal Temple of Rajaraja: An Instrument of Imperial Cola Power*, Abhinav Publication, Delhi, 2003, p. 80

⁴⁶ Gurukkal, *Social Formations*, p. 296

⁴⁷ Heitzman, James, *Gifts of power: Lordship in an Early Indian state*, OUP, New Delhi, 1997, p. 50, similar argument propounded by Champakalakshmi, in her, *Trade Ideology and Urbanisation*, p. 425

⁴⁸ Kathleen D Morrison, 'Coercion, Resistance and Hierarchy: Local Process and Imperial Strategies in Vijayanagar Empire' in Susan E Alcock et.al., *Empires: Perspectives from Archaeology and History*, Cambridge University Press, 2001, pp. 258, 264-265

state system. The function of the temple as a religious, political and economic unit, hence, opened up numerous discussion among scholars over a period of time. Among them, the temple as the controller of hydraulic projects of the state revealed different strata of relationships between the state, the temple and the society.

The temple as an institution in the initial phase of the state formation is understood purely as a religious entity that gave legitimization to the royal authority through means of religious symbols.⁴⁹ Devotion became one of the tools to exert psychological control over the masses by the time. With this, the temple extended religious authority to the water bodies, since the water was a cleanser of sins.⁵⁰ One of the example for the godly testament of a tank is evident from the Thiruvellārai inscription of Dantivarman (775–825 CE). The inscription showed the architectural feature of a well, which was called as *Mārppiḍugu-Perunkīṇaru* at Tenṇūr in Tiruvellārai.⁵¹ Some religious features were evident from the architectural style of the tank. The well was constructed in Swastika shape with four entrance. Hence it called *Nālu-mūlaikkēni*. The portal of Śiva and Parvati along with other deities are lined on either side of the Nandi. The southern side of the well is adorned with the image of Saptamātṛkas, the eastern side with the figure of yoga Narasimha and in the western side, an image of the king with a sword, followed by a horse and some warriors are depicted beautifully. C Minakshi opined that this well might be used for supply water to the temple as well as for the adjacent field.⁵² Therefore, in the construction and maintenance of water, the harvesting system, both the king and the

⁴⁹ Kesavan Veluthat, 'Religious Symbols in Political Legitimation: The Case of Early Medieval South India', *Social Scientist*, Vol. 21, No. 1/2 Jan. - Feb., 1993, p. 24-26, also see his book *The Early Medieval in South India*, p. 73. This was either through considering king as equal to deity, sculpting images of the king in the temple, by ascribing sacred epithets of the king like *uḍaiyar*, *perumāl* and was considered as a metaphor of the state etc

⁵⁰ Kathleen D Morrison, 'Archaeologies of flow: Water and Landscape of Southern Past, Present and Future', *Journal of Field Archaeology*, 40:5, Routledge, 2015, p. 10

⁵¹ EII VOL XI, no 15, The tank is said to be constructed by Kamban Araiyaṇ in the 4th regnal year of Dantivarman. This was said to be used to supply water to the temple as well as for the field's adjacent to the tank.

⁵² C Minakshi, *Administration and Social Life Under the Pallavas*, University of Madras, Madras, 1938, pp. 101-102

temple were involved. Water became a vital religious symbol that enhanced the authority of the temple in controlling resources.

Once the land and water body became the sole property of the god, the temple exercised its control to the maximum extent. This could be through means of lending the land for lease, collecting revenue from those lands, right to mortgage the land in case the tenant failed to repay the amount, controlling the water resources by means of regulating the supply of water to the field, claiming the first turn of water and even deciding the crop that should be produced in the land. An inscription pertained to the period of Rajendra Chola (1086-87 CE), showed that the temple was given authority to collect the *kaḍamai*⁵³ tax from the *dēvadāna* village. The village was also stipulated to give three *kaḷam* of paddy on each *mā* of land to be measured to the temple granary.⁵⁴ This is one of the single inscription that revealed different aspects of the temple like collecting revenue, accumulation of livestock to the temple, allowing tax concession to those lands which were well irrigated.

Apart from this multi-functional task of the temple, certain inscriptions showed their function as the controller of water sources in the villages. The control was granted through the village assemblies and thence it became the customary right of the temple. Appadurai contends that claiming the first turn of water was regarded as the customary right of the temple.⁵⁵ The twin inscription of Sundara Pāṇḍya I, issued in 1221 CE record two different rules for the distribution of water to the *dēvadāna* land. In the first inscription, the Urom granted the right to irrigate from the *periyamaḍai* of Neḷvayil periyakuḷam tank to Nayanār of Tiruvangattiśvaram after receiving the money, for the duration of seven *nāḷigās* (duration of 2 ½ hours) which was considered as *muttumurai* (a turn in irrigation kept in reserve during an emergency).⁵⁶ The second inscription is also

⁵³ The *kaḍamai* tax means land dues which was collected directly from the land owners.

⁵⁴ Inscriptions of the Pudukkottai State, no 116, p 95 (Hereafter sited as IPS), see also K. G Krishnan, *Inscriptions of the Early Pāṇḍyas from c. 300 BC to 984 AD*, no 35, p 44-45. Hereafter cited as *Krishnan, Inscriptions of Pandya*. The inscription is agreement made between *paṇṇilai naṭṭārs* and the members of the village of *nāḍu* made its agreeable to the *Dānattār* (trustees) of the temple. Again, it was also made sure that the paddy collected by the temple shall be redistributed as remuneration for the services.

⁵⁵ A. Appadurai, *Economic Conditions in Southern India. (1000-1500 AD)*, Thompson & Co., LTD, Madras, 1936, p. 293. Hereafter cited as *Appadurai, Economic Conditions*

⁵⁶ IPS no 258, p. 230

an agreement in favor of the same God which states that the ūrom gave first priority to the right to irrigate with the water from the larger sluice, smaller and the last sluice of the tank to Nāyanār. Out of 60 naligās a day, it is stipulated that the first turn of water should irrigate 12 naligas of this dēvadāna field.⁵⁷

When the first turn of water was understood in terms of customary rights, there were some authoritarian aspects which enabled the temple to regulate the water supply and maintenance of the tanks. The Kaliḍaikkurichchi inscription suggests the punishment given for an individual who enjoyed the first benefit of the water when it should be enjoyed by the temple land.⁵⁸

It was not only the devotion and sanctity that made these institution pivotal in controlling the water harvesting system. The donations and gifts also showed their impact. The main source in which the temple amassed wealth and power was through gifts and donations. This became the major institution in which a larger area of land was incorporated into the temple dēvadāna category. A general understanding from the inscriptional source suggests that most of the lands were either fully covered with water or had access to the nearest tanks or reservoirs.⁵⁹ All these endowments were utilized for maintenance, remuneration, agriculture, etc.

The ways in which the temple attained control over the water resources through gifts and donations could be understood in two ways, Claiming and reclamation of land and endowments to the temple made by various bodies.

The extensive Brahman settlement and increase in the number of constructions of the temples in the Tamilakam made it necessary to increase the agrarian production to meet the needs of the growing population and also to maintain these organizations. This could be regarded as the first step towards an organized settlement and production. The state was the major player in this act and they encouraged reclamations of the uncultivated lands through agencies like the temple, village high officials and individuals. An economic motive is best suited behind this cause rather than attaching a sovereign authoritarian position to the king in undertaking these works. Appadurai insists

⁵⁷IPS no 259, p. 230

⁵⁸ SIII Vol XXIII, no 90, pp. 53-54. he was required to pay the amount of 13 kāśu to the temple

⁵⁹ Some of the Inscriptions like SII Vol XIX, no 80 and no 265, IPS no 85, pp. 55-56; no 89, pp. 58-61; no 97, pp 72-73; SII Vol XIV, no 157, p. 83 showed this aspect of the temple

that the main aim of the state involved reclamation was to increase the population and subsequently the cultivation. Hence, there would be an increase in taxation to the state.⁶⁰ Such acts were supported by the state through granting tax-free concession to the peasants and people who reclaimed it and bought it for cultivation for the first time. There were instances that gave the donee the special right to collect taxes from their respective reclaimed land. Large tracts of forest lands were thus cleared. The words like *aṟu kāḍu* (felled jungle), *eri kāḍu* (burned jungle) is suggestive of these increasing reclamation that showed the clearing of forest lands for the purpose of creating villages.⁶¹ In most of the cases, the grants were made with reclamation as their sole purpose.⁶² It was the duty of the village or respective institution to make it fertile through possible irrigation system through employing tenants. The reclamation of land by the tenants was most welcomed because these land received tax concessions from the state for the specified period.⁶³ This motive of the state became successful with the effective improvement in irrigation technology.

Usually, the reclamations were done concentrating the temple alone. The temple-centered reclamation of the state is known as the system of favorable leases⁶⁴ which gave a certain right to the temple in deciding the rate of taxation, production of crops as well as its distribution and more importantly the control over the water resources of the territory. Most often, these reclamations were done on behalf of the temple by sabha, ūr and, some wealthy merchants. Their act was viewed as either for charity or for profit (*uḷavukkāṇi*).⁶⁵ Their sole purpose was to make these land watered and donate it as dēvadāna along with the whole right to the temple.

The direct reference to the reclamation from the side of the king is evident from an inscription from Lalgudi taluk. It provides a reference to an endowment made by certain

⁶⁰ Appadurai, *Economic Conditions*, pp. 188-192

⁶¹ Noboru Karashima, (ed.); *A concise History of South India: Issues and Interpretations*, OUP, New Delhi, 2014, p. 93

⁶² Some inscriptions from IPS no 136, no 139, no 140 is the suggested reclamations of irrigated fields

⁶³ K A Nilakanta Sastri, *History of South India from Pre-Historic Times to the Fall of Vijayanagar*, OUP, London, 1995, p. 318

⁶⁴ Appadurai, *Economic Conditions*, p. 195.

⁶⁵ *Ibid*, p. 284

Dēvan Arumoli of Perumpaḷāvēr. He after purchasing dry land and its conversion to a wetland (*nīr-nilam*) donated to the temple of Īśvara-Bhattāraka.⁶⁶ Inscriptions of a similar kind are also available in numerous numbers where the officers, sabhas, ur and wealthy individuals like merchants were involved in the transaction of reclaiming the dry or wasteland.⁶⁷ From the analysis of this inscription, it is apparently clear that the main aim of such reclamations was the conversion of the dry land into wetland through means of irrigation. The recoveries of drylands done by the individuals insist that, along with the uncultivated land, attempts were done to renovate the tanks adjoining the land.⁶⁸

After the reclamation process, donating the lands to the temple as a tax-free devadāna was seen as a general tendency. It was not only the land but the irrigation sources were also granted as *Kāṇikkaḍan*⁶⁹ to the temple with the whole right over the water resources. At this juncture, the temple gradually gained authority over the water and became the sole distributor of water to the fields. The temple authorities were free to give permanent tenancy right to the individual to reduce the land from being fallow and to decrease the chance of breaching of the land. Therefore, the maintenance of such water sources also became the duty of the temple authorities. The Koḍumbālūr inscription of Māṇavarman Kulasekhara I (1309-10) states the perpetual lease of tenancy right over the land Iluppaikuḍi by the temple authorities to one Dēvaṇ Tirunelvēli Uḍaiyār. The lease was made so that the temple authorities got 100 paṇam as *Parivaṭṭamudal* (prize of the temple honour) and he was to undertake further work on the repairing of the breached tank to bring the land under cultivation.⁷⁰ It is therefore clear that, even though the reclaimed land was granted to the individuals, in the end, the prescribed produce reached the temple granary. The act of reclamations, hence, was to increase the cultivation and revenue of the temple.

⁶⁶ SII Vol 13, No 75, p. 35. As the name Arumoli is the surname of Rājārāja I, it could be a royal endowment after the reclamation.

⁶⁷ The Ambasamsudram Inscription of Rajasimha (SII Vol XIV, no. 56, p 41), suggest the reclamations done on behalf of the temple. See also IPS no 92 p 67-68, SII Vol I, no 65

⁶⁸ IPS, no140, p. 116

⁶⁹ See Tiruneḍungalām inscription of Rājārāja I in SII vol XIII, no 182, p. 100. After the joint sale of land, they agreed upon to pay 150 kaḷam of paddy as *Kāṇikadan* that will allow the tank to irrigate the temple land. *Kāṇikadan* means land grant or owners share.

⁷⁰ SII Vol XXIII, no 136, p. 109

In the Tiruppanaṅgudi inscription of Virupaksha II dated in 1383, the sale money from dry and wetland was utilized by the temple authorities to renew the breach in a local tank called Caḍaiyēri.⁷¹ Through the process of improvement of lands, the temple gradually acquired command over the land. At the same time, they also preserved the tanks and water bodies from rupture. Burton Stein tried to link these activities of the temple for the irrigation system by analyzing the gap between the volume of resources that came to the temple and the secular management of the temple. This development actually reflected the investment kept for the irrigation by the temple.⁷²

Arjun Appadurai insists that the endowment to the temple was a method to extend the royal control through religious bodies. It was during the reign of Rājārāja I that early medieval Tamilakam witnessed such kind of royal endowment in great numbers and a decline in the Brahmin dominance.⁷³ Burton Stein argues that the temple-centered development in South India was carried through the endowments and gifts that they received. The gift of land to the temple was regarded as an act of ‘private benevolence’⁷⁴ and the gift of gold to the temple was categorized as ‘invested capital’.⁷⁵ Appadurai opined that in the long run, the act of benevolence increased the status of the donor in the society. Therefore, scholars have argued that the King was the major donor of endowments “.... without endowments the king would ease to place himself in an active relationship with the redistributive power of the deity and thus would fail to acquire the honor constitutive of sovereignty. Without protection, that is, without authoritative ratification by royal edicts, the king would have rejected his fundamental duty towards his subjects”.⁷⁶

⁷¹ Subbarayalu *Inscriptions of the Vijayanagara rulers*, no 112, pp. 87-88, see also IPS, no 223, p. 196 the responsibility to maintain the tank was given to the Śivabrāhmaṇar of the temple.

⁷² Burton Stein, ‘The Economic Function of a Medieval South Indian Temple’, *The Journal of Asian Studies*, Vol. 19, No. 2, Feb., 1960, Published by Association for Asian Studies, pp. 164-168

⁷³ A Appadurai, ‘Kings, Sects and The temples in South India, 1350-1700 AD’, *Indian Economic Social History Review*, 14; 47, 1977, p. 49

⁷⁴ Appadurai, *Economic Conditions*, p. 21

⁷⁵ *Ibid*, p. 22

⁷⁶ Geeta Vasudevan, *The Royal Temple of Rajaraja: An Instrument of Imperial Cola Power*, Abhinav Publication, Delhi, 2003, p. 74

The king played a prominent role in granting tax-free gifts to the temple for the functioning and maintenance. These gifts were generally called as devadānam or *tirunamattukāṇi*. There are instances where the king gave wetland surrounded by sluices and channels for the temple to meet the daily expenses.⁷⁷ After granting the land, the king was in the position to check whether the land, tank and agrarian products were well protected and regulated. A kind of control still existed even after the sale that meant to ensure proper cultivation. It allowed the state to confiscate the land from the temple because of their inappropriateness. Inscriptions like Kīlmāttūr inscription of Vira Pandya issued in 955-56 CE suggest the regulating power of the state.⁷⁸ Therefore, a twin motive of the state in supporting the temple and bringing the uncultivated lands in the territory is clearly evident.

The temple authorities, in turn, utilized this monetary support for remunerating and granting loans to the individuals. The kind of royal grant (possession of land or village or enjoyment of revenue or taxes) which they received had brought certain authoritarian power over the land and resources especially to the water bodies. The grant thus made showed the kind of right that the state possessed over the land. This right was visible in two possible ways. One is to receive the royal share from those gifted lands and the other was to give the sole proprietorship of the soil to the temple.⁷⁹

A more strict and affirmative rule over the creation of dēvadāna and subsequent use of water from the land was laid down in the Thiruvallangadu copper plate of Rājendra Chola I (1020 CE) which discuss the grant of dēvadāna to the temple of Tiruvallanguḍuḍaiyar in Jayāṅkonda śōlamandalam. It stipulates that all the resources, gazing lands, trees, tanks, and all taxes which the king used to enjoy earlier were transferred to the temple. Along with this, certain *vyavastās* (conditions) regarding the irrigation of the land was also fixed : (a) the land to be irrigated from the channels thus dug (b) it put restrictions on others who were not the tenants of this dēvadāna to direct water from the canals, dams through picotahs (c) the water should be used

⁷⁷ Burton Stein, 'The State, the Temple and Agricultural Development: A study in Medieval South India', *The Economics Weekly Annually*, Feb 4, 1961, pp. 180-181, see also SII Vol II, part 2, no 77

⁷⁸ T.V Mahalingam, *A Topographical list of Inscriptions in the Tamil Nadu and Kerala The state*, vol 5, ICHR, New Delhi, 1989, no 44, p 111

⁷⁹ Appadurai, *Economic Conditions*, pp. 27-28

proportionately for the irrigation purpose, (d) it can irrigate the village where the channels pass by (e) the reservoir, embankment should be built with burnt bricks (f) the village can raise the embankment to its maximum to hold maximum quantity of water.⁸⁰ The inscription, therefore, set an ample example for the creation of a *dēvadāna* land by the king with rights and privileges to the temple. The condition at which the land was to be irrigated reflects the fact that the state was concerned with the optimum use of water with less or no wastage of it. Strict laws were enforced so that the functioning of the tank or dam was done efficiently in the country.

After the endowment was being made, it was also necessary to define the boundary of the land. That necessitated even the royal authorities to define the land with a proper boundary after the gift. This had become obligatory after the increase of the private reclamation of land. While describing the boundaries of such lands, they made it clear that the four boundaries were properly fed by irrigating sources.⁸¹

Under the Vijayanagara rule, since the administration of the province was entrusted to the *nāyaka* rule, we do not find the direct influence of the ruler, but the *nāyakas* showed their influence in such places. One such evidence of gift directed by *nāyaka* is evident from South Arcot District. The inscription was issued by Sriraṅga I in 1584 AD, where Koṇḍama-*nāyak* remitted the *jōdi* and *birāḍa* tax on the 38 villages situated in his *nāyaṅkara* and endowed to the temple of Ādivarāha- Perumāl so that the canals and tanks in the endowed village will increase the temple revenue. And the temple is under the representation of Achyappa-*nāyaka*.⁸² Here, it is clearly evident that the canal and the tanks were the major sources of revenue to the temple.

This act of the state reveals the strategy of the centre in extending their control to the peripheral zones especially through means of the temple. Therefore, it is relevant to study the nature of these imperial political control through these transactional networks. The major temple was located in the core area of the empire and thus served as the border markets in the empire. While in the peripheral zones, the reclamations undertaken by the temple with the patronage of the state helped the king to the extent their political control

⁸⁰ SII Vol III, part 3, no 205, pp. 383-439

⁸¹ Some of the inscriptions that defined boundaries with the water sources were IPS, no 21, p. 23 no 127, p. 106; no 129, p. 107; no 136, p. 113; no 147, p. 121

⁸² SII Vol 16, no 294, p. 298

in these areas.⁸³ Heitzman analyzed the different implication of these networks of control. He insisted that at the public level, the king got *mariyathai* (honour), spiritual supremacy through these endowments, while at the administrative level, the grants helped them to accumulate the funding and staffing of the temple.⁸⁴

After the royal involvement, the next prominent institution was the local governing bodies of the state like those of *nāḍu*, *sabha* and the *ūr*. The nature of the landholding pattern of these villages showed a trajectory of involvement of individuals and landlords. Karashima argued that in the early period, there existed a communal or collective proprietorship of land in the non-brahmadēya villages and individual ownership in the brahmadēya villages.⁸⁵ These organizations were also granted permission to issue endowments to the temple.⁸⁶

It was during the Cōḷa period, we found a considerable number of inscriptions that describe the authoritative power of *sabha* over grating lands to the temple. Most often these grants were given as tax-free gifts to ensure minimal obligation to the temple in giving taxes to the state. Along with this, they also ensure that the land under the temple was under the proper irrigation system and also kept a check on its functioning.⁸⁷ Within the authoritative power of *Sabha*, the responsibility of maintenance and renovation of

⁸³ James Heitzman, 'Ritual Polity and Economy: The Transactional Network of an Imperial The temple in Medieval South India', *Journal of the Economic and Social History of the Orient*, Vol. 34, No. 1/2, Brill Publication, 1991, p. 52, and George W Spencer, 'Religious Networks and Royal Influence in Eleventh Century South India', *Journal of the Economic and Social History of the Orient*, Vol. 12, No. 1, Brill Publication, Jan.,1969, p. 54

⁸⁴ James Heitzman, *Gifts of Power: Lordship in an Early Indian State*, OUP, New Delhi, 1997, p. 125

⁸⁵ Kesavan Veluthat, *The Political Structure of Early Medieval South India*, Orient Longman, New Delhi, 1993, p 175. Hence forth cited as Veluthat, *Political Structure*

⁸⁶ Nilakanta Sastri, *The Pandyan Kingdom: From the Earliest Times to Sixteenth Century*, Luzac &Co., London, 1929, p. 232, Even though the assembly was given permission to decide and gift the lands (under proper irrigation) to the temple, Nilakanta Sastri has argued these organizations were kept away from some of the activities like the administration of the temple, maintaining lamps in the temple, deciding remuneration to the servants etc.

⁸⁷ SII Vol XIX, no 265, p. 134; see also SII Vol XIX, no 395, p. 208; SII Vol XIII, no 333, p. 176; SII Vol III, part 1, no 34, p. 78; SII Vol XIX, no 160, pp. 80-81; IPS, no 148, p. 122; IPS, no 158, p. 131; Subbarayalu *Inscriptions of the Vijayanagara rulers*, no 261, p. 215

irrigation systems sabha was entrusted to the annual tank supervision committee (ērivāriya perumakkal). It was from the period of Pallava, there existed a tank supervision committee in every village who were responsible for the maintenance and renovation of tanks in their respective village. Likewise, the governing bodies, these committees also granted gifts of irrigated fields regardless of their prescribed functions. This was seen as an act of benevolence to the religious institution.⁸⁸

In the activity of donations, the role of individuals, wealthy merchants and landlords were indispensable along with the state and other governing bodies. Noboru Karashima insists that in the earlier period of Pallava, Pāṇḍya and Cōḷa the donation of the land was made most probably by the *ūr* or *sabha* and the names of the individual may be absent. The so-called private transactions of the individual were rarely inscribed on inscriptions.⁸⁹ At the same time, Subbarayalu, as well as Karashima, opined that individual ownership of land increased during the 11th century and they were in a position to grant tax-free gifts to the temples. The nature of gifts was chiefly for the purpose to meet the temple requirements. This, in turn, backed the temple to emerge as the real owners of the land with full irrigation rights⁹⁰.

The inscriptional sources suggest that the land was bought from the governing bodies like *ūr* and *sabha* after paying the amount for the land. When it became the sole property of the individual, he gifted the land along with the right of the water to the temple as divine gifts. Likewise, the ruler's intention, the individuals also made the endowments as charity work or to gain honour in the society. The Ālambākkam, inscription of Dantivarman (807 CE) Vijayanārāyaṇam inscription of Pāṇḍya king Varaguṇa II (863 CE) are some of the examples for the land transaction between the Sabha and the individual. After the transaction, they gifted the prescribed land along with

⁸⁸ The functions of the tank supervision committees in granting the gifts was evident from SII Vol XIII, no 93, p. 45, SII Vol XIX, no 240, p. 123. The available two inscriptions suggest that they made gifts for the daily worship of the temple. Their motive in this aspect is similar to the local governing body.

⁸⁹ Karashima, *Studies from Inscriptions*, pp. 20-21. See also Karashima, *Epigraphical Study of Ancient and Medieval Villages in the Tamil Country*, p. 9

⁹⁰ Y Subbarayalu, 'Changes in Agrarian Relations in the Kaveri Delta, c. 900–1300', *Social Scientist*, Vol. 38, No.7/8, July-August 2010, p. 46

tanks and *ēri* as a divine gift with an exemption of taxation.⁹¹ These transactions were done under the category of *iraiyili devadanam*, *iṛayili kāraṅkilamai*, *Meḷukkuttuḍaval*, etc.

The main motive behind all these endowments was to grant the temple with resources for the daily expenses, remunerating the servants and feeding the Brahmanas. It was made sure that the temple was approved with full right to utilize the water from the irrigation sources. So in all the aspects, the land transactions of individuals and governing bodies granted the temple to extend its authority. For example, in an inscription, one individual named Pirāntakan Vīra Cōḷan gave the land to the Mahādēva of Nīrpaḷani, specifying that prescribed lands were utilized as *archanabhōgam*, *Meḷukkuttuḍaval* (lands held as remuneration for cleaning the temple floor with cow dung). Along with the grant, certain rules were enumerated that these dēvadāna lands should enjoy the first turn of the water. It also made clear that the temple priest was to be the administrators of the land. Pirāntakan Vīra Cōḷan declared the land as *puṛam* (tax-free) exempted from royal taxes *iṛai* (land tax) and free of *kuḍi* (cultivator).⁹²

It should be noted that during the nāyaka times, it was not the government servants but the men of wealth and privilege who did the gifts and donations. This was done primarily to meet the expenses of the temple and for the well-being of the donor. David Ludden, therefore, remarks that the patronage at this point lies from the local elites and not from the state.⁹³ One thing is illustrious that unlike the Pallava to Cōḷa times, in Vijayanagara jurisdiction, the role of local governing bodies or the supervision committees was decreasing. This is evident from the inscriptional sources itself. Instead of giving the charge of the transaction to the sabha, the nāyaka himself or high officers were granted the right to issue gifts, maintaining tanks and also its administration. The

⁹¹ SII Vol XIII, no 222, p. 120. similar inscription is evident from SII Vol XIV, no 17, p. 17 (ie. the Vijayanārāyaṇam inscription c. 863 CE) and in SII Vol III, part I, no 50, p. 104; IPS, no 124, p. 101. In this set of inscription, the land under the tank, *ūṇikal* (small tank for drinking purpose) were gifted as *dēvadāna iṛayili* (exempt from royal tax as the land was endowed to charity purpose).

⁹² IPS, no 30, pp. 28-29 see also, the Tiruchcheṅgōdu plate of Rāja Kēśari Varman-(Rājarāja I) in SII Vol III, Part 3, no 213, p. 477-480; SII Vol III, part 2, no 68, pp. 140-143; SII Vol XXIII, no 368, pp. 254-255; IPS no 167, pp. 154-155; no 251, p. 221

⁹³David Ludden, 'Patronage and Irrigation in Tamil Nadu: A Long Term View', *The Indian Economic and Social History Review*, Vol XVI, No 3, p. 357

Kāñjipuram inscription of Kampana II ⁹⁴, an inscription of Harihara II from Chittoor district, and the Kāñchipuram inscription of Sāḷuva Narasimha I all suggest the direct involvement of nāyaka or officers in deciding the nature of a gift to the temple.

So understanding the power of the temple in maintaining and governing the hydraulic sources requires a minimal understanding of the nature of gifts and endowments given by the state, corporative bodies, individuals and officials. It showed the way in which the temple accumulated property and exercise control over water resources.

The rulers of the medieval Tamilakam were interested in the construction and maintenance of the hydraulic systems of the country. Between the 4th and 8th century, we find a shift in the attitude of the state towards these work. In the beginning, its construction was seen as something that was to increase the virtue and prosperity of the state. In the meantime, the state was not directly involved in construction, but they had extended their patronage to several other institutions, and to honour individuals of the empire. They had initiated the process of gifting wetland to the temples and granting them full right over the water resources. It was not only the gift but the whole right over the land was thereby granted.

A drastic shift in this aspect is visible during the latter half of the 9th century, where there were huge agrarian prosperity and increasing private land holdings. There was a gradual increase in the authority of the state. During the Cōḷa period, particularly under Rajendra Cōḷa I, the role as a settler of disputes got shifted to an institution that gave more relevance to the construction of these networks of water sources. This was done mainly to improve the agrarian production to gain economic prosperity of the state. During the time of the second Pāṇḍya rule, the involvement of the state was visible while settling disputes over the distribution of water. He had also had taken away the right of the temple in controlling the water resources. The inscriptions, hence, show that the act of increasing the construction was initiated in the Cōḷa period, but a more restrictive approach was proposed by Pāṇḍyas of later period.

⁹⁴ Subbarayalu *Inscriptions of the Vijayanagara rulers*, no 26, p.19; no 510, pp. 424-425; no 476, p. 394. All the inscriptions suggest the involvement of Nayaka or officer. They decide the quantity of water to be supplied, the year at which the temple can enjoy the water way etc.

From the epigraphical evidence, some generalizations on the nature of control by the state and the temple over the irrigation sources can be enumerated. The state was the major institution in which the grants and powers were granted to the temple. For the state, this was an act of benevolence in the public sphere and the accumulation of power in the political space. Religious symbol act as the major insignia of this authoritarianism between both the temple and the state.

The control through devotion was always supported by the state in the domain of the irrigation system. The state indirectly functioned in the agrarian activity by granting power to the various establishment. But in certain inscriptions, we find the cumulative role of the state in deciding the supply of water and its optimum utilization. The major effort from the royal side was to ensure full-fledged cultivation. Therefore, going by the argument of Michael Mann, we can clearly argue that the network of the state control existed in medieval Tamilakam but does not actually represent the hydraulic despotism as put forth by Karl A Wittfogel. He was actually critiquing the Wittfogel by arguing that the control of irrigation networks is only a part of the ideological power of the state and therefore cannot be considered as a managerial state. His theory of IEMP model can be applied in this scene because the temple functioned as an institution that reflects the ideological as well as the economic power of the state. Ideological function means the transcendent version of authority, while economic power integrates human labour and the mode of production.⁹⁵

The process of reclamation, as well as endowment, went together in the economic scenario of Tamilakam. It was not only the state involved in both the process but local governing bodies and merchants showed their power. The land was granted mainly for the cultivation process and to meet the expenses of the daily offerings. Reclamation was not a one-way process to meet the pressure of population. I also reflected the relevance given to the irrigation sources. All the reclaimed lands which were under the tank became the property of the temple after the endowment. So the authorities of the temple in a way were responsible for the renovation work of it.

⁹⁵ Micheal Mann, *The Sources of Power: A history of power from the beginning to A.D 1750* Vol 1, Cambridge University Press, 1986 , pp. 519-521

The revenue thus accumulated was to be utilized to meet the daily expenses of the temple services. The gifted land thereby gave some rights to the temple authorities which is termed as customary rights. That was to decide the amount of water to be distributed and also decide which crop was to be cultivated in the field. The cultivated products thus went directly to the temple treasury.

The violators of the deed were punished either by the king or through governing bodies. The villagers, therefore, were subjected to undertake a pledge on behalf of the temple. In order to ensure smooth functioning of the deed, the land under good irrigation was granted tax concessions.

Increasing private endowments showed that the individuals were allowed to buy lands from sabha or ūr. This feature was in its maximum during the 11th century. The conversion of dry land to wetland never indicated an act of charity but do refer to the aspects of profit accumulation. Another feature of these private endowments was, after the reclamation of land, they tried to rename the land or tank if they had done any renovation works. In the social setup, this new pattern of distribution brought some people into the apex of social hierarchy by controlling the resources produced out of it.

As Rajan Gurukkal remarks, the cultivation based on wetland had also led to the proliferation of occupational specialization and hierarchy in society. The growth of private holding explicitly suggests the emergence of new hierarchical arrangement in society.

The changes in the administration during the Vijayanagara rule in Tamil country had a far-reaching effect on the local governing bodies. While analyzing the inscriptions of the Vijayanagara empire, it becomes clear that in the field of the agrarian economy as well as in the administration, the role of local governing bodies had been decreased. Burton Stein therefore rightly remarked "...local, agrarian institutions were undermined by the Vijayanagara expansion. Ūr, sabha, nāḍu were first declined and finally disappeared..."⁹⁶

An analysis of the provenance of the inscription suggests various ways in which the irrigation system was organized over the period. During the period of Pallava, Pandya

⁹⁶ Tapan Raychaudhuri, and Irfan Habib (ed.), *The Cambridge Economic History of India c. 1200-1750*, Vol 1, Orient Longman, 1982, p. 108

the irrigation systems were concentrated in and around the Madurai, Pudukkottai, Ramanathapuram, and Tirunelveli, etc. While during the Vijayanagar period, there occurred a shift in the increase of irrigation around the fertile areas of Kaveri like North Arcot, South Arcot, and Kanchipuram. The dry areas were left under minimal irrigation system.

The study also revealed the initiative undertaken by the rulers to spread the networks. In the Pallava period, the concentration of hydraulic works was given to the Tonḍaimaṇḍalam areas surrounding the river Pālar. The rulers like Nandivarman, Dantivarman, and Kampavarman spread these networks mainly to the Arcot district, Chingleput, and Pudukkottai regions. In the early Pandya period, it was Śrīvallabha who took the major initiative. Under him, the Pāṇḍyamaṇḍalam area surrounding Madurai, Ramanathapuram districts received considerable attention. During the Cōḷa period, intrusion to the peripheral areas was clearly visible from their activities for hydraulic improvements and management. Aditya I (891-907 CE) gave relevance to the core areas of Cōḷamaṇḍalam. A shift in the attitude was visible from the period of Parāntaka I (907-950 CE). Village assemblies were the major player in the expansion. During his period, the incorporation of Tonḍaimaṇḍalam areas into the agrarian economy was vehemently reflected. The successors of Parāntaka followed the same pattern of expansion except for Rājārāja I (985-1014 CE). During his reign, more attention was given to the areas surrounding Kāveri basin than Tonḍaimaṇḍalam and Pāṇḍyamaṇḍalam. Numerous works and regulations were visible, particularly around the peripheral region (Pudukkottai). This alludes the expansion and intrusion of the authority over the peripheral agrarian zones. For example, the inscriptions pertaining to the period of Rājārāja, Rajendra, Kulōttuṅga I, Kulōttuṅga II showed their enthusiasm to expand the irrigation networks to these areas. From the regnal year of Kulōttuṅga I (1070-1120 CE), the works that were done in Tonḍaimaṇḍalam and Pāṇḍyamaṇḍalam became more evident. Under Kulōttuṅga II (1133-1150 CE) and Kulōttuṅga III (1178-1218 CE), the regions of Kāñjipuram, Rāmanāthapuram, Tirunelveli once again came to the limelight. The period of the 13th century showed a much different approach. During the period, the Pandya's under Sundara Pandya made significant hydraulic expansion to the territory. During this period, both Pāṇḍyamaṇḍalam and Pudukkottai region received equal attention. Under Vijayanagara rulers, as mentioned above, the attention was given to the fertile regions of the state.

The inferences from the epigraphical sources suggested that the rulers exceptionally supported the irrigation projects. These networks became a tool for the agrarian expansion and political intrusion to the inner zones of Tamilakam.

CHAPTER II

INDIVIDUALS, VILLAGE COMMUNITIES AND HYDRAULIC PROJECTS: INFLUENCE AND CONTROL

Communities and corporations of the medieval Tamilakam had a significant place in the political, social and economic history. Scholars like Nilakanta Sastri described the village communities of Cōḷas as “little republic” and “federation of group” as they functioned autonomously without the interference of the ruling dynasty¹. While T V Mahalingam defines village communities as “a self-acting group of Teutonic families exercising a common proprietorship over a definite tract of land, cultivating a common system and sustained by its products.”² These communities include the Brahman assembly like *sabha*, the non- brahman assemblies like *ālungaṇam* and supra-local bodies and nagaram that functioned within the village.³ According to these early scholars, these powerful administrative structures functioned independently with minimal state intervention.

Burton Stein opines that the activities of the local assemblies as ‘decentralisation of state’.⁴ The nature and functioning of these communities revealed autonomy of assembly, but in certain cases, the allegiance to the state was clearly visible. The ūr and nāḍu was the political and revenue unit of the state.⁵ These institutions were therefore, controlled and maintained by the centre, with little autonomy in local matters.

¹K A Nilakanta Sastri, *The Cōḷas*, G.S Press, Madras, 1955, p 465, 515. Hence forth cited as *Sastri, Cōḷas*

² T V Mahalingam ‘Village Communities in South India’ in B P Sahu (ed.), *Land System and Rural Society in Early India*, Manohar, New Delhi, 1997 p. 179. Hereafter cited as *Sahu (ed.), Land System*

³ Sastri, *Cōḷas*, p. 465. Sastri called village assembly of the Cōḷas as ‘little republic’ because they functioned autonomously in the state without interference of the ruling dynasty. The executive body of the ur and sabha was called as *ālungaṇam* and *vāriyam* respectively. ‘According to Karashima, Ur formed the basic productive classes who were held responsible for the payment of taxes, while sabha formed the nucleus of administration in the village level with the brāhman head.

⁴ Veluthat, *Political Structure*, p. 169. See also; Burton Stein, (ed.), ‘The State and the Agrarian Order in the Medieval South India: A historiographical Critique’, *Essays on South India*, Asian Studies at Hawaii, No. 15, The University Press of Hawaii, 1975,p 69.

⁵ The idea of political and revenue unit of the state was proposed by scholars like Nilakanta Sastri, Subbarayalu, Burton Stein, Kesavan Veluthat, Noboru Karashima, Karashima.

The historiographical studies revealed numerous analysis about the nature and functioning of these organizations. The earliest effort in investigating the role and functions of the village assembly was done by Nilakanta Sastri who articulates that the village system exhibits a change in nature and functioning from the Pallava –Pandya period to the Cōḷas.⁶ Sastri opines that the relation between ūr and sabha or brāhmin and the non-brahmin settlement was primarily determined by the land. The changes in the landholding pattern of early medieval period initiated societal changes and the evolution of new landholders in the state. The communal landholding pattern of the early Cōḷa period had shifted to individual holding on a wider scale.

It is therefore important to know the landholding pattern of the irrigated land over the period to widen the scope of the study. According to Burton Stein, this relation between the two was mutual and beneficial, that segmented into localities with certain specific roles. He says that the Brahman settlement was concentrated more in the riverine tracts with full-fledged irrigation system. They brought the virgin land cultivable with advanced technology. Hence, the Brahman assemblies were the ‘maker’ of mature agrarian location in the macro region.⁷ The studies showed that the proliferation of nāḍu was in the fertile river valley during the initial period of state formation and later expanded to the nonfertile areas.⁸ The expansion of nāḍu in the non-fertile areas aimed at reclaiming and converting the land to fertile one by diverting irrigation sources.

⁶ Nilakanta Sastri, *Studies in Chola History and Administration*, University of Madras, 1932, pp 107-108, He did his preliminary study by analysing the epigraphic evidence from Uttaramerūr. Through the inscription, Sastri analysed the changing trend in the functioning of the sabha from the period of Dantivarman to Nandivarman. He says that the mature sabha during the period of Dantivarman undertook administration of village assemblies, distribution of resources, taxation etc got shifted to a more specific function with the qualification as parameter and for specific tenure. Arjun Appadorai also discussed the functions of the village assemblies.

⁷ Sastri, *Cōḷas*, p. 494, According to Nilakanta Sastri, the relation between the ūr and the sabha is something like ‘involuntary subordination, as a consequence of external pressure’. Also, see the work of Noboru Karashima *Studies from Inscriptions*. In the study conducted by Karashima, it was reveal that there was a change in the pattern of land holding when there was increase in transaction of private property. The communal holding of the brahmadēya land under sabha or ūr got shifted to the private holding that eventually paved way to the emergence of local chieftains with the title ūḍaiyan etc. According to Bhairabi Prasad Sahu, the incorporation of landed magnates like ūḍaiyar, vellālas as the maker of the agrarian relation reflects the inherent dynamism of the state. Bhairabi Prasad Sahu, ‘The State in Early India: An Overview’, *Proceedings Of the Indian History Congress* vol. 55 (1994), p 92.

⁸ Kenneth R Hall, *Structure and Society in Early South India: Essays in Honour of Noboru Karashima*, OUP, 2005, Article 1, p. 8, See also Burton Stein, (ed.), ‘The State and the Agrarian Order in the Medieval South India: A historiographical Critique’, *Essays on South India*, , p. 71

Supporting this argument of Stein, Veluthat connected the water bodies as the central theme to the locality of the nāḍu.⁹

The structural and geographical arrangement of nāḍu is important to understand the nature of distribution and utilization of these water sources. Nāḍu was the major political unit of the state, which held mainly to collect revenue.¹⁰ According to Stein, nāḍu was the basic superstructure with strong core, intermediate and periphery segment. These were the basic 'peasant macro-region' with an 'ethnic coherence'.¹¹ The hydraulic developments in these areas imply the complex system of technological innovation, its control, utilization, and institutional interaction. Hans George Bohle argued that this interaction between these institutions was interconnected.¹²

In the effective functioning of hydraulic projects, the interaction between the centralized state and the institutions of village assemblies was clearly visible. The task of the state was to execute and ensure well-maintained reservoirs and tanks in the territory. The completion of maintenance works and distribution became the responsibility of village bodies, the landlords, merchants, and the temple.¹³ Kathleen Morrison, therefore, insists that most of the irrigation facility in the Southern Indian state

⁹ Veluthat, *Political Structure*, p. 178. Champakalakshmi critiqued the conventional and segmentary state proponents for their ignorance of understanding the changes happened in nāḍu due to their contact with temple and nagaram. According to Champakalakshmi, urbanisation in the early medieval period was the major cause for the changes in society.

¹⁰ Y Subbarayalu, *Political Geography of Chola Country*, State Department of Archaeology, Government of Tamil Nadu, 1973, pp. 22-36, 40-41. Subbarayalu analyzed the role of nāḍu as a territorial unit bounded by water bodies, which tied together with their kinship relation. For the state, nāḍu was the chief source of the taxes, spokesmen of the people, paid the burden of taxes on behalf of time, undertake repair work of tanks and dams for the village assembly for interest.

¹¹ Burton Stein, *Peasant State and Society in Medieval South India*, OUP, New Delhi, 1994, p 3, p.25. Henceforth cited as Stein, *Peasant State*. And Aparajita Bhattacharya, 'Dynamics of Economic Changes in the Agrarian System of South India between 8th to 13 Centuries CE', *The International Journal Of Humanities & Social Studies*, Vol 2 Issue 6, June, 2014, p 254.

¹² Hans-Georg Bohle, 'From Centre to Periphery: Changing Spatial Structures in Rural South India 985-1985', *Geo Journal*, Vol. 10, No. 1, South Asian Affairs II, January 1985, p 7. He tried to analyse the manner in which the irrigation systems of the country was geographically arranged. The autonomy granted by the king to these institutions granted them with the responsibility to collect revenue, maintain and construct irrigating sources etc.

¹³ The references to functions of the administrative body as controller of water resources can be substantiated from the inscriptional sources. In some records, the nāḍu or assemblies like sabha or ūr was granted permission to decide, distribute this particular water sources. For example, The Siṅṇamaṇūr inscription of Śrīvallabha in 857 CE and Sālaigrāmam inscription of Vira Pāṇḍya issued in 957 CE suggest the role of sabha in deciding the distribution of water to the villages. For the details of the inscription see SII Vol XIV, no 78, p. 50; and EI Vol XXVIII, no 17, p. pp. 85- 92 respectively.

was not always directed or financed by royal authorities. The local elites also undertook the financing, commissioning of irrigation projects in the country through the cooperation of the landowners.¹⁴ This network of irrigation sources in the country may reflect the complex interconnection of local involvement in its control and maintenance.

Likewise, the royal initiative of construction, the village assemblies like Sabha and *ālugaṇam* had also constructed new tanks, channels, and bunds in the village. From the epigraphs, the direct involvement of the sabha was evident from the Uttaramerūr inscription of Kampavarman (877 CE). It recorded the sale of ½ kol of land surrounding the bund of the tank called Karaikaikutṭam for building a maḍam and for the raise of *bahir-bhūmi* (digging for the earth to raise bund). After the sale, the sabha had given a title deed (*paṭṭasāmantu*) stating that person who digs the bund of the tank was fined 5 kalañju of gold in favour of *vaiyarmegha tatāka* and who let the water flow from the tank (*nīrvittar*) shall be treated as traitors of the village.¹⁵ While in the Tippasamudram inscription (886 CE), it gave evidence that a channel (Viḷuppēraraiyan) was constructed by the Pṛtviyaṅgaraiyar (chief of the nāḍu) and his wife Illāḍapperundēviyār for the merit and memory of their son Ayyakkutti-aḍigal.¹⁶ Another inscription showed the construction of a sluice and a tank for storing water and constructing its bund after reclaiming the land for irrigation purpose.¹⁷ These inscriptions suggest that the sabha had only a negligible role in the direct construction works. The assembly initiate the construction works but the task to complete would be given to the individuals.

Towards the beginning of the 10th century, Karashima identifies that there was an increase in the role of individuals in the economic and social spheres because of the shift in the focus of transfer of ownership of the property from the communal organizations to the individual one. In the ūr, the land was controlled on a collective basis but in the later Chola period, the individual landholding became more prevalent. The land transfers were

¹⁴ Kathleen D Morrison, and Mark T Lycett, 'Centralised Power and Centralised Authority? Ideological claims and Archaeological Patterns', *Asian Perspectives*, 33:2, 1994, pp. 331-35. In this she tried to analyse how the monumental architecture symbolise centralisation. By considering the temple structure, she says that the elites were the prime player to ensure irrigation facilities to the temple. she also insists that the technological knowledge helped to mobilise the agrarian expansion.

¹⁵ Mahalingam, *The Inscriptions of the Pallavas*, no. 206. Sabha sold the land to Kuravaśiri- Rāmdēva bhattachan, a member of *ālugaṇa* of the village and to his two brothers.

¹⁶ EI Vol XXXIII, no 2, pp. 23-26

¹⁷ IPS no 120, pp. 98-99

done along with the transfer of *kāṇi* rights.¹⁸ This eventually led to the evolution of new agrarian order and the emergence of strata of landed magnates in the society with much power and authority. Karashima identified that these categories of people were attached to the royal office, and having honorific titles like *uḍiayan*, *kīḷavan*, etc. who possess the *kāṇi* right over the land and were capable of doing sales and donations within the village.

These private individuals, merchant corporations, wealthy merchants and government officers, therefore, became an active spokesperson in the village assemblies. They had constructed a network of irrigation systems throughout the village for the agrarian prosperity. The individuals from the beginning of the 9th century onwards undertook big projects like construction of tanks and reservoirs. The Rāmanāthapuram inscription (c. 810 CE) referred to a military chief Nakkaṇ-Puḷḷaṇ, who constructed a tank in his name called *Puḷḷan-ēri*. After constructing the tank, the inscription alludes that, he had renovated the banks of the tank and made the embankment stronger.¹⁹ During the Cōḷa period, as all the activities were centred around the temple, the individual constructions were evident in association with the donations to the temples. Some of the inscriptions alludes that the endowments had made after constructing tanks in that village.²⁰ The involvement of the private individuals continued even in the Vijayanagara times. The Malaiyaḍipattī inscription states that three individual from Cevvalur Cunraracōlapuram had constructed the village tank (*ūraṇi*).²¹ In the Irāmanāyakkapēṭṭai inscription (1435), the donor had granted 200 kuḷi of land as a gift to one Siṅgapperrumāl for constructing a reservoir in the village.²²

Along with the construction of tanks and reservoirs, there are references to the construction of sluices, canals, channels, and wells. The earliest reference to the construction of sluice by an individual came from an inscription issued by the Pallava king Nandivarman II (756 CE), where an individual named Pullayakadamban had

¹⁸ Karashima *Studies from Inscriptions*, pp. 20-22. Even Subbarayalu insist that the individual ownership of the non Brahmana landholders was increasing at the period of 13th century.

¹⁹ Krishnan, *Inscriptions of Pandyas*, no 15, p 25. In the inscription, it is said that the work was completed by his son, Puḷḷan-nakkaṇ. The name of the mason who completed the work as Vaḍugan-Kūṛraṇ. The same land was given to the mason as *kāṇi* by Puḷḷaṇ-nakkaṇ. See also IPS, no 188, p. 171.

²⁰ SII Vol I, no 65, and IPS, no 140, p. 116

²¹ Subbarayalu, *Inscriptions of the Vijayanagara rulers*, no 356, p. 298

²² Subbarayalu, *Inscriptions of the Vijayanagara rulers* no 316, p. 264

constructed a stone sluice for the village.²³ The Vaḷuvūr inscription of Nṛpatungavarman in 875 CE²⁴ and the Manampundi inscription of Vayirameghavarman²⁵ also record the construction of sluice and tank by the residents of the village. A set of inscriptions from Ukkal provides evidence with various aspects of the irrigation system and its utilization. No I of Ukkal inscriptions says that a person named Kannan Aruran constructed a well (*kinaru*) and cistern (*totti*) in the village of Ukkal in the name of the king.²⁶ The construction of taṇṇīr-pandal (water shed) was considered as a meritorious activity in the state.²⁷ The Dalapatisamudram inscription of Parantaka II (Pandya)²⁸, Kāñṇipuram inscription of Kampana II²⁹ gave reference to the encouragement and tax concessions granted for the erection of taṇṇīr pandal. The establishment of water shed for the memory of a person was evident from the work of Sekkilar in Periyapuram. In the verses, Appar was astonished to see the water-booth erected in his name.³⁰

The individual construction was encouraged even in Vijayanagara period. Along with individuals, the Nāyakas of Vijayanagara period arranged provisions to ensure water supply in the village by constructing canals throughout the territory. The Vriñchipuram inscription states that Nāgamma Nāyakkar made a canal from the river Koṇḍi-ārū to bring water to the reservoir at Pasumāttur. The canal was dug through three villages and the grant was as a charity to the village.³¹

²³ IPS, no 16, p. 19; SII Vol I, no 69, p. 101; Mahalingam, *Inscription of the Pallava*, no 323,

²⁴ Mahalingam, *Inscription of the Pallava*, no 153, It records the construction of a sluice (*tumbu*) at Vaḷugūr by one Aṛamilippārulāṇ a resident of Maṇṇārmaṅgalam in Aḷundūr nāḍū. See also SII Vol XIII, no 97, p. 47 in which the *Veṇpākkam* inscription records that the sluice was constructed by *Kēraḷam Rājādityan*

²⁵ Mahalingam, *Inscription of the Pallava*, no. 226, Records the Aṇikōvan oṛṇiyūrpīrāṭṭi excavated the irrigation tank at Niccavinīta maṅgalam and provide a sluice for it. See also IPS, no 11, p. 13 where the sluice of the Aṇimadaeri tank was constructed by Venṇimadatta Tamiḷadi araiyan, called Mallan Viḍaman.

²⁶ SII Vol III, part 1, no 4 of Ukkal inscription pp. 7-9. Here the person was asked to give 4 kalam of paddy for 6 months and 2 kalam and 2 tūni of paddy per year for the repair of cracks for the well and in the cistern.

²⁷ SII Vol XXVI, no 12, p. 9

²⁸ Krishnan, *Inscriptions of the Pandyas*, no 58

²⁹ Subbarayalu, *Inscriptions of the Vijayanagara rulers*, 2014, no 26, pp 19-20

³⁰ *Periyapuram*, Saivam.org, verses 1793-1794, retrieved on 14 June 2019, 12:32 PM

³¹ Subbarayalu, *Inscriptions of the Vijayanagara Rulers*, no 495, pp.410-411 The inscription wrote during the reign of Saluva Narashimha. It also recorded that in appreciation to the permission granted to the villages for the canal, a special service named after Nāgamma Nāyakkar arranged in the temple. Similar inscription is evident from Subbarayalu, *Inscriptions of the Vijayanagara rulers*, no 28, p. 21; no 116, p.90; no 510, pp.424-425 see also SII Vol XIII, no 51, p. 22

The examination of these epigraphic sources suggests that there existed a joint and beneficial relationship between the village assemblies and the individuals. The individuals derived their position in the society with the endowments of irrigated fields. It is therefore necessary to understand the character of land holding systems. There were two types of landholding structure prevalent, joint holding (gaṇabhogam) and the individual holding (ēkabhogam). In this structure, the village assembly had the right to sell, donate and buy lands. In an inscription, it is given that the Ur had the right to sell the land to the individuals for digging channels.³² The reference to these transactions were evident from the Uttaramerūr inscription of Dantivarman issued in 803 CE. It records the sale of land by sabhaiyar of Uttaramerūr-caturvēdimaṅgalam to Svāmikumāra-caturvēdi Sōmayaji of Muḍumbai. The individual donated enough money towards the expenses of digging a tank on Paramēśvaravadi and raising its bunds. Along with the gift, the individual granted the right to use the water from the tank by the sabha. It made clear that the sabha and the descendant would not have any special rights on the land.³³

Siddhalingamaḍam inscription states that the ūr of Marudūr sold ‘*eṅgal maganṇār*’ to Iṇaivāṅkuḍi Kīḷavan for a sum of 75 kalañju of pon and also the right of using 1/5th of the water that flowed through the big sluice in the channel in their village. The water thus sold was for irrigating the land of the person. Any stoppage of the flow of water shall be liable to fine a sum of 2 kalañju of pon.³⁴ These gifts, therefore, revealed the transfer of water rights along with the sale of land.

Apart from the endowment of land by the assembly, individuals themselves bought land from the assembly for getting the land to be cultivated. In the seventh regnal year of Rājaraḷa I (992 CE), an inscription registers the sale of land by sabha of Peruṅgūr to Sembiyan Vedivelar for securing the water right for the land which was endowed to the temple of Tiruveṇṇambiyūr-āḷavar. The sabha sold the land for digging a channel to carry water to the land by means of sluice from this tank.³⁵ In another inscription, Śembiyaṇmāḍēviyār (queen of Gaṇḍaraditya Perumal) had bought (9300 kuḷi of land)

³² SII Vol XXII, no 254

³³ Krishnan, *Inscriptions of the Pandyas*, no 101, p 341, see also, IPS, no 244, pp. 210-211

³⁴ SII Vol XXVI, no 397, p. 252

³⁵ SII Vol XIII, no 163, p. 86

surrounded by a swamp (olurkai) and embankment from the members of the assembly of Ambattur by granting 80 kalañju gold. Deed granted permission to Taṅkūṭṭa Mudiyan Vaṇṇakaṇ to irrigate the land with the first turn of the water and the last water from it and shall enjoy the right of the trees and wells in the land.³⁶

The role of sabha and the individuals were not merely confined to the construction works. Instead, both of them played a significant role in the management of these complex networks. This became their major work as local governing body. For the sabha, the control of water in the brahmadēya villages emanate in the form of monitoring the distribution of water, prescribing rules for its distribution and deciding the crops to be cultivated in the fields. The two inscriptions, the Siṇṇamaṇūr inscription (857 CE) and Ambasamudram inscription (922 CE) give reference to the decision of the sabha in regulating the supply of water and controlling the cultivation of crops produced in fields irrigated by the tanks and ponds of the village.³⁷

Similarly, when an individual bought land with irrigation facility, he in due course of time exerted control over the water sources of his land. An inscription dated during the 33rd regnal year of Parāntaka I (940), provides the evidence of gradual accumulation of power in controlling the tanks of the dēvadāna land. In the inscription, Marudurudaiyan Arunidi Kaliyan of Marauder made a gift to the temple of the Narasingaperumāṇaḍigal. The temple was indebted to pay 18 kalañju every year to the assembly but the temple could not manage to arrange 6 kalañju to them. In that situation, Marudurudaiyan agreed to pay the rest of the tax amount by taking the possession of the tank Kaliyānēri that belonged to the temple. He was given complete right to dig the tank to any depth, throw up the embankment to its fullest length, raise the tank bund and collect water in the tank to the maximum extent.³⁸

After the sale of land, the individual was held responsible to renovate or repair the tank if necessary. Either the responsibility was attested by the sabha to the individuals or individuals themselves took the initiative mainly for virtue and merit.³⁹ Sometimes, the villages depended on the private charity for the repair of the breach. For example, in the

³⁶ SII Vol III, part 3, no 141, pp. 286-288

³⁷ SII Vol XIV, no 78, p. 50, and Mahalingam, *Inscriptions of the Pallavas* no 70, p. 87

³⁸ SII Vol III, part 3, no 106, p.239-242. The individual is said to be an officer of Parāntaka I

³⁹ Heitzman, James, *Gifts of power Lordship in an Early Indian State*, OUP, New Delhi, 1997, p. 53. Citing one inscription, Heitzman insist that the construction of the tank referred to as tarmam or dharma, an act of religious benevolence and merit.

Kiḷiyanūr inscription (986) mahasabha of Kiḷinallūr sold the land irrigated by the local tank to Sāttan Malladigal of Pākkam with the condition that he had to contribute a *tūṇi* of paddy after every harvest for the maintenance of tank.⁴⁰ Besides the order of the sabha, certain individuals took the direct interest in renovation. In the case of Pāṇḍya territory, the frequent participation was from the person with the title 'Kiḷavan'.⁴¹ Some of the examples include the Erukkaṅgudi inscription of Śrīvallabha (827 CE where Etti-Sāttan who was the *Iruppaikkudi Kiḷavaṇ* repaired the tanks in Iruṅjōḷa-nāḍu. He demolished old bund, laid the foundation of stone below it, and raised new bund. He then made a channel between the west of the permanent channel and east of *Karuṅgulam* (these were the boundaries of the channel). He then named the bund around this boundary as Kiḷavaṇ-ēri.⁴²

Available inscription from the Pallava period shows an absence of the role of Kiḷavan or chiefs. Instead, the period showed the influence of residents of the village. Marudadu inscription of Nṛpatungavarman, 881 CE recorded the construction of a (weir) *kaliṅgu* and renovated the *tūmbu* (sluice) of the tank Maṛudāḍu by Koṅgaraiyar Niṇṇaperumāṇ.⁴³

In addition to the direct involvement of the individuals, they were also engaged in private endowments to the village assemblies and committees for the renovation purpose in the form of paddy, gold or land. The income thus generated from the tank was later utilized for its maintenance. For example, the Vijayanārāyaṇam inscription of Jaṭavarman Śrīvallabha refers to the closing of the tank Manōmayanēri by Nambi Saṅkaran Vāsudēvan. The breaching of the bund of the tank was repaired from the

⁴⁰ SII Vol XIX, no 398, p. 209. In Tamil Lexicon, *maṇṇrupāḍu* was the fine imposed by the court.

⁴¹ Krishnan, *Inscriptions of the Pandyas*, no 65 A, p 137. The Srivilliputtur inscription stated that the mahāsabha of Villiputtur named the sluice after Kiḷavaṇ of āṇmar-nāḍu as *Aruḷākkip-perumaḍāi* and the big channel from the sluice following the eastward as *āruḷākkip-peruṅkal*. This indicate the position of Kiḷavan in the society where the village assembly had taken initiative to change the name of sluice and channels

⁴² SII Vol XIV, no 44, p 34. The title *Iruppaikkudi Kiḷavaṇ* was a honorific title. Etti Sattan also constructed temples. The inscription ends with the praise of this Kiḷavaṇ. The record says that works undertaken by renovator in Sattur would be 'remembered as long as the moon and sun endures'. See also *Topographical list of inscription*, vol 6, no 140 where The Neṇmēri inscription of Śrīvallabha (833 CE) also describes the same work done by Etti Satti. Here he repaired the old bund and constructed a stone dam for the channel.

⁴³ Mahalingam, *Inscriptions of the Pallavas*, no 157. During the Pallava period, the wealthy individuals did the renovations works. Here we could not find the reference of 'kiḷavan' in renovating and constructing new tanks and bunds.

income generated from the endowments of land.⁴⁴ The endowments were mainly made to the tanks which were constructed by the individuals. The Daḷapatisamudram inscription of Varaguna I (852) recorded that Vēḷan of Irambāḍū made endowments of 500 sheep for the maintenance of the *Rājakka taṇṇir paṇḍal* constructed by him at Perumbaḷanṇi.⁴⁵ Therefore, as the major agent for the expansion of the irrigation system, the private individuals functioned with the co-operation of the local assemblies.

The activities engaged by the individuals in the 9th century showed the attempt to expand the length of the reservoir after renovation. This was done by raising the reservoir to a bigger one through deepening the tank to maximum. There were inscriptions that gave right to the individuals to expand the size of the tank. The renovation done by Iruppaikkūḍi Kīḷavan showed that he had converted the *kuḷam* (tank) to an *ēri* (reservoir).⁴⁶

The mercantile and artisanal groups emerged as a superordinate category with the emergence of supra-local bodies like nagarams and periyānāḍu. Their activities were particularly centred around the major brāhman settlements with an advancement in the agrarian system. Their emergence, therefore, implied the disappearance of local institutions from the political space.⁴⁷ The inscriptions proposed that similar to the Sabha, the merchant corporation also had the right to distribute and propose water rights over the irrigation sources. All their activities in a way reflected the nature of charity. In the late 9th century, the *śai-āyiranaṇṇūṟṟuvar*, (500 sects of vaḷanjiyar) decided the *urivayam* (water rights) for the *Aiṇṇūṟṟuvapēr-ēri* at Muniyandi by giving 2 kāśu.⁴⁸ Punganur Inscription had been issued by a member of *Tigai-yayirat-taiṇṇūṟṟu-nagar* (trading corporation) named Iśvarapichchan who had caused the releasing of the tank *Paramṇḍlādittap-pērēi* of ūr by giving gold to the assembly of Punganur. His act might

⁴⁴ SII Vol XIV, no 231, p 134. The channel was repaired by Nambi Saṅkaran Vāsudēvan got the name *Vāsudēvappēraṟu*. See also IPS, no 144, p. 119; SII Vol XXIII, no 63, p. 38; SII Vol XXVI, no 769, p. 552; EI Vol XI, no 15, pp. 154-158 also Subbarayalu, *Inscriptions of the Vijayanagara rulers*, no 483, p. 400

⁴⁵ SII Vol XIV, no 40, p. 30; no 173 A, p. 97; SII Vol XIII; no 281 B, p. 150

⁴⁶ SII Vol III, no 106, pp. 239-242; SII Vol XIV, no 43, 44, pp. 33-34

⁴⁷ Kenneth R Hall., *Structure and Society in Early South India: Essays in Honour of Noboru Karashima*, OUP, 2005, Article 1, p. 3. Stein, *Peasant State*, pp. 155, 216. This disappearance of local assemblies happened particularly during the period of nāyaka rule.

⁴⁸ IPS, no 61, p. 42

note as a charity to the village and those who violate or cause damage to the tank were obliged to give quarter poṇ daily to the reigning king.⁴⁹

The endowments to the irrigation networks were mainly granted to the tank supervision committees who were held responsible for the renovation work of hydraulic project undertaken by the sabha. Therefore, these committees became the major player in the maintenance activities of village water networks along with individuals. Tiruppārkaḍal inscription of Uttama Cōḷa (977) alluded the gift of 30 kalañju of gold received by the sabha from a native of Araisūr for repairing the breaches of the big tank of the village. The endowment was then utilized of the daily worship of the temple with the interest rate of 2 naḷi of rice from the gift. This duty was entrusted to *ēri variyam* elected in each year.⁵⁰ A military officer named Araisūrudaiyan Tiraṇ Śennai also issued an inscription of the same kind. He gifted 120 Kalañju of gold as a fund for strengthening the bund of the tank and removing the slit to the tank supervision committee called *ērivariya perumakkal*.⁵¹

Vāriyam or committee was a cooperative body functioning under the management of the village assembly. Among the various committees mentioned in the Tiruppārkaḍal inscription⁵² of Uttama Cōḷa (977), the role of *ēri vāriyam* or the tank committee is important to understand the nature of administrative control over the water sources. Analysing the role of *ērivariyam* reveals the role of village assemblies and cooperative bodies because the latter derive their authority from the village assemblies. It had instituted in the form of *vāriyams* with specific departments. The members of the *vāriyam* (*vāriyar*) were elected for a particular tenure and entry to the committee was on the qualification of the person.⁵³ They functioned as subordinate to the sabha who took part

⁴⁹ EI Vol XXVIII, Inscription A, no 43, p. 272

⁵⁰ SII Vol XIX, no 179, p. 91

⁵¹ SI Vol III, part 3, no 99, pp. 231-233; See also IPS no 71, p. 46.

⁵² Inscription states that the Mahasabha of Kāvidippakkam comprising the members of committees like ward committee (*kudumbu vāriya perumakkal*), *ēri vāriyam*, garden committee (*toṭṭa vāriyam*), field committee (*kaḷani-vāriyam*), 200 big men, bhaṭṭas and viśistas.

⁵³ Sastri, *Cōḷas*, p. 494, and Alayav, 'Leonid, Communities, Corporations and the State in Medieval South India (VIth-XIIth centuries)', Russia, p. 125; The other scholars who commented on the elections to the committee include Kesavan Veluthat, and Burton Stein. According to Kesavan Veluthat the ur was differentiated from sabha by insisting that ur does not possess any specific qualification for the members except for the property. Burton Stein analysed the qualification to be on the basis on property, Vedic proficiency, teaching experience and age limit as evident from the Uttaramerūr inscription. In this, the *vayiramegha tataka* attracted the attention of the sabha of uttaramerur and placed under the management

in the affairs of the temple, distributed resources, collected taxes, etc towards the beginning of the 9th century.⁵⁴

One of the inscriptions suggests that the members of the committee were appointed through means of election. The primary care of such communities was to get the slit removed from the tanks in order to ensure adequate depth for the tank to store water full-fledged for the forthcoming years.⁵⁵

A series of Uttaramerūr inscription issued in 9th century shows the major functions of these committees. The members called *ērivāyiraperumakkaḷ* was the major player in the maintenance and construction works. The sabha entrusted the committee to renovate and repair the tank from the taxes derived from it. The two Uttaramerūr inscriptions of Kampavarman dated during 879 CE and 884 CE record the existence of tank committee and its functions. Both the inscription recorded the gift of land and gold for the tank called Vayiramēgha taṭāka.

The committee got endowments mainly through sales done by sabha. It was an obligation of the sabha to assign duties like renovating the tank to the committee members every year.⁵⁶ In the Uttaramerūr inscriptions, after the endowment, the *ērivāyiraperumakkaḷ* asked to remove the slit (*kuḷivayil aṭṭuvittu*), deepening the bed and strengthening of the bund of the Vayiramēgha taṭāka using the annual income from the gifted land.⁵⁷ Apart from assigning the committee with the role as a renovating agent, the sabha also entrusted them with the duty to extract interest derived from the land for

of special tank committee called as *erivariyaperumakkal*. In the 12th year of Parāntaka, the committee decided to appoint members based on resolution in the presence of the king. The Ukkal inscription of Rājarāja I in 1002 also refer to the election to the *erivariyam*.

⁵⁴ Nilakanta Sastri, *Studies in Chola history and Administration*, University of Madras, 1932, pp. 108, 114, Hereafter cited as Sastri, *Studies in Chola History*. And also V Venkayya 'Irrigation in Southern India in Ancient Times', *ASI Report 1903-02*, p. 210

⁵⁵ Sastri, *Cōlas*, p 531, also in *Studies in Chola History*, pp. 112- 113. The committee of *ēri vāriyam* got the income to do this from the private gifts. Also see *Inscription of Pallava* no 211 and no 217 for the function of committee (Uttaramerūr inscription of Kampavarman, The Uttaramerūr inscription of Dantivarman (879)

⁵⁶ In one Uttaramerūr inscription, 250 Kuḷi of land was gifted by a member of *āḷuṇḡaṇa* of the Uttaramerur *caturvēdimaṅgalam* named Kuravaśiri Agniāśarmakramavitta sāmaśi. Apart from land, the residents of the *nāḍu* made endowments on gold 1000 kalaṇju, 100 kalanju of gold and 28 kādi of paddy to the sabhaiyar. See also Mahalingam, *Inscriptions of Pallava*, no 227

⁵⁷ Mahalingam *Inscriptions of the Pallava*, no 211 and no 217. In the first inscription, the gift was made by and the second endowment by a resident Śeyya Aparājitaṇ to the tank committee of the village.

the renovation purposes. For example, a resolution made by the sabhaiyar of Kaliyur kottam and Mannipakkilan in 887 CE upon 100 kalañju of gold. The interest from this gold (15 kalañju), the cash income from the 20 houses of the northern sector of the market place was to be utilized for the digging and removing the slit of the tank called *vaiyaramehga tataka* every year. This work was the responsibility of the tank supervision committee called *erivariya perumakkal* for that particular year.⁵⁸ In the Pāṇḍya territory, the Daḷapatisamudram inscription of Parāntaka II (904 CE) mentions about a body of Brahamana called *Iṇaigal ōreduppar* of Perumbalñji to maintain and renovate the watershed and recorded the gift of lands to the care-takers who supplied water to the village.⁵⁹ Here, the tank supervision committee was the major renovator functioning under the village assembly, particularly during the Pallava period. They derive their authority every year from the endowments and gifts made by the assemblies.

From the 10th century onwards, the village assembly began to show an independent authoritarian position over the water sources of the country. The diminishing nature of the ur with the evolution of vāriyams got reinstated during the Chola periods with the cooperation of the temples. The role of the tank supervision committee was reduced to a certain extent that the sabhaiyar themselves was involved in the utilization of interest derived. The Paḷḷikoṇḍa inscription of Uttama Cōḷa (982 CE), insists that the interest amount levied from the resident was utilized for removing the slit from the local tank.⁶⁰ One of the inscriptions from Ukkal refers to the decision of sabha in closing a sluice for renovation after granting 500 kāḍi of paddy from the endowment received from a person named Sadairyan.⁶¹

Along with the extraction of interest from the gifts, the sabha had also agreed to pay the stipulated amount to the person who was credited with the construction works. This would ensure maximum individual involvement in the construction works. An inscription dated during the period of Sri Kūlottunga (1083 CE), registers this decision of the district assembly, which had agreed to pay to Anapāyanāḍālvān, who constructed the sluice (*kalaṇgu*) from every mā of land.⁶²

⁵⁸ Mahalingam, *Inscriptions of the Pallavas*, no 223.

⁵⁹ Krishnan, *Inscriptions of the Pandyas*, no 58, p. 70

⁶⁰ SII Vol XIX, no 310, p. 155 20 kuḷi with the interest on 7 kalañju of gold received by them from a resident of Iṇaiyaṇsēri in Kachchippēdu.

⁶¹ SII Vol III, part 1, no 5, pp. 8-9

⁶² IPS, no 123, p. 100

Uravar played a significant role in the village at times of disputes. The local support for the development of irrigation system came from the ūravar and temples predominantly. There were instances where ūravar settled dispute over the distribution of water and made agreements for using water equally. In 1227, the ūravar made an agreement with the temple for sharing the water and fisheries in the tank. The temple utilise the 12 naligas to irrigate the dēvadāna land in the ūr and surrounding area.⁶³ Another instance suggest that Vayirava Anyanar Vijayala Tevar settled the dispute between the ūrar of Illlayatkudi and ūrar of Rahasingamanagalm. Both the ūr agreed to share the water from the Kiranur tank. To ensure this, the sluice flow surface was paved with stone and in one stone two vents were opened so that water let out would flow in equal shares.⁶⁴

In the Vijayanagara period, the role of ūravar as settler of disputes continued. In the Tiruvēṅgaivasal inscription of Kampaṇa II (1374 CE) the temple trustees and the ūravar of Tiruvēṅgaivasal agreed to grant *pādikāval* rights to the ūravar of the Irumpāli for repairing the tank Māṇikkanēri in the village.⁶⁵ In this inscription, the temple and the ūravar of the Tiruvēṅgaivasal agreed together for the repair of the tank in their village. This suggests the cooperative nature of the temple and the assemblies. The Vijayanagar inscription of Tiruppanaṅgāḍu also records the sale of land by ūravar of Oḷukkaippākkam to the ūrvar of Kaṇṇipākkam for twenty poṇ for digging the feeder channel (āṇṇūkāl) from the river to the irrigation tank of the village, after getting the tank repaired.⁶⁶ Therefore, it became clear that during the Vijayanagara period the role played by the sabha during the Chola period was taken over by the ūravar on a minimal scale.

The function of the assembly concerning the hydraulic projects not merely confined to the renovating and construction purposes. Besides, the inscriptions itself throw light on the manner in which the water sources of the country was utilized effectively. Their efforts were to guarantee efficient, wise and optimum utilization of these resources. To assure this, they imposed strict rules to protect the water resources from the transgressors. An inscription of the 13th century refer to the enforcement of

⁶³ IPS, no 259, p. 230

⁶⁴ R Tirumali, *Studies in History of Ancient Township of Pudukkottai*, Institute of Epigraphy, Department of Archaeology, Madras, 1981, p. 152

⁶⁵ Subbarayalu, *Inscription of the Vijayanagara rulers*, no 68, p. 51

⁶⁶ *Ibid.*, no 177

certain water right and rules over the land under irrigation. The crux part of this inscription was the pledge of villagers to protect everything in the land that was donated to the temple. The inscriptions state that (a) the residents of Kiranūr agreed that even in case of any enmity, they would not cause any damage to tanks, trees on the bunds and wells in the hills. If anyone causes damage, he/she will be liable to surrender one mā of wet land to the Lord of Uttamadānāśvaram and plant trident stones (tiruchukkal) in the boundaries. (b) Those who cut down the trees have to give half a kāṇi of wet land. (c) Anyone causes damage to water lifts held responsible to surrender one kāṇi of wet land. They took an oath not to harm any of the irrigation channels, wells, cattle, mango trees, etc.⁶⁷ Though this inscription was acknowledged by the residents of the village, the enforcement of the law was carried out by the village assembly.

Besides ensuring strict regulations, there are certain inscriptions that show direct control over the distribution of water from the tank. Such regulation was evident from the Kaśakudi plate of Nandivarman II (753-4) which inscribed that the Ūṛrukkāṭṭu-nāḍu was allowed to take water for the irrigational purpose from the river Chēyāru and Vehkā and from the tank called Tiraiyanēri.⁶⁸ Each nāḍu, therefore, granted permission to take water from the specified tank for the common use of the village.

The relation between the village assembly and the temple was somewhat determined by the irrigation networks. Brahman assembly like sabha was one of the major lenders of land and other aids to the temple for its daily worshipping.⁶⁹ The land thus transacted was surrounded by the irrigation facility and entrusted to extract revenue from the tank for the daily feeding of the Brahmanas.⁷⁰ Sabha also bestowed land to individuals as part of remuneration. For example, the garden and wet land near to the

⁶⁷ IPS, no 156, p. 129

⁶⁸ Mahalingam, *Inscriptions of the Pallavas*, no 77, p. 254

⁶⁹ SII Vol XIII, no 292, p. 155. For example, in the Brahmadēśam inscription of Aditya I- 20th regnal year (911 CE) endowment of piece of land under the tank Tigaittaṛal-ēri was made by Tirupponḍiai- Sōmāśiyār of Maṇarppākkam for the daily feeding of a brāhman. The gift entrusted to the *gaṇavāriya perumakkal* of the temple.

⁷⁰ IPS, no 85, pp. 54-55. The inscription records the gift to Paramēśvara of Tiruvagnīśvaram, a brahmadēya village in Kūḍaḷūr nāḍu, and entrusted with the assembly. With respect of the wet-lands which provide food for daily offering to the Paramēśvara of Tiruvagnīśvaram from the Pūvattan vāykkāl of the Pālaṛṛu channel and also made reference about Kīlaccēndan Vāykkāl. The above said lands irrigated by Kūruvāy maḍai, which exempted wholly or partially from taxes and established them under the authority of puravu-varippottagam. However, they were granted permission to donate to the temple, the corporative bodies of the village were kept away from their functioning.

sluice of Animeredi tank were granted to the mason Sonnaraiyan who made the sluice (kumiḷittudavāl)⁷¹ Similarly in 1012-13 AD the members of the town assembly of the Teluṅgakulalapuram gave wet lands called Mēdivayal and the Araṅgan ēri tank to provide remuneration for five persons including drummers.⁷² This inscription gives a clear picture of the nature of land transaction done during the 10th century. Most of the land thus transacted were either under proper irrigation or with irrigation sources.

The village assembly lost their control of the central government during the time of later Chola period onwards. By the beginning of Vijayanagara rule, the local government and the agrarian systems were undermined from the political scene.⁷³ Stein alludes that the agrarian activities were mainly around the Kaveri delta instead of the dry area of Pudukkottai. He, therefore, called the irrigation under the Vijayanagara system as “developmental investment”, which was most probably undertaken by the investment of the individuals through local support.⁷⁴

After the state and temple, the local governing bodies and individuals were the major controller of the hydraulic projects. While analysing the inscriptions, it became clear that the communities and corporation of the early medieval Tamilakam took minimal effort in the direct construction works. Their focus was in the regulation and maintenance works. For the effective functioning of these water bodies, the task of repair and renovation was entrusted to the ēri vāriyam. Their functions were regulated by the sabha by inscribing tasks to these bodies. They received monetary supply from the interest of the endowments made.

The growing private ownership of land made the individuals to initiate the construction and renovation works in the territory when compared to assemblies. Individual construction was welcomed in the territory with major attention to the

⁷¹ SII Vol XII, no 41, p. 17,

⁷² IPS no 91, p. 66-67; no 128, p. 107

⁷³ Sastri, *Cōḷas*, G.S Press, Madras, 1955, p. 500. See also Burton Stein ‘Vijayanagara’ in Tapan Raychaudhuri, and Irfan Habib ed., *The Cambridge Economic History of India c. 1200-1750*, Vol 1, Orient Longman, 1982, p. 108. The decline became obvious when the Brahmana became a mere instrument of imperial control. The evolution of nāyaka system and ayāgar system led to the further decline of nāṭṭar from the political scene. Therefore, this period in the Tamil country could be seen as a shift from the nāṭṭar system to the nāyaka system.

⁷⁴ Tapan Raychaudhuri, and Habib Irfan ed., *The Cambridge Economic History of India c. 1200-1750*, Vol 1, Orient Longman, 1982, pp 110-114, And also T V Mahalingam, *The Economic Life in the Vijayanagar Empire*, University of Madras, 1951, p. 53

renovation works. The authority accumulated by the individuals over the resources was a slow and gradual process. However, their power was normalised by the taxation and regulations imposed by the state and the nāttavar. In the post 9th century, the individuals who wish to construct tanks were disposed to take permission from the royal authority. This aspect was clearly visible in the Vijayanagara inscriptions where the officers were more involved in the construction of large-scale irrigation projects with the permission of the king.⁷⁵ Compared to the individual involvement, the corporative body of the village played multiple roles as controller of the water sources, endower to the temple and as a remunerator to the service.

The role of nāḍu and Ur in the villages was also worth mentioning. There were very few evidence for these institutions that showed their involvement in construction works. These organisations of the state functioned mainly as the settler of disputes. Their role as settler of disputes and spokesmen for the village showed their unquestionable authority in the village. Irrigation in the village level therefore became a localised and collective responsibility of the communities and individuals.

⁷⁵ Subbarayalu, *Inscriptions of the Vijayanagara rulers*, no 28, p.28; no 70, pp.53-54; no 348, p. 291

CHAPTER III

IRRIGATION AND SOCIETY

Irrigation projects exhibited a diverse nature of power revolving around the state and other institutions. Land and water, therefore, became the major source of power to these sections, which led to the hierarchization in society. The power structure revolved around the hydraulic projects also displayed a complex social relation between higher and lower sections of the society. The disparities emerged from the interaction of two classes opened up a wider discussion on their role in controlling water. The activities of the cultivators, their position and response to these works must be the central theme in such analysis.

The agrarian history of the Tamilakam showed the participation of the *veḷḷāḷas* (dominant agrarian community) and the *brāhmins* as a powerful category who controlled the vast areas of cultivated land of the village. The *veḷḷāḷas* were the landowners and actual tillers of the soil. Nevertheless, in most cases, they supervised agriculture with the tenants or agricultural labours. Burton Stein analyzed the relation between the landed magnates and the peasantry through *brāhmaṇa-veḷḷāḷa* alliance. Stein insists that in a segmentary state, the dominant peasant controlled and maintained the agrarian order along with the prestigious *Brāhmaṇas*. Here the peasants were the self-sufficient categories with settled agriculture in the core.¹ Champakalakshmi reviewed this argument by insisting that the agrarian economy of the core witnessed the advancement of the dominant peasant by displacing the people from the plain (marutham area).² This displacement and exploitation for the creation of centralized core became the dynamic forces of societal change.

David Ludden alluded that the opening up of new agrarian order in the fertile areas by these powerful sections made a profound impact on technology.³ Morrison analyzed

¹ Stein, *Peasant State*, p. 63.

² R Champakalakshmi, 'State and Economy: South India, Circa A.D 400-1300', in Romila Thapar (ed.), *Recent Perspectives of Early Indian History*, Popular Prakashan, Bombay, 1995, pp 269-270.

³ David Ludden, *Peasant History in South India*, Princeton University Press, UK, 1985, p 13-22. See also Hans-Georg Bohle, 'From Centre to Periphery: Changing Spatial Structures in Rural South India, 985-1985', *Geo Journal*, Vol. 10, No. 1, South Asian Affairs II, January 1985, where Hans-Georg Bohle tried

this impact of technology as the base for the cultural and social change in society. The technical knowledge initiated the construction of tanks and channels with the organized peasant service.⁴ The structured labour in the agrarian economy led to efficiency in production and distribution of resources. This efficiency was from the proper maintenance of irrigation networks. The peasants were the major players involved in the maintenance of irrigation systems as their subsistence mainly depended on the full-fledged availability of the water. The creation and maintenance of the irrigation system, therefore, became a localized responsibility that revolved around the peasants and tillers of the soil.

The ancient saṅgam poetry has references to the common peasants like *uḷavar* and *veḷḷāḷar*. Along with these classes, there were *adiyalar* (slaves), *vinaryar* (workers) and *Kalamar* (field labourer).⁵ The changes in the agrarian economy during the heyday of Cōḷas led to the decline of Brahmaṇa landholders eventually from the scene. The period witnessed the emergence of new individual landholders who employed kuḍiyalar for the cultivation. The increase in individual sale and gifts aided this category to make a hold in the society. A new social relation began to flourish between the individual landholders and the peasants upon the land. From cultivators, the peasants became the service class bounded to serve the proprietor.⁶

Since the epigraphical sources were quiet about the cultivators (kuḍi) and their role in the improvement of irrigation systems, the nature of their activities in the agrarian economy can be analysed through the revenue assessment of the state. For State, tax collection was a customary right. They entrusted the temples, officials and other beneficiaries for this task. Hence, in a centralised state, the authority over the people was

to emphasise the importance of the Brahmin settlement as the utilizer of services rendered by the veḷḷāḷas. Therefore, a complex structure was prevalent between the cultivating and non-cultivating groups. According to Subbarayalu, the relation between the both was hierarchical.

⁴ Kathleen D Morrison, 'Coercion, Resistance and Hierarchy: Local Process and Imperial Strategies in Vijayanagara Empire' in Susan E Alcock et.al., *Empires: Perspectives from Archaeology and History*, Cambridge University Press, 2001, p. 259.

⁵ MG S Narayanan, 'Role of Peasants in Early History of Tamilakam', in Sahu (ed.), *Land System*, p 239. The communities that we deal include only the landed groups with kinship ties. The others comes as service group (*paṇicheymakkal*)

⁶ R N Nandi, 'Agrarian Growth and Social Conflict in Early India', D N Jha (ed.), *The Feudal Order: State Society and Ideology in Early Medieval India*, Manohar Publishers, New Delhi, 2002.

exerting through the taxation policy.⁷ It therefore became relevant for the study of peasants and their position. Stein was criticised for the ignorance towards the revenue aspects of the peasant localities in the Cōḷa Empire. With the involvement of landed intermediaries in the revenue collection, new means of production emerged to increase the agrarian surplus. R S Sharma opines that this surplus was collected from the peasants through taxation.⁸ The taxes collected was not a mere duty imposed from the centre to the subjects, a chain of labour and obligatory services also embedded in it.

The general land tax to the state was *iṛai, ayam and vari*. Along with these dues, the population was likely to give certain compulsory taxes, which were both in kind, and services. Of the different taxes that prevailed, *kaḍamai* and *kuḍimai* were the most important one. The taxes that was collected from the *nāñjey* (dry land) and *puñjey* (wet land) was in kind, known as *kaḍamai*. This particular revenue assessment showed the relation between the peasants and the state as it formed the land revenue paid in kind to the central government.⁹

Kuḍimai was the small-scale taxation in the country that was primarily in the form of services. These were the taxes levied directly by local authorities from cultivators in addition to the rent paid to the state. *Kuḍimai* was different from another source of revenue as it was utilized for maintaining irrigation works, remunerating village officials and for temple maintenance. It therefore comprised of service, which was relevant for the study of irrigation system. Appadurai considered these services “public services”¹⁰ obliged by the cultivators. Subbarayalu considers *kaḍamai* and *kuḍimai* as taxes given to the central government and as “the demand that is rendered as per king’s order”.¹¹ Hence, in the discussion of hydraulic projects, both *kaḍamai* and *kuḍimai*, and its allied aspects

⁷ Until the end of Cōḷa period, the revenue assessment was the duty of these local bodies. Therefore, it was regarded as a localised matter, which involves *ūr, nāḍu* and *nāṭṭar*. With the introduction of administrative reforms by the Vijayanagar rulers, the wider power of the *sabha* and *nāḍu* diminished. The tax collection was shifted to the separate revenue officers called ‘*ayagars*’. See Irfan Habib, ‘Peasant in Indian History’ in Sahu (ed.), *Land System*, p. 224. Irfan Habib insist that dominance through revenue extraction gave immense power to the controlling stratum over the peasants.

⁸ R S Sharma, ‘The Segmentary State and Indian Experience’ in D N Jha ed., *The Feudal Order: State Society and Ideology in Early Medieval India*, Manohar Publishers, New Delhi, 2002, p 156.

⁹ Stein, *Peasant State*, p. 258.

¹⁰ Appadurai, *Economic Conditions*, p 33.

¹¹ Y Subbarayalu, *South India Under the Cholas*, OUP, New Delhi, 2011, p. 95 But as a critique to this, scholars like burton stein insist that *kuḍimai* is purely a local cess to be paid by the peasants to the local bodies.

need attention. Because, this category of taxation represents the way, in which income was derived and utilized for the irrigation projects, the societal response, and their services to the village reservoirs and the kind of exploitation that existed.

The role of the state in extracting the revenue from hydraulic projects was evident from direct and local involvement. Through direct involvement, the state imposed taxes, which was to be paid directly to the treasury. While the local involvement was in the form of ideological power, it forced the subjects to pay cess to the local assembly. This category formed the major revenue for the maintenance and repair work of the tank and other public utilities. This cess (*ēri-āyam*) was collected equally from dry and wetlands and thus became the ‘tank fund’ of the village.¹²

According to Appadurai, the taxes that come under the head of maintenance of irrigation projects like *kaṭṭe*, *kāluve*, *kere*, *nīr vilai kāśu*, *nirkuli* did not go to the central treasury. Instead, these demanded on land was collected locally and utilized for the maintenance purpose.¹³ Therefore, the role of the king has confined to as a decision maker who can exempt or introduce taxes as per the need of the *nāḍu* or assembly. An inscription during the regnal period of Rājārāja III alluded the role of the king in exempting the taxes from wetlands, dry lands, trees, tanks, wells within the boundaries of Kumāramaṅgalam. The duty of collecting the revenue like *nāṭṭu-viniyōgam*, *āḷamañji*, *tēvai* was given to the members of the assembly.¹⁴

The village assemblies thus made the revenue assessments for the tank locally.¹⁵ It was either done in favour of the tank or gave directly to the sabha. The income thus generated from the taxes was utilized mainly for renovating the irrigation projects. If anyone refused to pay the cess, the village assembly had the right to impose a fine and credit it to the ‘tank fund’ of the village. The Uttaramerūr inscription of Dantivarman issued in c. 817-18 CE records the decision of sabha in extracting the tank fund in favor of Vayiramēghataṭāka when the *sāmantas* left the village without paying the due.¹⁶ This

¹² Appadurai, *Economic Conditions*, p 217

¹³ *Ibid.*, pp 680-681 The maintenance purpose was undertaken by certain section called as *talaivāyachānrār* (sluice keepers).

¹⁴ IPS, no 196, p. 177.

¹⁵ Mahalingam, *The Inscriptions of the Pallavas*, no 196, see also SII Vol XIX, no 81, p. 42; EI Vol XXVIII, no 43, p.33.

¹⁶ *Ibid.*, no 109, p. 353.

means that any mortgage of the village by the sabha went to the tank fund. Tax dues hence, formed the major share of income for the maintenance work.

It became evident that *ēripatti* was one of the taxes utilized for this purpose. In an inscription, person named Nambiyamallanar made the gift of *ēripatti* (irrigation tax) for the field of Marudancheruvi, Kodumāḍi, and Kaluval by declaring these land to be tank land and *ēripatti* should be utilized for the maintenance of the tank.¹⁷ Along with *ēripatti*, we have reference to the gift of land as *tanṇirpatti* (probably for maintaining the tank) by the resident.¹⁸ Therefore, *ēripatti* and *tanṇirpatti* might be synonymous that denote the gift of land for the tank. The taxes for the maintenance of bund of irrigation tank were *kulai*, *kulai-veṭṭi*, *kulai-vaṭai*, *kurai-varuppu* and *kurappu-veṭṭi*.¹⁹

Some other references to the water cess come from the Villiyānūr inscription of Bukka II (1387). It recorded the levy of various taxes including the irrigation taxes like *nañjey*, *puñjey*, *ērimin vilai*, *oḷukunīr pattam*.²⁰ Other taxes included *veṭṭi*, *ērimmin* (fishing taxes)²¹ *īrai-vayal*, *aḍai-nilam*, *ētta-ppulam* (land given for water lever).²² (*oḍaikūḷi*), *nīrkūḷi* (tax on water)²³ *śennīrvetti* tax²⁴ *ēttak kaḍamai* (dues on water lift), *atimuṇi* (dues payable at the owners of the land to the owners of the well for drawing water from the well for irrigation)²⁵ These taxes could be categorised as a compulsory one.

In the Pallava territory, water levies extracted were *nīrkkīrai*, *nīr kūḷi*, *nīrkkīya viḷai*, *nīr vilai*, *nīr viḷai kāśu*, *nīr viḷai kūḷi*, and *ampu vari*. For the Pāṇḍya territory, *nīrāni*, *olukunir*, *olukunirpattam* was the common tax. In Cōḷa territory, there was only *nīrkūḷi*, *nīr vari*, *ōdaikūḷi* and *aṟṟup pāṭṭam* to denote the water cess and *olukunirpattam* in the Vijayanagara period.²⁶

¹⁷ SII Vol III, part 3, no 93, p. 45. C Minakshi identified *ēripatti* as the land endowed by the private individual for periodical repairs of the tanks which were managed by the assembly.

¹⁸ SII Vol III, part 3, no 188, pp. 364-365. This inscription gave reference to both Also mentioned *ēripatti* of the tank Kīḷai ēri and *Tannirpatti*.

¹⁹ P Shanmugam, *The Revenue System of the Cōḷas: 850-1279*, New Era Publications, Madras, 1987, p 50. Hereafter cited as Shanmugam, *Revenue*

²⁰ Subbarayalu, *Inscription of Vijayanagara Rulers*, no 137, pp. 110-111; no 415, pp. 342-343.

²¹ *Ibid.*, no 70, p. 53; and no 415, pp. 342-343.

²² Mahalingam, *Inscriptions of the Pallavas*, no. 212, p. 555.

²³ SII Vol III, part 3, no 151, pp. 300-322.

²⁴ SII Vol III, part 3, no 150, pp. 299-300.

²⁵ Tamil Lexicon, p. 37.

²⁶ Shanmugam, *Revenue*, pp. 48-49.

Water cess thus extracted was utilized for the maintenance purpose itself. The income for the maintenance purposes was levied from the interests of gifts and through utilizing the labour of the productive masses. The Uttaramerūr inscription of Dantivarman provides a reference to the decision of the sabha in repairing the tank through the interest amount of gifts through committee like *ērivāriyam*.²⁷

Besides deriving income from the interest rates, the voluntary gifts of taxes by the private individual and merchants to the tank made considerable income to the repair and renovation works. The inscription from Punganur suggests that a resident named *Āṇaiyamman* had given the gift of certain taxes *Kaṇṇālak-kāṇam*, *ūrppadin-kāḍi*, and *piḍa-nāli* from the village to the tank Paramaṇḍalādittap-pērēri that he constructed at Punganur.²⁸ The Guḍimallam inscription during the regnal year of Dantivarman (845 CE) alluded the gift of *ēricceṟuvu* to the tank named Vellēri by the headman of Kaḷyamangalam, Ayyappōṟri.²⁹ Similar effort had been done during the period of Cōḷa rule in favour of the improvement of the tank. There were references to the gift of *vālamaṇji* (income derived) from the tank to the *ūrar* for the repair works.³⁰ In the ninth regnal year of Rājarāja I, Arikullakala Brahmaḍarāyan gifted as called *Kuḷampaṭṭi* (land assigned for the maintenance of the tank) to the *nāṭṭar* as *iṟaiyili* for Kavirkuḷam tank.³¹ Thirumalai inscription of Dēvarāya II showed the decision of Tipparaśai nayakkar the Tāṇattar and Mahēśvaras, the residents of Paḍai viḍu, regarding setting apart the money received from the income from fishing lease in the land (*ēripāśi*). The income was used for removing slit and deepening of the tank every year and the amount of *vāśalkuḷippanam* from the Paḷlichandam, to deepen another tank.³²

²⁷ T Mahalingam, *Inscriptions of the Pallavas*, no 102, p.343 and, no 109 p. 353.

²⁸ EI, Vol XXVIII, no 43, p. 33.

²⁹ Mahalingam, *Inscriptions of the Pallavas*, no. 110, p. 357.

³⁰ SII Vol XIII, no 281 B, p. 150.

³¹ IPS, no 28, p. 26. He got *āvaṇa ōlai* (original sale deed) for the *kiḷ-cet vāyakkāl* (improved wet lands) under *peruṅkumili* (great sluice) of Kavirkuḷam and *paṟikāl* (seed bed) conveyed to him and transferred it to *nāṭṭar* and made them *iṟaiyili* (free of tax) and gave them as *Kuḷapaṭṭi*.

³² Subbarayalu, *Inscriptions of the Vijayanagara Rulers*, no 348, p. 291.

Along with taxes, the private endowments were given in gold³³, produces and land for irrigation networks. Paiyaṇūr inscription³⁴ and Aḡaḷūr inscription of Nandivarman II³⁵ records that certain land were endowed as gift to the tanks for the repair works. In the Paiyaṇūr inscription, an agreement was made between *gaṇattār* of Paiyaṇūr and a merchant named Nāgan of Uḷakkuṇi where he had to pay 6400 kāḍi of paddy to *gaṇattār* for digging annually (removing slit) from the big tank, called Pērēri of the village. Madam inscription of Vijaya-Kampavarman records that a merchant of Kuḷattūr in Teṇṇārrūr-nāḍu purchased land from ūrār of the village and presented it as *ēripatti* (private charity or gift of land) for the maintenance of a tank.³⁶ One of the inscription dated during the period of Aditya states that irrespective of the endowment of *ēripatti*, the person had given every kind of duty including *āṇavāy-dāṇḍam* for the benefit of the tank.³⁷ This shows that private endowments formed the major income for the renovation purpose of the reservoirs and tank. During the Vijayanagara times, the private individuals forced to levy taxes on reservoirs. Ponnēri inscription of Bukka II insist that one individual remitted the whole taxes on the reservoir Ponnēri to the nāḍu.³⁸ This seems that towards the Vijayanagara period, the voluntary endowments of taxes to the irrigation projects became a compulsory one.

Taxes extracted for the repairing purpose not essentially mean to be in cash or as land. There are instances in which the revenue was assessed in kind or service. Most often, the cultivators or the landowners were to pay the prescribed amount of paddy as local cess to the nāḍu. The Toṇḍūr inscription of Parantaka I (910 CE) duly mentioned the local cess as one nāḷi on every kāḍi of paddy made by the chief of the nāḍu for the proper upkeep of the irrigation tank.³⁹ The Kīḷiyanūr inscription states that the donee gifted with land under the tank with the condition to pay a tūṇi of paddy after harvesting for the maintenance of the tank irrespective of the *manrupadu* tax.⁴⁰

³³IPS, no 60, p. 42, See also SII Vol XIII, no 165, p. 88.

³⁴ Mahalingam, *Inscriptions of the Pallavas*, no 83, p. 280.

³⁵ *Ibid.*, no. 84, p 282.

³⁶SII Vol XII, no 110, p. 52.

³⁷ SII Vol III, part 3, no 93, p. 45.

³⁸ Subbarayalu, *Inscriptions of the Vijayanagara Rulers*, no 135, p. 109.

³⁹ SII Vol XIX, no 81, p. 42.

⁴⁰ SII Vol XIX, no 398, p. 209.

In most of the cases, the taxes had extracted in the form of labour services for the upkeep of the tank along with the gifts and levies in kind. This was the most common method of extracting service to the tank. Even such kind of unpaid labour also categorized as a form of local cess taken from the population by the village assemblies or local bodies, which comes under the head of kuḍimai. The labour services had been regarded as the pillar base for the expansion of agriculture in the medieval period. The saṅgam literature itself gave reference to the labour intensive work for the irrigation projects. Maduraikāñji refers to the noise of the people who stood in a row to lift water from the tank with the help of buckets tied to the well.⁴¹ Therefore, the activities in the progress of irrigation was not a secluded activity of state or local bodies. It involves the labour of normal peasantry who sustain the economy.

Heitzman analyzed the utilization of labour in the medieval Tamilakam in terms of property control by the Brahmins and peasants. The land holding pattern of the period revealed the trend of controlling well-fed fields (puñjey) of the territory by the temple, Brahmin assemblies, and wealthy individuals. The cultivators made rest of the lands fertile through diverting the water sources.⁴² The controlling sections were concentrated in the actively irrigating suburbs and peasants were pushed back to the dry zones with fewer water sources. Hence, the peasants were forced to expand agricultural production with a minimal source of water in an effective way. The labour in these peripheral areas was therefore organized and obligatory one.

The labour production requires the corporation and administration of both peasantry and landowners. Therefore, there existed an organized control of labour around the irrigation networks directed by the communities and individuals. The dues were primarily extracted to repair the irrigation facility in the territory by the brāhman assembly.⁴³ This kind of workforce was an obligation fulfilled by cultivators regardless of their ownership. Therefore, the maintenance of the irrigation systems was a collective effort in the medieval Tamilakam.

⁴¹ Chellaiah, 'Maduraikanchi', in *Pattupattu*: in line 80-90, pp. 238-239.

⁴² The epigraphical data of the period showed an increasing tendency of these sections to control the wet land, introduced irrigation system to the field and controlling the products thereby created. The possession of these lands was through endowments with kāṇi rights.

⁴³ The labour dues extracted directly from the assembly and there was no involvement of the state in its extraction. Therefore, there was no separate department in the centre for its assessment.

Imposing tax burden upon these masses was an effective tool to extract their service. The services were in the name of the king where his invisible authority was working as an ideological force. The kind of servile labour existed, led scholars to agree and disagree with the feudal aspects of the medieval period. Hence, the service was mandatory and it cannot be considered as a form of slavery but as corvee labour.⁴⁴ Here the cultivators and the peasants worked as a domestic labourer who was bounded by a responsibility to serve.

The inscriptional records of the period shows the kinds of services that extracted by the assembly for the maintenance purpose. *Veṭṭi* and *amañji* was the common form of free services rendered for the irrigation system. The term *veṭṭi* was evident in different suffixes like *śennir vetti*, *kuḷai vetti*, *aṟukāl vetti*, etc. Similarly, other forms of *amañji* include *ālamañji*, *ālum-amañjiyum*, *śennir amañji*, *ēri amañji*, *nīr amañji* and *valamañji* (special tax for cleaning the tank)⁴⁵ Ēruvāḍi inscription of Parantaka II issued in 906 CE alluded that the field of Iḷamakkal grows paddy from Arumaṇḍaikkāl and gave reference to the obligatory service called *veṭṭi*.⁴⁶ *Āṟṟuk-kara* and *aṟṟukkuali* were the services for the maintenance of river bunds in the Cōḷamaṇḍalam⁴⁷ and *veṭṭi vari* was the common term in Vijayanagara territory.⁴⁸

Temple was another mechanism in which labour of the masses was extracted through ideological influence. The brahmadēyas and the temples were the major controllers of the labour force in the medieval Tamilakam. Kesavan Veluthat argued that the temple played the intermediary role between the actual cultivators and the state through means of supplying the labour, collector, and distributor of resources. Hence, he insist, this more or less relates to the Indian feudalism.⁴⁹

The inscription during the period of Rājarāja I states that the income from the vāyakkāl was used to clean the temple floor by the uḍaiyars of the temple who do the daily service. The lands thus bounded by the vāyakkāl had endowed to meet the repair of

⁴⁴ Subbarayalu and Karashima supported the idea of corvee labour.

⁴⁵ The terms were collected from the work of Shanmugham, *Revenue*, pp. 31-32.

⁴⁶ Krishnan, *Inscriptions of the Pandyas*, no 60, p. 71.

⁴⁷ Shanmugam, *Revenue*, p. 50.

⁴⁸ Subbarayalu, *Inscriptions of the Vijayanagara Rulers*, no 121, pp. 94-95.

⁴⁹ Kesavan Veluthat, 'Temple Base of Bhakti movement in South India', *Proceedings to IHC*, 1979, pp 190.

the temple.⁵⁰ The temple land received special concession that this land can utilize the income and sometimes was exempted from the payment of labour dues. The Lalgudi inscription of Nṛpatungavarman issued in 892 CE records the exemption of tax burdens like *īrai*, *eccōru*, *veṭṭi*, *vēdiṇai*, *Seṇṇir-veṭṭi* and other *veṭṭi*.⁵¹ and the Jambai inscription⁵² suggest the privileges held by the temple.

Towards the Cōḷa period, the service like *veṭṭi* showed an increasing demand compared to other dynastic period.⁵³ *Veṭṭi* became a compulsory tax demanded directly from the centre. An inscription of 1286 suggests that labour dues had to pay compulsorily. In the inscription, the landowner failed to contribute labour to the repair of his portion of tank bund. Hence, he was sent to jail.⁵⁴ Therefore, a kind of compulsion exerted from the centre for the repair work. The centre directly punished the transgressors of the law.

Not sabha or nāḍu collected the taxes always. The private individuals were also held responsible for it. In the case of individuals, the assembly sold their right to the concerned person with an agreement that the donee has to pay the same every year. For example, the Kīlputtūr inscription issued during the 11th regnal year of Kampavarman registers the sale of the right to collect the *ērikkāḍi* (tank duty) in favour of the tank by the ūrār of Kīlppūdūr in Kāliyūr-Koṭṭam to Mādēvaṇār.⁵⁵ During the Cōḷa period, the right to collect taxes from the irrigated field was granted to the temples. Transfer of such rights enabled them to control the land, water and enjoy the taxes from it. An inscription during the period of Uttama Cōḷa alluded this aspect of the temple, where the agreement gave full authority to the temple to collect taxes on ferries (*oḍaikulī*), tax on water (*nīrkulī*) and other taxes like *nāḍacti*, *ūraṭchi* etc which the king should take and enjoy.⁵⁶

The revenue assessment of Tamilakam with respect to the taxes on irrigation suggest that there was an attempt to convert the barren lands. The Kīlputtūr inscription

⁵⁰ IPS, no 90.

⁵¹ Mahalingam, *Inscriptions of the Pallavas*, no 180, p 506-507.

⁵² SII Vol XII, no. 164, p. 91.

⁵³ The conclusion was derived from the statistical data made by Noboru Karashima in his 'South Indian History and Society.

⁵⁴ SII Vol VIII, no 591.

⁵⁵ SII Vol XII, no 102, p. 46, One kāḍi of paddy was ordered to be levied as *ērikkāḍi* upon each *paṭṭi* of uncultivated land.

⁵⁶ SII Vol III, part 3, no 151, pp. 300-322

alluded that all those uncultivated barren lands had to pay tank duty (*ērikkāḍi*). Either the compulsory assessment of certain taxes showed the attempt to penetrate the royal authority into the villages through taxation or it can be an attempt from the centre to make whole land cultivable. Certain inscription put forward the idea of exemption of taxes for the well-irrigated fields. Appadurai insist that not every such lands received tax benefits. However, lands that clear forest, demarcate the boundaries, and own proper irrigation facility were eligible for tax concession.⁵⁷ The Ukkal inscription of Rājarāja insist the tank supervision committee to exempt the village from the extraction of *veṭṭi* from the inhabitants.⁵⁸

The activities pertaining to the irrigation networks of the state was not exclusively related to the power politics and revenue extraction. At each level of work, the institutions of the state, technology, and the productive masses were involved. The interaction of technology and the productive labour in the hydraulic projects created a significant impact on the societal changes. Peter Mollinga had analyzed these aspects of social change as ‘socially constructed’ and called irrigation system as ‘socio-technical system’.⁵⁹

The societal changes in the medieval state was support by the improvement of the agrarian economy. This had created a production relation between peasants and the brāhmin landholders over the land. The production relations was based on the state’s share (*mēlvaram*) and the landowners share (*kīlvaram*) of labour.⁶⁰ In the initial years of state formation, the temples and brahmadēya were the controller and supplier of labour

⁵⁷ SII Vol III, part 3, no 116, pp. 252-253. Here the taxes like *iṛai*, *ecchoru*, *amañji*, *veṭṭi*, *vēḍiṇai* and *antarāyam* was exempted.

⁵⁸ SII Vol III, part I, No I (12) of Ukkal inscription, pp. 18-20. See also SII Vol III, no 150, pp. 299-300. In this inscription, the land was exempted from *śennirvetti* tax, SII Vol XII, no 164, p. 91; EI, Vol XV, no 5

⁵⁹ Peter P Mollinga, *On the Waterfront: Water Distribution, Technology and Agrarian Change in the South Indian Canal Irrigation System*, Wageningen, 1998, pp. 14-15. By socio technical system, Mollinga means that the water and the people mediated by technology. the people use sluice, weir and other technological aspects to control water.

⁶⁰ Y Subbarayalu, ‘Changes in Agrarian Relations in the Kaveri Delta, c. 900–1300’, *Social Scientist*, Vol. 38, No. 7/8 July-August 2010, pp. 47-48, Heitzman, James, *Gifts of power Lordship in an Early Indian State*, OUP, New Delhi, 1997, pp. 66-67.

forces to the land. Their authority was through ideological capture of mind of the common through bhakti.⁶¹

According to Shanmugam, the societal changes in Tamilakam was visible from the utilization of kuḍimai. It represents the whole peasantry, where they were forced to render service irrespective of their compulsory taxation to the state. The property relation showed the widespread misuse of this category of tenants. The change thus brought in the society was an “institutional change”.⁶² The institutional changes organized in a hierarchical manner with stratification in the society that showed clear exploitation of the larger producing masses in the name of labour levies. According to Irfan Habib, this stratification of the labour society and subsequent dominance of certain sections was reinforced by the fiscal system that prevailed.⁶³

The tax burden on the peasants was in the form of services, which was in the name of the king for the maintenance of the irrigation networks, renovations, etc. This could be categorized in terms of corvee labour, as they were to carry compulsory works. Y Subbarayalu insist that the existence of *talavāyichāṇṇār* (sluice keepers) in the Cōḷa territory suggested that their work was in nature of corvee labour.⁶⁴ This aspect led scholars including Kesavan Veluthat to link the demand for labour in terms of feudalism. Karashima argued that the local magnates of the period possessed the superior right over the land by subduing the peasant category through the surplus extraction by means of extra-economic coercion. As for Indian feudalism, Karashima rejected the aspect of slavery by analysing Ribeiro theory of Theocratic irrigation state.⁶⁵ The theory says that the peasants who held the land in common and subjected to slavery did the production in the Cōḷa period.⁶⁶ Nandi tried to connect the increase of servile labour because of an increase in the private landholding pattern. Serfdom at this point was an “obligation laid

⁶¹ Kesavan Veluthat, ‘Temple Base of Bhakti Movement in South India’, *Proceedings to Indian History Congress*, 1979

⁶² Vivek Chibber, ‘Breaching the Nadu: Lordship and Economic Development in Pre Colonial South India’, *The Journal of Peasant Studies* Vol.26, No.1, Frank Cass, London, October 1998, p. 3. See also Irfan Habib, “Peasant in Indian History” in Sahu (ed.), *Land System*, pp 222-224.

⁶³ Irfan Habib, ‘Peasant in Indian History’ in Sahu (ed.), *Land System*, p. 224.

⁶⁴ Y Subbarayalu, *South India Under the Cholas*, OUP, New Delhi, 2011, p 147.

⁶⁵ Karashima, *Studies from Inscriptions*, p xxviii.

⁶⁶ *Ibid.*, p xxviii. See also Kesavan Veluthat, ‘Temple and the State in Medieval South India’ *Studies in People’s History*, Vol 4, no 1, Sage Publication, 2017, p 22, For Kesavan Veluthat, the Indian feudalism assigned to the fiscal arrangements, especially the land grants. Here the temple played an intermediary role between the king and the samantas.

upon the producers by force and independently of his own volition to fulfil certain economic demands of an overlord in the form of dues and service”.⁶⁷ Therefore, the labour demanded was not in the form of slavery, but as an obligation through coercion. In a document given to the nāttavar of Vembār nāḍu by Kattapa Uḍaiyar, the people of four jātis agreed to remove the slit of the tank as a part of their contribution to the forced labour. It stipulated that those who failed to give labour have to provide one panam per kuli to the nāttavar.⁶⁸ The role of nāttavar in redressing the exploitation of the peasants to the nāyakas was visible from the 15th century Vijayanagara inscriptions.⁶⁹

The public service utilized for the maintenance activities of the irrigation system in the initial period was as a voluntary service to the state and hence it cannot be categorized as forced labour. In an inscription it was recorded that one Poovan Paraiayan who provided irrigation facility to a wasteland by his hard work made the land cultivable.⁷⁰ However, during the Vijayanagara period, the voluntary payment was shifted to compulsory labour along with the fiscal levies. Marlene Njammsch analyzed this shift because of the increase in the private land holding pattern. This system encouraged landed magnates to employ peasants and workers in sufficient numbers and demand their labour dues.⁷¹

The shift in the intensity of labour dues can be analyzed from the kinds of dues imposed over time. Towards the Cōḷa period, service taxes like *veṭṭi* and *amañji* underwent changes. There was an introduction of new service taxes like *vālamañji*, *veṭṭi-vari* along with other regular services. This showed the increase in the demand for labour imposed compulsorily from the royal officials.⁷² Along with the royal influence, the

⁶⁷ R N Nandi, ‘Growth of Rural Economy in Feudal India’, Presidential Address, *Proceedings of the Indian History Congress*, Vol 45, 1984, pp. -39-40. Also T V Mahalingam in his *Economic Life in Vijayanagara Empire*, p 20 had clearly made distinction between serfdom and slavery that existed in the Vijayanagara times. He insist that serf used for the agricultural production while the slaves existed in the urban areas attached to his master.

⁶⁸ Noboru Karashima, *Towards New Social Formation: South Indian Society under Vijayanagara rule*, OUP, New Delhi, 1992, p. 51 (AR 1944-no 285). Hereafter cited as Karashima, *New Social Formation*

⁶⁹ The Vijayanagara inscriptions collected by Noboru Karashima from South Arcot District revealed this aspect towards a certain extend.

⁷⁰ K R Hanumanthan, ‘Evolution of Untouchability in Tamil Nadu up to AD 1600’, in Aloka Parasher Sen ed., *Subordinates and Marginal Groups in Early India*, OUP, New Delhi, 2004, p 147.

⁷¹ Marlene Njammsch ‘From the Ancient Labour Tax to the Feudal Corvee: A Marxist Approach to the Study of Viṣṭi in Sahu (ed.), *Land System*, p 265.

⁷² For Vijayanagara, we could see the direct involvement of nāyaks in collecting such labour dues.

temple was another mechanism that extracted the services through their ideological power.

The study of the taxation with respect to the irrigation system pose a critical appraisal to the argument of Burton Stein that taxation was voluntary in the medieval period. With the epigraphical sources, it is clear that there was no voluntary services or taxes. Instead, the taxes and services, which levied, were out of compulsion. This had created a situation in which the normal peasantry subjected to the double extraction from the centre and local level. The inscriptions collected by Noboru Karashima from the Arcot District was vibrant and absolute regarding the exploitive nature of the tax.⁷³ The increase in kuḍimai demand can be considered as an attempt to intrude into the local administration by the centre. This was more visible from the shift in the imposition of labour dues like vetṭi and amaṇḍi. The statistical analysis of Vijayanagara inscription by Karashima asserted that ālamaṇḍi was prominent in the territory when compared to amaṇḍi. During this period, the initial water cess like *ērikaḍami*, *ērikuḷivetta*, *ēriminkāśu*, *ērimin pattam*, and *ērimin virpanam* showed a diminishing rate from the territory and *vetti vari* became a common tax.⁷⁴ The taxation policy of the state helped the local authorities to maintain the irrigation systems in an effective manner. The autonomy enjoyed by these bodies in collecting local cess was, therefore, a boon as well as a disadvantage for the normal peasantry. The taxes and services pertaining to the irrigation system was a collective responsibility. The local managers were responsible to expand the irrigation works through extracting the revenue and service from the peasants.

The hegemony formed over the water sources resulted in the coercive demands of labour and exploitation of the peasantry. It additionally showed the spread of technology and its insinuation in the environment. These questions of technological change, continuity and the societal response to the environment will discuss in the fourth chapter.

⁷³ Karashima, *New Social Formation*, pp 45-48. The epigraphs collected were particularly from the South Arcot District. Here, nāttavar took effort to disclose the sufferings of the peasants with regard to exploitation in taxation.

⁷⁴ *Ibid.*, Appendix 1, table 2

CHAPTER IV

IRRIGATION TECHNOLOGY IN MEDIEVAL TAMILAKAM

History is not only the study of the past but also the study of trajectories of knowledge. It studies the society through various forces of dynamics like polity, economy and societal aspects. The source that the historian used as the raw material for narrating the past can look through a different lens of interpretation. While taking architectural structures as his source, it can pose the questions of power, social response and to scientific approaches of the people to the specific period. Science and technology plays a significant role in understanding the knowledge system of ancient or medieval society. The studies of technology through scientific approach had shown a dynamic change in the society as a whole.

Hydrology is the study of water and its properties, including its distribution and movement in and through the land areas of the earth.¹ The history of control over the hydraulic projects furthermore throws light to the trajectory, nuances, and application of knowledge by the people. It opened up a wider outlook towards the hydraulic knowledge of the early medieval society, scientific understanding, and the assimilation of new technology to the society and to the environment.

The agrarian history of Tamilakam showed the relevance of artificial irrigation system, as the water source was insufficient throughout the territory. Water for both irrigation and domestic use was stored and distributed efficiently in the medieval period using existing harvesting systems like dams, tanks and wells. These water networks also showed the proficiency of medieval technology in making the water available throughout the season. The epigraphical sources alluded the relevance of irrigation projects in the territory and mentioned the characteristics and components of a good dam. For example, the Porumamilla tank inscription of Bhaskara Bhavadura (1291) gave reference to the relevance of Brahmana with knowledge of hydrology. It also gave references to the

¹ "Hydrology." The Columbia Encyclopaedia, 6th ed... Retrieved June 17, 2019 from Encyclopedia.com: <https://www.encyclopedia.com/reference/encyclopedias-almanacs-transcripts-and-maps/hydrology>

characteristics of a good tank.² The physical evidence of early medieval hydraulic projects showed this efficiency of the learned architects to *jalasāstra* (the science of hydraulics).

Saṅgam literature gave references to the natural methods of irrigation and harvesting pertaining to each *tiṇai*. It suggested the use of natural springs and methods to prevent the overflow or wastage of water. *Pattinipālai* mentioned the use of baked clay instead of stone for protecting the wall of the well.³ There were also evidence of earthen well which seems to be popular in the area.⁴ Along with the excavation of natural wells, the water to the fields were diverted through natural *vāyakkāl* (channels). From the plates, it can be clearly visible that water stored from the catchment area was diverted through man made channels.⁵ R. A. L. H Gunawardhana insists that this ancient technique of natural harvesting and storage of water witnessed change during the Pallava and Pāṇḍya period. The rudimentary technology for water harvesting and storing (natural ducts and catchments) experienced changes by taking inspiration from the advanced technology in Sri Lanka.⁶ He tried to draw similarities between the techniques of piston sluice and cistern sluice of Sri Lanka and Tamil land. Gunawardhana argued that this change happened because of the early medieval contact of Tamil dynasties to Sri Lanka. Here, the complex movement of ideas and technology was therefore visible.

Historiography of the early medieval Tamilakam had represented the irrigation system of the period as systematic, and widespread all over the Tamilakam that connect the rivers and channels to the interior villages. Appadurai quote the argument of Horsley, who observed the Pāṇḍya canals and said that the engineers of the period were experts in their art and irrigation engineering.⁷ Esha Shah categories the pre-modern tank irrigation

² EI Vol XIV, no 4. The inscriptions mentions other components of good tank were ground with hard clay, 3 yogana distance, compact wall, hills, phala shira, bed extension, fields, water course and gangs of men.

³ Chellaiah, *Pattinipalai in Pattupattu*, line 83, p. 35.

⁴ Plate 1 (earthen well)

⁵ Natural catchments and *vāyakkāl* in plate 2, 3, and 4

⁶ Gunawardana, *Intersocietal Transfer*, p. 138. Henceforth cited *Gunawardhana, Intersocietal*. He says the transfer of technology was not due to the diffusion of two regions but through the transfer of knowledge of technology.

⁷ Appadurai, *Economic Conditions*, pp. 211-212.

technology as small, decentralised, traditional, Eastern and local which are “ecologically embedded and socially suitable”.⁸

The inscriptional sources of the period gave reference to the construction of reservoirs, sluices, canals, and channels with considerable technological improvement.⁹ The studies of Gunawardhana, Rajan Gurukkal, and K Rajan, it is clear that the technology changed from the 7th century and it showed continuity from the Pallava period to the Vijayanagara times in Tamilakam. The physical evidence of these reservoirs suggests that during the 7th and 8th century, two major technological advancements occurred. One was the replacement of earthen bund with the stone and the other was the introduction of string line (nūlittuvitta) for bund raising. The term *karkoti* from the inscription indicates the use of stone rivets.¹⁰ Along with technological advancement, changes were visible in the method of construction. The replacement of burnt brick with stone showed this change from the saṅgam period. The use of stone was visible in the creation of wells, vāyakkāl (channel) and sluice¹¹. The stone was used to ensure resistance from the force of water in the tank as well as in the well. The replacement of brick to stone was clearly evident from the inscriptional sources. For example, the Taṇḍalam inscription of Kadavarkon Satti gave reference to the construction of stone sluice for Pōliyūr-nāḍu.¹²

Gurukkal insists that the system of water harvesting prevalent in the early medieval period was known as ‘cascade system’.¹³ This means the reservoirs connected to each other that ensure effective storage and sustainable distribution of water. The common methods of water distributions were dams (slit-check dam), tanks, sluices, well, canals, channels, and water lifts.

⁸ Esha, Shah, ‘Telling Otherwise: A Historical Anthropology of Tank Irrigation Technology in South India’, *Technology and Culture*, Vol. 49, No. 3, p. 673.

⁹ Some of the inscriptions to quote were The Kaṣakuḍi plate, *Marudadu inscription*, Taṇḍalam inscription, Agalūr inscription, Udayendiram plate, The Vaigai bed inscription, Ukkal inscription gave reference to the construction of stone sluices and waster weir. There were inscriptions during the period of Cōḷas that gave reference to the construction of pit wells and the use of water lever and water lifts.

¹⁰ Rajan, *Irrigation Technology*, pp 36-37, Rajan Gurukkal also remarked the same change.

¹¹ Plate 5, 6, 7, 8, 9, 10, 11, 12 and 13 shows the stone well and stone sluice. In the plate 8, 10, and 11 a stone channel was constructed to carry water to the respective fields from the reservoir.

¹² Mahalingam, *Inscriptions of the Pallavas*, no 261.

¹³ Gurukkal, *Social Formations*, p 333.

The construction of reservoirs and tanks showed the efficiency of the architect in scientific principles and logic. Among the types of reservoirs constructed, Gunawardhana had identified the existence of Arch dam in Kāveripakkam. He insists that dams with arch face have the capacity to resist the hydrostatic pressure in the reservoir.¹⁴ Along with arch dam, the prominent construction type was the check dam, slit dam and weir.¹⁵ Check dams are the group or series of low alignment of unshaped rocks constructed across the bottoms of the ephemeral stream channel.¹⁶ Slit dams were common and most prominent constructions of the check dam. This kind of check dam possesses one or more narrow and vertical openings, going from the dam base up to the weir. Slit dams primarily designed to control the debris in the flowing water. These structures will also regulate the velocity and control the sediments and soil erosion of the channel bed. Hence, they are called as slit-check dams.¹⁷

To understand the working of these projects, its maintenance and operation require basic knowledge of fluids at rest and in motion. The flow of fluids varies according to the bed, gradient, and channels through which water will discharge.

The slit dam in plate 1 locally known as ‘Kulattur periyakuḷam’ (kulattur pond) (10°33’20” N, 78°46’48” E) showed the masonry skill and technology through channel slope or gradient and installation of stone weirs. There are four sections in the check dam with pillared stone arranged in the base of the dam. The basic function of these structures is to resist the velocity of the flowing water from the reservoir. Here, the stone weirs act as an obstacle in their path thereby reducing the velocity.

The gradient is necessary for a fluid to flow. The velocity of a fluid is determined by its gradient in the bed. The channel bed of the check dam in Kulattur has a gradient towards west. It helped the maximum water flow to the direction of the highest slope.

¹⁴ Gunawardhana, *Intersocietal*, p 120.

¹⁵ See plate 16, 17, 18 and 19 (slit dam)

¹⁶ William, E Doolittle, ‘Use of Check Dam for Protecting Downstream Agricultural Land in the Pre Historic Southwest: A Contextual Analysis’, *Journal of Anthropological Research*, Vol 41, no 3, University of Chicago Press, 1985, p 1. An ephemeral stream is that one receive less rainfall or water source. This kind of streams were evident in the semi-arid or arid region. Definition from Hadley R.F. Ephemeral streams. In: *Geomorphology. Encyclopaedia of Earth Science*. Springer, Berlin, Heidelberg, (1968).

¹⁷ Michele Larcher and Aronne Armanini, ‘Design criteria of Slit Check Dams and Downstream Channels for Debris Flows’, *International Workshop on the Debris Flow Disaster of December 1999 in Venezuela Caracas*, November 27th – December 1st, 2000.

The main purpose of this slope could be in the reduction of sediment load in the main stream.

The water was to flow from the higher head of the dam to the lower towards the hydraulic gradient horizontally. The hydraulic gradient was generally understood as the slope of the water table. Here, the maximum flow will be more on the maximum hydraulic gradient per unit.¹⁸ Since the flow velocity is directly related to the slope of the channel, it could insist that in a high gradient, the velocity of the water will be high. This implies that steeper the slope, faster the velocity of flow. Therefore, the main aim of such check dams was to increase the velocity of flow to the more gradient surface. In this process of regulating the velocity, trapping sediments became the benefits. This means the check dam can collect more suspended particles like clay, slit and eroded soils mainly in the more gradient area. Hence, the stone structures were called as ‘filter fabric’ of the channel.

The flow is dependent not on the gradient alone. The influence of pressure also matters. In an open flow, the pressure at the free surface (top layer of water) is constant. The free surface is exposed to atmospheric pressure, hence, the pressure will be the same throughout the channel even if the gradient increases or decreases.

Another prominent construction in the regulation of water flow was the weirs. The early medieval inscriptions like Marudadu inscription of Nrpathungavarman and Kaśakudi plate of Nandivarman recorded the construction of weir (*kaḷiṅgu*) for the dam.¹⁹ Weirs were constructed to maintain high water level upstream of the crest of the dam and to regulate the flow of water from the dam.²⁰ The volume of water flow from upstream to downstream through weirs is less when compared to the check dams or slit dams.

The water from the main reservoir was carried to the fields and tanks by means of inundation channel.²¹ The inscriptions referred these branches of channels as *vāyakkāl*,

¹⁸ "hydraulic gradient." *A Dictionary of Earth Sciences*. . Retrieved June 15, 2019 from Encyclopedia.com: <https://www.encyclopedia.com/science/dictionaries-thesauruses-pictures-and-press-releases/hydraulic-gradient>

¹⁹ Mahalingam, *Inscriptions of the Pallava*, no 77 and SII vol 12, no 65

²⁰ As per the definition from ‘Basic Terms of Dam Characteristics’, in *Environmental Fact Sheet*, New Hampshire Department of Environmental Services, 2011, The term Crest of the dam is often used when top of spillway and top of dam should be used for referring to the overflow section and dam proper.

²¹ See plate 12 and 13.

tāy-vāykkāl (chief channel from which branch channel emerge).²² These channels linked to the main sluice of the dam that regulated the supply of water. Such kind of channels were known as *talainīr ppātu* (chief sluice of a tank, from which smaller channels branch out).²³ The volume of water travelled through these channels depended on the time, space and slope. The flow of water in such channel would be in a steady and uniform flow if there were a constant discharge of water from the sluice. The flow of water can be an unsteady, non-uniform flow if the opening of the sluice gate is less with respect to change in time.

The big scale irrigation projects like reservoirs and check dams meant to aid accessibility of water for the agrarian fields, domestic needs and enriching the ground water. The water from these projects was diverted to the tanks that are interior to the villages and that formed the major water source for these villages. These hydraulic structures stood as a living example for the conservation and harvesting of water through systematised technology.

Every region has its own way of traditional water harvesting system that reflects the geographical features of the place and uniqueness of technology used. In the village of Kilasevalpatti (Tirupattur Taluk, Sivaganga District), the common method for water harvesting was the tanks. The major source of water for these would be from the annual rainfall. At present, the area receives approximately 861.8 mm. to about 988.6 mm rainfall throughout the year²⁴, which would have been stored in these harvesting systems. The kind of *ēri* (tank) existed in this region can be categorized into two, one which is fed by channels through diverting river water and *ēri* which is completely dependent on rainwater.

The methods of harvesting and its utilization can be related to scientific principles and law and are visible in historical times too. Hydraulics, the practical science of water technology deep-rooted in the society and hydrodynamics is the theoretical knowledge of fluid mechanism. Both the knowledge system co-existed in society when we analyse the traditional technologies of Tamilakam. Keeping alive the experience of water

²² Tamil Lexicon, p 184.

²³ *Ibid.*, p 1780

²⁴ District Wise Climate Change Information For The State Of Tamil Nadu Rainfall Projections For Sivaganga, http://www.tnenviis.nic.in/WriteReadData/UserFiles/file/27_SIVAGANGA_RAINFALL.pdf, 04-05-19, 21.03pm

harvesting, they made the tanks and other sources to hold, catch and preserve water for the drier season with the efficient theoretical mechanism.

Evidence of such masonry skills on construction and the suitable application of laws was apparent from the tanks of Kilasevalpatti.²⁵ Almost all the *ēri* evident from this area shared the same commonality in terms of an architectural feature. The cohesion was visible in terms of features of tanks, and their location. These tanks were constructed near to the temple. This showed that the common people were restricted in using the tanks for domestic purposes. This also showed the evidence of temple controlled hydraulic system throughout the village.

The uniqueness of the architectural feature needs considerable attention. Each *ēri* followed the same pattern where these have an inlet valve to the western side of the tank. The opening valve was followed by an underground duct (*nīr ōdai*) which may have led to the main water source of the tank.²⁶ It is through this underground conduit, the water reached the *ēri* when it was necessary. This is an example where the application of theoretical science meets practical knowledge. The duct is rectangular in shape that enabled the laminar flow of water. Laminar flow is the flow in which the water moves smoothly without any turbulence.

The water that moves through this duct from the main source required more force and velocity to travel to the destination. The water in the dam will be in the state of inertia (resistance to change in motion) unless pressure is exerted. In the flow dynamics, the pressure at the two ends of the valve determines the course of water through the duct. The pressure is the force acting on a surface per unit area. According to Pascal's law, once the water entered the conduit (closed area), the pressure was exerted from every side of its wall. In this case, the pressure of the liquid was used on the base and on the wall of the duct. The base pressure was downwards and wall pressure was sideward.

Along with pressure, the velocity of water is another determinant of proper working of a tank. In the flow mechanism, both velocity and the pressure is inversely proportional to each other. That means, to increase the velocity of the fluid, the pressure should be low and vice versa. The difference in pressure of two ends hence produced the

²⁵ See plate 18, 19, 20 and 21 (tanks)

²⁶ Plate 22 shows the underground duct

acceleration to the fluid. Therefore, this force of the water made it move in a considerable speed through channel or pipeline to the irrigated field.

In the case of conduits, it can be possible that the mass flow rate (mass of the substance that passes per unit of time) will be in a constant velocity. The constant speed of the water hence implies the application of steady flow inside the tunnel. Considering the properties of the fluid in the tunnel as static, non-viscous and incompressible, the flow of water can be analysed in terms of energy perspective. Here, the Bernoulli's principle can be rightly applied where the pressure, velocity, and height of the fluid remain constant. Bernoulli's principle states that the higher the velocity of the fluid through the pipe, the lower the pressure in the wall and vice versa. This is the conservation of energy where there is no loss of energy. It states that the total energy of a small amount of incompressible liquid flowing from one point to another remains constant throughout the displacement. The total energy, in this case, is determined by the sum of potential energy, kinetic energy, and pressure energy.²⁷

Bernoulli's principle can be applied to find out the velocity water emanates from the outlet of the tank.²⁸ Since the area of the tank is big and the opening of the tank is small, the water flow will be slow at the top when compared to the bottom.

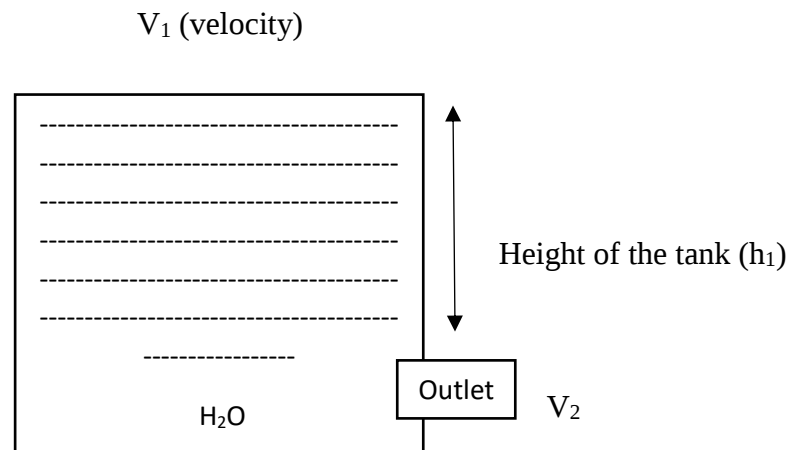


Figure 1. An illustration of a tank

²⁷ Dominique Thevenin and Gabor Janiga, *Fluid Dynamics for Engineers*, July 10, 2014. Also in Henry Semat and Robert Katz, *Hydrodynamics* (Fluids in Motion), Robert Katz Publications

²⁸ Figure 1 and also the plate 23 and 24 (inlet to the tank)

In figure 1, the velocity of water that emanates from the particular height to the outlet of the tank (V_2) can be calculated by Bernoulli's equation as:

$$V_2 = \sqrt{2gh_1}$$

Where the value of g (acceleration due to gravity) is 9.8, which remains constant to all water levels in the earth's surface. The examples of the water harvesting system from the Kilasevalpatti showed the confluence of practical knowledge with theoretical knowledge.

The water sources distributed and utilized efficiently in these areas with an idea for conserving water for the hard times. These reservoir systems of the past had also revealed their insight towards nature, environment and practical knowledge of the water harvesting system.

CONCLUSION

Water harvesting and its preservation of water for the basic needs and irrigation became the major focus of all societies in history. These networks became the major source that sustained agrarian production through the optimum utilization and effective preservation. The gradual technological improvement and agrarian expansion brought changes in the methods of preservation and brought new forms of control over it.

The construction and maintenance of water bodies were regarded as a meritorious activity that would bring virtue and prosperity to the state. With this intension, the state undertook large-scale irrigation works in the country. The power structure revolves around the hydraulic projects of medieval Tamilakam exposed intricate relation between the institutions of the state. The role of the state in the Pallava period was nominal and indirect. Strict enforcement of authority over the water began after the seventh century where the words of the king became ultimate. By the time of Cōḷas, the state began to entrust duties to temples, assemblies, and individuals for the maintenance and construction works of reservoirs. During this period, there was considerable number of large scale irrigation projects done by the king himself. During the Vijayanagara period, the nāyakas did mainstream construction works on behalf of the king. The widespread reclamations, gifts, and donations of land for agrarian expansion helped temple and other institutions accumulate authority from the state over water sources.

The epigraphical evidence showed that the temples were the next prominent institution in construction works after the state. Temple gathered religious acceptance from the people through the state. A shift in the role of temple as a religious head to an economic entity happened with the agrarian expansion, technological improvement, and creation of brahmadēya. This agrarian expansion of 7th century and subsequent Bhakti movement aided the expansion of temple to the peripheral zones of Tamil country. The emergence of Brahmadēya and dēvadāna also backed this movement to a certain extend. The role of the state in the construction of big temples, entrusting them with reclamations also necessitated the further growth of these institution. With this spread, the temples controlled the agrarian land and production by controlling the water sources in both core and peripheral regions of the country.

The inscriptional evidence showed reference to the multifunctional role of the temples in controlling the water. The land grants became the main base for their authority. The state encouraged reclamations of land, gifts, and donations by the officials, assemblies, nāttavar and wealthy individuals brought vast tracts of land as temple property. The supremacy asserted by the temple on these lands validated both economic and divine power of the temple institutions. At first, the right over water bodies in the village was regarded as their customary and inalienable right. Through affixing the principle of divinity and sanctity of water, the temple trustees demarcated some spaces as sacred as part of their claim over customary rights. This kept aloof certain people of the country from its usage. The right of the temple in distributing the volume of water to the fields, deciding the crops to be cultivated and their share of produce from the cultivators also came under their claim over prescriptive privileges. Along with this customary right, this activity of the temple can be categorized into their economic authority. The temple gained this power through the widespread reclamations of land, gifts, and donations undertaken by the state, officials, assemblies and wealthy individuals.

The village assemblies, local chiefs, wealthy individuals, merchants and residents of the village also showed their commitment towards expanding the irrigation networks to the interior village hamlets. Irrigation in the village level became a localised activity that ensured the combined role of assemblies, temples, and individuals. Though the temples were erected near the farm with water facilities, the task of converting the land to a cultivable one was with the village assemblies. The members of the assembly decided the distribution of water, crops to be cultivated and made land grants for maintenance activities. The assembly entrusted functions pertaining to hydraulic projects and cultivation to a specific committee called *ērivāriyam* from the Pallava period onwards. The members of this committee (*ērivāriya perumakkal*) were supposed to maintain and renovate the irrigation networks and ensured optimum and sustainable utilisation of water. The income for these activities was generated from the land transactions done for the tanks. Their endeavor continued till the Cōḷa period, particularly under Parāntaka and Uttama Cōḷa. The main motive behind the activity of the committee and the village assembly was directed by the economic prosperity of the state. The control over the hydraulic projects increased the reclamations of uncultivated lands and the output from the agrarian sector.

With the increased private ownership of land, wealthy individuals and merchants also constructed reservoirs and contributed to the renovation works. During the period of Pāṇdyas, the chiefs with the title *kīḷavan* renovated irrigation system on a considerable scale. Under the initiative of these individuals, the renovated water sources were later converted to big irrigation project. The replacement of the term *kuḷam* (tank) to *ēri* suggests this aspect.

The diminishing role of *vāriyams* in the Tamil country was evident from the 11th century onwards. The inscriptions suggested that the individuals replaced *vāriyams* to certain extent in the later Cōḷa period. These individuals directly controlled the water sources, renovate and desilt the tanks with the permission of village assembly or the king. During the Vijayanagar period, under Sangama rulers, the role of individuals and *nāyakas* was more prevalent than assembly or committees. The village assemblies and *nāttavar* showed less interest in the 14th century with the intrusion of *nāyakas* into the political system. However, their role was not completely expunged from the political scene. The inscriptions from the reign of Dēvaraya suggests that assemblies and *nattavar* had a nominal role in the village activities in the Arcot districts and near to it.

In the process of controlling the water, these institutions controlled the normal peasantry, agrarian productions and also their distribution. The collective response of the peasantry to the hydraulic projects in the Tamilakam can be analysed with respect to the revenue assessment. Taxes on irrigation was one among the source of income to the state treasury and to the renovation purpose. The analysis of epigraphs suggests that the peasants were subjected to double extraction from the centre in the form of taxation. Apart from the regular taxation, these classes were obliged to give their labour service to the upkeep of the tank. Hence, for the renovation purpose of these projects the capital from the sale of land, the free labour service, gifts and donation in kind and cash were extracted from the normal tenants and other residents. The multiplication of service tax like *veṭṭi* and *amañji* from the Cōḷa period showed that these taxes were imposed on the people by the state directly. This ensured a regular labour service for the renovation activities from the centre. The imposition of new labour taxes continued even in the Vijayanagara period. During the Vijayanagara times, the *nāttavar* became the active spokespersons against the increased burden of taxation. This period, therefore, witnessed the major shift in the activity of *nāttavar* for being chief of *nāḍu* to the representative of peasants.

The societal response to the hydraulic projects not only showed the exploitation and extraction of revenue. It also described the knowledge system of the medieval period. The physical structure of these networks suggested the diffusion of technology, fair enough knowledge of the environment, landscape, and the of laws of nature. The major technological improvement witnessed during the Pāṇḍya period with the replacement of stone bund instead of earthen bund and use of string line for raising the bund of the tank. This ensured the durability of the bund for a long period, resist the water pressure when it fills and ensured optimum storage capacity of the dam and tanks. The diffusion of knowledge system resulted in the use of pistern and cistern sluice throughout the territory. The physical evidence of the dam shows that the technology seems to continue from the 7th century onwards. The changes visible was with the method of construction. The use of flat stones in numerous number replacing the old brick one represents this change.

While analysing the inscriptions, it became clear that the power accumulated by various institutions of the state was gradual and was postulated by the changes in the agrarian economy. The state and temple utilized devotion and fear as a common mechanism to control the resources in the country. The power the state exerted implied the ideological hegemony from the centre. The fear of punishments made the subjects abide by the rules of the king. In the process of creating a centralised administration, the strict laws in the agrarian sector can be seen as an attempt to codify laws throughout the country. While in the case of the temple, both ideological and economic authority was employed. Irrigation became a localised activity when the assembly and individuals imposed their authority. The assembly was obliged to the state for the maintenance, construction, revenue extraction from these networks. In this process, the normal peasantry was subjected to exploitation from the state and local governing bodies.

To conclude, the agrarian changes happened during the 7th century is the main base for the expansion of the irrigation system in the early medieval Tamilakam. The urge to reclaim barren lands and to make them cultivable requires an efficient water harvesting and distributing system. The technological diffusion and indigenous knowledge system aided them in achieving this motive towards a large extend. All other power relations and subjugations of peasants was a continuation of the land grants and its sale. The temple, local bodies, and even the individuals possessed this power in the society only because of their land transactions and reclamations done for the agrarian expansion. The main motive behind the state was to make the country centralised and prosperous. However,

in the Vijayanagara period, the state indirectly involved through the nāyakas. Irrigation in the early medieval period was, therefore, a collective activity for achieving virtue and prosperity of the state. All developments occurred in the agrarian economy and society was directed mainly by the urge to control land. The widespread reclamation of dry lands and wet lands, converting barren lands and excavating new irrigation source all opened up a new platform of power.

List of plates



Plate 1, An earthen well



Plate 2, Natural catchment



Plate 3 Natural catchment



Plate 4, Natural vāyakkāl.



Plate 5, A well made with stone



Plate 6, An ēri with stone sluice



Plate 7, Stone sluice



Plate 8, Stone sluice with vāyakkāl to the field



Plate 9, Stone sluice with vāyakkāl to the field



Plate 10, a closer view of the channel running



Plate 11, another stone channel



Plate 12, Stone vāyakkāl



Plate 13, Stone vāyakkāl



Plate 14, Slit dam



Plate 15, Slit dam



Plate 16, Slit dam



Plate 17, Slit dam



Plate 18, temple tank



Plate 19, tank



Plate 20, temple tank



Plate 21, temple tank



Plate 22 showing underground duct



Plate 23, an inlet of the tank



Plate 24, inlet of the tank

TABLE OF INSCRIPTIONS

Sl No	Name of the inscription	Date (CE)	Ruler	Provenance	Donor	Donee	Donation	Miscellaneous	Reference
1.	Gunapadeya plate of	4 th century CE	Queen Cārudēvi.		Queen Cārudēvi.	Officer of Kaṭaka	Reference to the tank <i>paniyakupa</i> and <i>rājatatāka</i>	Land grant	Inscriptions of the Pallavas, no 4
2.	Mahendravadi inscription	7 th century	Gunabhadra alias Mahendravarman	_____	_____	_____	Constructed temple near to Mahendra tatāka	_____	Epigraphia Indica Vol IV, no 19, p. 152-153. Hereafter EI
3.	The Kūram plate	627-700 CE	Paramēśvaravarman I	Kanchipuram	Paramēśvaravarman I	Kūram	Granted village Paramēśvaramaṅgalam Evidence to a district channel	Village was exempted from taxation About Pallava genealogy	South Indian Inscriptions (SII) Vol I, no 151, p. 154-155
4.	The Jambai inscription	11 th regnal year	Vāṇakōvaraiyan	On the Gōpura of the Jambunātha temple, South Arcot	Rājarājadēvaṇ Vannēṇjarāyaṇ	village of Gudimallam	Village belong to the god Tiruttāntōṇṇī Āvuḍaiya-Nayaṇār Village was exempted from taxes like <i>kāśāyam</i> , <i>poṇvari</i> , <i>ālamañji</i> , <i>antarāyam</i>	_____	SII Vol XII, no 164, p 91

5.	The Vaigai bed inscription	c 720 CE	Chēdaṇ Arikēsari's	Stone slab, Mīnakshi temple	Chēdaṇ	Paruttikkūḍi-nāḍu	Construct sluice and channel	Founded the city – Maṅgalapuaram	Inscription of Pandya, no, 4, p 3
6.	Udayendiram plate	c.752 CE	Nandivarman II	North Arcot district	Nandivarman II	In the village of Kōṛra-grāma	Grant of village to 108 brahmanas along with water-lever (jala-yantra)	Fixed boundary	Inscriptions of the Pallavas, no 76, pp. 235-236
7.	Kaśakudi plate.	753-4 CE	...do...	Pondicherry	_____	Ūṛṛukkāṭṭu-nāḍu	Nāḍu was allowed to tank water for irrigation purpose from river and tank	Boundaries	The Inscriptions of the Pallavas, no 77, p 254
8.	_____	_____	Pallava	On the rock of the 'Arumaikkūḷam' pond Kuḷattūr Taluk-Nārttāmali	Venṛimadatta Tamiḷadi Araiyan,	Sonnāraiyan	Sluice was constructed by Venṛimadatta Tamiḷadi Araiyan, Land near to the sluice granted to the mason Sonnāraiyan	_____	IPS, no 11, p 13
9.	_____	756, 25 th regnal	Nandivarman II	On the slab forming part of the sluice of a ruined tank to the south east of the Rāsālīpaṭṭi temple, Kuḷattūr taluk	_____	_____	Construction of stone sluice by Pullayakadamban	_____	IPS, no 16, p 19
10.	Rāsaliṭṭi inscription	c.756 CE	...do...	On the slab forming the part of ruined sluice of the tank,	_____	_____	Karkumili (stone sluice) was constricted by Pullaya Kaḍamban	_____	Inscriptions of Pallava, no 79

				Rasalipatti, Pudukkottai			<i>(Sri Āridam Pullaṇ magan Pullaya kaḍmaṇ śeyyvitta kārkuṇi)</i>		
11.	Puḷḷūr plate	c.764-65 CE	...do...	North Arcot district	Nandivarman II	Four villages	Tanks like Pādi-ēri and Neśalarpūṇḍi-ēri and a river Cēyāru formed boundary Donee's granted with water rights Transgressors liable to punishment	Nandivarman born in Pallava family	Inscriptions of Pallava, no 81, p 271
12.	Saṭṭamangalam inscription	c.764 CE	...do...	On the natutla rock near Chandranathes hwara temple, north Arcot	Ūrar of Saṭṭamangala m	Tank	Ūrar of Sattamangalam gave endowment for the tank like two patti of arappuram, two patti of īlamakkal kaṇam and kūttu, irappu, īlamakkal kāṇam,	—————	Inscriptions of the Pallava, no 82
13.	Paiyaṇūr inscription	c.768 CE	...do...	Rock near Eṭṭiśvara temple ,Chingleput district	Merchant Nāgaṇ	Gaṇattar of Payiṇūr	Pay some amount of 6400 kāḍi of paddy to gaṇattār paddy for digging big tank called Pēreri The text reads... <i>Ulakkuni vāṇīkan Nāgan em ūr pēreri poliyūttinar rōṇḍūduvarkku kodutha nel...</i>	—————	Inscriptions. of Pallava, no 83, p 280

14.	The Velvikudi plate	c. 770 CE	Neḍuñchaḍaiyan	Unknown	Praśasti composed by Varōdayabhatta	————	Reservoirs formed boundary of the state	Political history and conquest	Inscription of the Pandyas, no 7
15.	Agalūr inscription	c.781 CE	Nandivarman II	Rock close to Jaina temple , north Arcot district	Nandivarman II	Agalur tumbu	Kampaiyara in his 50 th year constructed Agalūrtūmbu and gave the tank income of one kāḍi per patti of irrigated lands Gave a share of income for maintenance purpose.	The text reads.. ... <i>Nandivikkir amapaṇmaruk ku yāṇḍu aimpadavad Agalūrtūmbu Kampayaṇār iḍuviṭṭar īppērik....patti kāḍi....</i>	Inscriptions of Pallava, no 84, p.282
16.	Manampundi inscription	9 th century	Vayirameghavarman	On the slab setup in the street, South Arcot district	Aṇikōvan Oṟṟiyūrpīrāṭṭi	————	Daughter of Vilāḍarāyar and wife of Vayiramēghavarman, Aṇikōvan Oṟṟiyūrpīrāṭṭi made new tank at Niccavinita-mangalam	The text reads... Śrī Vilāḍarāyar magal Aṇikōvan Oṟṟiyūr pīrāṭṭi (and wife of) Vayiramēgha Vāṇakōvarayar ... <i>Niccavinita-mangalanu ēṟi kaṇḍu tūmbi iḍuvittar...</i>	Inscriptions of Pallava, no 266
17.	Taṇḍalam inscription	c.9 th century	Kadavarkon Satti	Engraves on rock near the tank Taṇḍalam,	Kadavarkon Satti	Taṇḍalam	Build stone sluice by Satti and goddess Lakshmi for Pōliyūr-nāḍu	———— ————	Inscription of Pallava, no. 261

				north Arcot district,					
18.	Siyamanagalam inscription	c.800 CE,	Dantivarman	Rock cut shrine of the temple, North Arcot district	Tiruppālaiyūr	_____	Construction of a sluice called Kumāravāy	_____	Inscriptions of the Pallavas, no 323
19.	Kunnāṇḍārkōyil inscription	c.800 CE (5 th regnal year)	...do...	On the rock cut cave of Parvatagirīśvar a temple, Pudukkoṭṭai	_____	_____	Construction of tank <i>vāli-ēri</i> by Vāli-Vaḍugan	_____	SII Vol XII, no 41, p. 17, IPS, no 17
20.	The Uttaramerūr inscription	c.803 CE	...do...	On the south wall of Vaikuṇṭha-perumāl temple, Chingleput district	Sabhaiyar of Uṭṭarmēru-caturvēdimaṅg alam	Svāmikumār a-caturvēdi Sōmayaji of Muḍumbai	Eri to the west of paramēśvaravadi was given five pāḍgam to Svamikumara caturvedi Somayaji for digging the tank for raising the bund. Donor and his decedents have no right thereafter	The text reads... <i>Paramēśvarav adiyin kiḷakku ērikkaga vaitta aindu pāḍagamumm muḍumbai śvamikumara caturvēdi Sōmayajirkku ēri toṇḍavum araiyattavum virukk kuḍuttom</i>	Inscriptions of the Pallavas, no 101
21.	The Uttaramerūr inscription	c.805 CE	...do...	South wall of Vaikuṇṭha-perumāl temple, Chingleput district	Sabhaiyar of Uṭṭarmēru-caturvēdimaṅg alam	_____	Sabha utilize the income deepening and improving the tank of Vayiramēghataṭāka.	_____	The Inscriptions of the Pallavas, no 102, p.343

							Task to tank committee called ‘ <i>variya</i> ’		
22.	The Ālambākkam, inscription	12 th regnal year, (807 CE)	Aditya I	On the south wall of the central shrine of the Varadarāja perumāl temple, Trichinopoly district	Mutta Bhavasēna Viltan	Temple of Tiruvisālūr perumāṇaḍigal	Gift of land as tax free to the temple to meet the daily expense. Land should be irrigated from Mārpiḍugēri		SII Vol XIII, no 222, p 120
23.	Rāmanāthapuram inscription	810 CE	Varaguṇa I	On a rock in the village, Dindigal taluk in Madurai district	Military chief Nakkaṇ-Puḷḷaṇ,	_____	Constricted a tank in his name called <i>Puḷḷan-ēri</i> . He renovated the tank. The work was completed by his son Puḷḷan-nakkaṇ.	Name of the mason who completed the work	SII Vol XIV, no 26, p 23
24.	The Uttaramerūr inscription	817-18 CE	Dantivarman	South wall of Vaikuṇṭha-perumāl temple, Chingleput district	Sabha of Uṭṭarmēru-caturvēdimaṇḍalam	_____	agreed to levy tax due from the riots whose sāmantas left the village without paying the due. Sell the land in favor of the tank Vayiramēghataṭāka	_____	The Inscriptions of the Pallavas, no 109, p. 353
25.	The Daḷapatisamudram inscription	the 6 th regnal year c. 823 CE	Varaguna I	On the slab lying in a field in the Parayacheri of the village	Vēḷan of Irambādū	_____	Two endowments: 500 sheep for the maintenance of the Rājakka taṇṇir paṇḍal Gift of sheep for maintaining the lamp	_____	SII Vol XIV, no 40

26.	Erukkaṅgudi inscription	c.827 CE	Śrīvallabha(Saḍaiyan Māṇṇ)	On a rock in a field to the south of the tank, Sattur taluk, Ramanathapuram District	_____	_____	Irappaikkudi Kīḷavan dismantled the old bund of the tank and constructed it with a stone.		SII Vol XIV, no 43, p 33
27.	Erukkaṅgudi inscription	c.827 CE	...do...	on a stone slab on the bund of the tank, Rāmanāthapuram district	_____	_____	<i>Irappaikkudi Kīḷavaṇ</i> repaired the tanks, raised new bunds and build temples. Made tank called Kīḷavaṇ ēri	Praise of Kīḷavaṇ	SII Vol XIV, no 44, p. 34
28.	Kuruvittuṇai	16 th regnal year (c.831 CE)	...do...	On the wall of Chitraratha-Vallabha Perumāl temple, Madurai district	Maṅgādu-kīḷan	_____	Cultivation of land by digging channel	land exempted from the payment of antarāyam	SII Vol XIV, no 236, p. 141
29.	Kuruvittuṇai	16 th regnal year (c.831 CE)	...do...	On the wall of Chitraratha-Vallabha Perumāl temple, Madurai district	Issued under the banner of god, who is called Śārṅgin of Chakratīrtham.	Sri-Harushan-Nārāyaṇa-Bhaṭṭa-Vijapeyayaji of Kranūr	Channel with the name of <i>Srīvallabhappēraṇu</i>	_____	SII Vol XIV, no 224, p 128
30.	Neṇmēri Inscription.	c.833 CE	...do...	On the slab set up On the bund of the tank	_____	_____	Irappaikkudi Kīḷavan built an ambalam after repairing the tank.	_____	Topographical list of inscription, vol 6, no 140

							Constructed stone dam for the channel		
31.	The Guḍimallam inscription	c.845 CE	Dantivarman	on a stone near the wall of Parasurāmēśvara temple, Chittoor district	headman of Kaḷyamāṅgalam, Ayyappōṟṟi	village Tiruvippiram bēḍu	Endowment of land as ericcērvu, irrigated by reservoir. Annual repair of the sluice	_____	Inscriptions of the Pallavas, no 110, p. 357
32.	The Siṇṇamaṇūr inscription	c.857 CE	Śrīvallabha	On the west wall of Lakshminārāyaṇa-perumāl temple, Madurai district,	Sabha of Ariēsarinallūr	Aḷa-nāḍu	regulating the supply of water from <i>Srikanṭha-vāykkāl</i> controlling the cultivation	_____	SII VOL XIV, no 78, p 50
33.	Vijayanārāyaṇam inscription	c. 863 CE	Varaṅga II	The south wall of Manonmanisvara temple, Tirunelveli	Panchavan-Pallavaraiyan	temples of Raghava-perumalnadi gal	Gift of land Paramēśvara vāykkāl		SII Vol XIV, no 17, p.17
34.	_____	C.869 CE	Nṛpatungavarman	On the North face of the ruined maṇḍapa in front of the rock cut shrine On the Mīlamalai hill, Kulattur	Sattan Sriyanaṅgai	Minavan Tamil Adiyaraiyan	Endowment as <i>Archanabhogam</i> (property for worship). Irrigation tax and other tax to be dedicated to temple. If breach in agreement, liable to pay fine	Sattan Pilliyili excavated temple, ṛśabha and ṛśabhakkaṭṭil	IPS, no 19, p 20

35.	_____	c.870 CE	Parakēsarivarman (probabaly Vijayalaya)	On the side of the slab lying outside the tank of the Munisāndai village, Thirumayam taluk	<i>Śai-āyiranaññūṟṟu var</i> , (500 sects of vaḷanjiyar)	<i>Aiñnūṟṟuvap ēr-ēri</i>	decided the <i>urivayam</i> (water rights) for the <i>Aiñnūṟṟuvapēr-ēri</i>	_____	IPS, no 61, p 42
36.	Porpandal inscription	c.871 CE	Kampavarman	On the Durgi stone fixed On the village, Chingleput taluk, Kanchipuram	Urom of Propondai	Valiyānai	Sale of right to collect tax for the upkeep of the tank <i>Oru kāḍi nel ērikku dharmmamaga viṟṟu koduthom...</i>	_____	SII Vol XII, no 97, p 43
37.	Chendali inscription	c.873 CE	Varaguna II	Tanjavur District	Kīṭāvan Kāṭṭān, a servant	Piḍāriyār of Mākālam	Village channel belong to <i>Piḍāriyār</i>	Right to possess <i>kāṇikkaḍaṇ</i>	Inscription of Pandya, no 35, p 44-45
38.	Vaḷuvūr inscription	c.875 CE	Nṟpatungavarman	On the slab setup near the sluice, north Arcot district	Aṟamilippāruḷāṇ		construction of a sluice (tūmbu) at Vaḷugūr by Aṟamilipparuan. The text reads.. <i>Aḷlundur nāttu Mannarangalam Aramippāruḷan Valagur śeyvitta tūmbu..</i>	_____	SII Vol XII, no 62, p 25
39.	_____	2+1 st year	Śaḍaiya-Mārar (pandya)		Kōōimaikondaṇ	Sabhai of śālaigrāmam	Use the water of the <i>Kuḷuvanḷuvani</i> and <i>Vāsudēva ēri</i>	_____	SII Vol XXVIII, no 17, pp. 85-92
40.	Kīḷputtūr inscription	11 th regnal year	Kampavarman	Upon stone in the middle of village	Ūrar of Kīḷputtūr	Mādevaṇār	sale of <i>ērikkāḍi</i>	other taxes mentioned	Inscriptions of Pallava, no 212, p 555

							uncultivated barren lands should give this tank duty		
41.	Madam inscription	26 th regnal year	...do...	On the side of a boulder called Śarukkāmpāri	merchant of Kuḷattūr	the tank at Maḍam	Purchased land from ūrār and give it as ēripaṭṭi	————	SII Vol XII , no. 110, p 52
42.	Ukkal inscription	15 th regnal year	...do...		Sadairyan	assembly of Utkur	Closing of a tank by the assembly	————	SII Vol III, part 1, no 5 of Ukkal insc
43.	Uttaramerūr inscription.	c.877 CE	...do...	On the south and east wall of the Vssikuṇṭha perumāl temple, Chingleput District	Sabhaiyar of Uttaramerūr caturvēdimaṅg alam	Kuravaśiri-Rāmdēva bhattan	Sale of land surrounded by bund for building a maḍam. Rules for using the water from the tank (against nīrvittar)	————	Inscription of the Pallavas, no 206
44.	The Uttaramerūr	c.879 CE	Dantivarman	South wall of Vaikuṇṭha-perumāl temple, Chingleput district	Āḷuṅgaṇa of Uṭṭarmēru-caturvēdimaṅg alam	Vayiramēgha taṭāka	Gift of land to the tank. Existence of assembly called <i>ēri-vāriyaperumakka!</i>	————	The Inscriptions of the Pallavas, no 211
45.	Thiruveḷḷarai Inscription		...do...	Margin of a well called Nalumūlaikkēṇi in Trichinopoly district.	Kamban Araiyaṇ	Tenṇūr	Ref. a well called <i>Mārppiḍugu-Peruṅkiṇṇaru</i> designed in the shape of Swastika	————	EII Vol XI, no 15, pp. 154-158
46.	Marudadu inscription	c.881 CE	Nṛpatungavarman	On the slab near the tank, Wandiwash	Koṅgaraiyar Niṇṇaperumāṇ	————	Construction of a weir (<i>kaliṅgu</i>) and renovated the tumbu of the tank.	————	SII Vol XII, no 65, p 27,

				taluk, North Arcot			The text reads... <i>Marudātt ērik kalingu seyvittu tūmbu putukkuvittar...</i>		
47.	Uttaramerūr inscription	C.884 CE	Kampavarman		Śeyya Aparājitaṇ	Sabhiyar of Uttaramerūr chaturvedima ngakam	Gift of gold to remove the slit and deepening the bed and strengthening of the bund of the Vayiramēgha taṭāka	_____	Inscription of the Pallavas, no 217
48.	Uttaramerūr inscription	c.884 CE	...do...	On the south and east wall of the Vaikuntaperu mal temple, Chengleput district	Dēvaṇḍai kalukkunran	Sabhaiyar	Renovation of tank Gift of money and paddy	_____	Inscriptions of the Pallavas, no 218
49.	Tippasamudram inscription.	c.886 CE	...do...	On the stone setup On the bund of the lake, North Arcot district	Pṛtvyaṅgaraiyar (chief of the nāḍu) and his wife Illāḍapperundē viyār	_____	Digging of a channel called Viḷuppēraraiyan in memory of their son	_____	EI Vol XXXIII, no 2, pp. 23-26
50.	Brahmadēsam inscription	c.886 CE	...do...	North Arcot	Member of Alunganam	Temple of Tiruppōndaip perumanadigal	Gift of gold for the supply of water to the temple	_____	SII Vol XXX, no 148, also SII Vol XII, no 107
51.	Uttaramerūr inscription	c.887 CE	...do...	On the south wall of vaikunta perumal temple	Sabhaiyar Of Kaliyur Kottam and a resident Mannipakkilan	Village	Interest amount utilized for digging and removing the slit of the tank vaiyaramēgha tataka	_____	Inscription of Pallava, no 223

							Task to eri variya perumakkal		
52.	The Brahmadēśam inscription	c.889 CE	...do...	South wall of central shrine in Chandramauḷīśvara temple	Ālum-Gaṇattar	Temple of Tiruppondai-perumāṇaḍigal	gift of 11 kalañju of gold for supplying water to temple	_____	Inscription of Pallava, no 225, p 580
53.	Uttaramēruṛ inscription	c.890 CE	...do...	_____	_____		<i>eri variyaperumkkal</i> were entrusted wiith the renovation work strengthen the bund of the vayiramegha tataka	_____	Inscriptions of the Pallavas, no 227
54.	Colapuram inscription	c.892 CE	...do...	On the inner wall of the Perumāḷ temple at Sorapuram near Vellur	Unknown	Vishnu temple at kattuttumbur	gift of lands irrigated by the tank Kaṇakavalli eri to the temple. Defined boundary	Construction of temple by the donor	SII Vol I, no 53, p79
55.	Lalgudi inscription	c.892 CE	Nrpatungavar man	On the niche of the north wall of the first prākāra of the Saptarṣīśvara temple, Thiruchirapaḷḷi	Duvēdi Nakkaṇūvān, Cāvāṇḍi-Nārāyaṇa-Mādēvan, Nārāyaṇa śēndan and Nārāyaṇa-Nakkaṇ	Religious preceptors	Sale of land and its exemption from taxes like <i>īrai</i> , <i>eccōru</i> , <i>veṭṭi</i> , <i>vēḍiṇai</i> , <i>Seṇṇir-veṭṭi</i> and other <i>veṭṭi</i> .		Inscription of Pallava, no 180, p 506-507

56.	_____	4 th regnal year	Rājasēkharavarman (Pallava)	On the south west wall of the maṇḍapa of Agastīśvara temple, Kuḷattūr taluk	Sabhai of Kuḷa maṅgallanāḍu	Periyakuḷam and Pulaṅkuḷam	Revenue collection from tank (kuḷampatti)	_____	IPS, no 25, p 24
57.	_____	Śaka year 9		Punganur, north arcot district	Āṇaiyamman	Tank	Gift of taxes to tank he constructed	_____	EI, Vol XXVIII inscription B, no 43, p 272
58.	Poṇṇamaravati inscription	3 rd regnal year	Pandya-Kōṇerimaikoṇḍan	On the central wall of the Chōleśvara temple, Tirumayam taluk		village virāttalai	Tax free gift to village Levies for the maintenance of the taṇṇīrpaṇḍal (water shed)	_____	SII Vol XXVI, no 12, p 9
59.	Incomplete inscription	_____	_____	_____	Urar	Vellāṇ kaṭampan vēnkaṭan	Buyer given permission to dig new channel Water will be supplied from the renovated tank through this channel.	_____	K Rajan, Ancient Irrigation Technology: Sluice technology in Tamil Nadu, p 97
60.	Pallivaram inscription	_____	_____	On the slab set up neat the well, Pallavaram, Saidapet, Chingleput	Villagers of Agaram Pallapuram	Śeku Muśamiyar	Sold land for a well	_____	SII Vol XXVI, no 58, p 36
61.	_____	c.894 CE	Pārthivendradhipathivarman/Aditya	North wall of the Vaikunta perumal	_____	_____	Reference to high level channel (<i>mugaṭṭukāl</i>)	_____	SII Vol III, part 3, no 176, p 352

				temple, Uttaramallur					
62.	_____	4 th (c.895 CE)	...do...	_____	Śandiran Eḷunuruvan nuba Mayilatti	Uttaramerur Caturvedima ngalam	Received <i>pūrvacharam</i> Exempted taxes like <i>veṭṭi</i> and <i>amañji</i> .	_____	SII Vol III, part 3,no 170, p 347- 348
63.	_____	4 th year (c.895 CE)	...do...	On the south wall of the Uttaramallur temple	Nuḷamba Mayilatti, a merchant	Subrahmany a Bhattara	Exempted taxes like <i>veṭṭi</i> and <i>amañji</i> .	Gift of land to the temple	SII Vol III, part 3,no 171, pp 348-
64.	Brahmadēśam inscription	_____	...do...	On the south wall of the central shrine of the Chandramuḷīś vara temple, Brahmadesam, North Arcot dist	Tirupponḍiai- Sōmāśiyār of Maṇarppākka m	Temple śripondai- perumāṇadig al.	Endowment of land under tank for feeding brahmans. Undertaken by the gaṇavāriya perumakkal of the temple	_____	SII Vol XIII, no 292, p 155
65.	_____	c.897 CE	...do...	On the slab lying in the courtyard of the Tiruvālisvara temple at Padi	Assembly of Kurattūr	Temple	Land sale, along with right of water	_____	SII Vol III, part 3, no 181, pp. 357-358
66.	_____	c.898 CE, 7 th regnal year	Rajakesari Varman	On the west wall of the central shrine of the Dandisvara temple at Valanchēri	Members of the Veḷenchēri	Veḷḷāla brothers of Oṇpaḍiruvēli	Sold land including the tank, channel. Exempted from <i>iṛai</i> , <i>ecchoru</i> , <i>amañji</i> , <i>veṭṭi</i> , <i>vēḍiṇai</i> and <i>antarāyam</i>	_____	SII Vol III, part 3, no 116, pp 252-253

67.	_____	9 th regnal year of, c.900 CE	Aditya I	On the slab setup at Tiruvaliśvara temple, at Kattur,	resident of Kāṭṭur	Ambalam	Gift of land as <i>tanṇirpaṭṭi</i> . Mentioned <i>ēripaṭṭi</i> of the tank Kīlai ēri.	_____	SII Vol III, part 3, no 188, pp 364-365
68.	Tillaistānam inscription	c.904 CE	...do...	On the south wall of the central shrine in the Ghritasthanesv ara temple, Tillaistanam	_____	_____	Vāykkals mentioned as boundaries	Gift of gold for burning lamp	SII Vol III, part 3, no 113, pp. 249-250
69.	Daḷapatisamudram inscription	c.904 CE	Parāntaka II (Pandya)	In the pillar lying in the parēachchēri of the village, Tirunelveli district	Villagers	Vēlāṇ-Chattaṇ	Purchase of land watered by tank Vēlvik-kumiḷi <i>Iṇaigal ōreduppar</i> of Perumbalṇji to maintain and renovate the water shed	Two endowments: maintain lamp and gift to caretakers who supplied water	Inscriptions of the Early Pāṇḍyas from c. 300 BC to 984 AD, no 58, p 70
70.	Ēruvāḍi inscription	c.906 CE	...do...	Inscribed On the boulder of Iraṭṭaippottai rock, Tirunelveli District	Brahmaṇas of Kīḷchchēri	Master of Aruvāḷam (for Jaina shrine)	field of Iḷamakkal grows paddy from Arumaṇḍaikkāl reference to <i>veṭṭi</i> .		Inscriptions of Pandya's no 60, p 71
71.	Tomḍūr inscription	c.910 CE	Parāntaka I (Cōḷa)	On the boulder of the chēri of the village, South Arcot district	_____	_____	Endowment of two village, garden land well as Paḷlichandam	_____	SII Vol XIX, no 80, p. 41

72.	Tonḍūr inscription	c.910 CE	...do...	On a boulder near the Chinḍūr inscription in South Arcot district	The chief Viṃakōvaraiyar Vayiri Malaiyan	_____	Levy of a cess for the proper upkeep of the irrigation tank	_____	SII Vol XIX, no 81, p 42
73.	_____	c.910 CE	...do...	On the west wall of the Matsyapureshvara temple, Papanasam, Tanjavur	Kāri kadaikuricchi	_____	Vāykkal as boundary	4 mā of land for maintenance of Brahmana	SII Vol XIX, no 66, p 34
74.	Tiruppārkkadal inscription	c.912 CE	...do...	On the south wall of the central shrine Kharapuiśvara temple, North Arcot district	Tank supervision committee	Tiruppārapuratti perumanadigal	Burn perpetual lamp by Koḍumbālur chieftain	_____	SII Vol XIX, no 121, p 61
75.	Srivilliputtur inscription	c.915 CE	Rājasimha	On the entrance into the central shrine of Vaṭapatraśāyi temple, Rāmanāthapuram district	Mahasabha	Tank in the village Valliputtur	Mahasabha rename the sluice as <i>Arulākkiperumaḍāi</i>	_____	Inscriptions of the Early Pāṇḍyas from c. 300 BC to 984 AD, no 65 A, p 137
76.	Thiruveṇṇainallūr	c. 917 CE	Parāntaka I	On the south wall of the maṇḍapa of the Kṛpāpurīśvara temple,	Sabha	Aparāyitan Uttamacōḷa Mārāyan	Land with tank made free of tax.	The land later gifted as dēvadana	SII Vol XIX, no 265, p 134

				Tiruchirappall y district					
77.	Tirupparkadal	c.919 CE	...do...	On the north wall of the central shrine in the Kharapuriswar a temple at Tirupparkadal,	Araisūrudaiya n Tiraṇ śennai	Assembly	Tank fund for strengthening the bund and removing slit. Supervised by <i>ērivariya perumakkal</i> .	Interest amount used to feed brahmanas	SI Vol III, part 3, no 99, pp 231-233
78.	The Ambasamudram inscription	2+9 th regnal year	Rajasimha	On the base of the ruined shrine of Thirumalanāth a temple, Tirunelveli district	Rajasimha	brahmadeya m Iḷangōykkudi	Purchase of waste Made the land cultivable Renamed the land to as 'Paṛaiyaṇ-vasakkal' Made it as endowment to temple	————	SII Vol XIV, no 56, p 41
79.	Siddhaliṅgamaḍam inscription	c.928-29	Parāntaka I	South wall of the maṇḍapa in front of the central shrine of Vyagrapādēśv ara temple, Tirukkoyilūr taluk- South Arcot District	Ūr of Marudūr	Iṛaivāṅkuḍi Kīḷavan	Sold ' <i>eṅgal maganṇār</i> ' Right of using 1/5 th of the water through the big sluice for irrigation. Fined if water was stopped	————	SII Vol XXVI, no 397, p 257
80.	Kaṭṭamanji inscription	c.937-38 CE	...do...	On the rock in a garden	Ūrar	Residents of the village of Kīḷlai	Sale of land, tax free and plot ittigated by water lift	————	SII Vol XXIII, no 61, p. 37

				,Chittor Talik, Chittor district		kaṭṭamachich i			
81.	Anaimalai inscription	c.940 CE	...do...	On the rock at the entrance into the central shrine of the Narasingaperu mal temple at Anaimalai	Marudurudaiy an Arunidi kaliyan	temple of the Narasingaper umānaḍigal	Took possession of the temple tank Kaliyānēri due to indebtedness of the temple	Gift to temple	SII Vol III, part 3, no 106, pp. 239-242
82.	_____	c.941 CE	...do...	on a slab near the tank in the village Munisāndai-, Tirumayam taluk	Mantri Āccan Mūtti	Muniyandaik kuḷam	Gift of money to deepening the tank	_____	IPS, no 71, p 46
83.	Neṇpākkam Inscription	4 th regnal year	Rājāditya	On the slab set up in the village, Veṇpākkam, Conjeevaram Taluk, Chingleput district	_____	_____	Construction of a sluice by Kēraḷam Rājādityan	_____	Vol XIII, no 97, p 47
84.	Ukkal inscription	c.944 CE	Parakesarivar man, Parāntaka I	_____	Assembly of Sivachūḷāmaṇi maṅgalam	Ukkal	Divine gift to the temple including tank, wet and dry land. Village exempted from taxation. Election to tank and garden supervision committee	_____	SII Vol III, part 1, no 12, pp 18- 20

							Committee shall not claim vetṭi		
85.	_____	c.949 CE	Cola raja Kēsari Gaṇḍarāditya	On the north wall of the central shrine in the Vaḷamaīśvara temple, Kulattur	Pirāntakan Vīra Cōḷan	Mahādēva of Nīrpaḷani	Land sale for archanbhogam and remuneration. Land will enjoy first turn of water Tax exemption	_____	IPS, no 30, pp 28-29
86.	The Tirukkuṟuṅgudi inscription	c.868 CE	Parāntaka II	on stone belonging to Nambi temple, Tirunelveli district	Mahāsabha of Vaikunda-Vaḷanāḍu	Brahmadēya Nāttarṟppōkku	Sale of land as tax-free. Land bounded by kuḷam. Common land should be irrigated by Vāsudēva lake	_____	Inscriptions of the Early Pāṇḍyas no 27, p 38
87.	Tiruverumbūr inscription	c.953 CE	Gaṇḍarāditya	On the south wall of the central shrine Pipilikēśvara temple, Tiruverumbūr, Trichinopoly taluk	Viranārayanan Semiyan Vēdivēlar	_____	Dug a channel	_____	SII Vol XIII, no 51, p 22
88.	Uṟaiyūr inscription	c.953 CE	Gaṇḍarāditya	On the south wall of the central shrine Pipilikēśvara temple, Tiruverumbūr, Trichinopoly taluk	Peruṅguri sabhai and ūrar of Eṟumiyūr	Temple	Sale of boundary disputed land. Agreed to supply water to the land from the tank at Srikanta caturvēdimāṅgalam	Agreed to pay taxes	SII Vol XIII, no 36, p 36
89.	Kīlṁāttūr inscription	c.955-56 CE	Vira Pandya	On the west wall of	_____	_____	Proper check on dry and wet lands of the temple	_____	A <i>Topographical</i>

				Maṇikaṇṭśvara temple, in Madurai district					<i>list of Inscriptions in the Tamil Nadu and Kerala State, vol 5, no 44,</i>
90.	Śālaigrāmam Inscription	c.957 CE	Vira Pandya	Rāmanāthapuram district	Vira Pandya	Sabha of Śālaigrāmam	To use the water of Kuḷuvāṇai-ēri Exempted from taxation	The village was given a dēvadāna status (diety land)	EI, Vol XXVIII, no 17, p 92
91.	Uḍayārguḍi inscription	c.961 CE	Sundara Chola	On the west wall of the Anantiśvara temple, South Arcot district	Periṅguṟip-perumakkal	—————	Gave plot of land in exchange of one below the Kiḷinālūr tank.	—————	SII Vol XIII, no 93, p 45
92.	Anbil plate	c.961 CE	...do...	—————	Aravaṇaiyan passed the order	Aniruddha Brahmāhiraja	Gift of land with exemption of taxes. (śennirveṭṭi) Right to enjoy all resources of land, right to enjoy taxes, dig well and cut channels, (full water right)		EI, Vol XV, no 5
93.	Udayārguḍi Inscription	c.962 CE	Parāntaka II	On the west wall of the central shrine of the Anantiśvara temple, Chidambaram	Vimaṇ Kundavaiyar	Tiruvantiśara ttu Paramaswami	Gift of land for sacred bath Boundary demarcation		SII Vol XIII, no 224, p 121

				taluk, South Arcot district					
94.	Tiruppagalūr inscription	7 th regnal year (c.964)	Parāntaka II	On the slab near Kallērippārai close to Cheyyār river, polur taluk-north Arcot district	Puttaraiyādi	_____	Endowment of land for the upkeep of the tank	_____	SII Vol XIII, no 173 A, p 97
95.	_____	c.966 CE	Unspecified	North Arcot	member of <i>Tigai-yayirat-taiñṇurru-nagar</i> (trading corporation) named Ísvarapichchan	Ur of Punganur	Release of tank <i>Paramṇḍlādittap-pērēi</i>	_____	EI, Vol XXVIII Inscription A, no 43, p 272
96.	_____	10 th regnal year (10 th century)	Virā- pandya dēva	On the wall of the maṇḍapa in the tirumali rock	Ambala Perumāl, head of Pāṇḍiyūr maṅgalam	_____	Built sluice for Madagēri	_____	SII Vol I, no 69
97.	Kirappākkam Inscription	17 th regnal year (c.970 CE)	Parāntaka II	On the boulder in a field near the tank, Kīrappākkam, Chingletur taluk	Kaṇho	Kumāraṇḍai Irevaṇaṇ	gift of <i>vālamañji</i> to ūrar	_____	SII Vol XIII, no 281 B, p 150
98.	Tiruppārkaḍal inscription	7 th regnal year (c. 977 CE)	Uttama Cōḷa	On the wall of the central shrine Kharapuiśvara	Native of Araisūr	Mahasabha of Kāvidippakkam	References to committees.	Endowment for daily worshipping of the temple	SII Vol XIX, no 179, p 91

				temple, North Arcot district			Received money for repairing the breaches of the big tank		
99.	Kāveripakkam Inscription	_____	...do...	On a slab built to the entrance of the Sudaravarada Perumal Temple, North Arcot	Kramavittan of Aralur	Gaṇaperumakkaḷ of Ilamandakam Avyālan	Gaṇaperummakkaḷ regulate the flow of water from the tank	_____	SII Vol XIX, no 177, p 90
100.	_____	7 th regnal year (c.977 CE)	...do...	On the south and east wall of the central shrine of the Uma maheśvaraswami temple at Koneri Rajapuram	resident of the ūrom	_____	Land with prescribed boundary shall enjoy the right to irrigated by the channels dug. Restrictions to cut diversion channels, shall not obstruct water flow. Save water in storeyed building Taxes like on ferries (<i>oḍaikuḷi</i>), tax on water (<i>nīrkuḷi</i>) shall be enjoyed by the temple	_____	SII Vol III, part 3, no 151, pp 300-322
101.	_____	c.978 CE	...do...	On the north wall of the central shrine of the Adimulesvara temple at Tiruppalattu	_____	Temple and assembly	Gift of land Free of śennirveṭṭi tax	_____	SII Vol III, part 3, no 150, pp 299-300

102.	Tiruvakkarai Inscription	c.980 CE	...do...	On the northern entrance of the first prakāra of Candramūliśvara temple, South Arcot	Peruṅguri perumakkal	Temple	Decision to grant 4 vēli land along with well and irrigated land as gift	_____	SII Vol XIX, no 240, p 123
103.	Pallikonda inscription	c.982 CE	...do...	On the base of the central shrine of the Nāganāthesvara temple, Vellore Taluk, North Arcot	Assembly of Nandikampa Caturvediman galam		Decision to remove slit from the tank every year from the interest received from an individual	_____	SII Vol XIX, no 310, p 155
104.	Tirumulaivayil Inscription	c.984 CE	...do...	On the west wall of the central shrine of the Masilamanishvara temple, Tirumullaivayil	Sembiyanmād eviyar	Assembly of Ambattur	Gift of land as Kīlērīpaṭṭu after exempting from taxes. Land bounded by swamp (oluṟkai), embankment etc Water right to individual Tankutta mudaiyan Vannakkan		SII Vol III, no 141, pp.286-288
105.	Tiruverumbūr inscription	c.986 CE	...do...	On the South wall of the central shrine of the Pipilikēśvara temple, Tiruchirapally district	Urar of the Kaviranāḍu	Tirumaḷaiyāl avar	Endowment of lands with channel for <i>ardhayāna</i> services	_____	SII Vol XIX, no 395, p 208

106.	Kiḷiyanūr inscription.	c.986 CE	...do...	On the North wall of the Central shrine of the Vaikunṭaperu māl temple, South Arcot district	Mahasabha of Kiḷinallūr	Sāttan Malladigal of Pākkam	Sale of irrigated land under tank under condition	_____	SII Vol XIX, no 398, p 209
107.	Tirumalappuram Inscription	c.988 CE	Rājarāja I	On the north west wall of the Maṇikaṇḍēśvara temple, Tirumalapuram, North Arcot district	Kambattaḍigal	Madhurāntak aṇṇ Gannḍarādityan	Sale of land Boundary demarcation	_____	SII Vol XIII, no 30, p 12
108.	Bādur Inscription	_____	...do...	On the wall of the Tiruvantiśvara temple, Wandiwash Taluk- North Arcot district	Ūrar	Tiruvantiśvar am Udaiyar	Gift of tank and exemption of taxation	_____	SII Vol XIII, no 199, p 108
109.	Lalgudi inscription	c.989 CE	...do...		Dēvan Arumoli of Perumpaḷālvūr	Temple of īsvara Bhattaraka	Reclamation and converting the land to wet land. Same land endowed to temple	Arumoli probably be Rājarāja himself	SII Vol XIII, no 75, p 35
110.	Tiruppalanam Inscription	c.989 CE	...do...	On the west wall of the central shrine of the	Merchant Nakkan Kāñjan	_____	Endowment of land after purchase and reclamation by merchant	_____	SII Vol XIII, no 101, p 49

				āpatsahāyśvara temple, Tiruppalanam, Tanjore taluk					
111.	Tiruchcheṅgōdu plate	c.990 CE	...do...	_____	Chief Kollimalavan Orriyūran Piradiganda-Varman	Temple of Paramēśvara	Gift of land as sacred <i>Mūlastāna</i> . Boundaries with tanks and channels like <i>kannādu</i> , dam called <i>Pūnārṟu-anai</i> and <i>kallōdu-anai</i> , tanks like <i>śūlai-kuḷam</i> (kāndelēri), <i>Tāmaraikuḷam</i> also <i>Kaṟṟali-ēri</i> (<i>pudukkuḷam</i>) and <i>nīrkovai</i>	_____	SII Vol III, no 213, pp 477-480
112.	Tiruvallam Inscription	c.992 CE	...do...	On the west wall of Bilvanthesvara shrine	Vikramādittan of Kārai nāḍu	kuṭṭaperumāl aḍigal	Gift of lamp to the maintenance of land. Boundaries with sluices and channels		SII Vol III, part I , no 50, pp 103-104
113.	_____	c.992-93 CE (9 th regnal year)	...do... (Rājarājakesari varman)	On the face of the third pillar of the shrine Gōkaṃaēśvara temple, Ālanguḍi taluk	Arikullakala Brahmadarāya n.	Kavirkuḷam tank	<i>Kuḷampaṭṭi</i> (land assigned for the maintenance of the tank) was gifted as <i>iṟaiyili</i>	_____	IPS, no 28, p 26
114.	Tiruverumbūr inscription	992 CE 7 th regnal year	...do...	On the north wall of the Pipīlikēśvara temple, Tiruverumbūr,	Peruṅguṟu-sabhai of Śrikanta-caturvēdimanḡalam	Sembiyan Vēdivāḷar	Sale of gold, right to collect tax from cultivators for periodical repair of the tank	_____	SII Vol XIII, no 165, p 88

				Trichinopoly taluk					
115.	Tiruverumbūr inscription	c.992 CE	...do...	On the west wall of the Pipilikāśvara temple, Trichinopoly taluk	Sembiyan Vedivelar	Temple of Tiruveṟumbi yūr-āḷavar	Purchased land from Perunguru sabhai Right of using water from the tank Donee constructed a channel for the irrigation purpose	—————	SII Vol XIII, no 163, p 86
116.	Tiruneḍuṅgalam inscription	c993 CE	...do...	On the south wall of the Gaṇēśa shrine, Neḍuṅgaḷanāth asvamin temple, Tiruneḍuṅdam , Trichinopoly	Sabha . ūr and the dēvakarmins of the temple at Tiruneḍuṅgalam	Kambāṇ Manujan	Registers the sale of kuḍinikka-dēvadāna. Also the land had to be irrigated by Kumīḷiyāru	—————	SII Vol XIII, no 182, p 100
117.	Ukkal inscription	1+7 year (c.993 CE)	...do...	—————	—————	—————	Election of men for the tank supervision committee	—————	SII Vol III, part 1, no 6 of ukkal inscription, pp 6-11
118.	Tiruvilimilalai inscription	c.997 CE	...do...	On the first pillar in the inner gōpura Vīḷināthasvām in temple, Tiruvīḷimīḷalai, Nannilam Taluk- Tanjore district	Assembly of Malalai	Temple	Land sale to get facilities of irrigation from the tank	—————	SII Vol XIII, no 333, p 176

119.	Siyamangalam	c.1004 CE, 19 th regnal year	...do...	Velur District	Ūrār	Vellāṇ Kaṭapan vēṅkāṭaṇ	Buyer has given permission to dig new channel, water rights	_____	K Rajan, p 97
120.	Tirumalai inscription	c.1006 21 st regnal year	...do...	On the buried rock in front of the gopura at the base of the Tirumala Hill, Polur			Guṇavīramāmunivan built a sluice (a Jain teacher) and preserved the sluice.	_____	SII Vol I, no 66
121.	_____	c.1006 CE	...do...	On the wall of the temple Tiruvangnīśvara temple, Tirumayam taluk	Paramēśvara of Tiruvangnīśvara, a brahmadēya village in Kūḍaḷūr nāḍu	Temple	Gift of land. lands irrigated by Kūruvāy maḍai, which has been exempted wholly or partially from taxes	_____	IPS, no 85, pp 54-55
122.	_____	c.1011 CE	...do...	On the south wall of the ruined temple, Tiruvilangudi, Kulattur	Peruṅguri sabha	Temple musician	Land gifted as kāṇī. Irrigation sources mentioned	_____	IPS, no 89, p 58-61
123.	_____	c.1012 CE	...do...	on the rock to the east of the Tirumalaikkāḍ ambar temple, Kulattur		Temple	Income from the vayakal were used to clean the temple floor and to meet the repair of the temple Income from vāyakkāl for remuneration. Land sale for renovation of the tank	Boundaries mentioned	IPS, no 90, pp 61-66

124.	_____	c.1012 CE	...do...	On the rock east of the Tirumalaikadambar temple, Pudukottai	Members of town assembly	Drummers	Granted land and Araṅgam ēri as remuneration to the drummers	_____	IPS, no 91, pp. 66-67
125.	_____	c.1013 CE	...do...	On the south wall of the central shrine in the ruined siva temple, Kulattur	_____	_____	The boundaries of the wet lands Reclaimed and rendered cultivable for the Kṣētrapālar	_____	IPS, no 92, pp 67-68
126.	Ukkal inscription	1014 CE	...do...		Kannan Aruran	_____	Kannan Aruran and a servant of Rājarāja caused for the construction of a kinaru (well) and totti. Gave allowance to the men who distribute the water in terms of paddy	Battle and destroyed the ship of Kānthallur śālai	SII Vol III, no 4 of Ukkal inscription, pp. 7-9
127.	_____	c.1015 CE	Rajendra Cōḷa	On the North wall of the Bilavanatheswara temple	Citizens of Vāṇapuram	Somanātha	Tax free land Boundary demarcated	_____	SII VOL III, part 1, no 53, pp 107-109
128.	Ukkal inscription	4 th year (1016)	...do...	_____	Komulan Araiyan Baladevan	Assembly	Sale deed for the maintenance of tank. Reference to tūmbu and ēttam	_____	SII Vol III, part 1, no 10, pp 15-17

129.	The Tiruvilangādu copper plate	6 th regnal year, (c. 1020 CE)	...do...	_____	_____	_____	Construction of embankment of the Kaveri river. The tank called as jalastambha (liquid pillar of victory)	Praśasti of Cōḷa family	SII Vol III, part 3, no 205, pp. 383-439
130.	_____	12 th July 1026 CE, (14 th regnal year).	...do...	On the south wall of the south <i>prākāram</i> in the Agastisvara temple, Alanguḍi Taluk	Tūṇanṛān Piḷḷān of Kōyilnallūrkk ōyilūr, Marundi āṇḍaval, Nayanār of Tirukkunṛākku ḍi	Nayanar of Tiruvagattiśv aram	The joint purchase of land with the money of the dancer for the conduit of Peṇṛāl ēri tank.	The land was donated as dēvadāna.	IPS, no 97, pp 72-73
131.	_____	c.1027 CE	...do...	On the slab set up On the bund of the Neriñjikkūḍi tank, Thirumayam taluk	Ponnāṇḍi of Uḷakkūḍi	Neriñjikkūḍi tank	Payment of paddy for the tank	_____	IPS, no 59, p 41
132.	_____	c.1028 CE	...do...	On the slab at the south east corner of the of the Neriñjikkūḍi tank, Tirumayam	Kallambalanda van of Mavanur	Tank	Gift of gold to tank	_____	IPS, no 60, p 42
133.	_____	c.1028 CE	...do...	On the north wall of the central shrine of the	Village assembly	Mahadeva of parambaiyur	Payment of taxes like <i>eccorru</i> , <i>vetti</i> and <i>iṛai</i>	Praśasti of the king	IPS, no 99

				Cholēśvara shrine, Parambur village, Kulattur taluk					
134.	Ukkal Inscription	c.1028 CE	...do...		Assembly and tank committee	Temple	Land grant to temple Reference to inundation channel <i>veḷḷakkāl</i>	_____	No 11 of Ukkal inscription, SII Vol III, pp 17-18
135.	_____	24 th regnal year (c.1036 CE)	...do...	On the pillar of the mandapa in front of the rock cut shrine, Kulattur	Nāḍu and Dānattār (trustees) of the temple	_____	The Nāyanār who resides in Agatiśuram temple shall take the kaḍamai tax from Kaḷḷikkuḍi Income from land for remuneration	_____	IPs, no 116, p. 95
136.	Sērmādēvi inscription	1038 CE	Sundara Cōḷa Pandya	On the north and west wall of the Ammaināthaśv amin temple, Ambasamudram, Tirunelvēli	_____	_____	Land made tax free dēvadāna the king. <i>Maṭai</i> and <i>vāyakkāl</i> mentioned.	_____	SII Vol XIV, no 157, p 83
137.	The Alambakkam inscription	1064 CE	Rājakēsarivar man	On the north wall of the Kalilāsanātha temple, Tiruchirapally	Peruṅguri perumakkal	Temple of Tiruvisalur Pallikondālv ar	Tax free gift of land surrounded by sluices and channels as Tiruccceṇṇaṭaipur.	Praśasti of the king	SII Vol XXVI, no 769, p 552
138.	Tirukkalukkunram inscription	1075 CE	Kulōttuṅga Chōladēva I	Wall of the Pandava perumal	Village	Kumāra Peruvāṇiyan Dēvan Eriṇjōḍi	Purchase of flower garden and gifted as dēvadāna.	This land free of taxes like vēlikkāsu,	SII Vol III, part 2, no 68, pp 140-143

				temple at Kāñjipuram			Irrigation rights of the sold land mentioned.	nīrvilai, sōrumaṭṭu etc.	
139.	_____	1079 CE	...do...	On the wall of the Sundarēśvara temple, Alangudi Taluk	Araiyan śedan	Jain monastery	Gift of land surrounded by vāyakkāl and ūrani	_____	IPS, no 119, p 97
140.	_____	20 th regnal year 1090 CE	...do...	On the east wall of the kitchen of the Śikhānāthasvā mi temple, Pudukottai	Anantaraman	Temple	Gift of land to conduct festival Boundary demarcation.	The land was formerly endowed by Uṟattūr kīḷavan and now left fallow	IPS, no 221, p 194
141.	_____	1090 CE	...do...	On the base of Anekatangapa dam Temple at Kanchipuram	King	Temple	Gift of nīr nilam to temple defraying from taxes. Described tūmb-aḍi (sluice) while mentioning boundary	_____	SII Vol II, no 77
142.	_____	1092 CE	...do...	On the north entrance of the Agastīśvara temple, Irumbānāḍu, Ti rumayam Taluk	_____	_____	Tiripuraṁ lands which irrigated from the śeembandamaḍai were given to śivabrāhmaṇar to maintain	_____	IPS, no 223, p 196
143.	_____	1103 CE	...do...	On the wall of the north prakaram of the Sundaraperum	Chief of Perumbūr nāḍū	Temple	Gift of land irrigated by tank, <i>ēmbal</i> (high level irrigation tank) and <i>ūṟnikal</i> (small tank for	_____	IPS. no 124, p 101

				āl temple, Irumbānāḍu, Tirumayam			drinking purpose) as <i>dēvadāna iṟayili</i>		
144.	_____	1116-17 CE	...do...	On a stone set up On the bund of a tank, Kulattur	_____	_____	Repair of breached bund on behalf of Kulōttuṅgaśōḷa Kaṇakarājan	_____	SII Vol XXIII, no 155, p. 124
145.	Kunnakudi inscription	1117 CE	...do...	Tiruppattur taluk- Rāmanāthapur am district-	_____	_____	The temple of Tirumalai uḍaiyar at Tirukuṇarakuḍi is one of the village irrigated by the river Tēṇāru	_____	SII Vol XXVI, no 24, p 20
146.	_____	1121 CE	...do...	On the the south wall of the central shrine, Svayamprakāś āmūrti temple, Idaiyāṭṭūr	_____	_____	Village assembly directed Karumānikka śeṭṭi to dig big tank, reclaim and improve land	_____	IPS, no 127, p 107
147.	Tiruppārkaḍal inscription	1124 CE	Vikrama Cōḷa	On the South wall of the central shrine of the Kharapuriśvar a temple, Wajalapet Taluk, North Arcot Dist	Araiśan Devarayan	Temple	Gift for burning lamp entrusted to Annual Tank supervision committee	_____	SII Vol XIX, no 160, pp. 80-81
148.	_____	1132 CE	...do...	Vyaghrapurish vara temple, Tiruvengaivas al, Kulattur	Members of Peruvāyilnādu assembly and	Sāndikkūttu dancer	Dēvadana land donated to dancer including kuḷam in the land for reclamation.	_____	IPS, no 128, p 107

					Mahēśvaras of the temple		When crop fail agreed to supply garin by the assembly		
149.	_____	1144 CE	Kulōttuṅga II	Gōkarṇēśvara temple rock	_____	_____	Constructed sluice and channel for Kavinad tank. Gift to village to store water.	_____	IPS, no 120, pp 98-99
150.	_____	1144 CE	...do...	On the South wall of the central shrine of Cōḷēśvara temple, Ponnamarapatti, Tirumayam	<i>Niṣadharājaan</i>	<i>Mahādēvar of Ponnamarāpati</i>	Gift of land surrounding village tank	_____	IPS, no 147, p 121
151.	Tirumurugaṇpūṇḍi inscription	1152 CE	...do...	Coimbatore district	_____	_____	Gift of paddy to feed mendicants from the land irrigated by periyā aṇai	_____	SII Vol XXX, no 25, pp 45-47
152.	_____	1156 CE	Rājarāja II	West wall of the Māḍīśvara temple, Kaalḷampatti, Tirumayam	_____	Mahadevar of Rājendra Chōlapuram	Boundaries of the land Everything in land gifted to Nayanar. Made them iraiyili (free of taxes)	_____	IPS, no 133, p 110
153.	Aḍuturai inscription	1161-62 CE	...do...	On the south wall of the maṇḍapa of the Apatsahāyēśvara temple	_____	Koṇḍaśōḷa-Pallavaraiyan	Sale of temple land as a reward for digging a well	Śivabrāhmaṇas agreed to measure 3 kaḷam of paddy to the temple	SII Vol XXIII, no 368, pp. 254-255

154.	_____	1161 CE	...do...	On the rock of the rock cut shrine, Mēlaikkōvil, Kuḍumiyāmali, Kulattūr taluk	_____		Boundaries of land with water bodies. Reclaimed by Munayilādittan Kōdaṇḍan	_____	IPS, no 136
155.	_____	1163 CE	Kūlottunga II	In the ruined Siva temple, Irumbāli, Kulattūr taluk	Members of district assembly	Anapāyanāḍālvān	Assembly agreed to pay to Anapāyanāḍālvān for constructing sluice.	_____	IPS, no 123, p 100
156.	_____	1175 CE	Rajadhiraja II	On the wall to the left of the entrance to the first prakara of Maḍattukovil, Nāṅupaṭṭi vaṭṭam, Kulattūr	Aḷakaikkon (merchant)	Temple of Tirupperumā naṇḍar	Brought devadanam land and renamed it as kūtan Kuḍikkadu. Here, his father dug a tank and reclaimed and improved it	Damaged insc	IPS, no 140, p 116
157.	_____	1183-84 CE	Kulōttuṅga III	Mucukundēśvara temple wall, Koḍumbālūr, Kulattūr taluk,	Se Uḍaiyān	_____	Repaired the tank and steps	Installed Dakṣhināmūrti, Tirumāl (viṣṇu), Ayan (Brahma) and two guardians of the gate	IPS, no 144, p. 119
158.	_____	1187 CE	...do...	On the northern wall of the ardhamandapam of the Umāpaṭiśvara	King	Temple	Gift of land with water to temple by king	_____	IPS, no 146, p 119

				temple, Sattanur, Tirumayam					
159.	The Vijayanārāyaṇam inscription	1187 CE	Jaṭavarman Śrivalabha	On the stone called Vaṇiyāṇ-kallu near the tank, Tirunelveli district	_____	_____	Breaching of tank Manōmayanēri. Closing of tank by Nambi Saṅkaran Vāsudēvan.	Income from land for maintenance purpose	SII Vol XIV, p 134, no 231, p 134
160.	_____	1190 CE	Kūlottunga III	North wall of the Maḍiśvara temple, Kaḷḷampattī, Tirumayam	Nilamaiyalaki yadēvan with support of Village Assembly	Ayyapoḷil Nācciyār	Endowment to temple for daily offering to temple. All income utilised for the same	_____	IPS, no 148, p 122
161.	_____	1193-94 CE 16 th regnal year	...do...	Umāpatiśvara temple, Sāttanūr Tirumayam Taluk	Ūrom	_____	Vembavayakkal lands were excluded from taxes like <i>iṇai</i> , <i>antarāyam</i> and taxes of every kind	_____	IPS, no 149, p 123
162.	_____	9 th regnal year- 1198 CE	Jaṭavarman Kulaśekhara I (pandya)	On the south wall of the Kadaliśvarar temple, Tirumayam taluk	Keraḷan Niṣadharāja of Puṇamalaiṇāḍu	Mutta Bhaṭṭa Sōmayāji	Gift of land with boundary demarcation and whole right over tanks Tax exemption	_____	IPS, no 244, pp 210-211
163.	_____	1201 CE	Kulōttuṅga III	On the west wall of the kolo- maṇḍapam, Uttamanāthasv	Urom	Residents	In case of enimity, the residents shall not harm the irrigation networks in the village.	_____	IPS, no 156, p 129

				āmi temple, Kulattur			Anyone damagae shall give one mā of wet land to the lord		
164.	_____	1204 CE	...do...	On rock north to the temple of Kaḍambar Kōvil, ñartamalai, Kulattur	merchant Kaḍamban śēṅguḍiyān Gaṅgadharar	Temple	Land sale by nagarattom to merchant free of taxes. After sale land endowed by donor to the temple.	_____	IPS, no 158, p 131
165.	_____	1206 CE	...do...	On the southern wall of the shrine Svayamprakāś emūrti temple, Idaiyāttūr village, Thirumayam taluk	Niṣadharājan of ponnamarāpati	Nayanār of the Tiruttānotōṇr iśvaram temple	Gift of land along with full water right to temple for daily service	_____	IPs, no 161, pp 134-135
166.	_____	1209 CE	...do...	On the South wall of Cōḷiśvara temple, Parambur, Kulattur	Ur of Parambaiyūr	Nayanar of Cōḷiśvaram temple	Sale of wet land, uncultivated and dry land near to tank	_____	IPS, no 165
167.	_____	1212-13 CE	...do...	On the south wall of the ardhamanḍapa m of Umāpatīśvara temple, Thirumayam taluk	Tirumaṇikkilār Devan Umaiyorupāka n	Nayanār of Umāpatīśvar am shrine	Gift of land which he brought from the ūrar for the daily offering. Reclaimed three wet lands including Meymoḷiyāṅkuḷam and its lands, Ponnankuḷam and its lands,	_____	IPS, no 167, pp 154-155

							Muttāṇḍiyārkuḷi and vayal, and two tanks		
168.	_____	1215 CE	Rājendra Chola	On the south wall of the central shrine of the Śivayōganātha swāmi temple, Kumbhakona m taluk, Kumbhakona m Taluk	Māḍan śēdan of Avaninārāyaṇa	Tiruvīśalur Perumāṇaḍig al	Endowment of land	_____	SII Vol XIX, no 44, p. 21
169.	_____	1216 CE	Māṇavan Sundara Pāṇḍyan I	In front of the maṇḍapam of the Agatīśvara temple, Tirumayam	Gangeyarayan	Temple	Made endowment as <i>iṇṇayili kāraṇkilamai</i> . Given right o the temple to enjoy the resources and water bodies.	_____	IPS, no 251, p 221
170.	_____	1221 CE	...do...	Agastiśvar temple, Neivasal	Urom	Temple	Gave the temple right to irrigate the land from Periyamaḍai of Neḷvayil Periyakulam tank	_____	IPS, no 258, p. 230
171.	_____	1221 CE	...do...	Agastiśvar temple, Neivasal	Urom	Temple	Gave first priority to the right to irrigate with the water from larger sluice, smaller and the last sluice of the tank to Nāyanār.	_____	IPS, no 259, p 230
172.	_____	1223-24 CE	...do...	On the pillar of the rock cut cave.Ramanat hapuram district,	Residents of śāli alias Tiruchchaṇam aḷagiya-nallūr	Nayinār Tiruppālaivā sāl Mudaliyar	sale of <i>maṇṇukāl</i> (sluice)	_____	SII Vol XXVI, no 29, p 23

				Tirupattur taluk					
173.	_____	1223-24 CE	Rājarāja III	On the south wall of the second prākāram of the temple Śikhānāthasvāmi temple, Kuḷattūr taluk	Chandesvara, custodian of temple	Sunditayilum nallāl , the aṇukki (personal servant of king), sār-araiyani (viceroy of nāḍu)	Land brought for the digging and the construction of an <i>uruṇi</i> . Named it <i>Umaiyaṇḍi ūruṇi</i> ,	Boundary demarcation	IPS, no 188, p 171
174.	_____	1223 CE	Sundara pandya I	Central shrine of the Svayamprakāś amūr, Tirumayam			Auction of land to the temple due to failure of paying debt	_____	IPS, no 268, p 241
175.	_____	1223 CE	...do...	Tiruppattur taluk- Rāmanāthapur am district	_____	_____	Gift of land and levies of land irrigated by Tēṇāru to the temple of Nayakar	_____	SII Vol XXVI, no 40, p 30
176.	Pon Amaravati inscription	1224 CE	...do...	On the gōpura of the Chōḷeśvara temple, Tiruchirappally district	_____	_____	temple in Ponnāmārapati-ppārru restrsining them from using the water in Iḍaṅgamikāman	_____	SII Vol XXVI, no 14, p. 10
177.	_____	1230 CE	...do...	Virapāṇḍi, Periyakuḷam taluk, Madurai,	_____	Enṇaiala uḍaiyār	Gift of land under the channel as tax free	Incomplete inscription	
178.	_____	1239-40 CE (24 th regnal year)	Rājarāja III	On the slab planted in a feeder channel	_____	Nāḍu, nagaram and several	Seeking royal order for the exemption of taxes.	_____	IPS, no 196, p 177

				On the east of the village, Kumāramaṅga lam Kuḷattūr taluk-		agara-brahmadēya ms of kōṇāḍu	Shall see that nāṭṭu-viniyōgam, ālamañji, tēvai and other kinds of dues are collected. It reads...		
179.	_____	1244-45 CE	...do...	_____	Representative s of the Kīlōṇāḍi and Vaḍaśīruvāynā ḍu and the araiyars	Ādicaṇḍēśva rar, the Dēvakanmi, kōyil kaṇakku and śri Māhēśvaram	joint deed of the <i>īrai</i> yili. Land endowment for repair and worship. Both nāḍu agreed to pay all taxes in kind.	_____	IPS, no 198, p 179
180.	_____	1286 CE	_____	On the south wall of the Subrahmanaya shrine in the Darukavnesvar a temple, Tirupallathurai , Tirichinopoly	_____	_____	Land owner was held for kuḍimai. One Karppūrraḍaiyan failed to contribute labour to repair his portion of tank bund and thus put to jail	_____	SII vol 8, no 591
181.	Koḍumbālur inscription	1309 CE	Maravarman Kulaseghara I	On the wall of the Muchukundes vara temple, Kulattur taluk	Temple authorities	Dēvan Tirunelveli Uḍaiyar	Perpetual lease of tenancy right over the land of Iluppaikudi. Lease amount will be utilised for the repair of tank	_____	SII Vol XXIII, no 136, p 109
182.	Kanjiapuram inscription.	1366 CE	Kampaṇa II	Above the tier of East wall of the sabhāpati maṇḍpa of Ēkāmbaranāth a Temple.	Kuḷaseghara Bhatta	village of Koḷaikkuḷa yagam	Tax free gift for purposes including running water shed 'tannir paṇḍal' for 360 days.	_____	<i>Inscriptions of the Vijayanagara rulers</i> , 2014, no 26, pp 19-20

183.	Peṇṇēśvaramaḍam inscription	1367 CE	...do...	On a rock surface near Pennaiyar river in the village, Krishnagiri District	_____	_____	Making of the canal Kaṇḍakandan-veli-peruvāykkāl	Victories achieved on behalf of the king by gaṇḍaragūḷi Māraya-nāyakkar Several forts were taken	Inscription of the Vijayanagara rulers, no 28, pp 21-22
184.	Kāñjipuram inscription	1374 CE	...do...	On the south wall of Nāyar maṇḍapa of Ekāmbara temple, Kanchipuram district	queen Irāmatēvi Avvaiyār	temple of Uḍaiyār and Nācciyār	Donated three villages to the temple, gifted one land after constructing reservoir. Exempted from kaḍamai like <i>veṭṭi vari</i> , <i>ērimin</i> etc	_____	SII Vol IV, no 351
185.	The Tiruvēṅgaivasal inscription	1374 CE	...do...	On the wall of the Brihannāyaki Amman shrine of the Viāgrapuriśvar a shrine	Temple trustees and the ūravar of Tiruvēṅgaivasal	Ūravar of the Irumpāli	Grant <i>pādikāval</i> rights for repairing the tank Mānikkanēri	_____	Inscription of the Vijayanagara rulers, no 68, p 51
186.	Kāñjipuram inscription	1378 CE	Harihara II	On the inner surface of west gōpura of the Varadarājaper umāl temple, Kanchipuram	Vira Ariyan Uṭaiyar	Śri Vēdēndrasāg ara Sripādiṅgal	Grant of village (some tank <i>jalapāṣana</i> and land) as <i>sarvamānya</i> to the temple to meet the bhiksha expense	_____	Inscription of Vijayanagara rulers, no 91

187.	Kaliḍaikkurichchi inscription	7+4 th regnal year (14 th century)	Māṇavarman Vikrama Pāṇḍya	On the south wall of the central shrine of the Nāgēsvaram uḍaiyar temple, Ambasamudram, Tirunelveli district	Rājaraja Caturvēḍimaṇḍalam	temple of Nilaiyūḍaiya Pāṇḍiya īśvaramūḍaiyae	Sale of land An individual was punished to pay 13 kāśu to the temple for using the water.	_____	SIII Vol XXIII, no 90, pp. 53-54
188.	Tiruppanāṅgudi inscription of	1383 CE	Virupaksha II	On the north wall of the maṇḍapa in front of the Tālapurīśvara shrine in the Siva temple, Cheyyar tṭuk, Tiruvannamalai district	Tiruppanāṅḡḍu temple	Māccāṭṭaṇ who is the tiruviḷakku-maṇṇāḍi of the temple	Sale of thirunāmattukkāṇi to renovate the tank Caḍaiyēri (ēṇikuḷi)	_____	Inscription of the Vijayanagara rulers, no 112, pp 87-88
189.	Srirangam inscription	1383 CE	Virupaksha II	Raṅganāthasvāmi temple, Thiruchirapalli district	Mudappa-mantra		Construction of sētu (bridge) by the donor	_____	Inscription of Vijayanagara rulers, no 116
190.	Kaḷanippākkam Inscription	1385 CE	Kampana II	On the kumuda portion of the mahamaṇḍapa in Bimīśvara temple, Vellore district	Sōmaiyya daṇṇāyaka	Temple of Pīmicuram-uḍaiya-nāyanāe	Tax free grant of land Mentions taxes (irrigation): vetṭivari, talaivari	_____	Inscription of the Vijayanagara rulers, no 121, pp 94-95

191.	Sittali inscription	1386 CE	Virūpāksha II	On a slab near the tank Vilaiyattikulam, Perambalur District	Mahāhāpradhāni Muttarasa-udaiyar	_____	Constructing reservoirs. Reclaim land under tank by Narasingadēvar of Vempar nādū	_____	Inscriptions of Vijayanagara rulers, no 128, p 100
192.	Villiyānūr inscription	1387 CE	Bukka II	East wall of the front maṇḍapa of the Tirukkāmīśvaram uḍaiyar temple, Pondicherry	_____	_____	Sāluva Sāvaṇḍadēva mahārājar remit taxes like <i>puṇey</i> , <i>nāṇḍey</i> , <i>ērīmīn-vilai</i> , <i>oḷukkunīr-pāṭṭam</i>	_____	Inscriptions of the Vijayanagara rulers, no 137
193.	Ponneri inscription	1387 CE	...do...	On the slab On the Krishnagiri-Dharmapuri highway, krishnagiri district	Irāmanāyan Ponnikkuttar (naṭṭu-nāyagam)	Ponnēri (reservoir)	Remitted taxes On the reservoir by the donor	_____	Inscription of Vijayanagara rulers, no 135
194.	Māraṇṭahalli inscription	1387 CE	...do...	Dharmapuri district	Ettappuḍaiyae	Ponneri	Remitted taxes	_____	Inscription of Vijayanagara rulers, no 136
195.	Muḍivēdu inscription	1397 CE	Harihara II	On the rock near the tank Chittor district	Tippi setti and Timāya	God of Tiruveṅḷaḷan ātha, Mallikārjuna, Bhairava and Brahmaṇa Raṁganātha and Rāmāvojhalu	Gift of land under the tank administered by Mahāpradhāna irugappa-danḍanāyaka	_____	SII Vol XVI, no 9, p 8

196.	Tiruppanaṅgaḍu inscription	1397 CE	Dēvarāya	On the inner side of the west wall of the first prakāra in the Śiva temple.	Ūravar of Oḷukkaippākkam	Ūravar of Kaṇṇipākkaṁ	Sale of land for digging the feeder channel (āṇṇūkāl). Repair of tank	_____	Inscriptions of the vijayanagara rulers, no 177
197.	_____	1406 CE	Vira Pratapa Bukkar	On the south wall of the central shrine in the Brahmapurisvara temple, Chingleput	Village of Alattur	_____	Settlement of dispute between villages regarding the supply of water from the Alattur tank.	_____	G. D Deshpande, Glipmses of historical water bodies in the Vijayanagar dynasty.
198.	Siddhamangalam inscription	1407 CE	Dēvarāya I	On the north wall of the Vyāgrapādēśvara temple, Tirukkivilur Taluk, Villupuram District	_____	Sabhai of Vinōdanallūr	Sale of Tirunāmattukāṇī land of the temple for digging an irrigation channel	_____	SII Vol XXVI, no 418, p 272
199.	_____	1412 CE	Bukkana Udaiyar	West wall of the second prakara in the Maragesheyasvara temple, North Arcot	Candeshwara Nayanar	Mathapathi	Order issued by Candeshwara Nayanar for the gift of land to mathapathi for diggint the tank	_____	G. D Deshpande, Glipmses of historical water bodies in the Vijayanagar dynasty.
200.	Tiṇḍivanam inscription	1418 CE	Vijaya Bhupati	On the south wall of the maṇḍapa in the Tiṇḍiśvaram shrine	The ūravar of Kiḍaṅgil	Temple of Tirukkevurīśvaram	Sale of land to the temple as <i>Tirunāmattukāṇi</i> to pay back the <i>oṭṭar</i> (masons) who have	_____	Inscription of the Vijayanagara rulers, no 245, pp 201-202

							repaired the breach in the tank		
201.	Dharmapuri inscription	1421 CE	Devaraya I	On the east wall of the mahamandapa of Ariyanātacuvāmi temple, Dharmapuri district	Nāttavar of Tagada nādu and nāṭṭu nāyakam Irāma nāyinār Ponnakkuttar	Rājarāja Isvaramuḍaiy a nayinār	Gift of land under the tank called Mēlēri to temple for the health and victory of Timmaiya Nāyakkar	_____	Inscriptions of the Vijayanagara rulers, no 261
202.	Tirumullaivāyil inscription	1424 CE	Dēvarāya II	On the south wall of the central shrine of the Māsīlāmaṇīśvara temple, Tiruvallur district	Uḍaiyar Orri Arasar and Arasuperumāl	Temple of Tirumullaivāyal uḍaiya nayanār	Gift of 4000 kuḷi of land for conducting festival. The land was given away the irrigation share from the donors lake called Periyēri	_____	Inscription of the Vijayanagara rulers, no 298
203.	_____	1426 CE	Vira Devaraya	Slab setup in the waste land near the tank in South Arcot District	Residents of Vada Nenmali		Regarding regulation of water supply from the river for irrigation	_____	G. D Deshpande, Glipmses of historical water bodies in the Vijayanagar dynasty.
204.	Irāmanāyakkanpēṭṭai inscription	1435 CE	Devaraya II	On a slab planted near Rāji-kavunḍa's house in the village of Irāmanāyakka	Vijayarāya Uḍaiyar	Siṅgapperumal	Grant of 200 kuḷi of land as an appreciation for making a reservoir.	_____	Inscription of the Vijayanagara rulers, no 316

				npēttai, Vellore district					
205.	Thirumalai inscription	1445 CE	...do...	On a boulder of the tank, North Arcot district	Tipparaśai nayakkar, the Tāṇattat and Mahēśvaras	residents of Paḍai viḍu	Income from <i>ēripāśi</i> (fishing lease) and Pallichandam shall utilise for removing slit and deepening the tank every year.	_____	Inscriptions of the Vijayanagara rulers, no 348
206.	_____	1446 CE	...do...	Slab setup in th ebund, North Arcot	_____	_____	Provision made for digging the tank from the fishing tax released from the Indiravanam tank	_____	G. D Deshpande, Glipmses of historical water bodies in the Vijayanagar dynasty.
207.	Malaiyaḍippattī inscription		Devaraya II	On the rock surface to the west of the tank of Tirumanan- kaṇmāy, Pudukkottai district	_____	_____	Three individuals made the village tank	_____	Inscription of the Vijayanagara rules, no 356
208.	Viracholapuram Inscription	1462 CE	Mallikārjuna	On the west kumuda portion of the Nariswara temple, Villupuram district	Rayappa nayaka	Nāriśvaram- uḍaiyar temple	Donor remitted several taxes On the land of the temple including <i>ērimin</i> (fishing tax)	_____	Inscription of the Vijayanagara rules, no 415

209.	The Tirugōkarṇam inscription	1475 CE	Pratāpa Dēvarāya	In the front of the maṇḍapa of the rock cut cave temple Pudukkottai	Viḷitturaṅkum perumāl pallavarāyar	Temple of Tirukkokaṇṇa m-uḍaiyār.	Gift of land under tank of Perunaṅkiḷḷi-pērēri	_____	Inscriptions of the Vijayanagara rulers, no 476
210.	Mēlavaḷavu inscription	1476 CE	Virupāksha III,	On the rock surface at Parambuk Kaṇmāy, Madurai district	Ūr paṛaiyan	_____	Land assessment to the mason who repaired the sluice	_____	Inscriptions of the Vijayanagara rulers, no 483
211.	Vriṇchipuram inscription	1482 CE	Saluva Narasimha I		Nāgamma Nāyakkar	Canal through three villages	Making of canal to bring water to reservoir Pasumāttur	_____	Inscriptions of Vijayanagara rulers, no 495
212.	Kāñjipuram inscription	1487 CE	Sālūva Narashima	On the west and south walls of the Tayār shrine, Kāñchipuram district.	Virupāksha-deṇṇāyaka	Temple	Present of money for the concertation ceremony. Dug canal for irrigating temple lands	Formed a new town	Inscription of the Vijayanagara rules,, no 510
213.	Information not available	_____	_____	_____	Tirumali Nayaka	_____	Donated a plot of nañjey land. Two taxes, nīṛkuli and āl-amañji was exempted	_____	ARE 1912, no 395
214.	Rangampettai inscription	1567 CE	Sadasivarāya	On the stone lying near the field	Nalla Bommu Nayaka	Shrine	Gift of land with water shed (<i>taṇṇīrpaṇḍal</i>)	_____	SII Vol XXIII, no 63, p 38

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